

## **Aspects of Indo-European historical syntax in a typological perspective**

**ABSTRACT:** This paper reexamines the core issues of the Indo-European syntax in a typological perspective including the interface of syntax, morphology and pragmatics (and in some instances also prosody). Word order is shown to have been significantly influenced by pragmatic functions even in allegedly prototypical verb-final systems in Anatolian, Indo-Aryan, Germanic and Romance. The paper also discusses the influence of verb valency involving clitic objects on attracting the verb to the initial position in Hellenistic Greek and Old Irish. Another major topic is the development of aspect systems that also had syntactic and pragmatic consequences. The paper discusses the main lines of this development including valency changes in a number of European language groups, whereas Indo-Aryan and Armenian (and to a limited extent also Germanic) primarily introduced other valency-changing categories, particularly causatives. The paper shows that the original typological properties are relatively resistant to change, but areal contacts can play a mediating role as illustrated by Dravidian and Uralic.

**Key words:** syntactic reconstruction, typological consistency, word order variation, pragmatic functions, Indo-European aspect and tense, Celtic verb complex

### **1. Introduction**

Investigations into Proto-Indo-European (PIE) syntactic patterns and their development in the later Indo-European (IE) languages are by necessity – in the absence of documents of such time depth – forced to rely on comparative evidence and linguistic assumptions about patterns and their possible modifications. The reconstruction methods rely heavily on our premises about cognitive and systemic regularities, for which the closest proxy emerges in cross-linguistic typological regularities. In the end, we aim at achieving the highest possible level of likelihood for the reconstructed Proto-Indo-European system, but must be cautious to avoid the pitfall of assuming full regularity. This brings us to the methodological problem of how to explain variant forms or patterns, traces of which show up in the later languages. For example Mallory & Adams (2006: 63) write that there is only scattered evidence of a future in Proto-Indo-European, absent from Anatolian and attested on both the extreme east of the Indo-European world (Balto-Slavic and Indo-Iranian) and the extreme west (Celtic) so it may have been another late addition in Indo-European. The decisive criterion in such instances should be similarity of form and function occurring in unconnected areas (if similar, then it is likely to be a remnant of a preceding stage, and if dissimilar, it is more likely to be an innovation).

Following up on pioneering investigations into the empirical basis of Indo-European syntax such as Delbrück's (particularly 1893–1900), Krahe's (1972), and Paul's (1880) early conceptual understanding of syntax, which all really provided the background for the later historical syntax, it was Lehmann (1974) who brought a major turn to syntactic investigation into Proto-Indo-European. In view of restricted evidence for the early stages of Indo-European (Lehmann (1974: 5) views Proto-Indo-European as

a language spoken by a specific community around 3000 B.C.), it becomes all the more important to understand the underlying patterns, which may have produced such forms. Lehmann relied on Greenberg's (1963) typological work combined with the generative framework. However, this typological framework is based on implicational scales and by itself dynamic, whereas the generative framework of those days was based on restrained rules, which did not provide for options of parameter setting and resetting (cf. e.g. Biberauer & Roberts 2007 on the history of English), required in order to account for variation.

The typological approach to language variation brought to the light overarching patterns based on implicational relations with a major impact on reconstructing historical syntax. For example, Lehmann (1974: 15) reconstructed Proto-Indo-European as an object-verb (OV) language, coherently having also postpositions and postposed comparative constructions, whereas verb-object (VO) languages have prepositions and preposed comparative constructions. Lehmann (1974: 15) wrote: "Accordingly in their underlying pattern of arrangement the three constructions *verb-object*, *adjective-pivot-standard*, and *preposition (postposition)-object* are identical. It may also be assumed that in the underlying structure V symbolizes an element much more general than is usually included under the rubric *verb*." It was this kind of reflection which took the reconstruction of historical syntax to the next higher level, although it could not escape the flaw of theory-conditioned circularity (as pointed out by Friedrich 1975, Jeffers 1976 and others, recently also Luraghi forthcoming). The main problem was, in my view, the absence of dynamism (later addressed by parametric syntax and optimality, mainly in phonology) and incapability of the generative model of that time (not of typology as such) to adequately incorporate semantic and pragmatic considerations.

One of the assumptions advocated by Lehmann (1974) and his contemporaries more or less until the end of the century was the principle assumed to produce the fundamental order in the sentences of each language:

"By this principle noun objects (N<sup>Obj.</sup>) are placed either before or after verbs. If objects are placed before verbs, the verb is followed by the categorial markers for qualifiers. If objects are placed after verbs, the Q categorial markers precede the verbs. Further, nominal modifiers (N<sup>Mod.</sup>) are placed on the opposite side of nouns from that on which verbs stand with regard to their objects. This principle brings about the distinguishing characteristics of verb-object (VO) and object-verb (OV) languages. As with any feature or characteristic of language, the features of the language governed by the principle may be undergoing change. When they are, the language in question is not a consistent language, though it may be predominantly VO or OV." (Lehmann 1974: 12)

However, Lehmann (1974: 22) understood that "it is rare that we find a consistent language"; he assumed that most of the earliest attested Indo-European languages were changing from OV to VO and that even the emergence of the so-called verbal noun was an effect of this ongoing syntactic change. Hock (2015: 53) also argued that "especially significant is that in the European members of the Indo-European family the strongest evidence for SOV is found in their earliest stages, and that the V2, SVO and VSO prevalent in later stages is an innovation". He furthermore argued that the relative-correlative structures, without center-embedding of the relative clause, are com-

patible with SOV typology, and that the preferential *i*-apocope in finite verbs in Italic, Insular Celtic, and Balto-Slavic, not paralleled by nouns, shows “that the verb-final hypothesis is a fruitful one”, although “the fact remains that among the SOV languages, early and Proto-Indo-European holds a typologically unusual position” (Hock 2015: 73). We should recall, however, that the relative-correlative structures vary across the Indo-European languages, and it may be important to point out that the preferential *i*-apocope in finite verbs, not paralleled by nouns, can also be explained as due to the functional load of the vocalic noun desinences (as carriers of case meanings) for which there is no correspondence in verbs.

Concerning e.g. early Slavic, Hock (with reference to Bernecker 1900) pointed to differences of genre (cf. Hock 2015: 53): “the common occurrence of verb-initial order in epics can be attributed to genre, while the SOV of didactic prose cannot be explained in this way and must therefore be considered unmarked”. However, this does not rule out the alternative possibility that both (verb-initial and verb-final) orders were genre specific (and governed by genre-specific pragmatic patterns).

But are we dealing with straightforward changes from OV to VO? This question is justified because Nichols (1995) understood on the basis of widespread language data that a typology of word-order phenomena is a complex matter. This is in agreement with various findings about pragmatic conditioning of word order in the early Indo-European languages (e.g. Bauer 2011 on focus-conditioned verb-initial placement in Hittite), specifically about sentence-initial verbs in Hittite and Cuneiform Luvian, of the Anatolian branch, previously viewed as prototypical examples of verb-final languages.

In spite of providing a major impetus and improvement to the study of Indo-European syntax, the early generative framework, on which Lehmann’s approach was based, ran against inherent boundaries as long as deviations from patterns could not be ascribed to alternative formal models. Hale (1983) reached the important insight that Warlpiri (an Australian language) lacks the close connection between verb and object reflected in potentially discontinuous word order. In contrast to the strongly VP centered languages called configurational, he termed languages with free word order, pro-drop, discontinuous NPs and usually also case marking ‘non-configurational’ (cf. Hale 1983: 26). Subsequently it was understood that so-called free word order is governed by pragmatic functions (usually, but not exclusively, referred to as ‘Topic’ and ‘Focus’, distinguished into internal and external).<sup>1</sup> Typically, Topic and Focus cross-linguistically have a strong preference for the left (i.e. initial) periphery, preceding the finite verb. In 1995, É. Kiss coined the term ‘discourse configurationality’ to account for placement rules of Topic and Focus to fixed structural positions (e.g. in Hungarian, the position preceding the finite verb is reserved for the Focus constituent). Later analyses of languages, ancient and modern, showed also that Topic stacking is a frequent phenomenon across languages, but also that a more varied notion of topicality is required. These discussions set the frame for much of current research on Indo-European word order.

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<sup>1</sup> Topic refers to known or accessible information and Focus to salient information, either new or contrastive according to the Amsterdam School of Functional Grammar.

## 2. Was Proto-Indo-European a verb-final language?

As already mentioned, Proto-Indo-European has usually been reconstructed as a verb-final language because of verb-final predominant patterns in unrelated branches such as Anatolian, Indo-Aryan, Romance and Germanic. However, nowhere has this pattern been fully consistent in the early attestations of the Indo-European languages. Haug (2008) gives the following table of attested word orders in Ṛg Veda I as compared to Classical Attic Greek vs. New Testament Greek (NT Greek).

**Table 1:** Word order in old Indo-European languages (based on the data in Haug 2008)

Basic word order in Vedic		Basic word order in Attic		Basic word order in New Testament Greek	
SOV	37%	SOV	44.5%	SVO	51.5%
OSV	24%	SVO	20.8%	SOV	17.8%
SVO	17%	OSV	15.0%	VSO	8.1%
OVS	9%	VOS	7.1%	OSV	7.7%
VOS	8%	VSO	6.7%	OVS	7.7%
VSO	4%	OVS	5.8%	VOS	7.1%

Both Vedic and Attic Greek had a slightly predominant verb-final pattern (including SOV and OSV), but this pattern covered hardly more than half of the cases. Verb-initial patterns in Ṛg Veda can be illustrated by the following examples:<sup>2</sup>

- (1) a. *nātārīd asya sámṛtiṃ vadhānām*  
 not-bear:AOR.3.SG his impact:ACC weapon:GEN.PL  
 'He failed to withstand the impact of his weapons' (1.32.6c)
- b. *nī āvidhyad ilibīśasya dṛḥhā ví śṛṅgīnam abhinac chūṣṇam índrah*  
 down strike:IMPF.3.SG Ilibīśa:GEN forts:ACC apart horned:ACC split:IMPF.3.SG Śuṣṇa:ACC  
 Indra:NOM 'Indra struck down Ilibīśa's forts and split apart the horned Śuṣṇa' (1.33.12a)

Apart from the possibility that word order in the Early Vedic texts was in part conditioned by metrical requirements (not explicitly discussed in this respect), we may still view these examples as indicative for the conditioning of Vedic word order. In example (1a), the negated verb in the aorist occurs at the beginning of the sentence. The negated verb in the aorist refers to the immediate past with a virtually resultative meaning (in line with Hoffmann's 1967 and Kiparsky's 1998 analysis of Vedic aspectual meanings of the past tenses), but the result is denied. Negation is salient across languages, and it draws the verb to the position characteristic of Focus constituents (this is a strong tendency across languages). Example (1b) has a verb in the imperfect tense (referring to historical or remote past), but combined with a preverb (*nī* 'down'), which makes the predicate telic; in this case it is telicity which makes the predicate salient and accounts for the position characteristic of the Focus constituent.

In the history of Greek, the word order pattern changed significantly between Attic Greek and the New Testament Greek: the verb-final pattern dropped to one quarter

<sup>2</sup> With an indication (book.hymn.line) at the end of each citation.

of the instances (SOV from 44.5% to 17.8% and OSV from 15.0% to 7.7%), and the predominant pattern became SVO. What can have been the reason for this change between Attic and the New Testament Greek?

Haug (2008) assumed that Greek could be fully accounted for by the functional configurationality outlined above. In the Oslo PROIEL corpus of the New Testament Greek,<sup>3</sup> Subjects occur preverbally in 94.5% of the instances and in only 5.5% of the instances postverbally. Objects, on the other hand, precede the verb in 10.3% of the instances and follow the verb in 89.7%. However, Vedic and Latin had more preference for preverbal Objects, which can be ascribed to the Focus function often assigned to the Object constituent. This variation was not fully absent from the earlier stages of Indo-European. Haug concluded that once we take function into account it becomes unlikely that PIE had a fixed word order.

Moreover, Haug et al. (2009) established a significant role of temporal-aspectual verb-properties in determining word-order preferences for participle placement in the biblical texts of the New Testament Greek. In accordance with their most common framing function, participles link an event to another event in discourse. In the positions preceding the finite verb, the authors found a significant predominance of aorist participles (considered to be perfective), whereas present participles, that are imperfective, are in a clear majority following the verb. The perfective participles link the verb event to a preceding event in discourse and thereby fulfil a pragmatic function.

**Table 2:** Correlation of aspect and position in New Testament Greek (Haug et al. 2009: 75)

	Present participle	Aorist participle	Other
Initial, not directly preverbal	6.9% (25)	92.7% (354)	0.8% (3)
Initial, directly preverbal	13.1% (74)	86.0% (485)	0.9% (5)
Internal, preverbal	14.8% (91)	82.6% (509)	2.6% (16)
Postverbal	74.4% (450)	16.2% (98)	9.4% (57)

This brings us to the next question: pragmatic functions were present in PIE and preserved in the later IE languages, so function alone may provide the necessary, but not sufficient explanation for the changes encountered in virtually all the later IE languages. What may have conditioned the word order patterns of the New Testament Greek?

In my view, the pragmatic functions Topic and Focus were the essential carriers enabling this change, but the impetus came from elsewhere. As described e.g. by Robertson (1914) and Horrocks (1997), the Greek system underwent a series of changes between Attic and NT Greek. Horrocks (1997: 92) describes the New Testament Greek as a “reasonably close reflection of a range of everyday Greek styles in the early centuries AD”, “largely devoid of Atticistic traits” and written in an area where Aramaic was the first language of the majority. This relative discontinuity should be kept in mind while discussing reduction and flattening of declensions, increase of prepositional use, increased use of pronouns in indirect cases where they would have been left out in Attic,

<sup>3</sup> Available online at: <[www.hf.uio.no/ifikk/proiel](http://www.hf.uio.no/ifikk/proiel)>.

and emergence of passive, formerly expressed by the middle (in addition to several changes in the realm of future tense and mood). The first three changes form a conglomerate and point to rising analyticity in the flectional system. The emergence of passive raised syntactic complexity by allowing a differential assignment of the Subject function. These properties of the colloquial styles were observed during the Hellenistic period already (cf. Horrocks 1997: 55). It was during this period that a shift towards verb-initial word order occurred, assumed to be a consequence of the syntactic clitic-second rule combined with a closer connection between the clitics and the verb and the corresponding tendency to shift the verb to the initial position enabling the clitics to dock onto it syntactically and prosodically. In my opinion, this development may be seen as a consequence of the new valency patterns of preverb-verb derivatives discussed in section 4 below. This syntactic factor was paralleled by the pragmatic factor of fronting of preverb-verb derivatives whenever their telic meaning was a carrier of a pragmatic function.

The New Testament Greek was also characterized by a new passive voice (whereas the middle voice in passive meaning was known from Homer and reconstructed for PIE). This new passive voice was, however, not restricted to transitive verbs (cf. Robertson 1914: 816; Luraghi 2010) and may be understood in the context of the other processes of changing valency. The sequence of events in Greek is one of the scenarios attested in the development of word order preferences in the Indo-European languages. There is however no strict causality involved in such developments. For example, the development of Vedic to post-Vedic was characterized by an increased use of adverbs with some cases in order to add specifications to case meanings.<sup>4</sup> Indo-Aryan of the later stages simplified the declensions, but remained verb-final, predominantly an SOV language. It also preserved the other properties of verb-final languages such as postpositions, whereas most Indo-European languages developed prepositions.

We cannot exclude the possibility of areal word-order phenomena. The verb-final properties of Indo-Aryan may have been reinforced by pervasive influence of Dravidian, itself verb-final, during the early period (demonstrated by borrowed kinship terms and basic lexical items). However, the northwestern Kashmiri language and some other Dardic Indo-Aryan languages developed a verb-second (i.e. V2) pattern in declarative main clauses and declarative-content subordinate clauses, whereas relative clauses remained verb-final.<sup>5</sup> Uralic languages are reconstructed as originally consistently SOV (cf. Honti 2007), but developed a verb-second pattern similar to Indo-European languages (although the case system was mainly preserved). Importantly, both the Finno-Ugric branch of Uralic and the European branches of Indo-European preserved

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<sup>4</sup> It is relevant to mention for Classical Sanskrit that it was not a living language any more during the Classical period (cf. Kulikov 2013). Attic Greek was also not a living language when the New Testament Greek emerged on an originally Aramaic territory (cf. Horrocks 1997).

<sup>5</sup> At the other end of the Indo-European area, most Germanic languages became V2 (English basically SVO), but German, Dutch and Afrikaans became V2 in declarative clauses and verb-final in subordinate clauses.

a strong conditioning role of the pragmatic functions, which (can be assigned to different constituents and) occur in the order Topic Focus Verb X/background in Finno-Ugric. Uralic languages share several essential properties, considered to be old, with older Indo-European languages (e.g. particle verbs, absence of ‘have’). However, only phenomena such as attributive congruence with the head noun in number and case, known only from the areas bordering to Indo-European (i.e. Baltic Sea Finnish) and fully absent e.g. in Ob Ugric (cf. Honti 2007: 51) may have arisen under Indo-European influence. Relevance of pragmatic functions in both Uralic and Indo-European enabled the shift to predominantly verb-second or verb-initial pattern.

Celtic differs from the other discussed languages by having developed a predominant verb-initial pattern, known from only about 4% of the world’s languages.<sup>6</sup> Siewierska (1998: 489) mentions Celtic as the only instance of VSO word order in Eurasia. How could this word order emerge?

As shown by Continental Celtic, which was attested earlier than Insular Celtic, Celtic had pragmatically conditioned word-order variation very similar to the other discussed languages.

- (2) *Insinde se bnanom bricto[m i- -n eianom anuana sanander]*<sup>7</sup>  
 cast:IMPR.2.SG PTL woman:GEN.PL charm[:ACC.SG.PRP they:GEN.PL name:ACC.PL yonder  
 ‘Cast the charm of these women in their names yonder’  
 Gaulish, Larzac, RIG, L-99 (Lambert 2002: 253)
- (3) *Andedion uediiumi diiuion ris (s)unartiu mapon*  
 ? invoke:PRS.1.SG god:GEN.PL PRP-good- power:INSTR:SG<sup>8</sup> Maponos:ACC:SG  
*arueriatin*  
 satisfaction-giver-ACC.SG<sup>9</sup>  
 ‘(?) I invoke by the good power of gods Maponos who gives satisfaction’  
 Gaulish, Chamalières, RIG, L-100 (Lambert 2002: 269f.)
- (4) *pissiumi*<sup>10</sup>  
 see:PRS.1.SG  
 ‘I see’  
 Gaulish, Chamalières, RIG, L-100 (Lambert 2002: 279)

Example (2) has verb-initial word order, usual for commands and invocations; example (3) has a preposed constituent, probably Topic, and example (4) has a line-initial verb in the present tense (cf. the picture of the inscription in Lambert 2002: 271, but further textual interpretations differ, cf. Lambert 2002: 279 vs. Delamarre 2003: 170).

Insular Celtic, as attested in Old Irish from the second half of the first millennium AD, developed a verb complex which could maximally contain the following elements:

<sup>6</sup> Cf. <<http://www.wals.com>>.

<sup>7</sup> The accent mark denotes vowel length in the tradition of Celtic transcriptions.

<sup>8</sup> Cf. Delamarre (2003: 287f.).

<sup>9</sup> Cf. Delamarre (2003: 56f.).

<sup>10</sup> Lambert (2002: 279) assumes the sequence *exsops possiumi*, but this is contradicted by other researchers, cf. Delamarre (2003: 170).

1. Conjunction
2. Negation
3. Connector
4. Pronominal goal/object
5. Up to five preverbs
6. Verbal root
7. Tense and modality markers
8. Pronominal agent/subject
9. Emphatic pronouns. (Schrijver 2007: 18)

The verb complex consisted essentially of two parts: the first part (1–4) in which object clitics were added to clause-initial particles, and the second part consisting of one or more preverbs followed by the verb with its tense and modality markers and Subject-coreferent desinence (with possible emphatic pronouns at the end, strictly speaking following the verb complex). The embedded clitics within the verb complex and the relatively unusual verb-initial word order were the key characteristics of Insular Celtic that triggered the assumption about possible influences of a non-European substrate on the British Isles (cf. e.g. Morris Jones 1900; Pokorny 1927–1928, 1929, 1930, 1949; Wagner 1959; more recently e.g. Jongeling 1995),<sup>11</sup> for which Afro-Asiatic seemed to have provided a (partial) model, but an alternative substrate could not be excluded. However, a thorough analysis of the chronology of these phenomena by Isaac (2007) showed that they existed in Afro-Asiatic more than a thousand years before similar Insular Celtic innovations of the early historical period occurred, when the existence of a substrate should have been attested, if present. Moreover, Eska (2010) pointed out that these emerging properties were present in Continental Celtic as well, suggesting a significant role of system-internal factors.

Historically, clitics adjoined the first constituent in the clause, which was an archaic feature, and preverbs developed from adverbs and preceded the verb. But how was the verb drawn to the clause-initial position? By two processes essentially (cf. Eska 1994; McCone 2006; Gvozdanović 2015): the Wackernagel (1892) rule by which clitics followed the first accentogenous constituent in the clause, and the rule of clitics landing adjacent to the finite verb. The combination of these two rules can account for the process of verb fronting in Celtic, similar to what happened to the ordinary Koine of Greek in the Hellenistic period (cf. Horrocks 1997: 59) mentioned above. Moreover, similar to the NT Greek distribution of participles dependent on aspect (cf. Haug et al. 2009), preverb-verb constructions had a preferential initial placement (cf. Gvozdanović 2015).

The strong influence of pragmatic functions could be observed throughout the history of Irish. As best exemplified by Archaic Irish (as defined by Greene 1977), the finite verb could occupy absolute initial position, the initial position preceded by an ‘absolute nominative’ topicalized element, the medial position preceded by a cleft

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<sup>11</sup> Matasović (2012) listed lexical elements in Celtic for which he assumed a (non-Indo-European) substrate origin. However, Blažek (2016) found Indo-European correlates for most of these elements.



construction, or final position. In non-initial position, the verb had the conjunct form, but Archaic Irish also had instances of absolute verb forms in final position. As discussed by Greene (1977):

“[...] the normal word-order in Old Irish is VSO: *Sligid Níall slógu* ‘N. kills hosts’. In Irish, as in the other Insular Celtic languages, cleft sentences in which the subject or object are fronted are very common; in such cases the verb has a specifically relative form: *Is Níall sliges slógu* ‘it is N. who kills hosts’; *It slóig sliges Níall* ‘it is hosts (nom.) which N. kills’. If, on the other hand, some other element of the sentence is fronted, the verb is non-relative: *Is i cath sligid Níall slógu* ‘it is in battle that N. kills hosts’.” (Greene 1977: 21)

MacCana (1973) provided examples of sixteenth century poetry in Classical Modern Irish with sentence-final verbs (even in absolute form) for reasons of emphasis, meter and/or rhyme.

To conclude: there was only a slightly predominant verb-final pattern in Proto-Indo-European. At all the stages, and particularly so when the ordinary Koine entered the literary tradition, word order was sensitive to pragmatic functions. Phenomena typologically congruent with the verb-final pattern such as postpositions and postposed attributes were also in part sensitive to pragmatics and could deviate. Growth of analyticity and transfer of functions to the syntactic level contributed to the predominant functional fronting of the verb. The verb-initial development of Celtic was a special instance, still explainable on the internal grounds.

Typologically, consistent verb-final languages have postpositions (but possessive attributes and demonstratives may be exceptional). Later Indo-European languages do not exhibit these properties in a systematic way, so the question arises whether they were present in the proto-language. The order between the attributive adjective and the head noun also does not fit a typological pattern, as the order noun-adjective predominates generally, but Eurasia has predominantly the opposite order, i.e. adjective-noun, even in the languages, which are verb-final. We may illustrate this by Indo-Aryan, which is verb-final (allowing only marked exceptions as mentioned above) and has preserved postpositions as case markers, but it developed preposed attributes. However, I would like to mention here that also this word order allows for meaningful or meaning-based variation in Indo-European. Romance and Slavic exhibit meaningful differences between preposed and postposed attributes. In Slavic, Polish rather systematically postpones relational adjectives and preposes qualitative ones. For Russian, Bonnot (2008) established that a postposed adjective qualifies a posteriori an already distinguished referent by identifying it with a preexistent representation (i.e. by activating a referent present in the extralinguistic situation or introduced before), whereas a preposed adjective does not by itself signalize such qualification. In this sense, postposition is marked and preposition unmarked. In view of its marked character, postposition of the attribute in modern Russian may in fact be due to topicality of the head noun with the consequence of its left-displacement (i.e. it is not the attribute which is postposed, but the noun which is preposed due to topicalization). In this case, pragmatic function assignment would be operative within syntagms as well and responsible for word order variation.

### 3. Indo-European aspect and tense

Word order of the early Indo-European languages was sensitive to tense and aspect, as illustrated by the Vedic examples. This brings us to the question of the notional basis of tense and aspect with its formal correlates.

There is a widespread opinion that the tenses of Proto-Indo-European (especially aorist and perfect in contrast to imperfect) were in fact aspectual (for a discussion cf. Szemerényi 1987, for a survey of the literature cf. Kiparsky 1998). According to Kiparsky (1998), the aorist was resultative perfective and the perfect generally perfective, whereas the imperfect was used for narrating past states of affairs localized at a specific point in the past time (this analysis was in line with Delbrück 1876: 90ff; 1893–1900, vol. 2: 268ff). Dahl (2010) pointed to developments of tense meanings with reference to temporal planes (e.g. the semantics of the Vedic aorist developed from resultative perfective to recent past, and the imperfect to distant past). Dahl (2012) advanced the idea of Late Vedic aorist and imperfect having been evidential in contrast to the other tenses. At this point I would like to mention that this analysis was essentially present in Delbrück's (1876: 128) description of the aorist and so in a more detailed way. Delbrück established a difference between Early Vedic and Middle Vedic (Brāhmaṇas):<sup>12</sup> whereas in both periods the aorist was used for recent past, it (lost its general narrative variants and) significantly acquired the additional evidential meaning (of the speaker having witnessed the event) in the Middle Vedic period. I would like to point out that this conceptualization of tense relative to the deictic centre came into being during the same crucial period in Vedic when univertation produced the new category of aspect (to be discussed below). Here we can see the emergence of a new division of the temporal spectrum between tense and aspect: aspect as the “inner temporal constituency” (in line with Comrie 1976: 6) and tense as the deictic temporal ordering. This Vedic type of tense semantics could be observed in Slavic throughout its development, including the contemporary Slavic languages which still have the aorist (Bulgarian also has the imperfect tense), cf. e.g. Stevanović (1969) concerning Modern Serbian.

Another point to be mentioned here is the conceptual basis of categories and binarism in the reconstruction of Indo-European. As pointed out by Meillet (1921: 228), gender distinctions in the nominal morphology give rise to the assumption that the gender system was originally binary, based on the opposition *active* vs. *inactive* (this comes to the fore as animate vs. inanimate in the later languages, with only few exceptions). Luraghi (2011) showed on the basis of distribution that this can be reconstructed for Proto-Indo-European indeed, with the feminine gender emerging from the active gender only in due course.

The gender semantics based on *active* vs. *inactive* had in my view a lexical-semantic counterpart in *dynamic* vs. *stative* verb semantics. Dynamic states of affairs were as a rule combined with an active (i.e. animate) first argument, whereas no such restric-

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<sup>12</sup> Dahl (2012) refers to it as Late Vedic.

tion held for stative states of affairs (for example, possessing something was a stative state of affairs, mainly conceptualized as spatial proximity, as opposed to acquiring something, which was dynamic and required an active first argument).

The dynamic vs. stative verb semantics could be modified in Proto-Indo-European by tense (tensed stems and tense desinences) and by adverbs, which later developed into preverbs or postverbs (and could not be any more placed freely in the sentence, but had to occur in the vicinity of the verb). Although mainly preverbs of adverbial origin occurred and in most cases remained distinctly recognizable, postverbs were attested in Proto-Indo-European as well; after univertation, postverbs tended to merge with desinences. Originally, preverbs (or postverbs) denoted direction, and in combination with the verb (also) telicity (e.g. in Sanskrit *pra-bhū-bhavati* ‘come forth, spring up, originate, appear’). Such adverbial preverbs modified the verb meaning by making it dynamic and specifying the change of state effectuated by the verb event. The boundedness of this change of state was subsequently spelled out in terms of an effected inner argument, often an additional goal argument. Note that the occurrence of preverbs was not consistent with the reconstructed predominant OV word order of Proto-Indo-European, but preverbs were consistent with the active/dynamic vs. inactive/stative conceptual basis of the system. The addition of preverbs had the capacity to transform a stative state-of-affairs into a dynamic one characterized by a spatial or (by extension) temporal change of state (e.g. ‘be’ > ‘forth-be’ => ‘come into being/originate’). This process hinged on preverbs having lost their independent syntactic and accentual status, followed by univertation in many, but not all Indo-European languages (e.g. Slavic developed relatively full univertation and Baltic only a rudimentary one). Univertation of preverb-verb syntagms mainly resulted in telic predicates. The extent of univertation can be observed to correlate with the development of the additional category of grammatical aspect. Grammatical aspect can be defined as a temporal frame within which the verb event is viewed: the temporal frame can be broad and the verb event overseen with its consequences, or narrow, viewing the verb event in progress (cf. also Gvozdanović 2012). The traditional description of aspect as the inner temporal constituency does not fully capture this distinction.

As already mentioned, the early Indo-European preverbs marked spatial boundedness of the verb event relative to its goal-argument or boundedness in time. Preverbs (which were originally syntactically unbound) moved along the grammaticalization line from free morphemes to syntactically bound morphemes (forming complex predicates with the verb) to morphologically bound morphemes in the later development of many Indo-European languages (with decreasing frequency along this path).

For example, Proto-Greek is assumed to have inherited from Proto-Indo-European preverbs *amphí* ‘on both sides’, *aná* ‘upwards’, *antí* ‘opposite to’, *apó* ‘off, away from’, *diá* ‘through, across’, *eis* ‘into’, *eks* (*ek-*) ‘out’, *en* ‘in’, *epí* ‘on’, *kata* ‘downwards’, *metá* ‘among’, *pará* ‘alongside, by’, *perí* ‘around’, *pró* ‘before’, *prós* ‘towards’, *ksún* (*sún*) ‘together’, *hupér* ‘above’. Homeric Greek had a subtle semantic difference between univertated and non-univertated preverbs, as can be illustrated by the following Homeric Greek examples.

- (5) a. *Ho g' hò:s eipò:n kat' àr' hézeto*  
 he:PRT thus speak:AOR.3.SG.M down then sit:IMPF.MID.3.SG  
 'he thus spoke and then sat down' (Ilias I 68)
- b. *Ide:s èn korphēisi kathézeto*  
 Ida:GEN in peak.DAT down-sit:IMPF.MID.3.SG  
 'on top of Mount Ida he seated himself' (Ilias XI 183)

We have similar instances even in modern Indo-European languages such as German, in which there are indivisible, divisible and dual verbal prefixes. For example, German *überfahren* in the meaning of 'overrun' is indivisible, but in the meaning of 'cross over' it is divisible.

In my reconstruction, it was Pedersen's law of early Slavic (preceding the Great Migrations of the middle of the first millennium AD) that gave an important impetus to univerbation. By Pedersen's law (cf. Kortlandt 1975: 8), the stress was retracted from inner syllables in accentually mobile paradigms, e.g. Ru. *ná vodu* 'onto the water', *né byl* 'was not', *pró-dal* 'sold', *pó-vod* 'rein'. The crucial point about this law was that it referred to syntactic units consisting of an accentogenous word with the surrounding clitics (if any), and preverbs were apparently already treated as clitics at that time.

The new dynamic meaning of a change of state (manifested either on the agent/experiencer or the goal of the verb event, or both) of the new preverb-verb combinations was more specific than the meaning of the corresponding simple verbs, with the additional propensity for acquiring either the Topic or the Focus function. Preverb-verb combinations therefore frequently occupied the sentence-initial position in medieval Slavic texts (cf. Gvozdanović 2015).

It was only Slavic that developed the aspect system based on preverb-verb derivatives to the full extent, productively applying this type of derivation (cf. also Schuyt 1990) and creating processual counterparts to these verbs by means of secondary imperfectivization (cf. e.g. Andersen 2009, 2013), which can also be dated around and after the migration period. Greek did not have the latter process, but relied on the contribution of the aorist vs. present stem to aspectuality (within a tense, e.g. the aorist, there is no aspect opposition, as shown by Ruijgh 1991: 205).<sup>13</sup> Germanic (especially English) developed as aspectual system with a marked category of progressive (to denote actual ongoingness) opposed to the unmarked category of simple aspect; this system does not crucially rely on preverb-verb derivatives.

In Vedic, univerbation started in Middle Vedic and was essentially finished by the time of Late Vedic (Sūtra), but no grammatical aspect oppositions were derived on top of the tensed-stems.<sup>14</sup> Such "trade-off" between tense and aspect occurred in several branches of Indo-European. As a counterpart to this development, Celtic, Greek and Slavic generalized the *-s-* desinence of the aorist as an indicator of perfectivity

<sup>13</sup> This is not taken into account by Hewson and Bubenik (1997) in their discussion of Greek as an aspect language.

<sup>14</sup> Deo (2007) assumed that univerbation took place between Vedic and Classical Sanskrit. However, Sanskrit was not a spoken language any more in the Classical period, as shown by Kulikov (2013) and univerbation may be assumed to have preceded the Classical period.

(cf. Watkins 1969), thereby ranking the aspectual meaning over the meaning of tense. This prehistoric development was not shared with Italic or Baltic, but it was an important dialectal trait paving the way for the development of aspect systems in these languages. All of these languages developed preverb-verb perfective compounds, but full aspectual oppositions with derived imperfective verbs were developed only in Slavic. Greek balanced the system by employing tense-stem distinctions with an aspectual effect and Celtic developed secondary spatio-temporal expressions ('*be* + at + verbal noun', e.g. *ató oc combáig* 'am at contending, i.e. I am contending', Würzburg Glosses 26d17).

Honti (2007) pointed to parallel developments in the Uralic languages, which mainly developed adverbs into preverbs to indicate direction (apart from *meg-* in Hungarian, e.g. *megállt* 'he stood' vs. *állt* 'he was standing', which according to Honti denotes telicity). Kiefer and Honti (2003) described separable preverbs as canonical in the Uralic languages. Only a few Uralic languages have verbal prefixes and these were according to the authors borrowed from Slavic. Honti (2007) assumes an indigenous origin of converbs in Uralic, but possible later congruence with Indo-European, which influenced partial development of converbs into prefixes (i.e. univerbation).

Celtic is another group which increased the use of preverbs in the formation of so-called verb complex. Celtic univerbation was later than Slavic as far as we can reconstruct it, but there was a significant similarity of Celtic and Slavic preverb semantics. Judging by Thurneysen's descriptions (1946: 341ff.), Celtic preverbs, exemplified by *ro-* (corresponding with Slavic *\*pro-* 'through, to the end') caused a (telic and) resultative (or in the case of *ro-* also general) perfective reading. This extension of the spatial semantics of the preverb *ro-* to temporal aspectual semantics fully parallels the effect of Slavic preverbs which became prefixes and allowed for temporal readings in addition to the original spatial ones. The formation and development of aspect had syntactic consequences. It was due to the specific development of the verb complex in Celtic (including the preverb *ro-* etc. for (telicity and) perfectivity and *no-* for imperfectivity) and the propensity of perfective forms to pragmatically connect the event with the preceding discourse (similar to the NT Greek) that a significant shift of the verb to the initial position occurred.

Other Indo-European languages exhibited similar phenomena of fronting of telic or perfective predicates, but not with the same degree of regularity. Comparable semantic factors relating to verb fronting were observed in Germanic (cf. Hopper 1979; Sasse 1995; Leiss 2000; Petrova 2011) and Romance (e.g. Sornicola 1995 concerning Spanish and Italian), and comparable pragmatic factors were observed in a huge variety of languages (e.g. Schäufele 1991 on Vedic, or Dik 1995 on New Testament Greek).

#### **4. Indo-European solutions for so-called labile valency patterns**

Ancient Indo-European, as illustrated by Vedic Indo-Aryan, had so-called labile valency patterns of verbs, which allowed for transitive or intransitive readings depending on the context. As shown by Kulikov (2009), Vedic already exhibited decay of such patterns, which ran parallel to the rise of causatives in *-áya-* and passives in *-yá-*; these

new categories increasingly took over the former functions of the middle diathesis. Kulikov correctly concluded that the rise of the new valency-changing categories was crucial to the elimination of valency lability in later Indo-Aryan and in fact also the other eastern Indo-Aryan languages such as Armenian. On the other hand, Germanic, Romance and Slavic developed the category of the reflexive to take over most of the former functions of the middle, but passive formation with the passive past participle occurred in these languages as well. These languages preserved to some extent the lability of valency, particularly Germanic and Romance, and developed only incipient morphological valency-changing categories such as the *-jan* causative in Germanic. At this point we should maintain, adding to Kulikov's survey, that univertation of preverbs was another valency-changing morphological means which should not be overlooked. The valency-changing properties of univertation were and are a productive process in the Indo-European languages (cf. e.g. German *leben* 'live' vs. *erleben* 'experience (something)', *schlafen* 'sleep' vs. *verschlafen* 'sleep through/past (something)', *sprechen* 'speak' vs. *versprechen* 'promise (something)'). As discussed above, such valency extension explicitates the effect of the change of state denoted by the preverb-verb derivative.

## 5. Conclusion

The presented survey has shown that the development of linguistic theories provided an important impetus for a better understanding of language histories, but it also in the past limited the scope of search for the data. This was discussed for two most vexed areas of Indo-European reconstruction: word order and temporoaspectual relations, with syntactic impacts. Both types of phenomena require dynamic types of rules and an understanding of interfaces of the different language levels, particularly of morpho-syntax with semantic and pragmatic factors.

The existing assumption of verb-final word order was criticized by showing that the slightly frequent final word order observed in the earliest texts was by no means fixed, but rather sensitive to pragmatic functions. Word order changes were triggered by morphological changes (rising analyticity) and syntactic changes (change of valency patterns); they were implemented in line with the existing pragmatic functions, but instigated by changes on the other levels. They became clearly manifested in those language varieties and periods in which the Koine represented the spoken language.

The development of aspect and tense in Indo-European reconstruction was analysed against the background of the dynamic/active vs. stative/inactive conceptual basis reconstructed for the Proto-Indo-European system. Further developments were strongly determined by the dynamic semantics of preverb-verb derivatives, with syntactic (valency changing) and pragmatic effects (fronting due to pragmatic functions). These developments affected lexical aspect; grammatical aspect as a temporal framing of lexical aspect developed in close interaction with tense as deictic temporal ordering. Areal phenomena (e.g. of Dravidian influencing Indo-Aryan) were shown to be able to strengthen the existing phenomena and possibly inhibit changes or mediate in their implementation.

## ABBREVIATIONS

ACC	accusative	IPF	imperfective	PF	perfective
AOR	aorist	M	masculine	PL	plural
DAT	dative	MID	middle	PRT	particle (taken to include also prepositions)
GEN	genitive	NOM	nominative	SG	singular
IMPF	imperfect	PERF	perfect		

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## ZUSAMMENFASSUNG

### Vergleichende historische Syntax der frühen indoeuropäischen Sprachen

Die allgemeinen Entwicklungen in der Syntaxtheorie und ihre Anwendungen beeinflussen auch die Studien zur komparativen Syntax des Indoeuropäischen. Fortschritte auf diesem Gebiet wurden in erster Linie durch detaillierte Untersuchungen semantischer und pragmatischer Faktoren erzielt, die eine Modifikation syntaktischer Regeln bewirken, und zwar sowohl synchron als auch diachron. Zum Fortschritt trug ebenso bei, dass syntaktische Muster nicht mehr als bestimmte Token behandelt, sondern Typen im Sinne von Konglomeraten von Eigenschaften zugeordnet wurden. Obwohl die Rekonstruktion durch die Etablierung kohärenter Muster einen Schritt vorangebracht wurde, litt der typologische Ansatz jener frühen Zeit an der Volatilität nicht-dynamischer Regeln und der fehlenden Möglichkeit, multidimensionale am Sprachwandel beteiligte Kräfte zu berücksichtigen. Dieser Aufsatz geht über die bestehenden kritischen Betrachtungen hinaus und untersucht die frühen Veränderungen in der indoeuropäischen Syntax, die an der Schnittstelle von Syntax, Morphologie und Pragmatik (in einigen Fällen auch Prosodie) zu lokalisieren sind.

Die Kernfragen der Rekonstruktion des Indoeuropäischen sind immer noch sehr umstritten und nicht völlig geklärt. Zu diesen gehört die syntaktische Typologie auf der Ebene der Syntagmen und der Haupt- und Nebensätze (linke und rechte Verzweigungen) und die damit verbundenen Fragen der Wortfolge, die Behandlung von Partikeln und die Entwicklung von Präverben sowie die mit dem Tempus-Aspekt-System und der Diathese verbundenen Phänomene. Die vorhandenen Daten bestätigen die Kritik an einem PIE OV Muster, weil sogar die prototypischen Vertreter der Sprachen mit Verben in Endstellung (Anatolisch, Indoarisch, Germanisch und das frühe Romanisch) eine signifikante Abhängigkeit der Wortfolge von den pragmatischen Funktionen Thema und Fokus aufwiesen, die eine Verschiebung der pragmatisch markierten Satzteile nach links bewirkten. Dies allein kann jedoch nicht die in den indoeuropäischen Sprachen Europas beobachtete Zweit- oder Erstverbstellung erklären. Der Aufsatz zeigt, dass die morphologischen Entwicklungen zu eher analytischen Sprachen einerseits und eine steigende syntaktische Komplexität von Prädikaten andererseits, besonders im Zuge der Univerbierung von Präverb-Verb Sequenzen, den Weg für eine spätere Umstrukturierung der Wortfolge in Übereinstimmung mit der vorherrschenden Zuordnung pragmatischer Funktionen ebneten. Um dies näher zu erläutern liegt der zweite Schwerpunkt des Aufsatzes auf adverbialen Konverben und ihrer Entwicklung zu Präverben und in einigen Sprachgruppen zu Verbalpräfixen im

Kontext der Entwicklung der Aspektsysteme und der dialektalen Differenzierung des frühen Indoeuropäischen. Der Aufsatz zeigt die Hauptlinien der Entwicklung von Aspektsystemen auf, teilweise mit Folgen für die Syntax. Die syntaktischen Folgen kamen besonders im Zuge der Univerbierung von Präverben in unterschiedlichen indoeuropäischen Sprachen zum Tragen, die in den meisten Fällen zu Valenzveränderungen führten, während das Indoarische und Armenische primär valenzverändernde Kausativ- und Passivbildungen anwendeten. Diese Verfahren existierten auch in den indoeuropäischen Sprachen Europas (z. B. im Germanischen), wo sie jedoch weniger prägend waren. Die betrachteten Entwicklungen weisen alle auf ein durch die Semantik bedingtes Zusammenspiel von Syntax und Pragmatik hin. Es wird auch gezeigt, dass die ursprünglichen typologischen Eigenschaften relativ resistent gegenüber Veränderungen sind. Sprachkontakte in einem Gebiet können jedoch eine modifizierende Rolle spielen. Um das Wesen dieser Entwicklungen deutlicher zu verstehen, werden parallele Entwicklungen in anderen frühen Sprachgruppen wie der uralischen und Kontakte zu Sprachen in benachbarten Gebieten mitberücksichtigt (wie z. B. vom Indoarischen zum Drawidischen).

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