

# THE TYPOLOGY OF INDO-EUROPEAN

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# ROADMAP

- Typology and Indo-European
  - *Phonology*
    - The glottalic model
    - Apophony and laryngeals
  - *Morphology*
  - *Syntax*
    - Word order
- Gender
- (Non)-Configurationality
- Basic valency / The passive voice

# LANGUAGE TYPOLOGY AND INDO-EUROPEAN LINGUISTICS

# LANGUAGE TYPOLOGY AND INDO-EUROPEAN LINGUISTICS

## Comparing languages

Early comparison: The underlying idea was that the cross-linguistic comparison of very different languages may be able to uncover the general philosophical principles ... and, at the same time, recover the evolution of man's faculty of language (Ramat 2010: 32; see Jasanoff 2017: 138-238)

- Nicolas Beauzée Grammaire générale ou exposition raisonnée des éléments nécessaires du langage, pour servir de fondement à l'étude des toutes les langues (1767).
- Johann Christoph Adelung / Johann Severin Vater (1806) Mithridates, oder allgemeine Sprachenkunde mit dem Vater Unser als Sprachprobe in nahe fünfhundert Sprachen und Mundarten

Systematic comparison → end of 18<sup>th</sup> – beginning of 19<sup>th</sup> century

- The birth of Indo-European linguistics: Sir William Jones' Third Anniversary Discourse to the Asiatic Society (1786)

# LANGUAGE TYPOLOGY AND INDO-EUROPEAN LINGUISTICS

August Wilhelm Schlegel (1818):

- no grammatical structure → Chinese
- agglutinated affixes → Turkish
- inflections → Indo-European
  - *synthetic* (Latin, Greek)
  - *analytic languages* (Romance)

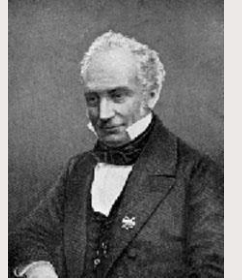


Systematic connection between language type and language family



# LANGUAGE TYPOLOGY AND INDO-EUROPEAN LINGUISTICS

Franz Bopp 1816. *Über das Conjugationssystem der Sanskritsprache in Vergleichung mit jenem der griechischen, lateinischen, persischen, und germanischen Sprache.*



Agglutinationstheorie → grammaticalization theory

Wilhelm von Humboldt 1836. *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluss auf die geistige Entwicklung des Menschengeschlechts.*



Classification of morphological techniques



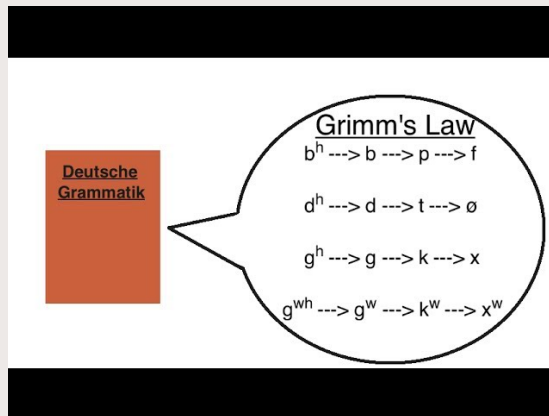
Both works are important for morphological typology → first level of linguistic analysis to attract interest in language comparison

# PHONOLOGY

The shift to phonology

Jacob Grimm *Deutsche Grammatik* (Göttingen, 1819, 2nd ed., Göttingen, 1822–1840)

600 pages devoted to phonology → Grimm's law or First Germanic Sound Shift (Collinge 1985: 64-76)



Verner's Law (Karl Verner 1875)

| Indo-European | Germanic          |              |
|---------------|-------------------|--------------|
| /p/           | [f]<br>[θ]<br>[x] | Grimm's Law  |
| /t/           |                   |              |
| /k/           | [β]<br>[ð]<br>[ɣ] | Verner's Law |



# PHONOLOGY

## PIE stops – Traditional reconstruction

|                   | labial         | dental         | dorsal          |                |                 |
|-------------------|----------------|----------------|-----------------|----------------|-----------------|
|                   |                |                | palatal         | velar          | (labio)velar    |
| voiceless stops   | p              | t              | k'              | k              | k <sup>w</sup>  |
| voiced stops      | b              | d              | g'              | g              | g <sup>w</sup>  |
| voiced asp. stops | b <sup>h</sup> | d <sup>h</sup> | g' <sup>h</sup> | g <sup>h</sup> | g <sup>wh</sup> |

# PHONOLOGY

## Is this system plausible?

- Languages that preserve aspirate stops either have only voiceless aspirates, as Ancient Greek or have both voiced and voiceless aspirates, as Indo-Aryan (no typological parallels for traditional PIE stops):

Ancient Greek stops: /p/ /b/ /p<sup>h</sup>/

Old Indo-Aryan stops: /p/ /p<sup>h</sup>/ /b/ /b<sup>h</sup>/

- \*b exceedingly infrequent (\*bh very frequent!)
- Constrains on the distribution of stops:
  - No sequences of two plain voiced stops (\*deg impossible).
  - No root with both a voiceless stop and a voiced aspirate (\*d<sup>h</sup>ek or \*teg<sup>h</sup> impossible)
  - Plain voiced stops compatible with either of the other two series: (\*deg<sup>h</sup> or \*dek both possible)

# PHONOLOGY

Jakobson, Roman 1958. Typological studies and their contribution to historical comparative linguistics. Proceedings of the Eighth International Congress of Linguists, pp. 17–35. Oslo University Press.

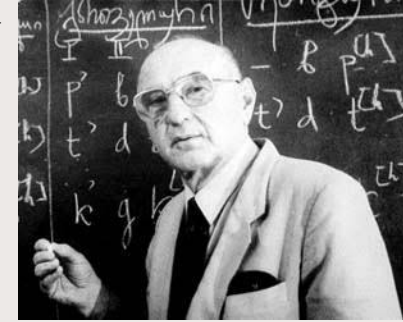


The reconstructed system of PIE stops had no typological parallels in any known language !!



# PHONOLOGY

## The glottalic theory (New look of PIE)



Gamkrelidze, Thomas V. and Vjaceslav V. Ivanov. 1984 as *Indoevropskij jazyk i indoevropceitsi*. Tbilisi: Izdatel'stvo Tbilisskogo Universiteta. (English translation 1995. *Indo-European and the Indo-Europeans*, 2 vols. Berlin: Mouton de Gruyter)

Hopper, Paul. 1973. Glottalized and murmured occlusives in Indo-European. *Glotta* 7: 141–66.



# PHONOLOGY

## The glottalic theory (New look of PIE)

- Voiceless stops with an aspirated allophone corresponding to the voiceless stops of the traditional reconstruction
- Glottalized stops corresponding to the voiced stops of the traditional reconstruction
- Voiced (or murmured) stops with an aspirated allophone corresponding to the voiced aspirates stop of the traditional reconstruction

### a. Traditional PIE

\*[p]      \*[b]    \*[b<sup>h</sup>]

### b. New look

\*[p]/[p<sup>h</sup>]    \*[pʰ]    \*[bʾ]/[bʾ<sup>h</sup>]

# PHONOLOGY

## The glottalic theory (New look of PIE)

|                                      | labials            | dentals            | velars <sup>[b]</sup> | labialized velars                | uvulars            |
|--------------------------------------|--------------------|--------------------|-----------------------|----------------------------------|--------------------|
| <b>voiceless stops</b>               | p ~ p <sup>h</sup> | t ~ t <sup>h</sup> | k ~ k <sup>h</sup>    | k <sup>w</sup> ~ k <sup>wh</sup> | q ~ q <sup>h</sup> |
| <b>ejective or glottalized stops</b> | (p')               | t'                 | k'                    | k <sup>w'</sup>                  | q'                 |
| <b>voiced stops</b>                  | b ~ b <sup>h</sup> | d ~ d <sup>h</sup> | g ~ g <sup>h</sup>    | g <sup>w</sup> ~ g <sup>wh</sup> | g ~ g <sup>h</sup> |

# PHONOLOGY

## Typological plausibility

- similar to consonant inventories of other known languages
- glottalized stop [p'] in the place of the voiced stop [b] → this sound is often missing in phonological systems that feature glottalized stops
- it is also often the case that two glottalized stops cannot occur in close sequence

# PHONOLOGY

**Especially fit for Germanic!**

New Look of Grimm's Law



$*p/p^h$   $*t/t^h$   $*k/k^h$  the aspirated allomophone  $\succ$  Proto-Germanic  $\phi$   $\theta$   $\chi$  (easier than if we only postulate a non-aspirated voiceless stop)  $\rightarrow$  typologically similar to one of the more notable evolutions from Ancient to Modern Greek (with  $\varphi$ ,  $\theta$ , and  $\chi$  respectively).

$*b/b^h$   $*d/d^h$   $*g/g^h$   $\rightarrow$  non-aspirated allomophone phonologized  $\succ$  Proto-Germanic  $b$   $d$   $g$

$*p'$   $t'$   $k'$   $\rightarrow$  glottalization is lost  $\succ$  Proto-Germanic  $p$   $t$   $k$

# PHONOLOGY

## Is the traditional reconstruction really implausible?

- Bario Kelabit (Austronesian, Blust 2006)
- Mbatto (Kwa, Stewart 1989)

Comrie (1993: 82) so-called voiced aspirates are breathy voiced stops → traditional definition of voiced aspirates for PIE ‘phonetically untenable’

- Indo-Aryan languages, which feature breathy voiced stops, either also have voiceless aspirates (Sanskrit), or have lost aspiration altogether (Sinhala). Panjabi has lost breathy voiced stops, similar to Ancient Greek. Malayam (Dravidian but heavily influenced by Indo-Aryan) breathy voiced stops have merged either with plain voiced stops or with voiceless aspirates.

# PHONOLOGY

## Apophony

### Connected with (pre)PIE accent

PIE (possibly (pre)PIE) accent → Lexical accent “a word’s accent is not determined by its purely phonological properties (such as syllable weight or metrical structure), but is rather dependent on what morphemes it contains and how they are combined.” (Lundquist & Yates, 2018: 2122) (attested in e.g. Salishan, Tokyo Japanese, Chamorro (Austronesian), Cupeño (Uto-Aztecan))

### Apophony visible in paradigmatic classes



Kiparsky (2010) no clear parallel for the pre-PIE system has yet been brought forward.

# PHONOLOGY

## Apophony

Strong vs. weak verbs → Grimm (*Deutsche Grammatik*)

Strong verbs inflect through alteration of their root vowel, weak verbs inflect through the ‘help’ of an affix → strong verbs are more ‘powerful’, weak verbs show signs of ‘decay’

Some morphological types are more ‘valuable’ than others (see morphology)

# PHONOLOGY



## Internal consistency: Laryngeals

Ferdinand de Saussure 1879 *Mémoire sur le système primitif des voyelles dans les langues indo-européennes*

Confirmed by Hittite (known from 1916)!

| After vowels           |                                      |                  |          |          |           |
|------------------------|--------------------------------------|------------------|----------|----------|-----------|
|                        | PIE                                  | Latin            | Sanskrit | Greek    | Hittite   |
| *iH > *ī               | *g <sup>w</sup> ih <sub>2</sub> -wós | vīvus            | jīva     | bíos     |           |
| *uH > *ū               | *d <sup>h</sup> weh <sub>2</sub> -   | fūmus            | dhūma    | thūmós   | tuwaḥḥaš  |
| *oH > *ō               | *sóh <sub>2</sub> w̥                 | sōl              | sūrya    | hēlios   |           |
| *eh <sub>1</sub> > *ē  | *séh <sub>1</sub> -m̥                | sēmen            |          | hēma     |           |
| *eh <sub>2</sub> > *ā  | *peh <sub>2</sub> -(s)-              | pāscere (pastus) | pāti     | patéomai | paḥḥas    |
| *eh <sub>3</sub> > *ō  | *deh <sub>3</sub> -r/n               | dōnum            | dāna     | dōron    |           |
| Before vowels          |                                      |                  |          |          |           |
|                        | PIE                                  | Latin            | Sanskrit | Greek    | Hittite   |
| *Hi > *i               | *h <sub>1</sub> íteros               | iterum           | ítara    |          |           |
| *Hu > *u               | *pélh <sub>1</sub> us                | plūs             | purú-    | polús    |           |
| *Ho > *o               | *h <sub>2</sub> owi-                 | ovis             | ávi      | ó(w)is   | Luw. ḫawa |
| *h <sub>1</sub> e > *e | *h <sub>1</sub> ésti                 | est              | ásti     | ésti     | ēšzi      |
| *h <sub>2</sub> e > *a | *h <sub>2</sub> ent                  | ante             | ánti     | antí     | ḫanti     |
|                        | *h <sub>2</sub> erǵ-                 | argentum         | árjuna   | árguron  | ḫarki     |
| *h <sub>3</sub> e > *o | *h <sub>3</sub> érb <sup>h</sup> -   | orbus            | arbhas   | orphanós | ḫarp-     |

# PHONOLOGY

## Laryngeals and typology

The phonological influence of the laryngeals on the coloring of an adjacent vowel must have been due to phonological features of the laryngeals themselves. They obviously had posterior articulation, more posterior than the uvular consonants. On typological grounds, these phonemes can be regarded as pharyngeal continuants.

This three-member set of laryngeals provides a structural parallel to the three velar orders - velar, palatovelar, and labiovelar ... This system not only has typological parallels in Abkhaz-Adyghe (Allen 1956) and modern Eastern Iranian dialects (Edel'man 1973), but in addition is justified by internal structural correlations within the Indo-European sound system.

Gamkrelidze & Ivanon (1995: 137)

# PHONOLOGY

What is the present incorporation in IE linguistics / reconstruction of PIE?

- Laryngeal theory commonly accepted → based on actual shortcomings of the reconstruction
- Glottalic theory mostly not accepted → entirely based on typological considerations

# MORPHOLOGY

## Morphological techniques

- **Fusional** → a single inflectional morpheme to denote multiple grammatical meanings, different inflectional classes (e.g. case and number).

**Latin:** *amic-o* (dat.sg) vs. *amic-is* (dat.pl); *homin-i* (dat.sg) vs *homin-ibus* (dat.pl)

- **Agglutinative** → each morpheme denotes a single grammatical meaning

**Turkish:** *arkadaş-a* (dat.sg) vs. *arkadaş-lar-a* (dat.pl)

- **Isolating** → no inflectional morphology
- **Polysynthetic** → arguments incorporated into the verb

# MORPHOLOGY

## Morphological techniques

Humboldt (1836): Languages and in general language families belong to a type and cannot change.

‘Inner form of a language’: The character and structure of a language expresses the inner life and knowledge of its speakers ... languages must differ from one another in the same way and to the same degree as those who use them.

It is the task of the morphology ... to distinguish the various ways in which languages differ from each other as regards their inner form, and to classify and arrange them accordingly (*Encyclopædia Britannica*)

# MORPHOLOGY

## Morphological techniques

Humboldt 1836

*Value scale: isolating > agglutinative > fusional*

### PROBLEMS:

- Chinese is isolating, but it is the language of a culturally highly evolved society.
- Disappearance of inflection in modern IE languages of Europe (e.g. English)



Loss of inflection then becomes the highest stage of development!

# MORPHOLOGY

## PIE: highly fusional

- New grammatical forms due to loss of inflection

Schlegel 1818: “The invention which produced analytic grammars is somehow a negative one, and the method uniformly applied in this respect may be reduced to a single principle. one strips certain words of their meaningful energy, leaving them only a nominal value, in order to grant them a more general circulation and to introduce them into the elementary part of language. These words become a sort of paper money, meant to facilitate circulation.”

- Synthetic vs. analytic languages
- Definite/indefinite article and auxiliaries (including future) in Romance languages as compared to Latin

# MORPHOLOGY

## PIE: highly fusional

- The origin of grammatical forms



### *Agglutinationstheorie*

Franz Bopp 1816

Sanskrit: original state of affairs in IE vs. Changes displayed by all of the other IE languages



The “simple language organism” of Sanskrit is gradually destroyed and replaced by “mechanical compositions, from which, when their elements were no longer recognized, an appearance of a new organism evolved”

→ BUT: also applies the same analysis to certain inflectional categories of this language which strike him as analyzable (Lehmann 2016: 106)

# MORPHOLOGY

**PIE: highly fusional**

## *Agglutinationstheorie*

- Verbal endings from personal pronouns (e.g. first singular *\*-mi* cf. 1 person pronoun *\*me*)
- Verbal tenses from fusion with auxiliaries (e.g. Germanic weak preterite in *-d* from the root *\*dhē* of the verb ‘do’)
- Nominative singular suffix *-s* traced back to the pronoun stem *\*so-* ‘he’
- Ancient Greek article < demonstrative
- Complementizer ‘that’ in the IE languages < a neuter demonstrative or relative pronoun in the accusative or some other dependent case

# MORPHOLOGY

PIE: highly fusional

## *Agglutinationstheorie*

- Discarded by the Neogrammarians
- Revived by grammaticalization theory (Meillet 1912)

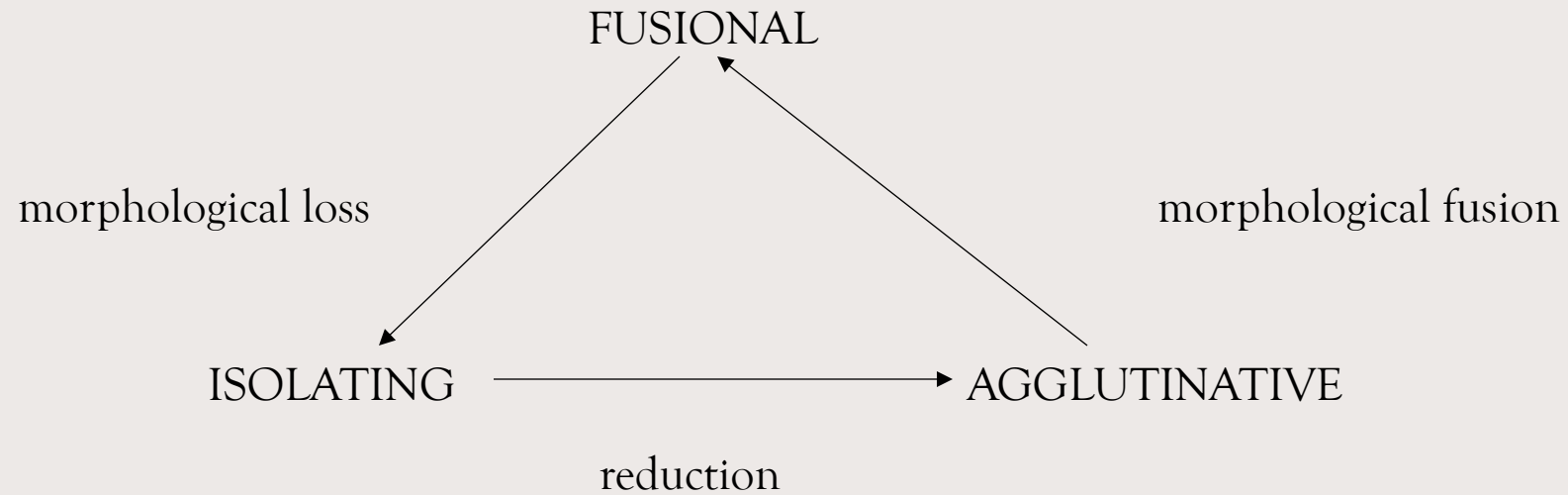


Modern concept of grammaticalization: Becoming more grammatical means losing in autonomy with respect to use by speakers. With respect to the language system, becoming more grammatical means getting increasingly subjected to the rules of grammar of a particular language. This brings with it reduction in semantic and phonological complexity, in syntagmatic variability and in morphological status (Lehmann 2016: 105)

# MORPHOLOGY

## Changes in morphological techniques

- From synthetic to analytic
- Grammaticalization: from analytic to synthetic



(Wahley 1997)

# MORPHOLOGY

## From fusional to agglutinative: Modern Armenian

| Heřaxos (Telephone) |             |                 |
|---------------------|-------------|-----------------|
| CASE                | SINGULAR    | PLURAL          |
| Nominative          | heřaxos     | heřaxos-ner     |
| Accusative          | heřaxos-ë   | heřaxos-ner     |
| Genitive            | heřaxos-i   | heřaxos-ner-i   |
| Dative              | heřaxos-in  | heřaxos-ner-in  |
| Ablative            | heřaxos-ic' | heřaxos-ner-ic' |
| Instrumental        | heřaxos-ov  | heřaxos-ner-ov  |
| Locative            | heřaxos-owm | heřaxos-ner-owm |



# SYNTAX

## Word order in PIE

Delbrück (1878, 1900): *traditionelle* vs. *occasionelle Wortstellung*

There is a traditional word order that is best recognised in the plain narrative. It is almost identical to the one we know from Latin. The subject begins the sentence, the verb closes it, the dative, accusative, etc. are placed in the middle, but in such a way that the accusative is immediately before the verb. The adjective comes before its substantive, as does the genitive.

...

The habitual sequence can be deviated from, if a term in the sentence needs to be emphasised, if the connection to another sentence requires a shift, or for whatever other reason. I call this deviant position the occasional one.

...

The occasional position of the words does not always result from a free momentary decision made by the speaker but can be influenced by tradition. Thus, as a basic law of occasional word order that runs through all Indo-European languages, it can be established that the word to be emphasized moves forward

# SYNTAX

## Wackernagel's Law

Jacob Wackernagel 1892 *Über ein Gesetz der indogermanischen Wortstellung* ('On a law about Indo-European word order')

→ Enclitic pronouns as well as enclitic and postpositive particles tend to be placed in second position in ancient Indo-European languages (Sanskrit, Ancient Greek, Latin)

|           |            |            |                 |              |                |
|-----------|------------|------------|-----------------|--------------|----------------|
| <i>ei</i> | <i>kai</i> | <i>min</i> | <i>Olumpios</i> | <i>autòs</i> | <i>egeirei</i> |
| if        | also       | 3SG.ACC    | Olympian.NOM    | self.NOM     | push.PRS.3SG   |

'if even the Olympian himself pushes him', Homer *Il.* 13.58.

|            |           |             |               |            |                 |
|------------|-----------|-------------|---------------|------------|-----------------|
| <i>kai</i> | <i>hē</i> | <i>gunē</i> | <i>eporāi</i> | <i>min</i> | <i>exiōnta</i>  |
| and        | the       | woman.NOM   | see.PRS.3SG   | 3SG.ACC    | go.out.PTCP.ACC |

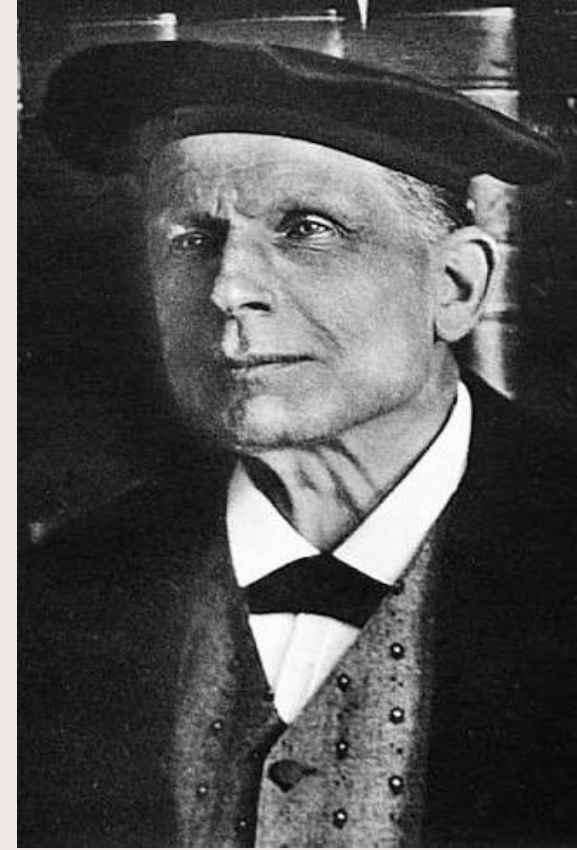
'and the woman saw him going out', Herodotus *Histories*, 1.10.2.

|           |            |            |             |           |           |
|-----------|------------|------------|-------------|-----------|-----------|
| <i>ho</i> | <i>gár</i> | <i>toi</i> | <i>païs</i> | <i>me</i> | <i>ho</i> |
| ART.NOM   | PTC        | PTC        | child.NOM   | 1SG.ACC   | ART.NOM   |

*Sáturos*      *apédra*

Satyros.NOM    run\_away.AOR.3SG

'The boy Satyrus ran away from me.' (Pl. *Prot.* 310c3; Ancient Greek)



# SYNTAX

## 1916 Hittite

- (1) *piran=ma= at= mu m<sup>D</sup>XXX.DU-as DUMU m<sup>m</sup>zida maniyahhiskit*  
 before CONN 3SG.ACC 1SG.OBL A.-NOM child Z. administrate.PRET.ITER.3SG  
 ‘before me Armadatta, the son of Zida, had administrated it’;
- (2) *n= as= mu= kan hurwais*  
 CONN 3SG.NOM 1SG.OBL PTC escape. PRET. 3SG  
 ‘he ran away from me’.

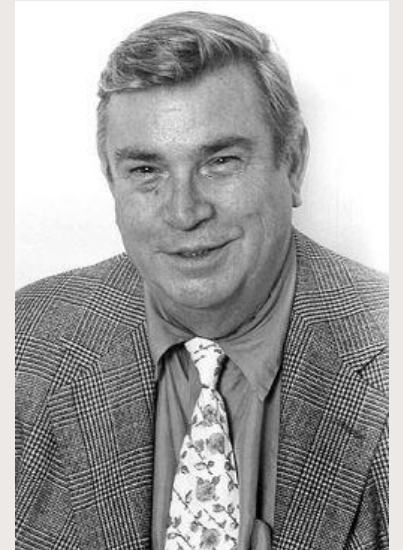
|                                  |                    |                          |
|----------------------------------|--------------------|--------------------------|
| <i>nu= wa it</i>                 | <i>namma</i>       | <i>apūn= ma= wa= tta</i> |
| CONN QUOT go.IMP.2SG then        |                    | DEM.ACC=PTC=QUOT=2SG.DAT |
| <sup>L0</sup> KÚR <i>Ḫayašan</i> | <sup>D0</sup>      | <i>BELI-YA karū</i>      |
| enemy H.ACC Stormgod             | lord=1SG.POSS      | already                  |
| <i>paiš nu= war= an=</i>         | <i>kán kueši</i>   |                          |
| give.PST.3SG CONN QUOT 3SG.ACC   | PTC strike.PRS.2SG |                          |

‘Go at last! The Stormgod my lord has already given you that Hasaya enemy and you will strike him.’ (*KBo* 4.4 ii 56–57; Hittite)

# SYNTAX

Calvert Watkins "Preliminaries to a Historical and Comparative Analysis of the Syntax of the Old Irish Verb," *Celtica* 6 (1963) 1-49

- (i)      CONN (=clitici) ... V
- (ii)     X (=clitici) ... V
- (iii)    V (=clitici) ...
- (iv)     CONN (=clitici) V ...
- (v)      CONN (=clitici) ... PREV V
- (vi)     X (=clitici) ... PREV V
- (vii)    CONN (=clitici) PREV ... V
- (viii)   PREV (=clitici) ... V
- (ix)     PREV (=clitici) V ...



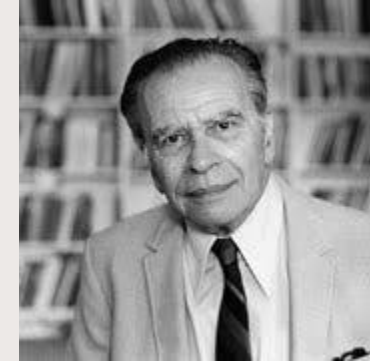
# SYNTAX

**Word order typology: basic order of meaningful elements**

1. VSO (NA, NG, PrepN, NRel)
2. SVO (NA, NG, PrepN, NRel)
3. SOV (AN, GN, NPostp, RelN)

(Greenberg 1963)

→ What was the type of PIE?



# SYNTAX

- W. P. Lehmann. *Proto-Indo-European Syntax* (1974) → PIE: rigid SOV  
→ main support to reconstruction: typological comparison with Japanese
- Paul Friedrich (1975) *Proto-Indo-European syntax: the order of meaningful elements* → PIE: SVO
- R.M.R. Hall and Beatrice L. Hall (1971) *Underlying VSO word order in Indo-European* → PIE: VSO



- Gay Miller (1975) Indo-European: VSO, SOV, SVO, or all three?

# SYNTAX

## Reception:

- W.P. Lehmann's Syntax → virtually disappeared from references  
(essentially based on cross-linguistic typological comparison under the assumption of typological consistency)
- Delbrück, Wackernagel, Watkins → still going strong  
(based on comparison of data from IE languages)

# GENDER

# GRAMMATICAL CATEGORIES

## Categories of nouns

Gender (not inflectional!)

Number

Case

## Categories of Verbs

Aspect

Tense

Mood

Voice

# GRAMMATICAL CATEGORIES

## Inflection and derivation: Gender and number

|                         |                       |
|-------------------------|-----------------------|
| inflection              | derivation            |
| no change of word class | change of word class  |
| obligatory              | non-obligatory        |
| syntactic function      | no syntactic function |

Derivation serves the lexicon:

- *by creating new words*
- *by motivating the lexicon*

Different denotations → different words

**Number:**

*Dog*

*Dogs*



**Gender:**

*magister / magistra* (Lat); *Freund / Freundin* (Ger.)

# GRAMMATICAL CATEGORIES

## Inflection and derivation

“If the two inflexional forms differ semantically only, like Latin *urbs* (singular): *urbes* (plural), the status of such a pair will be intermediate between the relation basic word:derivative and the relation *urbs: urbem*. [...] *urbs:urbanus* = two different words; *urbs:urbes* = one word, with forms semantically different and having secondary syntactical functions; *urbs:urbem* = one word, with forms semantically identical, syntactically different” (Kuryłowicz 1964: 17)



Figure 1. IE nominal categories—inflection and derivation.

N → N → no change of class  
*vrkaḥ* → *vrkūḥ*

Figure 2. Gender as non-prototypical derivation.

# GRAMMATICAL CATEGORIES

## Inflection and derivation

Similarities between gender shift and  
other types of derivation

Table 2. Some denominal nouns in the Indo-European languages.

|                |                                                                                   |
|----------------|-----------------------------------------------------------------------------------|
| diminutives    | <i>putrah</i> 'son' → <i>putrakah</i> (Skr.)                                      |
|                | <i>funis</i> 'rope' → <i>funiculus</i> (Lat.)                                     |
|                | <i>Hund</i> (m.) 'dog' → <i>Hündchen</i> (nt.) (Germ.)                            |
|                | <i>gatto</i> 'cat' → <i>gattino</i> (It.)                                         |
|                | <i>donna</i> (f.) 'woman' → <i>donnino</i> (m.) (It.)                             |
| augmentatives  | <i>palla</i> (f.) 'ball' → <i>pallone</i> (m.) (It.)                              |
| agent nouns    | <i>mercatus</i> 'market' → <i>mercator</i> (m, f.: <i>mercatrix</i> )             |
|                | 'merchant' (Lat.) <sup>3</sup>                                                    |
|                | <i>Kunst</i> 'art' → <i>Künstler</i> (m, f.: <i>Künstlerin</i> ) 'artist' (Germ.) |
|                | <i>science</i> → <i>scientist</i> (Engl.)                                         |
| names of place | <i>granum</i> 'grain' → <i>granarius</i> 'granary' (Lat.)                         |
|                | <i>acqua</i> 'water' → <i>acquaio</i> 'sink' (It.)                                |
| names of trees | <i>malum</i> (n.) 'apple' → <i>malus</i> (f.) 'apple tree' (Lat.)                 |
|                | <i>mela</i> (f.) 'apple' → <i>melo</i> (m.) 'apple tree' (It.)                    |
|                | <i>banana</i> (f.) 'banana' → <i>banano</i> (m.) 'banana tree' (It.)              |
|                | <i>cerise</i> 'cherry' → <i>cerisier</i> 'cherry tree' (Fr.)                      |
|                | <i>pomme</i> 'apple' → <i>pommier</i> 'apple tree' (Fr.)                          |
| abstract nouns | <i>phúsis</i> 'nature' → <i>phusiké</i> 'physics, science of nature' (Gr.)        |
|                | <i>lingua</i> 'language' → <i>linguistica</i> 'linguistics' (It.)                 |
| collectives    | <i>Berg</i> 'mountain' → <i>Gebirge</i> 'mountains' (Germ.)                       |
|                | <i>frutto</i> (m. sg.) 'piece of fruit' → <i>frutta</i> (f. sg.) 'fruit' (It.)    |
|                | <i>muro</i> (m. sg.) 'wall' → <i>mura</i> (f. pl.) 'city walls' (It.)             |

# GRAMMATICAL CATEGORIES

## What is gender?

“Genders are classes of nouns reflected in the behavior of associated words” (Hockett 1958: 231).

→ Defining property of gender: setting up agreement classes

“NOUN CLASSES and GENDERS are noun categorization devices realized outside the noun itself within a head-modifier noun phrase.” (Aikhenvald 2000: 17)

→ **Classificatory function of gender** (similar to other types of classifiers)

## Non-classificatory function of gender

“It is a mistake to think of gender systems as systems for classifying things: to the extent that they do so it is secondary to their function to make it easier to keep track of links between constituents.” Dahl (2000: 113)

“The reason that gender is assigned to a noun is to enable anaphoric reference to that noun in discourse and deictic reference to that noun in the environment of speech.” (Frajzyngier and Shay 2003)

# GRAMMATICAL CATEGORIES

## Gender



- Ancient Indo-European languages → sex-based three-gender system (masculine, feminine and neuter).
- Brugmann (1891) → late development from an earlier animacy-based two-gender system (animate, morphologically corresponding to masculine, inanimate, corresponding to neuter)



Feminine gender formed through the addition of a special suffix (Brugmann  $-*\bar{a}$ , currently  $-*h_2$ )

- Brugmann's explanation: Suffix originally abstract → the word for 'woman,  $*g'ven\bar{a}$  ( $*gwenh?$ ), was in origin an abstract noun from an otherwise unattested verb 'give birth', which caused the suffix to be re-interpreted as gender marker

# GRAMMATICAL CATEGORIES

## The Anatolian gender system

Two-gender distinction: non-neuter vs. neuter both in nouns and in pronouns

| morphology:     | SINGULAR                                                                          |           | PLURAL                                                                                |                        |
|-----------------|-----------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|------------------------|
|                 | ANIMATE                                                                           | INANIMATE | ANIMATE                                                                               | INANIMATE              |
| nom.            | -(a)s                                                                             | Ø / -am   | count                                                                                 | collective             |
| acc.            | -(a)m                                                                             | Ø / -am   |                                                                                       | (cf. verbal agreement) |
|                 |  |           |                                                                                       |                        |
| all other cases | same endings                                                                      |           | nom. -es                                                                              | -a                     |
|                 |                                                                                   |           | acc. -(a)nt                                                                           | -a                     |
|                 |                                                                                   |           |  |                        |
|                 |                                                                                   |           | dat/loc, genitive --> same ending for both genders                                    |                        |
|                 |                                                                                   |           | instrumental, ablative --> no plural                                                  |                        |

# GRAMMATICAL CATEGORIES

## Gender



SAME SUFFIX ALSO = NOMINATIVE/ACCUSATIVE NEUTER PLURAL!

- Extension to collective must have preceded extension to feminine, in order to accommodate the Anatolian data.  
→ Influence of some feminine collective:
- Tichy (1993) extension to feminine started with the word \*h<sub>2</sub>-*widhéweh* an ancient collective, indicating the relatives of a dead person, and later 'widow'
- !! NO traces of feminine collectives are attested anywhere in the IndoEuropean languages

# GRAMMATICAL CATEGORIES

## Gender

PROBLEM: nominative/accusative plural neuter = inflectional ending / feminine suffix = derivational

If we accept Tichy's theory the suffix underwent the following stages:

derivational suffix (abstract) → inflectional ending (neuter 'collective' plural) → derivational suffix (collective feminine) → stem vowel (-a stems: marker of an inflectional class)

Highly unlikely!!

# GRAMMATICAL CATEGORIES

## Gender

Table 1. Development of Suffix  $*-h_2$

|       |                                                                                          |
|-------|------------------------------------------------------------------------------------------|
| 1.    | derivational suffix (non-obligatory)                                                     |
| 2. a. | neuter nouns:<br>inflectional suffix (nominative/accusative plural, obligatory)          |
| b. i  | $-ā-$ stems:<br>marker of inflectional class ('theme vowel', obligatory)                 |
| ii    | first class adjectives:<br>marker of inflectional class and feminine gender (obligatory) |

Stages 1 and 2 chronologically ordered, stages 2a and 2b two separate developments:

2. a. a derivational suffix turns into an inflectional one, preserving (part of) its meaning;

2. b. a non-obligatory, meaningful suffix turns into a theme vowel, i.e. a purely grammatical, obligatory item, which is also interpreted as the marker of a noun class (i.e. of a grammatical gender).

# GRAMMATICAL CATEGORIES

## Gender

A seldom asked question: how did the two gender system come about?

Gender:

Possible origins of gender:

Greenberg 1978, followed by Corbett (1991) Aikhenvald (2000)

### (3) STAGES IN THE RISE OF GENDER MARKERS

generic nouns --> classifiers --> pronominal demonstratives --> attributive demonstratives -->  
determiners --> agreement markers

Greenberg (1978: 79, followed by Corbett 1991: 313): “[t]he way in which gender arises need not be the same as that by which the system can expand by the development of new genders”. → exponents of other grammatical categories become gender markers limited to the creation of new genders: “[g]ender systems may expand by adding new genders; this is generally done using existing morphological material.” (e.g. rise of animacy based sub-genders for masculine nouns in the Slavonic languages)

# GRAMMATICAL CATEGORIES

## Gender

### 2 GENDERS - ANIMATE / INANIMATE (Anatolian)

| SINGULAR        |              | PLURAL    |                                                                                                            |
|-----------------|--------------|-----------|------------------------------------------------------------------------------------------------------------|
|                 | ANIMATE      | INANIMATE |                                                                                                            |
| nom.            | -(o)s        | Ø / -om   | count                                                                                                      |
| acc.            | -(o)m        | Ø / -om   | { stage (a <sub>i</sub> ) = Pre-PIE no plural<br>stage (a <sub>ii</sub> ) = PIE collective<br>(< abstract) |
| all other cases | same endings |           |                                                                                                            |
|                 |              |           | nom. -es      -h <sub>2</sub> > -a                                                                         |
|                 |              |           | acc. -(o)ns      -h <sub>2</sub> > -a                                                                      |
|                 |              |           | all other cases      same form                                                                             |

Figure 1 The Indo-European two gender system and agreement



DIFFERENCES IN AGREEMENT RESULT FROM DIFFERENTIAL MARKING OF CORE ARGUMENTS!!

# GRAMMATICAL CATEGORIES

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## Origins of noun classes/gender systems

- ✓ Increasingly grammaticalized systems of classifiers may develop into agreement systems (e.g. Bantu languages)
- ✓ Other types of morpheme are re-interpreted as gender markers (e.g. Russian)

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

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## **Gender from above vs. Gender from below**

**Gender from above:** creation of new gender markers from an earlier system of classification. Usually involved in the rise of a gender system in languages without gender.

Stages in the rise of gender markers (grammaticalization):

Generic nouns → classifiers → pronominal demonstratives → attributive **demonstratives** → **determiners** → agreement markers

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

---

## **Gender from above vs. Gender from below**

### Gender from above:

Agreement triggering gender markers derive from semantically motivated non-agreement triggering markers, which had the function of singling out groups of nouns, either at the lexical level (derivational affixes) or at the syntactic level (classifiers). (Luraghi 2009). Fodor (1959) labels this process as “lexico-semantic”.

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

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## **Gender from above vs. Gender from below**

### Gender from above:

- The classificatory function of gender is prominent
- High number of genders
- Overt gender markers

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

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## **Gender from above vs. Gender from below**

### Gender from below:

Gender arises from special patterns of case marking. Such a process normally takes place in languages that already have a gender system. No new gender markers are created. Fodor (1959): morphologically or syntactically motivated process.

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

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## **Gender from above vs. Gender from below**

### Gender from below:

Gender systems that derive from special agreement patterns are identified by agreement: hence, their primary function is to track discourse referents, that is, to indicate, through agreement, co-referring items, such as nouns and modifying attributes or nouns and anaphoric/deictic pronouns.

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

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## **Gender from above vs. Gender from below**

### Gender from below:

- The tracking function is prominent
- Small number of genders.
- No overt gender markers.

# ORIGINS OF NOUN CLASSES/GENDER SYSTEMS

---

## **Gender from above vs. Gender from below**

**NB:** The two functions of gender coexist in all gender systems, but either one is maximized, partly depending on the origin of a system.

# GRAMMATICAL CATEGORIES

*Areally related gender systems* (from Matasović 2004 and WALS):

- SUMERIAN: 2 genders, animate (socially active beings, some personified inanimate) / inanimate (including animals, abstractions, objects, collectives)
- ELAMITE: 2 genders , animate / inanimate (including collective plurals of animate nouns)
- DRAVIDIAN:
- Kannada, Tamil Gondi, Telugu: 3 genders, masculine / feminine / residue;
- Kolami, Parij Ollari: 2 genders, masculine / feminine (including inanimate);
- NW CAUCASIAN: no gender; 3 genders, male human / female human / inanimate;
- NE CAUCASIAN: 3, 4 and 5+ genders; all sex based (systems usually include a gender for animals; Tabasaran: 2 genders, animate / inanimate);
- BURUSHASKI: 4 genders, masculine / feminine / animals (including some highly individuated objects) / neuter (including objects, mass and abstractions);
- AFRO-ASIATIC: 2 genders, masculine and feminine (including singulative, abstractions, diminutives, socially inactive beings).

# (NON)- CONFIGURATIONALITY

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

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Ken Hale (1983)

Warlpiri → absence of hierarchical relations among constituents, notably the non-existence of the VP.

Non-configurational languages → “flat” structure / or hierarchical structure at the Lexical Structure only (does not project on Phrase Structure).

WARLPIRI: Pama-Nyungan language spoken in the Northern Territory, Australia, by over 3000 people

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

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## FEATURES OF NON-CONFIGURATIONALITY:

- i. free word order
- ii. referential null objects
- iii. discontinuous constituents

## IMPLICATIONAL SCALE:

discontinuous constituents > null objects > free word order (Baker 2001)

Jirwali

Mohawk

German

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

(1) *Free word order in Warlpiri*

a. Ngarrka-ngku ka            wawirri    panti-rni  
man-Erg        PresImpf kangaroo spear-Npst  
“The man is spearing the kangaroo”

b. Wawirri ka pantirni ngarrkangu  
Pantirni ka ngarrkangu wawirri  
Ngarrkangu ka pantirni wawirri  
Pantirni ka wawirri ngarrkangu  
Wawirri ka ngarrkangu pantirni (Hale 1983:3)

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

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(2) *Discontinuous expressions in Warlpiri*

Maliki-rli-ji      yarlu-rnu wiri-ngki  
dog-Erg-1sgObj bite-Pst    big-Erg

“A big dog bit me.” (Hale et al 1995:1434)

(3) *Null anaphora in Warlpiri*

Purra-nja-rla    nga-rnu  
cook-Inf-PriorC eat-Pst

“Having cooked (it), (he/she/it) ate (it).” (Laughren 1989:326)

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

## (A) HEAD MARKING (MOHAWK):

### (a) head marking (Mohawk):

*Shako-núhwe's (ne owirá'a).*

*m.sgS/3plO-like-HAB NE baby*

*He likes them (babies). (Baker 1996)*

(Features i, ii)

## (B) DEPENDENT MARKING (JIWARLI):

### (b) dependent marking (Jiwarli):

*Juru-ngku ngatha-nha kulypa-jipa-rninyja parna.*

*sun-ERG 1sg-ACC be\_sore-TRANS-PST head*

*The sun made my head sore. (Austin 1993)*

(Features i,ii, iii)

# NON-CONFIGURATIONALITY IN ANCIENT IE LANGUAGES

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(A), (B)



Two types of non-configurationality

→ What is a configurational language? Best example: English → Word Order assigns grammatical relations (subject and object) and indicates constituency (noun modifier order cannot be changed)

Free occurrence of null anaphora lies at the heart of non-configurationality; its appearance draws a line between free constituent order, of the type known from German or Spanish, and “real” non-configurationality (Baker 2001a: 1437)



□ What is «real» non-configurationality?

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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Devine and Stephens (1999: 143-148)

Discontinuous constituents in Ancient Greek:

- survey of some features of non-configurationality
- attempt an explanation for the co-occurrence of such features
- state of affairs displayed by Ancient Greek indicative of ongoing change from non-configurationality to increasing configurationality

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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Free word order and discontinuous constituents in Herodotus (Dover 1960, Devine & Stephens 2000)

- (3)      a.        *apodexamenoι erga megala*  
                      '*having-performed deeds great*' (Her 7.139);
- b.        *alia te megala erga apedexanto*  
                      '*other and great deeds they-performed*' (Her 8.17);
- c.        *alia apodexamenos megala erga*  
                      '*other having-performed great deeds*' (Her 1.59).
- (4)      *tauta es tous pantas Hellenas aperripse ho Kuros ta epea*  
                      '*these to the all Greeks directed the Cyrus the words*' (Her 1.153).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## Discontinuous constituents in Latin

|                              |                          |                          |                          |                     |                       |
|------------------------------|--------------------------|--------------------------|--------------------------|---------------------|-----------------------|
| (5) <i>Arma</i>              | <i>virumque</i>          | <i>cano,</i>             | <i>Troiae</i>            | <i>qui</i>          | <i>primus</i>         |
| <i>arm(N).ACC.PL</i>         | <i>man(M).ACC.SG+and</i> | <i>sing.PRS.1SG</i>      | <i>Troy(F).GEN</i>       | <i>REL.NOM.SG.M</i> | <i>first.NOM.SG.M</i> |
| <i>ab oris</i>               | <i>Italiam,</i>          | <i>fato</i>              | <i>profugus,</i>         |                     |                       |
| <i>from shore(N).ABL.PL</i>  | <i>Italy(F).ACC</i>      | <i>destiny(N).ABL.SG</i> | <i>fugitive.NOM.SG.M</i> |                     |                       |
| <i>Laviniaque</i>            | <i>venit</i>             | <i>litora</i>            |                          |                     |                       |
| <i>Lavinian.ACC.PL.N+and</i> | <i>come.PRF.3SG</i>      | <i>strand(N).ACC.PL</i>  |                          |                     |                       |

“I sing the arms and the man, who, exiled by destiny, first came from the Trojan shores to Italy and to the Lavinian strand.” Verg. Aen. 1.1-3 (Latin).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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Hewson, Bubenik (2006)

Emergence of configurationality in all Indo-European languages

→ first detectable in the rise of adpositional phrases

→ diachronically oriented (but it virtually only deals with increasing grammaticalization of adpositional phrases).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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Schäufele (1990)

Non-configurationality in Vedic Sanskrit

Reinhöl (2016)



Rise of configurationality in Indo-Aryan from Vedic Sanskrit onward

*Configurationality → by-product of the grammaticalization of certain function words → rise of postpositional phrase*

Old Icelandic

Farlund (1990), Sigurðsson (1993), Rögnvaldsson (1995)

→ also deal with null objects

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## **Jiwarli-like properties of Ancient Indo-European languages**

NPs are case marked and the verb lacks agreement morphemes: thus, grammatical relations are marked on the NPs (i.e. on the dependents). Both the order of constituents and the order of words within constituents are free (that is, constituents can be discontinuous), and null anaphora is extensively used for subjects and objects

→ *Verby vs. nouny adjectives*

“discontinuous constituents are possible only in languages with no more than a weak N/A contrast”  
Baker (2001a: 1437) → adjectives are predicated of nouns, rather than be dependents.

“L’adjectif n’est nullement lié au substantif. Il est généralement au même cas, au même nombre, et, ce qui est le trait caractéristique de l’adjectif, au même genre ..., mais parce qu’il s’applique au même objet.” Meillet and Vendryes (1924: 530)

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## Adjectives

*tābhih*      *jvalantībhih*      *dīpyamānābhih*      *upauteti*      *rājānam*

DEM.INS.PL flaming.PTCP.INS.PL    shining.PTCP.INS.PL    approach.PRS.3SG king(M).ACC.SG

“With the flaming, shining ones (sc. weapons) he approaches the king.” AB 8.24.6 (Vedic Sanskrit).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## Adjectives

Indian grammarians found it difficult to distinguish between *visesana* ‘qualifier’ and *visesya* ‘qualified’ in a noun-adjective construction independently of the meaning intended by speakers in each given context. The 6<sup>th</sup>-7<sup>th</sup> century grammarian and philosopher Bhartṛhari, for example, “maintains that the ... two terms ... represent syntactic categories ...; they refer to a word as a member of a combination and not as an isolated individual.” Bath (1994: 170-171)

Greek adjectives with no gender distinction → properties which are usually predicated of human beings *pénēs* ‘poor’, *Héllēn* ‘Greek’, *phugás* ‘fugitive’. some of these adjectives always refer to human males, while some others always refer to human females: thus, their categorial status seems closer to nouns (they have inherent gender) Kühner, Blass (1890: 547-51)

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## Referential null objects

*sadyó jā́tá*

*óṣadhībhir*

*vavakṣe*

just born.PTCP.PRF.NOM.SG.M plant(F).INS.PL grow.PRF.MID.3SG

*yádī vārdhanti*

*prasvò*

*ghṛténa*

when increase.PRS.3PL shoot.NOM.PL.F clarified.butter(N).INS.SG

“Just born, (Agni) has grown by means of the plants, when the shoots increase (him) with clarified butter.” RV 3.5.8ab (Vedic Sanskrit);

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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*ou* *gàr oímai*      *themitòn*      *eînai ameínoni*      *andri*      *hupò*  
NEG PTC think.PRS.1SG righteous.ACC.SG.N      be.INF better.DAT.SG.M      man.DAT.SG.M under  
*kheíronos*      *bláptesthai.*      *apokteíneie*      *mentàn isōs*      *è* *exeláseien*      *è*  
worse.GEN.SG.M injure.INF.M/P kill.OPT.PRS.3SG PTC      equally or banish.OPT.PRS.3.SG or  
*atimōseien*  
disfranchise.OPT.PRS.3SG

“For I believe it’s not God’s will that a better man be injured by a worse. He might however perhaps kill (him), or banish (him), or disfranchise (him).” Pl. Apol. 30d (Ancient Greek);

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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*dverginn mælti, at sá baugr skyldi vera*  
dwarf say.PRF.3SG that DEM.NOM.SG.M ring(M) should.PRF.3SG be.INF  
*hverjum hofuðsbani, er atti*  
whosoever.DAT.SG death REL have.PRF.3SG

“The dwarf said that that ring should bring death to anybody who possessed (it)” (Old Icelandic, from Sigurðsson, 1993, p. 248).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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“Un verb indo-européen ne ‘gouvernait’ pas le cas de son complément; mais le nom apposé au verbe se mettait au cas exigé par le sens qu’il exprimait lui-même.” Meillet and Vendryes (1924: 522) --> Valence was **semantic** not **syntactic**

Semantic valence --> number of participants which are typically involved in an event

Syntactic valence --> number of actual constituents which a verb needs in order to stand in a grammatically acceptable construction (see Payne 1997: 169-170 and Luraghi, Parodi 2008: 197-199).

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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*quaero,      ecquid      litterarum.      Negant. ...      confessi sunt      se      accepisse,*

ask:prs 1sg indef.nom.n letter:gen.pl.f deny:prs.3pl confess:prf.3pl refl.acc take:prf.inf

*sed excidisse      in via*

but drop:prf.inf in road:abl.sg.f

“I ask (the servants) if they have found any letters. They say they haven’t. ... they confessed they had taken some, but had lost them on their way” (Cic. Att. 2.8);

*Caesar      exercitum      reduxit      et      in Aulercis*

Caesar:nom army:acc.sg.m take.back:prf.3sg and in Aulercian:abl.pl.m

*Lexoviisque, ...,      in hibernis      collocavit*

Lexovian:abl.pl.m+and in winter.camp:abl.pl.n settle:prf.3sg

“Caesar took his soldiers back and let them settle in the winter camp among the Aulercians and the Lexovians” (Caes. Gal. 3.27);

# NON-CONFIGURATIONALITY IN ANCIENT INDO-EUROPEAN LANGUAGES

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## LATE LATIN

*multua pecora habet, multum lanae, caput praeterea*

many:acc.pl.n cattle:acc.pl.n have:prs.3sg much wool:gen.sg.f head:acc.sg.n especially

*durum*

hard:acc.sg.n

“He has many heads of cattle, plenty of wool, an especially hard head.” (Petr. 39).

*et obtuli eum discipulis tuis et non potuerunt*

and bring:prf.1sg 3sg.scc.m disciple:dat.pl.m poss.2sg.dat.pl and neg can:prf.3pl

*curare eum*

cure:inf 3sg.acc.m

“And I brought him to your disciples, but they could not cure him.” (Mt. 17.16).

# THE RISE OF CONFIGURATIONALITY

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## OLD ITALIAN

*or non avestú la torta? Messer sí: ebbi*

ptc neg have:prf.2sg+2sg.nom art.sg.f cake:sg.f sir yes have:prf.1sg

“So, did you have the cake? Yes sir, I did!” (Nov. 79).

*la torta l' ha mangiata tutta Giovanni*

art.sg.f cake.sg.f 3sg.acc.f have:prs.3sg eat:ptcp.sg.f all:sg.f John

“John ate the whole cake, it was John who ate the whole cake.”

# THE RISE OF CONFIGURATIONALITY

Data extraction from syntactically annotated corpora (dependency treebanks)

**Table 1.** Texts composing the treebanks

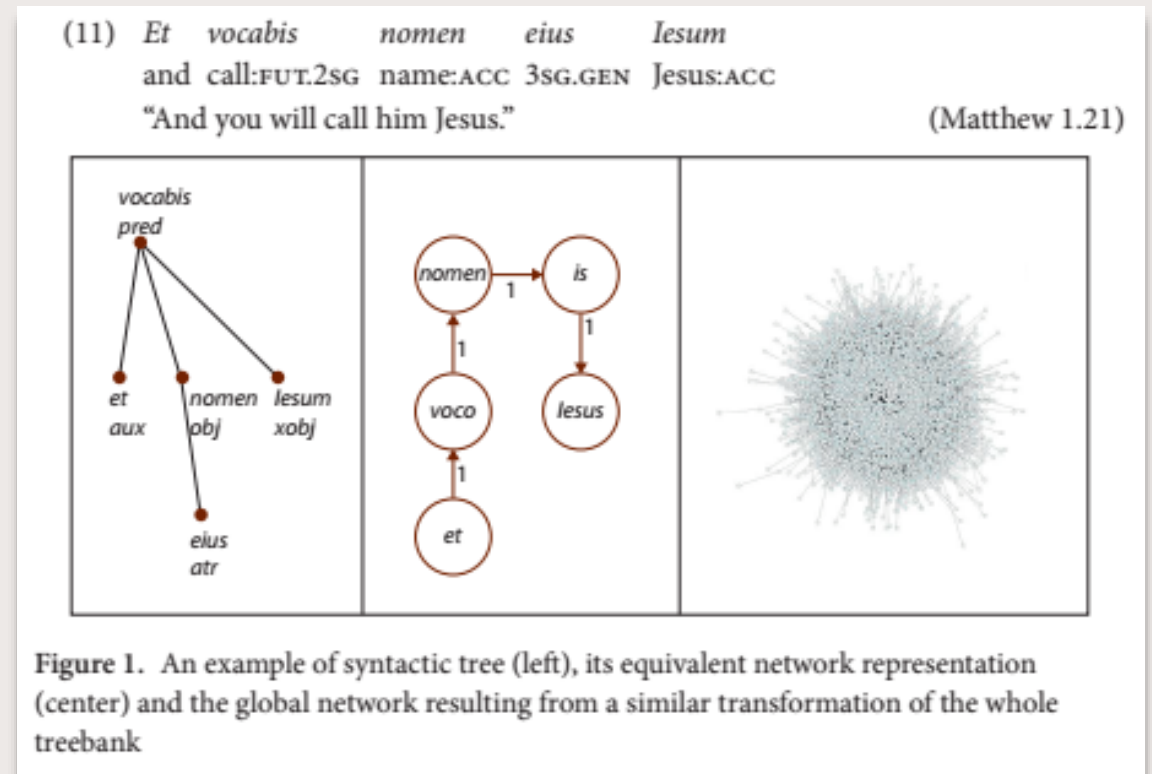
|        | Classical Greek                  | Late Greek                                                           | Classical Latin                                                                     | Late Latin                                                       |
|--------|----------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Author | Herodotus                        | Septuagint                                                           | Caesar and Cicero                                                                   | Jerome                                                           |
| Title  | <i>Histories</i><br>(I.1–VII.83) | <i>New Testament</i><br>(Matthew I.1 – Acts<br>of the Apostles V.10) | <i>The Gallic War</i> (I.1–<br>VII.77) and <i>Letters to<br/>Atticus</i> (I.1–VI.9) | <i>Vulgate</i> (Genesis<br>I.1 – Acts of the<br>Apostles XIV.11) |
| Date   | 440–429 BCE                      | 49–150 ca. CE                                                        | 58–50 BCE and 68–43<br>BCE                                                          | 382–413 CE                                                       |

# THE RISE OF CONFIGURATIONALITY

A network is a graph consisting of a set of nodes  $V$  and a set of edges  $E$ .

A network can be induced from a treebank by setting up an equivalence between

- (i) nodes and properties of words (e.g., their form, lemma, part-of-speech tag, etc.)
- (ii) edges and word relations (e.g., precedence in linear order, dependency in syntax, etc.).



# THE RISE OF CONFIGURATIONALITY

## FREE WORD ORDER

For Ancient Greek, we observe a shift from indifference regarding OV or VO order to a clear preference for VO. In Latin, the preference changes by swapping the order from OV to VO.

**Table 3.** Counts of objects following (VO) or preceding (OV) verbs in the four treebanks

|                 | VO   | OV   |
|-----------------|------|------|
| Classical Greek | 3762 | 3409 |
| Late Greek      | 4501 | 2158 |
| Classical Latin | 1473 | 5471 |
| Late Latin      | 4884 | 2791 |

# THE RISE OF CONFIGURATIONALITY

(12) *Qui diutissime impuberes permanserunt, maximam  
REL.NOM.PL long chaste:NOM.PL remain:PRET.3PL highest:ACC  
inter suos ferunt laudem  
among POSS.3PL.ACC.PL carry:PRS.3PL praise:ACC  
“Those who have remained chaste for the longest time, receive the greatest  
commendation among their people.” (Caes. G. 6.21)*

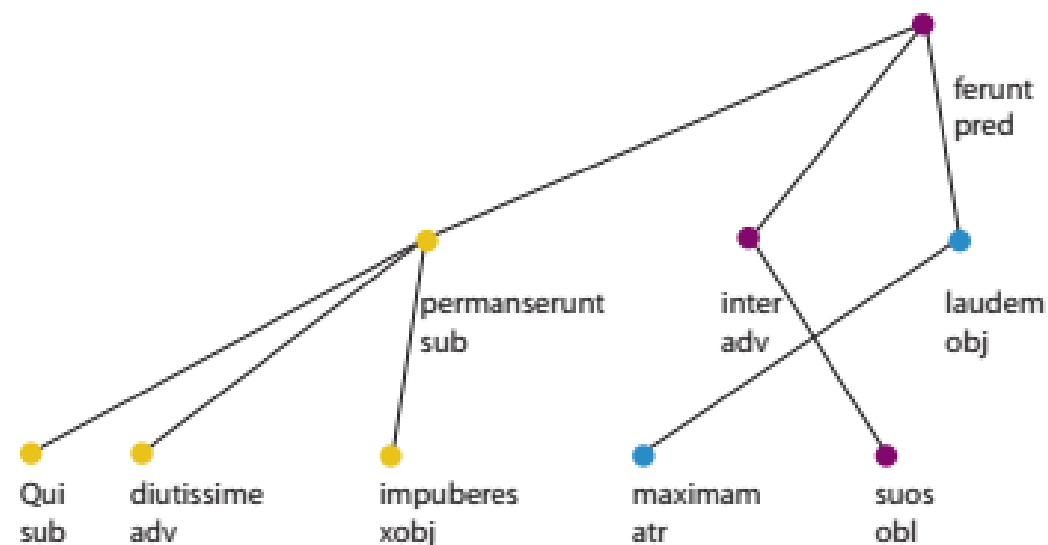


Figure 4. Discontinuous constituent in Classical Latin retrieved by the query

# THE RISE OF CONFIGURATIONALITY

## Discontinuous NPs

Table 5. Counts of pairs divided by at least a word in a gap (i.e., creating discontinuities) by kind of constituent

| Language variety | Noun phrases (determiner) | Noun phrases (adjective) |
|------------------|---------------------------|--------------------------|
| Classical Greek  | 400                       | 85 + 206 = 291           |
| Late Greek       | 112                       | 12 + 23 = 35             |
| Classical Latin  | –                         | 221 + 58 = 279           |
| Late Latin       | –                         | 25 + 18 = 43             |

# THE RISE OF CONFIGURATIONALITY

To estimate the number of referential null objects, no direct source for information is available either in local or in global networks, since co-reference and implicit nodes are not present in all the treebanks.

Instead, this measure was approximated by the percentage of third person personal pronouns among the objects of verbs.

We assumed that, if the object is mandatory, it must surface as a pronoun in some constructions.

**Table 7.** Counts of the objects (total and subsets)

|                                              | CG          | LG          | CL         | LL         |
|----------------------------------------------|-------------|-------------|------------|------------|
| <b>objects</b>                               | 7171        | 6659        | 6944       | 7675       |
| <b>of which 3rd person personal pronouns</b> | 295 (4.11%) | 789 (11.85) | 167 (2.40) | 763 (9.94) |
| <b>of which in coordinated constructions</b> | 5 (0.07%)   | 58 (0.87%)  | 10 (0.14%) | 57 (0.74%) |

# THE RISE OF CONFIGURATIONALITY

Third person pronouns (*autós* for Ancient Greek, *is* for Latin) climb the ranking in the late varieties compared to the classical varieties.

The evidence points towards a change in the role of third person pronouns

→ rising tendency to appear as verb objects  
points toward the overt realization of the object even in contexts in which its referent can be recovered from discourse.

Table 8. Ranking of the most connected nodes of global networks by number of edges

| Position | CG            | LG           | CL         | LT           |
|----------|---------------|--------------|------------|--------------|
| 1        | <i>ho</i>     | <i>ho</i>    | <i>et</i>  | <i>et</i>    |
| 2        | <i>kaí</i>    | <i>kaí</i>   | <i>sum</i> | <i>sum</i>   |
| 3        | <i>dé</i>     | <i>autós</i> | <i>qui</i> | <i>is</i>    |
| 4        | <i>eimí</i>   | <i>dé</i>    | <i>que</i> | <i>in</i>    |
| 5        | <i>hoûtos</i> | <i>eimí</i>  | <i>is</i>  | <i>autem</i> |
| 6        | <i>autós</i>  | <i>egó</i>   | <i>ego</i> | <i>qui</i>   |

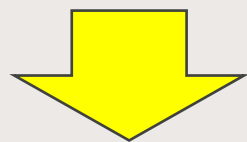
# THE RISE OF CONFIGURATIONALITY

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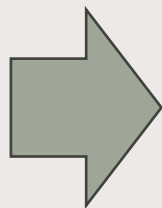
Free word order. Words in late varieties show a higher regularity in the co-occurrence patterns.

Constituents. The number of discontinuous NPs drops dramatically in late varieties.

Null referential direct objects. Third-person personal pronoun objects increase in number inside the treebanks, and third person pronouns increase in degree inside the global networks in late varieties.



IS THERE A CORRELATION?



# THE RISE OF CONFIGURATIONALITY

Based on the figures in Table 9, we found a correlation to be statistically significant and strong.

Indeed, the count of third-person personal pronouns in coordination correlates negatively with the number of non-projective adjective-noun pairs.

Since we linked the former with the absence of the null anaphora of objects, it turns out that the occurrence of null referential direct objects and the occurrence of discontinuous NPs are interdependent.

**Table 9.** Pearson coefficients (bottom-left) and their significance expressed as p-value (top-right) of the correlations among the variables measured in both global and local networks

|                                                 | Density        | Discontinuous NPs<br>w/ adjective | 3rd person personal<br>pronouns in coordination |
|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------------------|
| Density                                         | –              | $p = 0.4692$                      | $p = 0.4884$                                    |
| Discontinuous NPs w/<br>adjective               | $\rho = -0.53$ | –                                 | $p = 0.0007$                                    |
| 3rd person personal<br>pronouns in coordination | $\rho = 0.51$  | $\rho = -0.99$                    | –                                               |

# WHY DID CONFIGURATIONALITY ARISE?

---

Indo-European languages

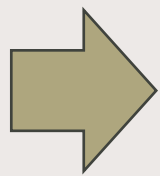
SEMANTIC CONSTITUENCY TURNED INTO SYNTACTIC CONSTITUENCY IN THREE STEPS:

1. adpositional phrases
2. NPs with modifiers
3. VP → obligatory constituents order

# WHY DID CONFIGURATIONALITY ARISE?

---

## RISE OF RIGID WORD ORDER



Is loss of morphological case the cause?

Questionable: Rögnvaldsson (1995) remarks that Old Icelandic, which is considered non-configurational, has the same number of cases as Modern Icelandic, which is configurational

# WHY DID CONFIGURATIONALITY ARISE?

---

## DISAPPEARANCE OF DISCONTINUOUS NPs

Baker (2001: 1437) → for discontinuous NPs to be allowed, a “particular kind of case marking is required”. Herman (1985: 347) → indicating what lexemes belong to a certain constituent is a function of case systems in just the same way as indicating grammatical relations.



BUT: actual data clearly point toward an earlier development of configurationality within NPs!

# WHY DID CONFIGURATIONALITY ARISE?

---

## ADPOSITIONAL PHRASE

*grammaticalization of adpositional phrases brought about increasing loss of independent semantic contribution of cases to the meaning of the construction → development preceded loss of the case system by many centuries (e.g. Latin).*



*DESEMANTICIZATION OF CASES IS A CONSEQUENCE, RATHER THAN A CAUSE  
OF THE RISE OF CONFIGURATIONALITY*

# WHY DID CONFIGURATIONALITY ARISE?

---

CONFIGURATIONALITY →

BY-PRODUCT OF RELATEDNESS OF FREQUENTLY CO-OCCURRING ITEMS

1. spatial adverb specifying the precise spatial meaning of a NP inflected in a certain case → grammaticalization  
→ adpositional phrase
2. nouns that indicated properties often accompanied other nouns → appositions, originally agreement in case  
→ frequent co-occurrence with other nouns caused them to be felt as subordinate → agreement in gender →  
configurationality within NPs
3. frequent co-occurrence of certain verbs with NPs inflected in the accusative → transitivity, → direct objects  
obligatory even when they were not expressed though a NP → rise of VP and loss of null objects



Elizabeth Traugott (2014)

Constructionalization perspective: diachronic process understood as a change that encompasses the whole construction

Configurationality --> result of constructionalization processes

CONSTRUCTIONALIZATION

# CONSTRUCTIONALIZATION

---

## CONSTRUCTIONALIZATION

1. from spatial adverb to adposition
  - a) *spatial adverb adds some specification to NP which through case marking indicates spatial relation*
  - b) *adpositional phrase: the adposition becomes the marker of the spatial relation, the case marker loses independent relevance*

# CONSTRUCTIONALIZATION

---

## CONSTRUCTIONALIZATION

### 2. loss of discontinuous NPs

- a) *two nouns refer to the same referent, they are in an appositional relation and are inflected in the same case because they fulfill the same semantic role*
- b) *the apposition becomes an attribute of the headnoun and develops gender agreement → headnoun: controller / attribute: target of agreement*

# CONSTRUCTIONALIZATION

---

## CONSTRUCTIONALIZATION

### 3. rise of VP

- a) *verb only has semantic valency → direct objects recoverable from the context are not overtly realized*
- b) *grammaticalization of valency → direct objects become obligatory*



*overtly realized direct objects become markers of transitivity*

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

Loss of null objects in Late Latin

*et obtuli            eum            discipulis            tuis            et non potuerunt*

and bring:PRF.1SG 3SG.SCC.M disciple:DAT.PL.M POSS.2SG.DAT.PL and NEG can:PRF.3PL

*curare    eum*

cure:INF 3SG.ACC.M

“And I brought him to your disciples, but they could not cure him.” (Mt. 17.16).

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

VO vs. OV in Modern Italian

*Maria ha mangiato la torta*

Maria has eaten:M the cake

“Maria ate the cake”

*la torta I' ha mangiata Maria*

the cake(F) it(CLITIC) has eaten:F Maria

“Maria ate the cake, it was Maria who ate the cake.”

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

French: obligatory clitics subjects

moi je ne sais pas ce qu'il veut, ce garçon la

me I NEG know NEG DEM REL he wants DEM guy there

“I don’t know what he wants, that guy.”

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

Bossong (1998: 32) points out that a sentence such as:

*il la voit, la femme*

he her sees the woman

“He sees her, the woman.”

tends to be realized without any intonational break:

*il la voit la femme*

“He sees the woman.”

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

Bossong: spoken French moving in the direction of → doubling all arguments by means of clitics hosted by the verb

*Il la lui a donné, son père, à Jean, sa moto*

he it.F him has given his father to John his motorbike

“John’s father gave him his motorbike” (Tesnière, 1959: 175).

# TOWARD HEAD-MARKING NON-CONFIGURATIONALITY

---

clitic doubling makes possible binding of the possessive *son* with the oblique NP *à Jean* → impossible with normal word order and normal intonation:

\**Son<sub>i</sub> père a donné à Jean<sub>i</sub> sa moto.*

“His father has given John his motorbike.” (ungrammatical with his = Jean’s)

→ pattern typical of non-configurational languages of the Mohawk type, i.e. head marking ones

# BASIC VALENCY

---

# THE PASSIVE DIATHESIS

# BASIC VALENCY

Nichols et al. (2004) “...**basic valence orientation** ... serves as a useful building block for characterizing the **lexical and morphosyntactic signatures of languages, language areas, and language families.**” (Nichols et al. 2004: 149)



**Inchoative/Causative alternation** (Haspelmath 1987, 1993)

Certain events can be conceived of as happening spontaneously or as being brought about by an external cause, e.g. *break* (intr.) vs. *break* (tr.).

# BASIC VALENCY

**Transitivity** --> semantic rather than syntactic concept (Hopper, Thompson 1980; Nichols et al. 2004: 150): *eat* „intransitive“. Better definition: plain vs. induced.

FIG 1. INDUCED --> *The boy broke the windowpane*

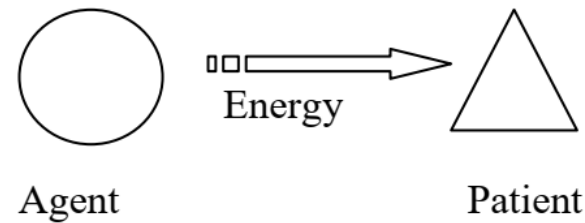
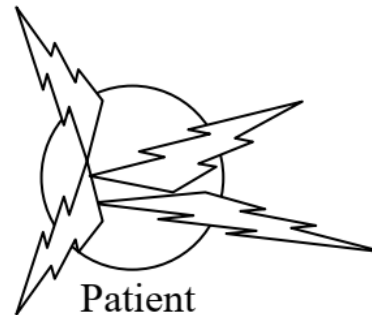


FIG 2. PLAIN --> *The windowpane broke*



- Both types of event are telic and imply a change of state

# BASIC VALENCY

Verb pairs 1-9 more likely to have animate subjects

Verb pairs 10-18 more likely to have inanimate subjects

| Pair | Plain                 | Induced                              |
|------|-----------------------|--------------------------------------|
| 1    | 'laugh'               | 'make laugh, amuse, strike as funny' |
| 2    | 'die'                 | 'kill'                               |
| 3    | 'sit'                 | 'seat, have sit, make sit'           |
| 4    | 'eat'                 | 'feed, give food'                    |
| 5    | 'learn, know'         | 'teach'                              |
| 6    | 'see'                 | 'show'                               |
| 7    | 'be/become angry'     | 'anger, make angry'                  |
| 8    | 'fear, be afraid'     | 'frighten, scare'                    |
| 9    | 'hid, go into hiding' | 'hide, conceal, put into hiding'     |
| 10   | '(come to) boil'      | '(bring to) boil'                    |
| 11   | 'burn, catch fire'    | 'burn, set fire'                     |
| 12   | 'break'               | 'break'                              |
| 13   | 'open'                | 'open'                               |
| 14   | 'dry'                 | 'make dry'                           |
| 15   | 'be/become straight'  | 'straighten, make straight'          |
| 16   | 'hang'                | 'hang (up)'                          |
| 17   | 'turn over'           | 'turn over'                          |
| 18   | 'fall'                | 'drop, let fall'                     |

# BASIC VALENCY

Group I (oriented)

(a) **transitivizing** vs. (b) **intransitivizing languages**:

(a) **Basic form is intransitive**: transitive form is morphologically more complex

(special case: the basic form is an adjective) → **Augmented correspondences**: (Nanai, Tungusic)

(b) **Basic form is transitive**: intransitive form is morphologically more complex → **Reduced correspondences**: (Russian, Indo-European)

# BASIC VALENCY

...

(a) Augmented correspondences: (Nanai, Tungusic)

(b) Reduced correspondences: (Russian, Indo-European)

TAB. 1: INTRANSITIVE / TRANSITIVE VERBS IN NANAI UND RUSSIAN

|               |                    |                   |                          |
|---------------|--------------------|-------------------|--------------------------|
| INTRANSITIVE: | ‘learn’            | ‘fear’            | ‘hide’(go into hiding)   |
| TRANSITIVE:   | ‘teach’            | ‘frighten, scare’ | ‘hide’ (put into hiding) |
| Nanai         | <i>otoli-</i>      | <i>mian-</i>      | <i>siri-</i>             |
|               | <i>otoli-wa:n-</i> | <i>mian-bo-</i>   | <i>djaja-</i>            |
| Russian       | <i>učit’-sja</i>   | <i>bojat’-sja</i> | <i>prjatat’-sja</i>      |
|               | <i>učit’</i>       | <i>pugat’</i>     | <i>prjatat’</i>          |

(adapted from Nichols et al. 2004: 151)

# BASIC VALENCY

Group II (non-oriented)

- (c) **Undetermined correspondence** (both members of the pair treated as derived):
- Suppletion (*sterben/töten*)
  - Ambivalent (*labile*) (*brechen*)
  - (Conjugation class change)

**Conjugation change:** “In languages which classify verbs by conjugation class (i.e., have sets of allomorphs for inflectional paradigms; we also code lexically determined theme vowels, extensions, and the like as differences of conjugation class), and conjugation classes are inflectional classification rather than derivational categories, verbs showing this correspondence belong to different conjugation classes in their intransitive and transitive uses but are otherwise underived.” (Nichols et al. 2004: 159)

→ Only compelling example: West Armenian

# BASIC VALENCY

Group II (non-oriented)

(d) **Neutral correspondence:**

- Ablaut (*fallen/fällen*) (→ but cf. Plank & Lahiri 2015)
- Double derivation (equipollent)

| Yupik (Siberian) | aghagh-nga | aghagh-te-   |
|------------------|------------|--------------|
|                  | 'hang'     | 'hang' (tr.) |

- Auxiliary / light verb change

|                         |                                  |                     |
|-------------------------|----------------------------------|---------------------|
| <b>Ingush</b>           | ieghaz-v.uoda (angry-go)         | 'be/get angry'      |
| <b>(East Caucasian)</b> | ieghaz-v.ug (angry-lead)         | 'anger, make angry' |
| <b>Hausa (Chadic)</b>   | yi dariya (lit. 'do laughter')   | 'laugh'             |
|                         | ba dariya (lit. 'give laughter') | 'make laugh'        |

## BASIC VALENCY AND VALENCY ORIENTATION

FREQUENCIES (FROM  
NICHOLS ET AL 2004)

- **Universal preferred  
lexicalization** Nichols et al.'s  
(2004: 172), cf. Haspelmath (1993):

“Other things being equal, languages  
prefer to lexicalize as basic verbs that  
typically select animate subjects”

|                  | ANIMATE | INANIMATE |
|------------------|---------|-----------|
| Augmented        | 285.5   | 203.5     |
| Reduced          | 42.5    | 106.5     |
| Double           | 61      | 75        |
| Ambitransitive   | 28.5    | 66.5      |
| Conjugation      | 0.5     | 7         |
| Auxiliary change | 14      | 25        |
| Ablaut           | 22      | 30.5      |
| Suppletion       | 206     | 98        |
| Adjective        | 3.5     | 5         |

# BASIC VALENCY

... Indo-European languages in Nichol et. al's sample (out of 80 total languages):

- |                 |                                                       |
|-----------------|-------------------------------------------------------|
| • Russian       | Detransitivizing --> reflexive middle                 |
| • German        | Detransitivizing --> reflexive middle                 |
| • Modern Greek  | Detransitivizing/Undetermined (suppletion, labiality) |
| • West Armenian | Transitivizing                                        |
| • Hindi         | Transitivizing                                        |
| • Portuguese    | Undetermined (suppletion)                             |
| • Ossetian      | Undetermined (labiality)/Transitivizing               |

# BASIC VALENCY

## BASIC VALENCY ORIENTATION IN MODERN HIGH GERMAN

Plank&Lahiri 2015: 6)

“there are sometimes other formal means to distinguish intransitives and transitives even for the same pairs, such as alternations of stem vowels (e.g., sitzen ‘sit, be seated’ – setzen ‘set, seat’,

futtern ‘eat, stuff oneself’ (colloquial) – füttern ‘feed’) which Nichols et al. do not code as being directed, and which would therefore have to be credited to the account of indeterminateness.” (ib.)

*Strong = basic and intransitive, weak = derived and transitive in German*

| INTRANSITIVE                                                    | ← | TRANSITIVE                                               |
|-----------------------------------------------------------------|---|----------------------------------------------------------|
| a. <i>sich setzen</i> ‘take a seat’                             |   | <i>setzen</i> ‘set’                                      |
| <i>sich ärgern</i> ‘be/become angry’                            |   | <i>ärgern</i> ‘annoy’                                    |
| <i>sich amüsieren</i> ‘enjoy oneself’                           |   | <i>amüsieren</i> ‘amuse’                                 |
| ( <i>sich</i> ) <i>erschrecken</i> ‘fear, be frightened’        |   | <i>erschrecken</i> ‘frighten’                            |
| <i>sich verstecken</i> ‘hide oneself, go into hiding’           |   | <i>verstecken</i> ‘hide’                                 |
| b. ( <i>sich</i> ) <i>öffnen</i> ‘become open’                  |   | <i>öffnen</i> ‘cause to become open’                     |
| ( <i>sich</i> ) ( <i>um</i> -) <i>drehen</i> ‘turn over/around’ |   | ( <i>um</i> -) <i>drehen</i> ‘cause to turn over/around’ |

# BASIC VALENCY

## BASIC VALENCY ORIENTATION IN MODERN HIGH GERMAN

*Strong = basic and intransitive, weak = derived and transitive in German*

OR MAYBE NON-ORIENTED?

TAB. 4: BASIC VALENCY ORIENTATION IN MODERN HIGH GERMAN - NON-ORIENTED (?)

| NON-CAUSATIVE                        | CAUSATIVE                                                                |
|--------------------------------------|--------------------------------------------------------------------------|
| <i>essen</i> 'eat'                   | <i>ätzen</i> 'feed' (of animals and their young), 'etch' (make eat into) |
| <i>trinken</i> 'drink'               | <i>tränken</i> 'water' (horses, cattle)                                  |
| <i>er-saufen</i> 'drown' (be killed) | <i>er-säufen</i> 'drown' (kill by submerging in water)                   |
| <i>ge-nesen</i> 'convalesce'         | <i>nähren</i> 'nourish'                                                  |
| <i>saugen</i> 'suck'                 | <i>säugen</i> 'suckle'                                                   |
| <i>beissen</i> 'bite'                | <i>beizen</i> 'marinate'                                                 |
| <i>sitzen</i> 'sit'                  | <i>setzen</i> 'set'                                                      |
| <i>liegen</i> 'lie'                  | <i>legen</i> 'lay'                                                       |
| <i>hängen</i> 'hang'                 | <i>henken</i> 'execute by hanging'                                       |
| <i>fahren</i> 'drive, ride'          | <i>führen</i> 'lead, drive'                                              |
| <i>springen</i> 'spring, jump'       | <i>sprengen</i> 'blow up'                                                |
| <i>dringen</i> 'penetrate'           | <i>drängen</i> 'urge, push, press'                                       |

# BASIC VALENCY

...

TAB. 5: HOMERIC GREEK VERB PAIRS

| ANIMATE VERBS                   | plain                          | induced            | strategy                           |
|---------------------------------|--------------------------------|--------------------|------------------------------------|
| (1) 'laugh'-'make laugh'        | <i>geláō</i>                   | periphrasis        | TRANSITIVIZING                     |
| (2) 'die'-'kill'                | <i>thnēskō</i>                 | <i>kteínō</i>      | SUPPLETION                         |
| (3) 'sit'-'seat'                | <i>hézomai</i>                 | -                  | AUGMENTATION                       |
|                                 | <i>hízomai</i>                 | <i>hízō</i>        | VOICE ALTERNATION                  |
|                                 | <i>hízō</i>                    |                    | LABILE ACTIVE                      |
| (4) 'eat'-'feed'                | <i>esthiō</i>                  | <i>bóskō</i>       | SUPPLETION                         |
| (5) 'learn'-'teach'             | <i>daēmenai</i> < * <i>daō</i> | <i>dédae</i>       | AUGMENTATION                       |
|                                 | <i>didáskomai</i>              | <i>didáskō</i>     | VOICE ALTERNATION                  |
| (6) 'see'-'show'                | <i>horáō</i>                   | <i>deíknumi</i>    | SUPPLETION                         |
| (7) 'be angry'-'anger'          | <i>kholoûmai</i>               | <i>kholóō</i>      | VOICE ALTERNATION                  |
| (8) 'fear'-'frighten'           | <i>deídō</i>                   | <i>deidíssomai</i> | AUGMENTATION                       |
| (9) 'hid'-'hide'                | <i>keúthomai</i>               | <i>keúthō</i>      | VOICE ALTERNATION                  |
| INANIMATE VERBS                 |                                |                    |                                    |
| (10) 'boil'-'boil'              | <i>zéō</i>                     | -                  | -                                  |
| (11) 'burn'-'burn'              | <i>kaíomai</i>                 | <i>kaíō</i>        | VOICE ALTERNATION                  |
| (12) 'break'-'break'            | <i>rhégnumai</i>               | <i>rhégnumi</i>    | VOICE ALTERNATION                  |
| (13) 'open'-'open'              | <i>oígnomai</i>                | <i>oígō</i>        | VOICE ALTERNATION                  |
| (14) 'be(come) dry'-'dry'       | <i>térsomai</i>                | <i>tersáinō</i>    | AUGMENTATION-<br>VOICE ALTERNATION |
| (15) 'be(come) long'-'lengthen' | <i>tanúomai</i>                | <i>tanúō</i>       | VOICE ALTERNATION                  |
| (16) 'hang'-'hang'              | <i>krémamai</i>                | <i>kremánnumi</i>  | VOICE ALTERNATION                  |
| (17) 'turn over'-'turn over'    | <i>stréphomai</i>              | <i>stréphō</i>     | VOICE ALTERNATION                  |
| (18) 'fall'-'drop'              | <i>píptō</i>                   | <i>hīēmi</i>       | SUPPLETION                         |

# BASIC VALENCY

...

TAB. 6: HITTITE VERB PAIRS

|     |                                    | ANIMATE VERBS     |                                    |                                         |
|-----|------------------------------------|-------------------|------------------------------------|-----------------------------------------|
|     |                                    | MEANING           | PLAIN                              | INDUCED                                 |
| 1.  | ?                                  | laugh<br>cry      | <i>hahhars-<br/>wija-</i>          | -<br>-                                  |
| 2.  | Undetermined                       | die               | <i>ak-</i>                         | <i>kuen-</i>                            |
| 3.  | Transitivizing<br>Transitivizing d | sit<br>sleep      | <i>es-<br/>ses-</i>                | <i>ases-, assessanu-<br/>sas(sa)nu-</i> |
| 4.  | Transitivizing<br>Transitivizing   | eat<br>drink      | <i>et-<br/>eku-</i>                | <i>adanna pai-<br/>akinanna pai-</i>    |
| 5.  | ?                                  | learn             | <i>istamas- 'hear'</i>             | -                                       |
| 6.  | Undetermined                       | see               | <i>aus-/u-, sakunvaya-</i>         | <i>tekkussa-, tekkussanu-</i>           |
| 7.  | Transitivizing<br>Transitivizing   | be angry<br>worry | <i>kartinmiya-<br/>lahlahhiya-</i> | <i>kartinmiyahh-<br/>lahlahhinu-</i>    |
| 8.  | Transitivizing                     | fear              | <i>nah-, nahsariya-</i>            | <i>nahsarnu-</i>                        |
| 9.  | Undetermined                       | hide              | <i>munnai- (mid.)</i>              | <i>munnai- (act.)</i>                   |
|     |                                    | INANIMATE VERBS   |                                    |                                         |
|     |                                    | MEANING           | PLAIN                              | INDUCED                                 |
| 10. | Transitivizing                     | boil              | <i>ze-</i>                         | <i>zanu-</i>                            |
| 11. | Transitivizing                     | burn              | <i>war-</i>                        | <i>warnu-</i>                           |
| 12. | Undetermined                       | break             | <i>dinvarna- (mid.)</i>            | <i>dinvarna - (act.)</i>                |
| 13. | Transitivizing                     | open              | <i>hassanza (adj.)</i>             | <i>hass-</i>                            |
| 14. | Transitivizing<br>/equip.          | dry               | <i>hat-, hatess-</i>               | <i>hatnu-</i>                           |
| 15. | Equipollent (Trans.)               | become long       | <i>dalukess-</i>                   | <i>daluganu-</i>                        |
| 16. | Transitivizing                     | hang              | <i>agank-</i>                      | <i>(anda) ganganu-</i>                  |
| 17. | Transitivizing                     | turn over         | <i>wah-</i>                        | <i>wahnu-</i>                           |
| 18. | Undetermined                       | fall              | <i>mauss-</i>                      | <i>pessiya-</i>                         |

(from Luraghi 2012)

# BASIC VALENCY

...

TAB. 7: OTHER ANIMATE VERBS

|     | PLAIN                                   | INDUCED                                                                  |
|-----|-----------------------------------------|--------------------------------------------------------------------------|
| 1.  | <i>(anda) impai-</i> 'worry'            | <i>(anda) aimpanu-</i> 'make worry'                                      |
| 2.  | <i>hass-</i> 'give birth'               | <i>hassanu-</i> 'bring to birth'                                         |
| 3.  | <i>hassikk-</i> 'be satiated'           | <i>hassikkanu-</i> 'sate'                                                |
| 4.  | <i>hatuk-</i> 'be fearsome'             | <i>hatuganu-</i> 'terrify'                                               |
| 5.  | <i>huis-</i> 'live'                     | <i>huisnu-</i> 'rescue', 'heal' 'let live'                               |
| 6.  | <i>merr-</i> 'get lost', 'go missing'   | <i>mernu-</i> (NH) 'cause to disappear, dissolve'                        |
| 7.  | <i>nink-</i> 'soak', 'get drunk'        | <i>ninganu-</i> 'drench'                                                 |
| 8.  | <i>pukka-</i> 'be hateful'              | <i>puqqanu-</i> 'make hateful'                                           |
| 9.  | <i>samen-</i> 'disappear'               | <i>samenu-</i> 'make (something/-one) pass by, bypass, ignore (someone)' |
| 10. | <i>tarra-</i> 'be able to'              | <i>tarranu-</i> 'make powerful'                                          |
| 11. | <i>tariya-</i> 'be(come) tired'         | <i>dariyanu-</i> 'make tired'                                            |
| 12. | <i>wak(ki)szya-</i> 'omit', 'be absent' | <i>waggasnu-</i> 'omit'                                                  |
| 13. | <i>werite-</i> 'fear'                   | <i>weritenu-</i> 'scare'                                                 |

TAB. 8: OTHER INANIMATE VERBS

|    | PLAIN                                                 | INDUCED                                                                                  |
|----|-------------------------------------------------------|------------------------------------------------------------------------------------------|
| 1. | <i>ars-</i> 'flow'                                    | <i>arsanu-</i> 'let flow'                                                                |
| 2. | <i>hark-</i> 'perish'                                 | <i>harganu-</i> 'destroy'                                                                |
| 3. | <i>kist-</i> 'go out'                                 | <i>kistanu-</i> 'put out'                                                                |
| 4. | <i>lak-</i> 'be knocked down' (mid.)                  | <i>lak-</i> (act.) <i>laknu-</i> (NH)                                                    |
| 5. | <i>lap-</i> 'glow'                                    | <i>lapnu-</i> 'kindle'                                                                   |
| 6. | <i>mai-, miya-</i> 'grow', 'be born'                  | <i>miyanu-</i> 'let grow (vegetation)'                                                   |
| 7. | <i>parkiya-</i> 'rise'                                | <i>parkiyanu-</i> 'make to rise'                                                         |
| 8. | <i>samesiya-</i> 'burn (for fumigation) intr.' (mid.) | <i>samesiya-</i> 'burn (for fumigation) tr.' (act.)<br><i>samesanu-</i> 'burn' (only NH) |
| 9. | <i>zappiya-</i> 'drop'                                | <i>zappanu-</i> 'let drop (liquid)'                                                      |

TAB. 9: OTHER VERB PAIRS WITH VOICE ALTERNATION → MOSTLY INANIMATE

|    |                  | MEANING                                             | ACTIVE                      | MIDDLE                                |
|----|------------------|-----------------------------------------------------|-----------------------------|---------------------------------------|
| 1. | <i>harp-</i>     | split                                               | transitive                  | intransitive                          |
| 2. | <i>irha-</i>     | finish                                              | transitive                  | intransitive                          |
| 3. | <i>lazziya-</i>  | prosper, flourish/set straight, recover (only mid.) | transitive                  | intransitive from OH/OS               |
| 4. | <i>lulunvai-</i> | survive/sustain                                     | transitive from OH          | intransitive from OH                  |
| 5. | <i>marriya-</i>  | melt down/melt                                      | transitive from OH/NS       | intransitive from OS                  |
| 6. | <i>nai-</i>      | turn                                                | transitive from OS          | intransitive from OS<br>transitive NH |
| 7. | <i>pars-</i>     | break                                               | transitive                  | transitive / intransitive from OH/NS  |
| 8. | <i>sunvai-</i>   | fill                                                | transitive                  | intransitive                          |
| 9. | <i>zinna-</i>    | finish                                              | transitive/<br>intransitive | intransitive                          |

# BASIC VALENCY

...      **Valency and lexical aspect**

TAB. 11: MEDIA TANTUM

|     |                  |                           |
|-----|------------------|---------------------------|
| 1.  | <i>ā-</i>        | ‘warm up’                 |
| 2.  | <i>ar-</i>       | ‘stand’                   |
| 3.  | <i>es-</i>       | ‘sit down’                |
| 4.  | <i>iya-</i>      | ‘walk’                    |
| 5.  | <i>isduwa-</i> , | ‘become known/apparent’   |
| 6.  | <i>ki-</i> ,     | ‘lie’                     |
| 7.  | <i>kis-</i> ,    | ‘happen’, ‘become’        |
| 8.  | <i>kist-</i> ,   | ‘go out, be extinguished’ |
| 9.  | <i>pugga-</i> ,  | ‘be hateful’;             |
| 10. | <i>tarra-</i> ,  | ‘be capable of’           |
| 11. | <i>tugga-</i> ,  | ‘be visible’              |
| 12. | <i>war-</i> ,    | ‘burn’                    |
| 13. | <i>ze-</i> ,     | ‘be(come) cooked’         |

(from Luraghi 2012)

Stative: n. 1, 2, 4, 6, 10, 11, 13

# BASIC VALENCY

Adjective, intransitive change-of-state (fientive), transitive induced (cf. Germ. verbs in *-ja-/na-*)

*suppiahh-* ‘purify’ from *suppi-* ‘pure’, *suppess-* ‘become pure’

*idalawahh-* ‘harm, injure’ from *idalu-* ‘evil’, *idalawess-* ‘become evil’.

Stative verbs with *-ahh-* und *-ess-* correspondence: *nakke-* ‘be important’ vs. *nakkiyahh-* ‘regard/ treat as important’ and *nakkess-* ‘become important, troublesome’.

Latin fientive derivatives in *-ēsc-*: *rubēscō* ‘I blush’ from *ruber* ‘red’ *rubeō* ‘I am red, blushing’; *senēscō* ‘I grow old’ from *senex* ‘old’ *seneō* ‘I am old, have grown old’ (Watkins 1971: Latin *-ēsc-* corresponds to Hittite *-ess-*)

Latin de-adjectival causative suffix *-ā-* *novāre* ‘renew’ from *novus* ‘new’, cf. Hittite *newahh-* ‘renew’.

Are verbal roots unambiguously specified for a single lexical aspect?

# BASIC VALENCY

Hittite was heavily transitivizing: in particular, transitivizing affixes were used for deriving active counterparts both from stative verbs (and adjectives) and from verbs that denoted uncontrolled change-of-state events.

Many intransitive verbs which served as basis for causative derivation were also characterized by being inflected in the middle voice: most of them were *media tantum*. Among verbs that indicate an uncontrolled event, stative displayed a higher degree of affinity with the middle voice, as they were by the large majority *media tantum*, contrary to change-of-state verbs, which, especially in Old Hittite, could be either *media* or *activa tantum*.

The close connection between the middle voice and stative verbs is also shown by the fact that no stative verb allows for voice alternation.

On the other hand, change-of-state verbs, though infrequently, could also encode valency alternation through voice, whereby middle forms were change-of-state and active forms were transitive.

Even though this pattern remained limited in Hittite, also on account of frequent (and apparently increasing) lability, it acquires significance when set in the framework of the evidence from other ancient Indo-European languages.

# BASIC VALENCY

## GOTHIC

Middle voice limited (passive), no reflexive middle (limited use of reflexive pronouns in alternations), derived causative in *-ja-*, cf. Suzuki (1989), Lühr (2008), Ottosson (2013), Tarsi/Zanchi (2025)

### CAUSATIVE *JA*-VERBS FROM INACTIVE INTRANSITIVE VERBS (ANTICAUSATIVE CONTENT)

- ✓ *anþarans ganasida, ak sik silban ni mag ganasjan* 'he saved others, but he cannot save himself' Mark 15,31
- ✓ *hwas mag ganisan* 'who can be saved' Luke 18,26
- ✓ *gadrausida mahteigans af stolum* 'he pulled down princes from their thrones' Luke 1,52
- ✓ *ains ize ni gadriusip ana airþa inuh attins izwaris wiljan* 'not one of them falls to the ground without the will of the father' Matthew 10,29

# BASIC VALENCY

## TRANSITIVE-INTRANSITIVE (ANTICAUSATIVE) PAIRS

- ✓ Transitive weak *ja*-verb and *na*-verb derived from an adjective

*fulljan* 'fill' - *fullnan* 'become full' (*fulls* 'full'), *gabigjan* 'enrich' - *gabignan* 'be rich' (*gabigs* 'rich'), *managjan* 'increase' - *managnan* 'be plentiful, increase' (*manags* 'many'), *mikiljan* 'praise, magnify' - *mikilnan* 'be enlarged' (*mikils* 'big'), *usmerjan* 'spread abroad' - *usmernan* 'spread (intrans)' (cf. *wailamereis* 'admirable'), *gaqiujan* 'make alive' - *gaqiunan* 'become alive' (*qius* 'alive'), *daupjan* 'kill' - *gadaupnan* 'die' (*daups* 'dead')

- ✓ Transitive weak *ja*-verb and *na*-verb without attested related adjective

*drobjan* 'stir up' - *drobnan* 'become restless', *usgaisjan* 'frighten' - *usgeisnan* 'be astonished', *afhwapjan* 'choke' - *afhwapnan* 'be choked', *fraqistjan* 'destroy' - *fraqistnan* 'be destroyed', *afslauptjan* 'perplex' - *afslauptnan* 'be amazed'

## CHRONOLOGY OF THE CAUSATIVE ALTERNATION IN GERMANIC

(adpted from Ottorsson 2013)

- Causatives in *-ja-* attest to basic transitivizing orientation
- Development of *-na-* anticausatives in Proto-Germanic partly connected with loss of PIE inflectional middle
- Later development: reflexive middle --> basic orientation changes to detransitivizing
- Development of labile verbs (non-oriented)

# BASIC VALENCY

GOTHIC, animate subjects

|    | MEANING               | CONTINUOUS                                    | PLAIN<br>BOUNDED                                       | INDUCED                                                                  | STRATEGY                                          | ORIENTATION      |
|----|-----------------------|-----------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------|------------------|
| 1  | LAUGH                 | <i>hlahjan</i> (st6)<br>Luke 6:25             | synthetic passive<br>Luke 6:21                         | <i>uf-hlohjan</i> (wk1)<br>Luke 6:21                                     | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 2  | DIE, BE DEAD          | <i>daups wisan</i><br>Luke 15:24              | <i>ga-daupnan</i> (wk4)<br>John 6:50                   | <i>ga-daupjan</i> (wk1)<br>Romans 8:36                                   | double derivation<br>( <i>na-/ja</i> -derivation) | neutral          |
| 3  | SIT, BE SITTING       | <i>sitan</i> (st5)<br>Matthew 26:69           | <i>ga-sitan</i> (st5)<br>John 6:3                      | <i>satjan</i> (wk1)<br>Luke 8:16<br><i>ga-satjan</i> (wk1)<br>John 15:16 | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 4  | DRINK (UP)<br>(proxy) | <i>drigkan</i> (st3)<br>Matthew 6:25          | <i>ga-drigkan</i> (st3)<br>Luke 17:8                   | <i>dragkjan</i> (wk1)<br>Matthew 25:42                                   | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 5a | KNOW, LEARN           | <i>lais</i> (pret.-pres.)<br>Philippians 4:12 | –                                                      | <i>laisjan</i> (wk1)<br>Mark 10:1                                        | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 5b | KNOW, LEARN           | –                                             | <i>laisjan sik</i> (wk1)<br>Timothy I 5:13             | <i>laisjan</i> (wk1)<br>Matthew 5:19                                     | reduction (reflexivization)                       | detransitivizing |
| 6  | SEE                   | <i>saihvan</i> (st5)<br>Matthew 11:7          | <i>bi-saihvan</i> (st5)<br>Luke 20:23<br>'to perceive' | <i>at-augjan</i> (wk1)<br>Luke 20:24 <sup>10</sup>                       | suppletion                                        | indeterminate    |
| 7a | BE SAD (proxy)        | –                                             | <i>gaurs wairpan</i><br>Luke 18:23                     | <i>gaurjan</i> (wk 1)<br>Ephesians 4:30                                  | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 7b | BE SAD (proxy)        | –                                             | synthetic passive<br>Corinthians II 2:2                | <i>gaurjan</i> (wk 1)<br>Ephesians 4:30                                  | reduction<br>(voice alternation)                  | detransitivizing |
| 8a | FEAR, BE<br>AFRAID    | <i>ogan</i> (pret-pres.)<br>Matthew 10:26     | –                                                      | <i>ogjan</i> (wk1)<br>Nehemiah 6:19                                      | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |

|    | MEANING                 | CONTINUOUS                          | PLAIN<br>BOUNDED                                                             | INDUCED                                          | STRATEGY                                          | CORRESPONDENCE    |
|----|-------------------------|-------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------|-------------------|
| 8b | FEAR, BE<br>AFRAID      | –                                   | <i>ga-plahsnan</i> (wk4)<br>Luke 1:29                                        | <i>plahsjan</i> (wk1)<br>Corinthians II 10:9     | double derivation<br>( <i>na-/ja</i> -derivation) | neutral           |
| 9  | HIDE, GO INTO<br>HIDING | –                                   | <i>ga-filhan sik</i> (st3)<br>John 8:59                                      | <i>ga-filhan</i> (st3)<br>Matthew 8:21 'to bury' | reduction (reflexivization)                       | detransitivizing  |
| 16 | HANG                    | <i>hahan</i> (wk3)<br>Luke 19:48    | –                                                                            | <i>us-hahan</i> ? <sup>11</sup> (st7)            | reduction?<br>(reflexivization?)                  | detransitivizing? |
| 19 | AWAKE, WAKE<br>UP       | –                                   | <i>ga-waknan</i> (wk4)<br>Luke 9:32                                          | <i>us-wakjan</i> (wk1)<br>John 11:11             | double derivation<br>( <i>na-/ja</i> -derivation) | neutral           |
| 20 | SLEEP, FALL<br>ASLEEP   | <i>slepan</i> (st7)<br>Matthew 8:24 | <i>ga-slepan</i> (st7)<br>Luke 8:23<br><i>ana-slepan</i> (st7)<br>John 11:11 | –                                                | –                                                 | –                 |
| 21 | RUN                     | <i>rinnan</i> (st3)<br>Luke 8:33    | –                                                                            | –                                                | –                                                 | –                 |

# BASIC VALENCY

## GOTHIC

inanimate subjects

|                  | MEANING             | CONTINUOUS                                             | PLAIN<br>BOUNDED                                     | INDUCED                                        | STRATEGY                                          | CORRESPONDENCE   |
|------------------|---------------------|--------------------------------------------------------|------------------------------------------------------|------------------------------------------------|---------------------------------------------------|------------------|
|                  |                     |                                                        |                                                      |                                                |                                                   |                  |
| 10               | BOIL                | –                                                      | –                                                    | –                                              | –                                                 | –                |
| 11a              | BURN, LIGHT<br>UP   | –                                                      | <i>tundnan</i> (wk4)<br>Corinthians II 11:29         | <i>tandjan</i> (wk1) Luke 15:8                 | double derivation<br>( <i>na-lja</i> -derivation) | neutral          |
| 11b              | BURN, LIGHT<br>UP   | <i>brinnan</i> (st3)<br>Skeireins 6:2                  | –                                                    | <i>ga-brannjan</i> (wk1)<br>Corinthians I 13:3 | augmentation<br>( <i>ja</i> -derivation)          | transitivizing   |
| 12               | BE BROKEN,<br>BREAK | –                                                      | <i>us-bruknan</i> (wk4)<br>Romans 11:17              | <i>brikan</i> (st4)<br>Galatians 1:23          | reduction ( <i>na</i> -derivation)                | detransitivizing |
| 13               | BE OPEN, OPEN       | –                                                      | <i>us-luknan</i> (wk4)<br>Matthew 9:30               | <i>us-lukan</i> (st2)<br>John 9:14             | reduction ( <i>na</i> -derivation)                | detransitivizing |
| 14a              | BE DRY, DRY         | <i>þaursus wisan</i><br>Luke 6:6<br>'be dry, withered' | <i>ga-þaursnan</i> (wk4)<br>John 15:6<br>'to wither' | – <sup>12</sup>                                | –                                                 | –                |
| 14b <sub>1</sub> | FILL                | –                                                      | <i>fullnan</i> (wk4)<br>Ephesians 3:19               | <i>fulljan</i> (wk1)<br>Matthew 27:48          | double derivation<br>( <i>na-lja</i> -derivation) | neutral          |
| 14b <sub>2</sub> | FILL                | –                                                      | synthetic passive<br>Luke 1:15                       | <i>fulljan</i> (wk1)<br>Matthew 27:48          | reduction<br>(voice alternation)                  | detransitivizing |
| 15               | BE STRAIGHT         | –                                                      | –                                                    | <i>raihts waurkjan</i><br>Luke 3:4             | –                                                 | –                |
| 17               | ROLL (proxy)        | –                                                      | <i>walwison</i> (wk2)<br>Mark 9:20                   | <i>af-walwjan</i> (wk1)<br>Mark 16:3           | suppletion <sup>13</sup>                          | indeterminate    |

|    | MEANING             | CONTINUOUS                         | PLAIN<br>BOUNDED                        | INDUCED                                       | STRATEGY                                 | CORRESPONDENCE |
|----|---------------------|------------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|----------------|
|    |                     |                                    |                                         |                                               |                                          |                |
| 18 | FALL                | –                                  | <i>ga-driusan</i> (st2)<br>Matthew 7:25 | <i>ga-drausjan</i> (wk1)<br>Luke 10:15        | augmentation<br>( <i>ja</i> -derivation) | transitivizing |
| 22 | SHINE, LIGHT<br>UP  | <i>skeinan</i> (st1)<br>Luke 17:24 | –                                       | <i>ga-liuhtjan</i> (wk1)<br>Corinthians I 4:5 | suppletion                               | indeterminate  |
| 23 | SHAKE, TREM-<br>BLE | <i>ga-wigan</i> (st5)<br>Luke 6:38 | –                                       | <i>ga-wagjan</i> (wk1)<br>Luke 6:48           | augmentation<br>( <i>ja</i> -derivation) | transitivizing |
| 24 | ROAR, RATTLE        | –                                  | –                                       | –                                             | –                                        | –              |

# BASIC VALENCY

## GOTHIC

**Table 4:** Animate S/O verbs. Absolute frequencies of each correspondence paired with mean frequencies in Nichols et al.'s sample and standard deviations values (Nichols, Peterson & Barnes 2004: 192). Verb meaning 16 HANG was not counted as the induced verb \**us-hahan* is hypothetical (see in detail footnote 11).

| Correspondence and strategy              | Frequency   | Nichols et al.'s (2004) data |                    |
|------------------------------------------|-------------|------------------------------|--------------------|
|                                          | Animate S/O | Mean values                  | Standard deviation |
| TRANSITIVIZING ( <i>ja</i> -verbs)       | 5.5         | 3.6                          | 2.3                |
| DETRANSITIVIZING (total)                 | 3 (1)       | 0.5                          | 0.9                |
| – Reflexive <i>sik</i>                   | 2(1)        | –                            | –                  |
| – Voice alternation                      | 1(0)        | –                            | –                  |
| – <i>na</i> -verbs                       | 0           | –                            | –                  |
| NEUTRAL ( <i>na</i> -/ <i>ja</i> -verbs) | 2.5         | 0.8                          | 1.1                |
| INDETERMINATE (suppletion)               | 1           | 2.6                          | 1.4                |

**Table 5:** Inanimate S/O verbs. Absolute frequencies of each correspondence paired with mean frequencies in Nichols et al.'s sample and standard deviations values (Nichols, Peterson & Barnes 2004: 192).

| Correspondence and strategy              | Frequency     | Nichols et al.'s (2004) data |                    |
|------------------------------------------|---------------|------------------------------|--------------------|
|                                          | Inanimate S/O | Mean values                  | Standard deviation |
| TRANSITIVIZING ( <i>ja</i> -verbs)       | 2.5           | 2.5                          | 2                  |
| DETRANSITIVIZING (total)                 | 2.5           | 1.3                          | 1.5                |
| – Reflexive <i>sik</i>                   | 0             | –                            | –                  |
| – Voice alternation                      | 0.5           | –                            | –                  |
| – <i>na</i> -verbs                       | 2             | –                            | –                  |
| NEUTRAL ( <i>na</i> -/ <i>ja</i> -verbs) | 1             | 0.9                          | 1.3                |
| INDETERMINATE (suppletion)               | 2             | 1.2                          | 1.2                |

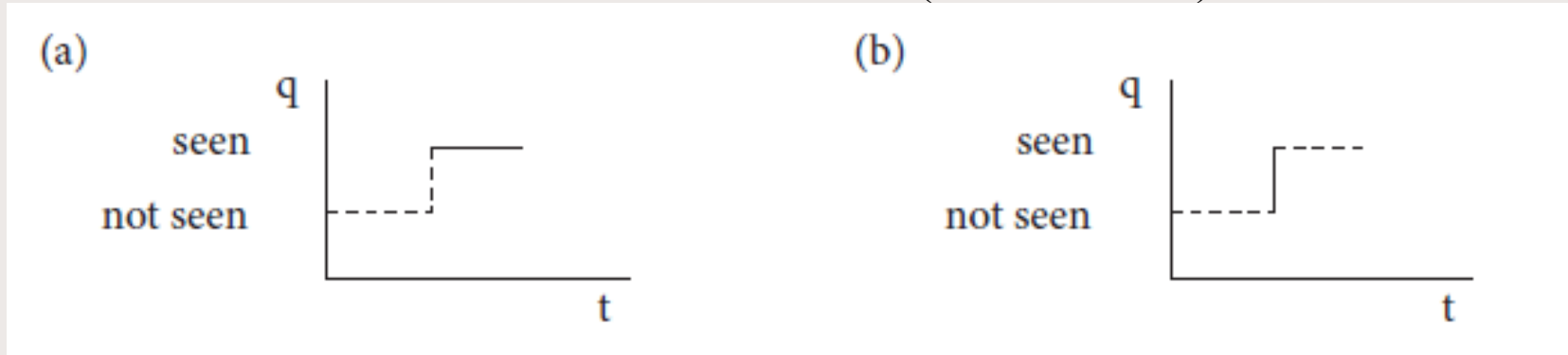
# BASIC VALENCY

✓ Verbs can refer to events profiled in different ways within the same language

(a) *I **see** Mount Tamalpais*

(b) *I reached the crest of the hill and **saw** Mount Talmapais*

FIG. 3: ALTERNATIVE PROFILING FOR ENGLISH *SEE* (Croft 2012: 55)



✓ Cross-linguistic correspondence does not always hold

English *know* stative vs. Italian *conoscere* stative/change of state

--> *Ho conosciuto Giovanni un mese fa* 'I met (\*knew) John a month ago'

# BASIC VALENCY

- ✓ Reference to state or change of state not always clear  
(examples from Ottosson 2013)
- State: *nu saiwala meina gadrobnode*  
‘Now my soul is troubled’ John 12,27
- Change of state: *jah gadrobnode Zakarias gasaihwands, jah agis disdraus ina*  
‘the sight disturbed Zechariah and he was overcome with fear’ Luke 1,12
- Unclear: *ni indrobnai izwar hairto*  
‘do not let your hearts be troubled’ John 14,1

# BASIC VALENCY

## Lexical aspects and valency alternation

German: *sitzen* / *setzen* --> transitivity

*sich setzen* / *setzen* --> detransitivizing

Homeric Greek: *hézomai* ‘be sitting’

*hízomai* ‘sit down’ / *hízō, eísa* (sigmatic aorist) ‘seat’

Slavic: *\*sed-* ‘sit down’

*\*sed-e-* ‘be sitting’ (stative) vs. *\*sad-i-* ‘let sit’ --> equipollent

(cf. Nichols 2006)

Russian: *sidet* ‘be sitting’ (only imperfective)

*sadit*’-*sja/sest* ‘sit down’ / *sažat*’/(*u-, po-*)*sadit* ‘seat’ --> detransitivizing

Plain = change of state root: induced adds causation

➤ Plain = stative root: induced adds change of state+causation (two steps)

# BASIC VALENCY

## Valency alternation and the middle voice

PIE *media tantum* (cf. Delbrück 1911):

- STATE
  - CHANGE OF STATE
- } COMMON FEATURE: *LACK OF CONTROL*

### ► Lexical distribution?

↻ Late development of voice opposition  
↻ Both directions

### ► Voice alternation: oriented or non-oriented?

## Morphological complexity:

- older stage --> middle endings related only to perfect endings
  - later stage --> middle endings related to active ending (cf. Gr. *-mai* etc.)
- Verbs denoting controlled actions cannot have stative counterparts --> voice opposition < canticaustive alternation with change of state verbs

*Stative verbs --> only transitivity strategies*

*Change of state verbs --> both transitivity and detransitivizing strategies possible*

# BASIC VALENCY

**Voice opposition originated out of anticausative alternation; reflexive meaning of the IE middle is a later development**

## THE MIDDLE VOICE IN VEDIC SANSKRIT

“The middle diathesis (also called ‘middle voice’) is usually said to function as a syncretic marker of several intransitive derivations: passive, anticausative (de-causative), reflexive, reciprocal; see examples below. This might indeed be the case in Proto-Indo-European. However, one of the oldest documented Indo-European languages, Vedic Sanskrit, seems to attest the decay of the original system.” (Kulikov 2009: 76) [cf. Meiser 2010]

...

“The causative/anticausative distinction is the only valency-changing derivation which, unlike passive, reflexive and reciprocal, is quite regularly expressed by the active/middle opposition, at least in early Vedic, as in med. *várdhate* ‘grows’ ~ act. *várdhati* ‘makes grow, increases’ or med. *réjate* ‘trembles’ ~ act. *réjati* ‘makes tremble’.

... in most cases, the middle type of inflexion is not the only marker of anticausative, being supported by the stem opposition ... transitive-causative presents with nasal affixes with the active inflexion are mostly opposed to middle thematic root presents [emphasis added] ... cf. *pávate* ‘becomes clean’ ~ *punáti* ‘makes clean’; *ríyate* ‘flows, bubbles’ ~ *rináti* ‘makes flow, makes bubble’.” (Kulikov 2009: 76, see also Kulikov 2000, 2013)

# BASIC VALENCY

*Innovation (Kulikov: degrammaticalization of the middle voice) or archaism?*

Cf. Hittite (Hoffner&Melchert 2008):

reflexive --> mostly expressed by the particle *-za*

reciprocal --> mostly expressed by the numeral 'one', the demonstrative, or with the particle *-za*

passive --> often periphrastic (passive participle plus verb 'be'), passive meaning of middle rare and late

--> anticausative alternation

The prototype of the middle voice is based on the Greek middle --> Anatolian, Indo-Aryan more conservative

# THE PASSIVE DIATHESIS

## TERMINOLOGY

Kittilä & Zuñiga (2019: 4)

DIATHESIS → any specific mapping of semantic roles (SRs) onto grammatical roles (GRs)

VOICE → grammatical category whose values correspond to particular diatheses marked on the form of predicates

“Diathesis refers to the number of semantic arguments involved in a state of affairs, to how they are involved in it, and to how they are assigned to GRs of varying salience and flexibility. Voice refers to the way a specific diathesis is formally marked on functional or lexical verbs in the predicate complex.”

- Example: English → the passive diathesis is expressed by a passive voice

# THE PASSIVE DIATHESIS

MEDIOPASSIVE → THE MIDDLE VOICE ENCODES THE PASSIVE DIATHESIS (AMONG OTHERS)

Gothic → translates Greek passive

|                  |                 |                     |                   |              |
|------------------|-----------------|---------------------|-------------------|--------------|
| <i>twos</i>      | <i>wairpand</i> | <i>malandeins</i>   | <i>samana,</i>    | <i>aina</i>  |
| two:NOM          | AUX.PRS.3PL     | grind:PTCP.NOM.PL.F | together          | one:NOM.SG.F |
| <i>usnimada</i>  | <i>jah</i>      | <i>anþara</i>       | <i>bileiþada</i>  |              |
| take:PRS.M/P.3SG | and             | other:NOM.SG.F      | leave:PRS.M/P.3SG |              |

'Two women shall be grinding together; the one shall be taken, and the other left.'

(Luke 17.35; Gk. *ēsontai dúo alēthuosai epì tò auto, hē mia paralēmphthēseta* [take.FUT.PASS.3SG] *hē dè hetēra aphethēsetai* [leave.FUT.PASS.3SG])<sup>9</sup>

Hittite → agented

|               |               |                             |                  |
|---------------|---------------|-----------------------------|------------------|
| <i>n=ašta</i> | <i>MUL-aš</i> | <i>nepišaz katta maušzi</i> | <i>KUR-yaš</i>   |
| CONN =PTC     | star:NOM      | sky:ABL down fall:PRS.3SG   | country:GEN      |
| <i>A.ŠÀ</i>   | <i>kuraš</i>  | <i>IZI-it</i>               | <i>warnutari</i> |
| field         | slice:GEN     | fire:INS                    | burn:PRS.M/P.3SG |

'When a star falls down from the sky, the field of the country will be burned by fire.'

(KUB 8.25 i 3, NH)

Tocharian → agented

|                  |               |                  |
|------------------|---------------|------------------|
| <i>kuṣṭhwākā</i> | <i>tā=šši</i> | <i>yärtär</i>    |
| predator:PERL.PL | where=PTC     | drag:PRS.M/P.3SG |

'Where is he being dragged by the predators?'

(CETOM A 55 b2)

# THE PASSIVE DIATHESIS

MEDIOPASSIVE → THE MIDDLE VOICE ENCODES THE PASSIVE DIATHESIS (AMONG OTHERS)

## Homeric Greek

It is often the case that the occurrence of an agent phrase triggers a passive interpretation,

which would not be available if no agent phrase co-occurred



there are verbs whose passive function does not depend on the occurrence of an agent phrase, such as verbs of consumption



*hóssa*            *toi*   *ekpépotai*            *kai*   *edédotai*            *en*  
 how\_much:NOM   PTC   drink:PRF.M/P.3SG   and   eat:PRF.M/P.3SG   in  
*megároisi*  
 palace:DAT.PL  
 'All that has been drunk and eaten in (your) palace.'  
 (Od. 22.56)<sup>14</sup>

*ê*   *mála*   *dê*   *se*            *biázetai*            *ōkùs*            *Akhilleús*  
 PTC   much   PTC   2SG.ACC   constrain:PRS.M/P.3SG   swift:NOM   A.:NOM  
 'Certainly swift Achilles does great violence to you.'  
 (Il. 22.229)

*Eurúlokh'*, *ê*   *mala*   *dê*   *me*            *biázete*            *moûnon*  
 E.:VOC            PTC   much   PTC   1SG.ACC   constrain:PRS.2PL   alone:ACC  
*eónta*  
 be:PTCP.PRS.ACC  
 'Eurylochus, you do great violence to me, who stand alone.'  
 (Od. 12.298)

*Aías*   *d'*   *oukét'*   *émimne:*            *biázeto*            *gàr*   *beléessin*  
 A.:NOM   PTC   NEG   remain:IMPF.3SG   constrain:IMPF.M/P.3SG   PTC   dart:DAT.PL  
 'But Ajax could not hold on, as he was oppressed by darts.'  
 (Il. 11.575–6)

# THE PASSIVE DIATHESIS

MEDIOPASSIVE → THE MIDDLE VOICE ENCODES THE PASSIVE DIATHESIS (AMONG OTHERS)

Latin → oppositional middles: early specialization for passive diathesis BUT: only for *infectum*

(Clackson and Horrocks 2007: 25–26)

*et ab eis ita amantur*  
 and by 3PL.ABL thus love:PRS.M/P.3PL  
 '(Certain animals up to a certain time love their offspring,) and are so loved  
 by them.'  
 (Cic. *Amic.* 27)

# THE PASSIVE DIATHESIS

MEDIOPASSIVE → THE MIDDLE VOICE ENCODES THE PASSIVE DIATHESIS (AMONG OTHERS)

## Indo-Aryan

Passive diathesis encoded by middle voice to a limited extent, depending on tense (present, aorist, perfect, future)

### Present stem

|                                              |                  |                   |
|----------------------------------------------|------------------|-------------------|
| <i>yābhir</i>                                | <i>mādāya</i>    | <i>śūmbhate</i>   |
| REL.INS.PL                                   | exhilaration:DAT | adorn:PRS.M/P.3SG |
| 'By whom he is beautified for exhilaration.' |                  |                   |
| (RV 9.38.3)                                  |                  |                   |

### Root aorist

|                                                      |                  |                 |                 |               |
|------------------------------------------------------|------------------|-----------------|-----------------|---------------|
| <i>yāt</i>                                           | <i>samāśīta</i>  | <i>haryatāḥ</i> | <i>īndrasya</i> | <i>vājraḥ</i> |
| when                                                 | whet:AOR.MID.3SG | enjoyable:NOM   | I.:GEN          | mace:NOM      |
| 'When the enjoyable mace of Indra has been whetted.' |                  |                 |                 |               |
| (RV 1.57.2)                                          |                  |                 |                 |               |

### Sigmatic aorist

|                                                                                    |                   |             |              |              |                  |
|------------------------------------------------------------------------------------|-------------------|-------------|--------------|--------------|------------------|
| <i>yāt</i>                                                                         | <i>pāñcajanya</i> | <i>viśā</i> | <i>īndre</i> | <i>ghōṣā</i> | <i>āsṛkṣata</i>  |
| when                                                                               | clan_five:INS     | tribe:INS   | Indra:LOC    | cry:NOM.PL   | send:AOR.MID.3PL |
| 'When cries were sent surging to Indra by the clan belonging to the Five Peoples.' |                   |             |              |              |                  |
| (RV 8.63.7)                                                                        |                   |             |              |              |                  |

# THE PASSIVE DIATHESIS

MEDIOPASSIVE → THE MIDDLE VOICE ENCODES THE PASSIVE DIATHESIS (AMONG OTHERS)

## DIFFERENT DEVELOPMENTS:

Ancient Greek → use of middle voice to encode the passive did not cover the majority of occurrences but was on the rise → Medieval and Modern Greek: only IE language that preserves the middle voice, with the percentage of passive occurrences steadily increasing over time

Indo-Aryan → passive occurrences marginal if not inexistent without additional marking → thorough change in its alignment system, partly connected with the widespread use of the periphrastic passive

Latin → the middle voice routinely encodes the passive diathesis at an early stage already, but remains limited to the *inflectum* → left no traces in the Romance languages, which extended the periphrastic form already used in the *perfectum*

## TYPOLOGICALLY RARE

Haspelmath (1990) 31 languages out of 80 contained in his sample have a passive, attesting 39 different morphological strategies → an inflectional strategy consisting of a set of passive endings (differential subject person markers in Haspelmath's terminology) is only attested in two languages of the sample, Latin and Modern Greek

# THE PASSIVE DIATHESIS

DEDICATED PASSIVES → A PASSIVE VOICE ENCODES THE PASSIVE DIATHESIS

Ancient Greek → derivational strategy

Future and the aorist have separate passive paradigms, formed with the suffixes  $-\bar{e}-$  or  $-\text{th}\bar{e}-$  plus the active endings

PIE suffix  $*-\text{eh}_1-/-\text{h}_1-$  of stative verbs

PIE suffix  $*-\text{dh}$ , which had a resultative meaning

# THE PASSIVE DIATHESIS

DEDICATED PASSIVES → A PASSIVE VOICE ENCODES THE PASSIVE DIATHESIS

## Middle Armenian

suffix *-v-*

morpheme /u~v/ forming present stems, e.g. *gel-u-* 'to turn' + medio-passive marker *-i-* as in *ber-i-m* 'I am carried' was added. In the sequence *-vi-* /v/ was then reanalysed as a passive morpheme.

→ risegmentation

# THE PASSIVE DIATHESIS

DEDICATED PASSIVES → A PASSIVE VOICE ENCODES THE PASSIVE DIATHESIS

Indo-Iranian → derivational strategy

Dedicated passive formed with a derivational suffix → present stem plus the suffix *-ia-* (Sanskrit *-ya-*, Avestan *-iia-*, Old Persian *-ya-*)

- Sanskrit → middle endings
- Old Persian → active endings
- Avestan → middle endings
- Young Avestan → both active and middle endings

*-ya-* (both the passive and the fourth class suffix)  
 < PIE suffix *\*-eh<sub>1</sub>-/-h<sub>1</sub>-* of stative verbs (cf. Greek passive aorist *-ē-*)

Connected with fourth class verbs (many media tantum) but accent moves in Sanskrit

*pacati* 'cooks' (1st class, active) / *pácyate* 'becomes ripe, cooked' (4<sup>th</sup> class, middle) / *pacyáte* 'is cooked' (passive)

→ accent doesn't move in Iranian

# THE PASSIVE DIATHESIS

## PERIPHRASTIC PASSIVES

### Hittite

<sup>GIS</sup>TUKUL <sup>HLA</sup>-iš=wa=tta      šiunit      piyanteš  
 weapon:NOM.PL=QUOT=2SG.DAT    god:INS    give:PTCP.NOM.PL  
 'The weapons are given to you by the Gods.'  
 (KBo 22.6+ i 25 OH<sup>2</sup>/NS)

- a. EGIR-an=at=kan      tarnattari  
 back=3SG.NOM.N=PTC      release:PRS.M/P.3SG  
 '(If there is no male heir), it [i.e. the property] will be released.'  
 (KBo 4.10 obv. 11, NH/NS)
- b. nu=war=at=mu=kan      parā    taman      ešdu  
 CONN=QUOT=3SG.NOM.N=1SG.DAT=PTC    forth    release:PTCP.NOM.N    be:IMP.3SG  
 '(On this tablet these words are not to be found), so let it be permitted  
 for me.'  
 (KUB 26.1+ iv 51, NH/NS)

# THE PASSIVE DIATHESIS

## PERIPHRASTIC PASSIVES

### Latin

-to participles,  
auxiliary 'be'

*nihilo ego quam nunc tu amata sum*  
nothing 1SG.NOM than now 2SG.NOM love:PPP.F be:PRS.1SG  
'No less than you are now, was I once beloved.'  
(Pl. Mos. 1.3)

### Germanic

auxiliaries  
'be', 'become'

- a. *qam Iēsus jah dāuþiþs was*  
come:PST.3SG J.:NOM and baptize:PTCP.PST.NOM be:PST.3SG  
*fram Iōhannē*  
from J.:DAT  
'Jesus came and was baptized by John.'  
(Mark 1.9)
- b. *sabbatō in mans warþ gaskapans*  
sabbath:NOM in man:GEN become:PST.3SG make:PTCP.PST.NOM  
'The sabbath was created for man.'  
(Mark 2.27)

### Old Church Slavic

-to and -no participles, auxiliary 'be'

*oni že slyšavъše ěko živъ*  
DEM.NOM.PL PTC hear:PTCP.PST.NOM.PL that alive:NOM  
*estъ i viděnъ bystъ ejъ*  
be:PRS.3SG and see:PTCP.PST.PASS.NOM be:AOR.3SG DEM.INS.SG.F

*ne jęse věry*  
NEG take:AOR.3PL faith:GEN  
'And they having heard that he was alive and had been seen by her did not believe.'  
(Mark 16.11)

*a otъ ne imoštaago i eže*  
but from NEG have:PTCP.PRS.GEN and REL.ACC  
*ašte mъnitъ se imy*  
ever believe:PRS.3SG REFL have:PTCP.PRS.NOM  
*vъzeto bōdetъ otъ nego*  
take\_away:PTCP.PST.PASS.NOM be:FUT.3SG from DEM.GEN  
'But from him who has not shall be taken away even that which he thinks he has.'  
(Matt. 25.29)

# THE PASSIVE DIATHESIS

## PERIPHRASTIC PASSIVES

### Indo-Aryan

PPP = verbal adjective with \*-to/-no suffix

PPP of transitive verbs is P-oriented: *kr̥ta-* ‘made’ from *kr̥-* ‘make’, *hata-* ‘killed’ from *han-* ‘kill’

sometimes with verb ‘be’ but most often without a verb

|                      |              |             |            |          |
|----------------------|--------------|-------------|------------|----------|
| <i>tatām</i>         | <i>me</i>    | <i>āpas</i> | <i>tād</i> | <i>u</i> |
| stretch:PPP.NOM.N    | 1SG.GEN      | work(N):NOM | DEM.ACC.N  | PTC      |
| <i>tāyate</i>        | <i>pūnaḥ</i> |             |            |          |
| stretch:PRS.PASS.3SG | again        |             |            |          |

‘My [ritual] work has been performed and it is being performed again.’  
(RV 1.110.1)

|               |           |             |                 |
|---------------|-----------|-------------|-----------------|
| <i>yuktās</i> | <i>te</i> | <i>astu</i> | <i>dāksinah</i> |
| yoke:PPP.NOM  | 2SG.GEN   | be:IMP.3SG  | right:NOM       |

‘Let your right (horse) be yoked.’  
(RV 1.81.5)

Passive future (gerundive), various suffixes

|           |            |           |                 |                   |
|-----------|------------|-----------|-----------------|-------------------|
| <i>yā</i> | <i>ēka</i> | <i>īd</i> | <i>dhāvyaḥ</i>  | <i>carṣanīnām</i> |
| REL.NOM   | one:NOM    | PTC       | invoke:GERV.NOM | mortal:GEN.PL     |

‘(He) who alone must be invoked by mortals.’  
(RV 6.22.1)

# THE PASSIVE DIATHESIS

Derivational strategies cover the majority of languages: Haspelmath (1990: 28) lists 25 cases of “additional stem affix” in languages of different genetic and areal affiliation, including Afro-Asiatic, Andean-Equatorial, Australian, Austroasiatic, Austronesian, Indo-Pacific, Niger-Kordofanian, Penutian, Uralo-Altaic, and Inuit

Periphrastic forms consisting of a participle and an auxiliary are more frequent than passive inflectional endings in Haspelmath’s sample, but those that contain the copula ‘be’ are limited to IE languages (Dryer 1982; Haspelmath 1990: 38–42)

# THE PASSIVE DIATHESIS

## MINOR STRATEGIES

Lexical passives (Ancient Greek, Hittite)

Conjugation class change

Lability

Classical Armenian

|                                                                                                                            |                   |           |                  |                    |
|----------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------------|--------------------|
| <i>čanač'em</i>                                                                                                            | <i>zimsn</i>      | <i>ew</i> | <i>čanač'im</i>  | <i>yimoc'n</i>     |
| know:PRS.1SG                                                                                                               | ACC:my:ACC.PL:DEF | and       | know:PRS.M/P.1SG | by_my:GEN.PL:DEF   |
| '(I am the good shepherd.) I know my own and I am known by my own.'                                                        |                   |           |                  |                    |
| (John 10.14)                                                                                                               |                   |           |                  |                    |
| <i>mi-n</i>                                                                                                                | <i>aṛmuc'u</i>    | <i>ew</i> | <i>miws-n</i>    | <i>t'oluc'u</i>    |
| one-DEF                                                                                                                    | take:SBJV.PRS.3SG | and       | other-DEF        | leave:SBJV.PRS.3SG |
| '(Two men will be in the field;) one will be taken and the other left.'                                                    |                   |           |                  |                    |
| (Matt 24.40; Gk. <i>heīs paralambánetai kai heīs aphietai</i> ; cf. the synoptic parallel in Luke 17.35 quoted in ex. [1]) |                   |           |                  |                    |



Perfects and statives (Ancient Greek, Vedic)

Contrary to Haspelmath's (1990: 27) claim that "in general passive constructions without passive morphology do not exist"