

histories of words, and this is the case with \*kens-. Its English derivative census is as typically Roman as cosmos is Greek, with the one showing a practical and political emphasis, while the thrust of the other is more theoretical. Sanskrit and Avestan too, as we have seen, contribute to the overall picture, for along with instances of Greek kosmos, juxtaposed with \*wekw-, their various uses of \*kens- with \*wekw- attest to an Indo-European pride in well-ordered speech. In Rig-Veda 8.8.11, for example, this is shown by an association of the combination of vacas and śams- with the Ásvins' richly decorated chariot. Other Vedic, Avestan, and Greek passages refer or allude to well-ordered speech as being efficacious in supporting the cause of truth (Rig-Veda 4.51.7 and Yasna 31.1), or in dealing with political (Solon 1.2) or military (Iliad 2.213) incompetence or problems of being and non-being (Rig-Veda 10.72.1 and Parmenides 8.52). From all of these, it emerges that an etymology which phonology alone is not quite sufficient to establish is rendered more likely by poetic considerations.

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## THE PROSODIC BASIS OF WACKERNAGEL'S LAW

Mark Janse

Bibliographic Linguistic, The Hague

One of the most important achievements of contemporary syntactic research is the inclusion of intonation in the interpretation of sentence structures. As a result, attention has been shifted from "constructional" phenomena such as agreement or word order to "segmentational" phenomena. Crucial to understanding the phenomenon of segmentation is the idea that words and sentences are the basic units of linguistic structure. Whereas the word is the basic constructional unit, the sentence is the locus of segmentational phenomena. Sentence segmentation is the division of a sentence in one or more segments comprising one or more words or word groups. Segments are characterised by a prosodic contour and separated by a potential pause. Segmentation allows the speaker to articulate the semantic content of a sentence by focusing on the salient points of development in a topic.

For obvious reasons, the concept of sentence segmentation is only rarely encountered in syntactic analyses of "dead" languages. Yet the practice of classical colometry presupposes some notion of segmentation. Thus, the Alexandrian grammarian Dionysius Thrax (2nd c. BC) affirms that one of the functions of punctuation marks (σημα) is to give the sentence rhythm by dividing it into breath (πνεύμα) groups. Even more important is his mention of the pause (διαστολή), the function of which is to mark off sense (σῆμα) groups.

The concept of sentence segmentation may throw some fresh light on a well-known problem of comparative Indo-European grammar, viz. the position of enclitics. In the Greek of the Gospels, enclitics normally come after the word with which they are construed, as in the following example:

- (1) ἡ πίστις σου σέσωκέν σε (Mk 10.52 = Mt 9.22 = Lk 7.50)  
 "your faith has saved you"

From a constructional point of view, the postposition of the enclitic personal pronouns (EPPs) σου and σε may be considered the "natural" order, because their syntactic dependence harmonises with their phonological dependence, enclitics being phonologically dependent on a preceding word with which they form a more or less complete phonological unity. Moreover, interference of the Semitic substrate languages reinforces the postposing of EPPs that correspond to pronominal suffixes in Aramaic and Hebrew. In New Testament (NT) Greek, postposition of EPPs is by far the most frequent order. Consider, for instance, the last words of Jesus, which are rendered in Aramaic in the majority of manuscripts:

- (2) אלהי אלהי למה שבקתני  
 ελαα ελαα λεμα σαβαχθανι (Mk 15.34 = Mt 27.46)

In Mark's verbatim translation, the enclitic personal pronouns are all postposed:

- (3) ὁ θεός μου # ὁ θεός μου # εἰς τί ἐγκατέλιπές με (Mk 15.34)  
"my God, my God, why have you forsaken me?"

Now compare Matthew's version:

- (4) θεέ μου # θεέ μου # ἵνατί με ἐγκατέλιπες (Mt 27.46)

In (4), the EPP με is preposed vis-à-vis the verb in accordance with "Wackernagel's Law" (Wackernagel: 1892). Its position has been defined as "clausal second", i.e. after the first word of the (main or subordinate) clause. Wackernagel's Law is one of the few generally accepted syntactic rules of comparative Indo-European grammar. Compare, e.g., the Gothic translation of (2):

- (5) *gub meins # gub meins # duhwe mis bilaist* (Mk 15.34 = Mt 27.46)

Of course, Wackernagel's Law need not necessarily conflict with what I have just called the "natural" order, as in the second example of the following minimal pair, where the EPPs μου and με are postposed in relation to the verb on which they depend, while at the same time taking up clausal second position:

- (6a) τίς μου ἤψατο (Mk 5.31)  
"who touched me?"

- (6b) ἤψατό μου τις (Lk 8.46)  
"someone touched me"

Compare also the Gothic (7) and Latin (8) versions of (6a) and (6b):

- (7a) *hwas mis taitok*

- (7b) *taïtok mis sumis*

- (8a) *quis me tetigit*

- (8b) *tetigit me aliquis*

The question is, of course, under what circumstances Wackernagel's Law precedes the "natural" order. In this respect, the NT Greek evidence is of particular importance, precisely because of the pressure of the substrate languages:

- (9a) ἔκτεινον τὴν χεῖρά σου (Lk 6.10)

- (9b) ἔκτεινον σου τὴν χεῖρά (Mt 12.13)  
"stretch out your hand"

The postposition of σου in (9a) in many respects "natural". It matches the Semitic pattern and the order has become obligatory in Modern Greek. Not surprisingly, then, postposition of genitive EPPs vis-à-vis nouns is by far the most frequent order in NT Greek. So what might have induced the preposition of σου in (9b)?

If I have just said, that postposition of EPPs is somehow "natural", because it harmonises their syntactic and phonological dependence, it stands to reason to take a look at the words to which they attach themselves if they are preposed vis-à-vis the word on which they depend. In (4) and (6a), the first word is an interrogative. In (9b), it is a verb in the imperative mood. It turns out that Wackernagel's Law applies frequently in the presence of an interrogative. Consider, e.g., (10a), with preposed με, and (10b), with a postposed nominal group:

- (10a) τί με πειράζετε (Mk 12.15 = Mt 22.18)  
"why are you proving me?"

- (10b) τί πειράζετε τὸν θεόν (Ac 15.10)  
"why are you proving God?"

Compare the Gothic (11) and Latin (12) versions of (10a) as well:

- (11) *hwa mik fraisip*

- (12) *quid me tentatis*

In the presence of an imperative, Wackernagel's Law applies frequently as well. The only cases of preposed EPPs which are dependent on an imperative involve negative particles or nominative PPs, as in the following examples:

- (13) μή μου ἅπτου (Jm 20.17)  
"don't touch me"

- (14) σύ μοι ἀκολουθεῖ (Jm 21.22)  
"you follow me"

Even if the verb is not in the imperative mood, the presence of negative particles and nominative pronouns, personal or other, triggers Wackernagel's Law:

- (15) οὐ μή σε ἀπαρνήσομαι (Mk 14.31 = Mt 26.35)  
"I will never disown you"

- (16) οὐδεὶς σε κατέκρινεν [...] οὐδὲ ἐγὼ σε κατακρίνω (Jm 8.11)  
"has no one condemned you? [...] then neither do I condemn you"

Compare also the following examples from Old Persian (Hale 1988: 29, 34):

- (17) *nai [šim] ima varnavātāy* (DB 4.49)  
"it does not convince him"

- (18) *mā tāy [duruxt]am pādāya* (DNb 52)  
"let that not seem false to you"

What these examples have in common, is the presence of words which by their very nature tend to be focalised and occur frequently in clausal first position. It would seem that the presence of such "emphatic" words attracts EPPs in clausal second position. This is not only the case of words which are, so to speak, emphatic by nature, but also of other focalised words:

- (19) εὐχαριστῶ σοι # ὅτι ἤκουσάς μου [...] ἐγὼ δὲ ᾔδειν # ὅτι πάντοτε μου ἀκούεις # ἀλλὰ εἶπον [...] # ἵνα πιστεῦσῶσιν # ὅτι σύ με ἀπέστειλας (Jm 11.41-42)  
"I thank you that you have heard me [...] I knew that you always hear me, but I said this [...] that they may believe that you sent me"

In this example, ἤκουσάς is focalised, as God's hearing is the reason for Jesus' words of gratitude, hence the topic of the pericope. The addition of πάντοτε in the fourth clause, however, constitutes a salient point of development in the topic. The fact that πάντοτε is focalised has triggered Wackernagel's Law. The final clause again involves a focalised nominative PP. According to Hale (1988: 29-30), topicalization is also at work in the following examples from Old Persian:

- (20) *xšačam šim adam adīnam* (DB 1.59)  
"the kingdom I took from him"

- (21) *Auramazdā māy upastām abarā # uti anī[yāha ba]gāha* (DB 4.60)  
"Auramazda bore me aid, as did the other gods"

Whereas Wackernagel's Law suffices to explain the preposition of EPPs in the above examples, it cannot account for those instances of preposed enclitics which do not occur in clausal second position. A number of these can be subsumed under Wackernagel's Law, if the notion of clause is not restricted to main or subordinate clauses, but includes participial and infinitival clauses as well:

- (22) σὺ δὲ νηστεῖον # ἀλειψαὶ σου τὴν κεφαλὴν # καὶ τὸ πρόσωπόν σου ὕψα (Mt 6.17)  
"But you, when fasting, anoint your head and wash your face"

- (23) ἐν τῷ λέγειν αὐτὸν ταῦτα # ἐπέρρισά τις φωνὴν γυνὴ ἐκ τοῦ ὄχλου # εἶπεν αὐτῷ (Lk 11.27 ὁ<sup>75</sup> B)  
"as he was saying this, some woman in the crowd raised her voice and said to him"

The majority of manuscripts have the positions of *φωνήν* and *γυνή* in interchanged in order to juxtapose the indefinite pronoun *τις* and *γυνή*. As it stands, the sequence *γυνή ἐκ τοῦ ὄχλου* in (23) could be considered appositional to *τις*.

If Wackernagel's Law is not defined in terms of clausal position, but instead in terms of segmental position, a more plausible generalization of the phenomenon emerges. Consider, for instance, the following example:

- (24) ἰδοῦ # τὰ ἡμισία μου τῶν ὑπαρχόντων # κύριε # τοῖς  
πτωχοῖς δίδωμι (Lk 19,8)

"look, half of my possessions, sir, I give to the poor"

The position of the EPP *μου* in (24) is remarkable, as the nominal group could be interpreted as "my half of the possessions", which is obviously not what is meant. If the particle *ἰδοῦ*, which corresponds to the Hebrew *רִאֵה*, is taken as a separate segment, the preposition of *μου* becomes perfectly natural, as *ἡμισία* is clearly focalised. If *καὶ νῦν* in the following example is taken as a segment as well, the position of *με* is again in consonance with Wackernagel's Law (note the postposition of the nominative PP *σύ* in the presence of the imperative *δόξασον*):

- (25) ἐγὼ σε ἐδόξασα ἐπὶ τῆς γῆς [...] καὶ νῦν # δόξασον με σύ #  
πάτερ # παρὰ σεαυτῷ (Jm 17.4-5)

"I have glorified you on earth [...] and now # you must glorify me, father, in your presence"

Hale (1988: 35-36) reports a similar phenomenon ("parenthesis") in Old Persian:

- (26) *vašnā [Auramazdā] # adam šis ajanam* (DB 4.6)  
"by the will of Auramazda, I slew them"

There is another category of words which readily attract enclitics in clausal second position, viz. subordinating conjunctions like *εἰ*, *ἐάν*, *ἴνα*, *ὅταν*, *μήπως*, etc., with the notable exception of "recitative" *ὅτι* (19). One example must suffice:

- (27) ἐάν τις μου τὸν λόγον τηρήσῃ (Jm 8.52 φ<sup>66</sup> (D) Lpc)  
"if anyone keeps my word"

In Greek, as in Indo-European, clausal second position was the preferential position for a number of particles, such as *μέν*, *δέ*, *γάρ*, *οὖν*, *ἀν*, etc., the enclitic nature of which is disputed. Because of their typically enclitic-like syntax (note, e.g., the internal make-up of *ἐάν*, *ὅταν*, *μήπως*, etc.), these particles have been called "quasi-enclitics" (Wackernagel 1892: 371). To conclude, consider the following example, with the quasi-enclitic particle *μέν* in clausal fifth (!) position:

- (28) καὶ ὑμεῖς οὖν # νῦν μὲν λύπην ἔχετε # κάλιν δὲ ὄψομαι ὑμῶς  
# καὶ χαρήσεται ὑμῶν ἡ καρδία (Jm 16.22 φ<sup>22v.66</sup> κ<sup>2</sup>B C<sup>o</sup>D αf)  
"and so with you, now you are grieved, but I will see you again, and your heart will rejoice"

The grief of the Apostles (*ὑμεῖς*) over the imminent death of Jesus is compared to the grief of a woman in labour. In the second segment, *νῦν* is focalised in contrast with *κάλιν* in the following, which explains the position of *μέν*. The majority of manuscripts (A C<sup>o</sup> Θ Ξ) have the order of *νῦν* and *λύπην* interchanged, thus focalising *λύπην* as compared to *χαρήσεται* (with preposed *ὑμῶν*).

The generalization of Wackernagel's Law can now be formulated as follows: (*quasi-enclitics are either placed after the word on which they depend syntactically or they are placed after the first word of the sentence or a segment thereof, particularly if this word is a subordinating particle or if it is focalised.*)

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## PHONOLOGIE DIACHRONIQUE À PROPOS DE DEUX HYPOTHÈSES

A. Maniet

Université Laval, Québec, CANADA

Dans le cadre restreint de cette courte communication, je me concentrerai sur deux des théories du changement langagier: l'une, globale et qui dépasse d'ailleurs le domaine linguistique — il s'agit de l'hypothèse de Zipf, appelée "loi du moindre effort" —, l'autre, plus spécifique, celle d'A. Martinet (1) qui, dans le prolongement de Zipf, rattache l'économie des changements phonétiques au rendement fonctionnel des oppositions phonologiques.

Je poursuis depuis plusieurs années une recherche sur l'évolution phonologique du latin ancien à partir d'un corpus préclassique (2e s. av. J.C.) de 2000 lignes comparé à un état plus ancien (d'environ 800 ans) de ce corpus, reconstruit sur la base de la méthode et des résultats acquis de la grammaire comparée des langues indo-européennes. Cette recherche a abouti à un premier tome (2) présentant une analyse statistique comparative des occurrences de phonèmes, de séquences consonantiques et de syllabes dénombrées dans chacun des deux corpus. L'exposé que je vais présenter se base largement sur ces données.

Commençons par l'hypothèse de Zipf, que je simplifie au maximum, en la réduisant au domaine phonique: la tendance générale du locuteur est d'économiser sur la fréquence des occurrences phoniques pour produire un même signifié. La comparaison de mes deux corpus confirme cette hypothèse. En effet, le nombre global d'occurrences de phonèmes est, dans le corpus plus ancien, de 90637 unités, alors que, dans le corpus latin attesté, il n'est plus que de 77433 unités, ce qui signifie une économie d'effort, pour le même message, de plus de 14%. Je ne commenterai pas davantage ce résultat et je passe immédiatement à la thèse générale reliant l'économie au rendement fonctionnel des oppositions; j'examinerai ensuite l'hypothèse plus "pointue" du rôle joué par le degré de rendement dans le maintien, l'accroissement ou, au contraire, la perte d'une opposition.

Pour ce qui concerne la thèse générale, j'ai calculé le pourcentage comparatif de ce rendement dans chacun des deux corpus (j'en fournirai le détail dans le vol. 19, 1993 de la revue *Langues et linguistique*). En voici les