Speech Prosody 2020
25-28 May 2020, Tokyo, Japan

Verb-Second and Initial-Weak Prosody

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Abstract

The verb-second order (V2) has been discussed mainly in syntax in generative grammar since 1980's (e.g. den Besten [1]). Most studies assume that V2 order is derived from the base order by a syntactic head-movement of T to C position together with a movement of a constituent to the specifier position of C.

In the minimalist program, the status of head-movement as a syntactic movement is questioned. Chomsky [2] argues that head-movement is a phonological movement, not a syntactic one. However, the nature of this phonological movement is not clear.

In this paper, I propose that V2 order is realized by the language-specific prosody at Externalization, not by syntactic movement nor by phonological movement. I argue that languages with stem-initial stress (and unstressed prefixes) allow V2 order (e.g. Germanic languages except for modern English, Kashmiri). These languages allow an unstressed initial syllable in a word. I argue that this initial-weak word-prosody projects up to phrasal prosody in the languages. Constructions with V2 order have an unstressed verb in a prosodic phrase. I propose that the prosody of the V2 languages accepts the order because the V2 order matches the initial-weak word/phrase prosody of the languages.

Index Terms: word order, stress location, syntax-phonology interface

1. Introduction

It has been claimed that word order and prosody interact in some constructions. The verb-second order (V2) is one of the constructions that may be affected by prosody. In the history of generative grammar, it has been argued that V2 order is derived from the verb-final construction by a head-movement of V into the C (complementizer) position in CP (Complementizer Phrase) (cf. den Besten [1]).

However, in the minimalist program of linguistic theory, the status of head-movement as a syntactic movement is questioned. For example, Chomsky [2] argues that head-movement is a phonological movement, not a syntactic one. The problem is how we can specify the nature of this phonological movement.

In this paper, I propose that V2 order is determined by language-specific prosody at Externalization. I argue that languages with stem-initial stress (i.e. word stress on the second syllable) allow V2 order (e.g. German, Dutch, Kashmir). It is argued that these languages allow an unstressed initial syllable in a word. I argue that this prosodic property matches V2 order which has a weakly stressed word in a prosodic phrase. I argue that there is no "phonological movement" displacing V to C position. Rather I propose that a verb is just Externalized in the second position in the V2 constructions.

In section 2, I briefly review the analysis of V2 in terms of syntactic head-movement, and point out its problems in the current minimalist program of linguistic research. In section 3, I propose an analysis of V2 in terms of Externalization, which assumes no head-movement. I also discuss the typology of V2 focusing on prosodic differences among languages. Section 4 concludes discussion.

2. Head-movement analysis of V2 and its problems

In this section, I briefly review the analysis of V2 in terms of syntactic head-movement, and point out its problems in the current minimalist program of linguistic research.

2.1. Head-movement analysis of V2

The verb-second order (V2) has been discussed mainly in syntax in generative grammar since 1980's (e.g. den Besten [2]. A typical example of V2 is shown in German (1) (cf. Yoshida [3]).

(1) a. *Anna hat gestern den Film gesehen.*
Anna has yesterday the film seen
'Anna saw the film yesterday.'

b. *Den Film hat Anna gestern gesehen.*
the film has Anna yesterday seen
'The film, Anna saw yesterday'

c. *Gestern hat Anna den Film gesehen.*
yesterday has Anna the film seen
'Yesterday, Anna saw the film'

The auxiliary verb *hat* is placed on the second position in the unmarked word order in (1a) and a marked word order in (1b); the first position is occupied by the subject *Anna* in (1a) and the topic *den Film* in (1b).

Most studies assume that V2 order is derived from the base order by a syntactic head-movement of T to C (Complementizer) position. The standard analysis assumes the following structure for V2 construction, as shown in (2).

(2) a. [$_{CP}$ *Anna* [$_{C'}$ *hat* [$_{CP}$ ~~*Anna*~~ [$_{T'}$ ~~*hat*~~ [$_{VP}$ *gestern den Film gesehen*]]]

b. [$_{CP}$ *Den Film* [$_{C'}$ *hat* [$_{TP}$ *Anna* [$_{T'}$ ~~*hat*~~ [$_{TP}$ *gestern* ~~*den Film*~~ *gesehen*]]]]]

c. [$_{CP}$ *Gestern* [$_{C'}$ *hat* [$_{TP}$ *Anna* [$_{T'}$ ~~*hat*~~ [$_{TP}$ ~~*gestern*~~ *den Film gesehen*]]]]]

In (2b) and (2c), the auxiliary verb *hat* moves from T to C by head-movement to make V2 order. The topic *den Film* and *gestern* also move from their base positions to the specifier position of C.

10.21437/SpeechProsody.2020-76

The head-movement analysis of V2 also explains why languages such as German do not have V2 order in subordinate clauses, as shown in (3).

(3) a. ... *dass Anna gestern den Film gesehen hat.*
... that Anna yesterday the film seen has
b. *... *dass Anna hat gestern den Film gesehen.*

(4) ... [$_{CP}$ [$_{C}$ *dass*] [$_{TP}$ *Anna gestern den Film gesehen hat*]]

In subordinate clauses, the C head position is already occupied with the complementizer *dass* as in (4), and the auxiliary *hat* cannot move to the occupied C position to derive V2 order as shown by the unacceptability in (3b).

The head-movement analysis successfully explains (3a).

2.2. Problems with the head-movement analysis of V2

However, the standard analysis of V2 in terms of head movement has some problems. A theoretical problem is that the status of head movement in syntax is questioned in the minimalist syntax. Chomsky [1] argues that head movement is not a syntactic movement but a PF movement. One of the reasons is that head movement does not extend the construction violating extension condition. Another is that head movement have no effect on semantic interpretation. of Merge. However, the nature of PF movement is not clear.

Another problem is the typology of V2 in the world languages (cf. Holmberg [4]). V2 order is seen in a specific group of languages including Germanic languages (except for Modern English), some old Romance languages, Breton (Celtic), Sorbian (Slavic) and Kashmiri (Indo-Aryan). We want to know why head movement from T to C occurs only in these languages. One might assume some syntactic feature triggering head movement, but this assumption does not give us why the feature is given to T in the V2 languages but not in the other languages.

3. Linearization matching Prosody

3.1. V2 order and initial-weak prosody

Wackernagel [5] pointed out that in early Indo-European languages, finite verbs in main clauses were accentless second position elements. He suggested that verb second order developed from mono syllabic verbs and disyllabic verbs to longer verbs. Citing his idea, Bošković [6] argues that V2 order and clitic-second order are similar in that both orders depend on the prosody. However, the details of the mechanism of V2 order are not clear.

I argue that V2 order is decided at Externalization of a TP, which has no linear order in syntactic computation. Specifically, it is argued that in order to have V2 order, languages must allow a weak element in a prosodic unit (intonational phrase, phonological phrase and phonological word). The examples in (1) may have the prosodic phrasing in (5), where the first constituent in a sentence makes a phonological phrase (Φ) by itself.

(5) a. (Φ *Anna*) (Φ *hat gestern*) (Φ *den Film gesehen*)
Anna has yesterday the film seen
'Anna saw the film yesterday.'
b. (Φ *Den Film*) (Φ *hat Anna*) (Φ *gestern gesehen*)
the film has Anna yesterday seen
'The film, Anna saw yesterday'
c. (Φ *Gestern*) (Φ *hat Anna*) (Φ *den Film gesehen*)
yesterday has Anna the film seen
'Yesterday, Anna saw the film'

In these prosodic patterns, the auxiliary *hat*, which is phonologically weak, is at the initial position of the second phonological phrase. The second phonological phrase consisting of a weak auxiliary (*hat*) and a content word with stress (*gestern* and *Anna*) is good for German, which allows an initial weak element in a prosodic unit (prosodic word and phonological phrase). Thus, the V2 order matches German prosody.

3.2. Merge and linearization

Now let us consider how the construction with V2 order is linearized. Merge makes sets consisting of two syntactic objects (constituents) in the minimalist framework. According to the standard theory of phase (Chomsky [7]), I assume that CP and *v*P are the phases, when a daughter of them, i.e. a complement, is Transferred to PF. Let us consider the point of derivation when T is Merged with *v*P, as shown in (6).

(6) {$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}}}

Note that the structure in (6) is just the result of recursive Merge, and is to be linearized at Externalization. If the language is German, there are three alternative derivations in the next step, as shown in (7).

(7) a. {$_{TP}$ Subj {$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}}}
b. {$_{TP}$ Obj {$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}}}
c. {$_{TP}$ Adv {$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}}}

At Externalization, the specifier of T (represented as X) is linearized as the first constituent in TP, as in (8).

(8) [$_{TP}$ X {$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}}]

Next, T can be linearized before *v*P or after *v*P, as shown in (9).

(9) a. [$_{TP}$ Subj [$_{T'}$ T {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}]]
b. [$_{TP}$ Subj [$_{T'}$ {$_{vP}$ Subj {$_{v'}$ *v* {$_{VP}$ {$_{V'}$ V Obj} Adv}}}}] T]

The head-initial T' in (9a) shows the verb-second order seen in German and other V2 languages, and the head-final T' in (9b) shows the verb-final order seen in verb-final languages such as Japanese. The structures in German (9a) and Japanese (9b) are finally Externalized as in (10a) and (10b), where I omit *v* and *v'*.

(10) a. [$_{TP}$ X [$_{T'}$ T [$_{vP}$ Subj [$_{VP}$ Adv [$_{V'}$ Obj V]]]]]
b. [$_{TP}$ X [$_{T'}$ [$_{vP}$ Subj [$_{VP}$ Adv [$_{V'}$ Obj V]]] T]]

I argue that V2 languages such as German chooses (10a) rather than (10b) because they have initial-weak prosody. The V2 order in (10a) has the prosodic phrasing in (11) and the verb-final order in (10b) has (12).

(11) a. ($_{Φ1}$ Subj) ($_{Φ2}$ T Adv) ($_{Φ3}$ Obj V)
b. ($_{Φ1}$ Obj) ($_{Φ2}$ T Subj) ($_{Φ3}$ Adv V)
c. ($_{Φ1}$ Adv) ($_{Φ2}$ T Subj) ($_{Φ3}$ Obj V)

(12) a. ($_{Φ1}$ Subj) ($_{Φ2}$ Adv) ($_{Φ3}$ Obj V T)

b. (Φ_1 Obj) (Φ_2 Subj) (Φ_3 Adv V T)

c. (Φ_1 Adv) (Φ_2 Subj) (Φ_3 Obj V T)

The second phonological phrase Φ_2 in (11) starts with T, which is occupied with a phonologically weak word, i.e. an auxiliary or a verb. This phonological phrase Φ_2 in (11) is acceptable in V2 languages including German, which allow a weak element at the initial position of a prosodic unit (i.e. prosodic word or prosodic phrase).

We still need to explain why German does not have (12) in main clauses. Suppose that the German sentences are Externalized in the verb-last order as in (13).

(13) a. *(Φ_1 *Anna*) (Φ_2 *gestern*) (Φ_3 *den Film gesehen hat*)
Anna has yesterday the film seen
'Anna saw the film yesterday.'

b. *(Φ_1 *Den Film*) (Φ_2 *Anna*) (Φ_3 *gestern gesehen hat*)
the film has Anna yesterday seen
'The film, Anna saw yesterday'

c. *(Φ_1 *Gestern*) (Φ_2 *Anna*) (Φ_3 *den Film gesehen hat*)
yesterday has Anna the film seen
'Yesterday, Anna saw the film'

There is nothing wrong with the second phonological phrase Φ_2, which starts with a strong element, an adverb *gestern* or a noun *Anna*. The problem lies in the third phonological phrase Φ_3, which has weak two words at the end, a verb *gesehen* and an auxiliary *gesehen hat*.

3.3. non-V2 order and initial-strong prosody

This idea implies that non-V2 languages do not allow an initial-weak element in a prosodic unit. I argue that this is the case for Japanese and most of Altaic languages, which have head-final word order and word stress on the initial syllable (cf. Tokizaki [8]). Thus, non-V2 languages choose (10b), where the second phonological phrase Φ_2 starts with a strong element, as shown in Japanese (14).

(14) a. (Φ_1 *Marie-wa*) (Φ_2 *kinoo*) (Φ_3 *sono eiga-o mita*)
Marie-Top yesterday the film-Acc saw
'Marie saw a film yesterday.'

b. (Φ_1 *Sono-eiga-o*) (Φ_2 *Marie-wa*) (Φ_3 *kinoo mita*)
the film-Acc Marie-Top yesterday saw
'The film, Marie saw yesterday.'

c. (Φ_1 *Kinoo*) (Φ_2 *Marie-wa*) (Φ_3 *sono eiga-o mita*)
yesterday Marie-Top the film-Acc saw
'Yesterday, Marie saw a film.'

In these sentences, the second phonological phrase Φ_2 is a noun (phrase), and its first mora has some strength and low pitch, which signals the edge of a phonological phrase.

Suppose that Japanese chose the V2 order (10a) rather than the verb last order (10b) at Externalization. Then, the sentences would be (15).

(15) a. *(Φ_1 *Marie-wa*) (Φ_2 *mita kinoo*) (Φ_3 *sono eiga-o*)
Marie-Top saw yesterday the film-Acc
'Marie saw a film yesterday.'

b. *(Φ_1 *Sono-eiga-o*) (Φ_2 *mita Marie-wa*) (Φ_3 *kinoo*)
the film-Acc saw Marie-Top yesterday
'The film, Marie saw yesterday.'

c. *(Φ_1 *Kinoo*) (Φ_2 *mita Marie-wa*) (Φ_3 *sono eiga-o*)
yesterday saw Marie-Top the film-Acc
'Yesterday, Marie saw a film.'

I argue that these sentences are unacceptable because the second phonological phrase Φ_2 starts with verb *mita*, which is a weak element. Japanese does not have the V2 order because it does not allow initial-weak prosody.

Note that the V2 sentences in (15) are unacceptable because of their prosody. In fact, these sentences become acceptable if we change their prosody as in (16).

(16) a. (Φ_1 *Marie-wa mita*) (Φ_2 *kinoo*) (Φ_3 *sono eiga-o*)
Marie-Top saw yesterday the film-Acc
'Marie saw a film yesterday.'

b. (Φ_1 *Sono-eiga-o mita*) (Φ_2 *Marie-wa*) (Φ_3 *kinoo*)
the film-Acc saw Marie-Top yesterday
'The film, Marie saw yesterday.'

c. (Φ_1 *Kinoo mita*) (Φ_2 *Marie-wa*) (Φ_3 *sono eiga-o*)
yesterday saw Marie-Top the film-Acc
'Yesterday, Marie saw a film.'

The sentences in (16) have been considered as dislocation of the constituents to the right of the verb *mita*. In this analysis, these sentences are some of possible linearized sequences matching Japanese prosody, i.e. initial-strong. The first phonological phrase Φ_1. in (16) starts with a strong element (a noun (phrase) or an adverb), not with a weak element (the verb *mita*).

Note that initial-strong could be related to a constraint STRONG-START proposed by Selkirk [9] and Elfner [10], which is formulated as in (17) (Selkirk [9]).

(17) A prosodic constituent optimally begins with a leftmost daughter constituent which is not lower in the prosodic hierarchy than the constituent that immediately follows:
* (π_n π_{n+1} ....

This constraint is violable. I do not use this constraint and the Optimality Theory in this study.

3.4. Main clauses vs. subordinate clauses

Note that German has V2 order in main clauses while it has the verb-last order in subordinate clauses. The data is shown in (18).

(18) *Ich glaube daß* [*Anna gestern den Film gesehen hat*]
I think that Anna yesterday the film seen have
'I think that Anna saw the film yesterday.'

In the subordinate clause in (18), the auxiliary *hat* is located at the clause-final position rather than at the V2 position. The head-movement theory of V2 claims that the first (auxiliary) verb cannot move to the subordinate C position, which is occupied with the complementizer *daß*.

In this Externalization approach to V2, which does not assume head movement, we can explain the verb-final order in subordinate clauses in terms of the compactization of constituents in head-final linearization. Tokizaki [11] and Tokizaki and Kuwana [12] argue that head-final constituents such as OV are more compact than head-initial constituents such as VO in that the juncture between head and complement is stronger in head-final constituents than in head-initial constituents. V2 construction is head-initial and verb-final

construction is head-final. Then, subordinate clauses should be compact and head-final (verb-last), because they are subordinate to the main clauses, which are less compact and head-initial (V2). The presence of complementizer also has an compactization effect on subordinate TP.

Note that this prosodic analysis naturally explains the fact that there are I-V2 languages such as Icelandic and Yiddish, where subordinate clauses as well as main clauses have V2 order. I argue that the compactness requirement on subordinate clauses is less rigid in these languages than in C-V2 languages such as German. Of course, we need to find some prosodic differences between I-V2 languages and C-V2 languages.

3.5. Pronominal subjects in Old English

Another advantage of this prosodic analysis of V2 is that it gives a straightforward account of the verb-third order (V3) in the case of pronominal subjects in Old English (cf. Pintzuk [13], Kroch et al. [14]).

(19) a. *Ælc yfel he mæg don* (WHom, 4.62)
each evil he can do

b. *scortlice ic hæbbe nu gesæd ymb pa prie dælas* ..
briefly I have now spoken about the three parts
(Or 9.18)

c. *æfter his gebede he ahof pæt cild up* ..
after his prayer he lifted the child up
(AEChom. 2.28)

These examples have the phonological phrasing shown in (20).

(20) a. (Φ_1 *Ælc yfel*) (Φ_2 *he mæg don*)
each evil he can do

b. (Φ_1 *scortlice*) (Φ_2 *ic hæbbe nu gesæd*) (Φ_3 *mymb pa prie dælas*)...
briefly I have now spoken about the three parts

c. (Φ_1 *æfter his gebede*) (Φ_2 *she ahof pæt cild up*) ...
after his prayer he lifted the child up

In (19a), the pronominal subject *he* is phonologically weaker than the following (auxiliary) verb *mæg*. Similarly, *ic* is weaker than *hæbbe* in (19b), and *she* is weaker than *ahof* in (19c). Thus, the second phonological phrase Φ_2 has initial-weak prosody, which is acceptable in Old English as in German.

3.6. V2 and word-stress typology

This prosodic analysis of V2 predicts that languages with initial-weak (and second-strong) prosody may have the V2 order. This prediction is borne out with Germanic languages including German and Dutch. We also understand that English lost V2 order in its historical change because English has changed its word-stress location from stem-initial to right-oriented due to the influence of French.

It is interesting to consider other V2 languages than Germanic. Kashmiri is reported to have V2 order. Goedemans et al. [15] describes the primary word-stress in Kashmiri as in (21).

(21) In words of all sizes, primary stress falls on the left-most non-final superheavy syllable, else on the left-most non-final heavy syllable, else on the initial syllable.

This amounts to say that Kashmiri has initial-weak (and second strong) stress. Thus, our prosodic analysis correctly predicts that Kashmiri has V2 order.

In the Indo-European family of languages, Romance languages do not have V2. This analysis attributes the lack of V2 in Romance to their right-edge stress in words and phrases.

4. Conclusion

In this paper, I proposed that V2 order is determined by language-specific prosody at Externalization. I argued that languages that have stem-initial stress (i.e. word stress on the second syllable) allow V2 order (e.g. German, Dutch, Kashmir). It is argued that these languages allow an unstressed initial syllable in a word. I argued that this prosodic property matches V2 order which has a weakly stressed word in a prosodic phrase. I argued that there is no "phonological movement" displacing V to C position. Rather I proposed that a verb is just Externalized in the second position in the V2 constructions.

This prosodic approach to V2 does not assume problematic head-movement. Moreover, this analysis limits the language variation to phonology. This is desirable in the minimalist program, which tries to explain parameters of word order as Externalization parameter. Of course, we need to investigate the correlation between word/phrasal prosody and V2 order in the world's languages more carefully. However, this study shows a possible way to explain one of the longstanding problems of word order without head movement.

5. Acknowledgements

I would like to thank Yoshihito Dobashi, Jiro Inaba and Tomohiro Yanagi for their ideas on the topic. Thanks also go to Takahiro Shimizuno for discussiong the problems of head movement in the minimalist program. The remaining errors are my own. This work was supported by JSPS KAKENHI 15H03213.

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