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ОПРЕДЕЛЕНИЕ УДАРЕНИЯ НА ФРАНЦУЗСКОМ STRESS ASSIGNMENT IN FRENCH ЯЗЫКЕ

Ударные слоги французского языка (не считая эффатических ударений) обычно определяются языковыми правилами, связанными со смысловыми группами или с сочетанием определенных синтаксических единиц. Однако, наличествуют контр-примеры этому суждению, поэтому мы предполагаем, что определять ударение во французском языке следует как — последнее слоговое ударение в группе слов, произнесение которых занимает больше 250 мс и меньше 1250 мс.

Syllabic stress in French (outside emphatic stress) is usually determined by rules involving sense group or an alignment with some syntactic unit. However, counterexamples abound, leading to propose a rhythmic constrain, defining stress as the last syllable stress of a group of words whose pronunciation would take more than 250 ms and less than 1250 ms.

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When we read a text or when we speak spontaneously in French, either orally or silently in our head, we produce strings of words with some syllables stronger than others. In these sequences of prominent syllables, some are located on the first syllable of content words (i.e. adjectives, nouns, verbs and adverbs), and some others on the last syllable of any category of words. The first case pertains to an emphatic stress (*accent d'insistance* in French), the second to a group stress (*accent de groupe*), defining a group of words the last syllables of the last words of which are stressed. This group stress, sometimes called *accent tonique*, has been frequently compared to word stress of languages such as English or Italian, where stress location, frequently non-final, is defined in the lexicon. However, this is not the case for French (or Korean) where the *accent tonique* falls always on the last syllable in words pronounced in isolation, but also on the last syllable of a group of words, whether the last word is a content or a grammatical word. Indeed, speakers don't read word by word, but group of words by group of words, the last word getting stressed on its last syllable whatever its syntactic category. So, we can have *mais pas seulement* "but not only" stressed on the last syllable of the adverb, as well as *mais pas que* "but not which" stressed on the relative pronoun *que*.

Accent phrase

In prosodic phonology, stress group is called *accent phrase* (*unité accentuelle* in French), which leads to the definition of the sentence *prosodic structure* as a hierarchical organization of accent phrases. The prosodic structure is somewhat similar to the syntactic structure, as it assembles at different levels accent phrases instead of syntactic categories. Whereas for lexically stressed languages such as English accent phrases are easy to define (they contain one single content word and eventually some grammatical words), this definition does not hold for non-lexically stressed languages like French or Korean. An accent phrase in French can contain more than one content word, as in *le petit prince* "the little prince" or *les grands enfants* "the grownup kids". This leaves us without any satisfactory definition, as at this point any group of words of any size would fit in an accent phrase.

Groupes de sens and groupes syntaxiques

In the literature, some definitions are available for accent phrases, although French grammarians are quite elliptic on the subject, as it can be noticed in language teaching

manuals. Their most common retained principles pertain to the concepts of either sense group (*groupe de sens*) or syntactic group (*groupe syntaxique*).

"A stress group corresponds to a sense group" is of the most commonly accepted definition for an accent phrase in French. However, it is easy to find counterexamples, by expanding an example of a *groupe de sens*. Indeed, in the list of the following expanded noun phrases:

Le canard

Le petit canard

Le vilain petit canard

**Le vilain petit canard boiteux*

Supposedly all stressed only on their last syllable, it seems difficult or impossible to read, even silently, the last expansion without putting a stress on another syllable inside the group, on *vilain* for example: *Le vilain petit canard boiteux*. The same extra syllable stress can be obligatory on long words, such as *paraskevidékatriaphobie*, the "fear of Friday thirteen": *paraskevidékatriaphobie* or *paraskevidékatriaphobie*. It follows that the sense group definition does not seem to hold when the group contains a large number of syllables. Already in 1550, the French grammarian Louis Meigret noticed that long words with more than seven syllables needed an extra stress to be pronounced. More recently, Fernand Carton (1997) made similar observations and suggested that the number of syllables in a stress group depends on the speech rate adopted to read or say them. *Le vilain petit canard* would then have only one final stress if pronounced (very) rapidly, and two stressed syllables if pronounced more slowly *Le vilain petit canard*.

The definition of accent phrase based on syntactic units can also be challenged for the same reasons. In a press conference (27/11/2012), the speaker François Hollande stressed both *brasseurs* and *belges* last syllables in *l'inquiétude des brasseurs # belges* with a pause between *brasseurs* and *belges*, although the noun and the adjective that follows clearly belong to the same syntagm *brasseurs belges* and that the speech rate was reasonable fast. In this example, two accent phrases do correspond to a single syntactic group.

Phrasing

It follows from the link existing between speech rate and the realization of phrasing, i.e. the segmentation of speech flow into accent phrases, can vary and that this segmentation is not unique. But what is more precisely the influence of speech rate on phrasing, i.e. the interaction between speech rate and the placement of stressed syllable as boundary of accent phrases?

To find out, we can refer to measurements made on spontaneous speech, pertaining to consecutive stressed syllables in French (Martin, 2014). It appears that the gap between successive stressed syllables is always over 250 ms and below 1250 ms, whereas the number of syllables in accent phrases defined by stressed syllables varies from 1 to 8 syllables. Furthermore, the average syllabic duration in accent phrases varies between 250 ms (one syllable accent phrase) and 100 ms (8 syllables accent phrases). This reveals a compression of the average syllabic duration in order to fit a large number of syllables,

with a maximum of 8 or 9, into a single accent phrase of a 1250 ms maximal duration.

Single syllable accent phrases are found in examples such as *par le **fait que** d'autre part* «by the fact that on the other hand», with *fait* and *que* both stressed, or *je suis sur ce **sujet en train de vous dire que** j'assume totalement...* «I am telling you that I totally assume...” (Emmanuel Macron, 15/10/2017) with *dire* and *que* both stressed. In both cases, the gap between the center of the consecutive stressed vowels is about 250 ms, which can be considered as the duration of one syllable accent phrase.

Eurhythmicity

Eurhythmicity is another parameter that can play a role in phrasing, with a tendency to balance the duration of consecutive accent phrases. Of course, this tendency depends on the number of syllables of the accent phrases involved, and is realized differently in spontaneous and in read speech. In spontaneous speech, there is a tendency for the speaker to adjust the average duration of the syllables, making them longer or shorter in order to achieve an accent phrase duration varying little in the sentence. For read speech on the contrary, speakers have a tendency to group words so that the number of syllables tend not to vary too much, keeping their average duration unchanged. An example for read speech would be *Max **adore** les **chocolats***, with a final stress on *adore* and on *chocolats* (not congruent with syntax), whereas in spontaneous speech it would tend to be ***Max** # *adore les chocolats** (congruent with syntax) with a pause after *Max* to favor eurhythmicity.

Stress assignment in French

The rule assigning group stress in French is then: “stress the last syllable of the last word of a group of words whose pronunciation does not exceed 1250 ms”. Assigning stress to consecutive syllables separated by less than 250 ms would result in having the first syllable perceived as unstressed, even if the acoustic features of syllabic stress are properly realized by the speaker (Martin, 2017).

Phrasing in silent reading

Silent reading, i.e. reading with an inner voice, is interestingly constrained by the same maximal duration values as in oral speech production. This means that we can silently read a text slowly and rapidly, leading to phrasing with a reduced (minimum 1) or a large number of syllables (maximum 7 to 8) in silently read accent phrases. However, we are limited in speed by the time it takes to process each accent phrase, whatever their number of syllables. This limit is about 250 ms, a value that seems to contradict commercial courses fast reading, who claim up to 500 words a minute...The explanation relies in the processes involved. In silent reading, we normally process accent phrase by accent phrase (and not word by word), and this process needs at least 250 ms to complete, although the eye movement can scan the corresponding written text 2 or 3 times faster (Martin, 2015). In contrast, fast reading does not proceed accent phrase by accent phrase, but Keyword by Keyword, skipping all grammatical words or content word considered non-important. This results in a long enumeration of selected Keywords, without any elaboration of a prosodic or syntactic structure. The resulting comprehension of a text may of course be very different from normal silent reading.

Conclusion

Accent phrases in French are not determined by the syntactic categories of the words they

~~contain, nor by their assumed meaning or some syntactic unit alignment. They are determined by the time it takes to pronounce them, between 250 ms and 1250 ms.~~

Interestingly, silent reading and silent monologues accent phrases are governed by the same constrains, except that the processing of accent phrases can go down to 250 ms whatever their allowed maximum number of syllables, despite the fact that their oral realization can take up to 1250 ms. The difference between these two values is of course due to the articulation process necessary to produce oral speech sound, which does not occur in silent reading.

Although unexpected, this simple stress assignment rule in French may simplify greatly the often-fuzzy explanations given on the subject in teaching French to second language learners.

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