

### **Prosodic prominence: a cue to distinguish young and old speakers?**

Scholars highlight the structuring function of prosody in language production and comprehension processes([1],[2],[3]). Prosody also gives information on referents' accessibility in the conversation([4],[5],[6]). Typically, accented nouns refer to less accessible referents whereas unaccented nouns refer rather to more accessible referents([7],[8],[9]). Accentuation is linked to Gussenhoven's "effort code"([10]), which, in French, is related to different levels of prominent syllables([11],[12],[13],[14]). In a listening task, [15] indicates that attention of old and young adults is attracted towards the important information through pitch accents to the detriment of the less important information which is less taken into account.

We tried to determine whether these results can be observed in a production task: can different strategies of accentuation be observed between younger(YS) and older speakers (OS) according to the informational status of a discourse unit (more or less informational)?

The aim of the study is (i) to examine the relation between referential complexity/ambiguity, discourse stages, and prosodic prominence and (ii) to compare the prominence productions of the YS and OS.

The analysis, led on 30 YS(mean age:27.8) and 30 OS(mean age:69.36), is based on a storytelling in sequence task. The experimental material, composed of three sequences structured around six pictures, allows us to treat jointly the referential complexity (one/two characters), the referential ambiguity(different/same gender) and discourse stages (maintain/shift). 180 storytelling, extracted from SNF's data n°X for a duration of two hours of recording, were transcribed in Praat([16]) and segmented into syllables with EasyAlign([17]). Each syllable is annotated by one of the three levels of prominence ([18]): not prominent(NP), weakly prominent(WP) or strongly prominent(SP). For analyses, a rate of prominent syllable is calculated as follows: the number of prominent syllables for every level of prominence *divided by* the total number of the present syllables in a discourse stage and in each of more or less referentially complex/ambiguous storytelling.

The purpose is to examine whether the rates of prominent syllable(NP, WP and SP) are (i)influenced by the referential complexity/ambiguity and discourse stages, and (ii)produced identically by the YS and OS.

All subjects considered, results show a significant effect of referential ambiguity with an increase in WP syllable rate, suggesting a discrete accentuation in presence of a context with referential ambiguity. The results also show a significant effect of the shift stage with an increase in WP syllable rate and a decrease in NP syllable rate, indicating that all speakers produce more WP syllables when the character in focus changes. Moreover, the comparison between YS and OS indicates that, in a context with referential complexity(1/2 characters), YS significantly produce more WP syllables and OS significantly more NP syllables. These results suggest that YS modulate more their production of prominent syllables and that OS prefer to reduce the "effort code". The comparison also shows a significant effect of both discourse stages with an increase in WP syllables for YS compared to OS. Interestingly, OS produce more SP syllables during a shift stage in a context with referential ambiguity compared to YS.

These results can be linked to the results found by [15]. Generally, OS and YS produce more WP syllables in the context of referential ambiguity. In both discourse stages, YS modulate their "effort code" by stressing their syllables more weakly whereas OS stress their syllables more strongly during a shift stage. This can suggest that with ageing we produce an "effort code" only if necessary, that is for the shift stage.

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