

Final remarks

This study investigated the possible relation between syntactic impairments and reading difficulties. Syntactic impairment was characterized in terms of difficulty in the oral comprehension of sentences considered to be computationally costly from a linguistic perspective, as well as from the point of view of an on-line model of sentence computation (cf. chapter 3). This investigation was intended to verify whether an impairment of the syntactic processing, for possibly affecting the syntax-prosody interface, could cause problems related to reading fluency and comprehension.

As language impairment, SLI in particular, and dyslexia are potentially comorbid disorders and may present overlapping manifestations, a word recognition test and a reading test with isolated words/pseudo words were created and carried out, in order to verify whether the group whose behavior suggests syntactic impairment differs from the control group in the word recognition and reading abilities. It was also intended to provide an assessment of the reading abilities of the 6th grade student population at the word level in relation to adult standards.

No relationship between syntactic impairment and reading ability at the word level was observed. Participants who showed symptoms of reading difficulty that may be suggestive of dyslexia were identified in both SI and CT groups (44% of the children in the SI group), which are in line with the pattern observed in other studies (Catts et al., 2005). Other factors are, nevertheless, likely to contribute to a relatively high percentage of teenagers at the 6th grade with difficulties at the word level (55%). These findings can be an alert for teachers, regarding the efficiency of reading teaching/learning procedures in schools.

For those students (SI and CT) who did not have reading difficulty at the word level, their abilities to read fluently and to comprehend the costly sentences (OWH+N and ORC) were assessed both in isolation and within narrative texts. The three key-components related to reading fluency were examined - reading rate, reading accuracy and prosody.

Only an aspect of prosody, namely, the *proper use of pitch contour* could distinguish children from the SI and the CT group, with lower performance in the former regardless of whether the critical sentences were read in isolation or within discourse. Their *reading comprehension* abilities were also distinguished when the target structures were presented in isolation.

As for these sentences in discourse, a higher *number of disfluencies* was obtained in the SI group and reading rate (as far as the *number of words read correctly per minute* is concerned) may also distinguish the group's abilities when reading ORCs. A bigger sample is nevertheless required in order to verify the extent to which this tendency is maintained.

Unlike the comprehension of isolated sentences, the comprehension of OWH+N and ORC in discourse was not particularly difficult for the SI group. It is possible that lexical factors (such as the presence of animate/human nouns as the moved/intervening element of the test sentences), apart from discourse factors (such as the prior mention of the referents, the possibility of mapping the subject of the WH/RC onto a referent as the sentence is read) (cf. Forster & Corrêa, 2017) contribute to make the costly sentences easier for the SI group in this condition (the results of the follow up study with animate/human elements as the subject and the object of the critical sentences went in this direction). Reading material with the costly sentences in the lowest cost conditions is likely to provide a means of minimizing the comprehension difficulties of the SI population and may contribute to their gradual mastering of reading strategies to cope with the more demanding stimuli. It should be noticed that corpora data suggest that language use in natural conditions privileges low cost structures (cf. Cabral, 2016).

The comprehension of the target sentences in discourse was also intended to verify whether a pronominal form as the subject of OWH and ORCs would facilitate performance, in relation to a full nominal phrase, in the light of the intervention hypothesis (Friedmann, Belletti & Rizzi, 2009; Grillo, 2008) and psycholinguistic hypotheses concerning the way referents are introduced (Warren & Gibson, 2002; Gordon, Hendrick & Johnson, 2004). The results supported this hypothesis as far as WH+N sentences are concerned. As for RC, a similar effect was not obtained, possibly due to the methodology used. Whereas WH- questions at the end of the narratives did not cause problems, the YES/NO question by means of which the comprehension of the RCs was assessed was not taken as a

natural question by the students. Difficulties in ascribing the illocutionary force of a question based on intonation only may be a factor explaining this difficulty in so far as the ascription of the proper pitch to sentences has been identified as a problem, particularly in the SI group.

When the overall reading fluency is considered, by contrasting the reading of a sample of sentences with a varied of structures and punctuation marks by the SI and CT groups, again, the only factor that can distinguish their performance regards prosody (the ascription of pitch contour).

In sum, the present findings suggest that an impairment in syntactic processing affects processing at the syntax-prosody interface, with some impact on comprehension in particularly demanding tasks. Extra care and attention must be directed to the prosody in reading activities, since difficulties ascribing the proper pitch contour and illocutionary force, for example, may provide a cue to a syntactic impairment.

As for further research, a number of follow up studies can be envisaged in order to clarify some of the questions raised in the present investigation. For instance, a bigger sample and the manipulation of features such as *animacy/human* and *superordinate/subordinate* categories are required in order for the effect of lexical factors in syntactic processing and reading abilities to be attested, and for the scope of syntactic impairment to be more clearly delimited. The possibility of implicit prosody (attributed to previous silent reading) differently affecting the oral reading ability of the groups contrasted here has to be explored, since difficulties in amplifying the original sample of SI students and time limitation prevented the effect of this factor from being investigated. It is also necessary to conduct the tests described in this study with children and teenagers with diagnose of SLI (not only with symptoms suggestive of this disorder) in order to verify the extent to which the tendencies obtained become more expressive. Apart from that, bearing in mind the percentage of syntactically impaired students with reading difficulties at the word level (44%) identified in this research, it is worth investigating the possibility of comorbidity between SLI and dyslexia, that is, before reading fluency can be an issue.

In the longer run, exploring the syntax-prosody interface from a linguistic perspective, and from the point of view of a model of on-line sentence computation, such as MINC (cf. chapter 3), is likely to provide the theoretical

basis for better understanding of syntactic impairment and its impact upon reading fluency and comprehension. Intervention methods intended to contribute to circumventing difficulties stemming from syntactic impact impairment in reading are likely to benefit from these theoretical developments.