On the comprehension and production of passive and relative clauses by dyslexic University students*

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"*Per Adriana, con grande stima e affetto*"

0. Introduction

The term Developmental Dyslexia (DD) is normally used to identify a phonological deficit which compromises the ability of decoding written language, despite normal intelligence levels. Phonological abilities and working memory is where dyslexic subjects differ from matched controls (Stanovich 1988, Siegel 1999). It is reported in the literature that dyslexic subjects display difficulties in processing rapidly presented auditory information (Richardson 1996), and differ from controls in a number of syntactic comprehension tasks presented orally (Guasti 2011, Talli et al. 2011). This phenomenon has raised the issue of the possible comorbidity of dyslexia and Specific Language Impairment.

Normally, the presence and the level of the deficit are investigated through the administration of standardized tests providing a general assessment of their linguistic competence. This type of assessment could be not sufficient in adult dyslexic subjects who might have developed strategies to cope with their reading difficulties, or have not been diagnosed at a younger age. Focusing on University students, another issue is raised. They have to confront with the formal register of the language, both in written materials and in oral classes. It is therefore useful to elaborate tests which assess the comprehension of constructions occurring in complex texts, such as (object) relative clauses and passive sentences.

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1. The experiment

1.1 Participants

The experimental sample is composed of 10 dyslexic University students ranging in age from 20 to 25 years (DD group), all living in Milan or in the area near it. Their performance in relative clauses was compared to two groups of individuals with no impairment (16 adolescents, age range: 14;1-17;5, 16 adults, age range: 20-34). Their performance in passive sentences was compared to a group of 17 University students (age range: 20-23).

1.2 Materials

The comprehension of relative clauses was assessed by using a referent selection task (Volpato, 2010), in which the participants had to select the correct referent out of four possible choices. We tested subject relatives (SR: *Il topo che colpisce i conigli* 'The mouse that hits the rabbits'), object relatives with preverbal embedded subjects (OR: *Il topo che il coniglio colpisce* 'The mouse that the rabbit hits'), and object relatives with postverbal embedded subjects (ORp: *Il topo che colpiscono i conigli* 'The mouse that hit the rabbits'). The production of relative clauses was tested using a preference task through which participants were forced to produce subject or object relatives. The comprehension of passive sentences was assessed by using a picture matching task (Verin 2010), in which the subjects had to select the correct picture out of three options. The production of passive sentences was assessed by using an elicitation task. We tested actional passives (*Marco è baciato da Sara* 'Marco is kissed by Sara') and non-actional passives (*Marco è visto da Sara* 'Marco is seen by Sara'). All participants were assessed individually through the oral modality.

2. Results

Table 1 and 2 show the percentage of accuracy obtained by each group in each sentence condition of the relative clause comprehension and production tasks:

Table 1: % of accuracy in relative clause comprehension.

	Dyslexic	Adolescents	Adults
SR	93%	100%	100%
OR	77%	92%	100%
ORp	81%	94%	100%

Table 2: % of accuracy in relative clause production.

	Dyslexic	Adolescents	Adults
SR	98%	100%	98%
OR	1%	0%	0%

In the comprehension task, dyslexic's performance is lower than adolescents' and adults' in all sentence conditions. Also in the production task, the dyslexic students behave slightly different. Indeed they produce some object relatives, which are never found in adolescents and adults.

Table 3 and 4 show the percentage of accuracy obtained by each group in each sentence condition of the passive sentence comprehension and production tasks:

Table 3: % of accuracy in passive sentence comprehension.

	Dyslexic	Adults
Actional	100%	100%
Non-actional	95%	100%

Table 4: % of accuracy in passive sentence production.

	Dyslexic	Adults
Actional	86%	99%
Non-actional	64%	65%

With actional verbs, dyslexic students' performance in the comprehension task is comparable to adults. In the production task, some students experienced difficulties with actional passives. Most participants showed a quite high level of performance with rates of accuracy above 90%.

3. Discussion

Overall, the analysis of performance showed that the group of dyslexic student had more difficulties in dealing with (object) relative clauses than with passive sentences.

The asymmetry we found in the acquisition of relative clauses and passive sentences is also found in previous studies on English (Stein et al., 1984). From a linguistic point of view, the two structures differ with respect to the type of chain (A in passive sentences vs. A' in relative clauses) which is built between the merge position and the surface position of the moved element. We suggest that the participants experience considerable difficulties in the interpretation of A' chains, while A chains are more preserved. The two constructions also differ with respect to the computation load asked to the memory system to be interpreted. In dyslexic children, the deficit might be attributed to their inability to keep in mind linguistic information, analyze, organize and reproduce it (Cornoldi 1999). This phenomenon would account, on the one hand, for the difficulty found in the comprehension of relative clauses, which are characterized by long-distance syntactic dependencies and are problematic for the language computational system; on the other hand, it would explain the better accuracy in the comprehension of passive sentences which are composed of shorter sequences and dependencies, and are therefore easier to memorize and process.

4. References

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