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How can deaf learner-specific written errors be explained?

Deaf learners' difficulties with written language have been the subject of many studies over the last fifty years, most of them in the United States. Since the mid eighties similar studies have been carried out in Quebec on deaf learners' errors in written French and more recently studies have tried to explain some of these errors.

The purpose of this paper is to shed some light on the reasons that could explain certain errors found in deaf students' texts. We will first present a review of the studies carried out in Quebec. We will then show the similarity between errors made by deaf students who sign and deaf students who do not sign. The third part of this paper will address the question of deaf learner-specific written errors.

Dubuisson, Vincent-Durroux and Nadeau (1991) compared two studies (Dubuisson and Lacerte, 1987; Vincent-Durroux, 1990), one analysing the

written productions of oralist students aged 11 to 12 and the other analysing the oral productions of oralist students' aged an average of 14 years. Errors found in these corpora were the same and included difficulties with grammatical categories such as prepositions, determiners, and auxiliary verbs and with *functional* syntactic categories such as the subject fonction. Lacerte (1988) studied the written productions of signing deaf students over 14 years of age and those of adult deaf signers. She concluded that syntactic errors were more numerous than morphological errors, which were more frequent that lexical errors.

Nadeau, Dubuisson and Gélinas-Chebat (1991) evaluated the written production of university level deaf students. They compared oralist and signing *deaf* students to hearing students. They found that oralist *deaf* students made fewer grammaticality errors than signers, however error types were the same in both groups and were different from hearing students' errors. Dubuisson and Nadeau (1994) analysed the texts of 226 deaf students, between 6 years old and adulthood. Most of them were severely to profoundly deaf and communicated with different communication modes. They concluded that oralist students performed best, followed by students who used oral and signing communication modes, who performed better than students who used sign only. Nevertheless, the amount of ungrammatical sentences did not decrease with students' age. Furthermore, they observed the same types of errors in student texts in each of the three groups.

From the results of all these studies, we can see that deaf students produce the same types of errors whatever their linguistic background and school level.[15] Oralist and signing students from primary, secondary and university level produce the same errors.

In another vein, Nadeau (1993) compared the errors found in Dubuisson and Nadeau's corpus to francophones' written errors and to those of learners of French as a second language. Nadeau concluded that deaf writers' errors are, for the most part, different from francophones' written errors but are comparable to those of learners of French as a second language. This confirmed her hypothesis that French functions as a second language for most participants in the study. Nadeau also pointed out certain types of errors that were found neither in first language learners nor in second language learners. Two types of errors involved noun complements and lexical redundancies.

Based on data from Dubuisson's ongoing study, two other types of errors seem to characterize deaf use of the written language. They concern figure and ground organization and non-chronological sequencing.

We will now give examples of each of these types of errors. The first involves noun complements. In French, the complement follows its head noun and is linked to it by a preposition. The errors found are characterized by an inversion of the complement and the head. We present examples of this type in (1). In each example, the first sentence

contains the ungrammatical construction. The second gives the correct equivalent and the third gives the translation.

1. A) Tu dessine les étoiles sur manteau du mosif (motif). (1)
   Tu dessines les étoiles sur le motif du manteau.
   "You draw stars on the motif on the coat."

   B) L'cureuil vais dans à l'arbre trou. (2)
   L'écureuil va dans le trou de l'arbre.
   "The squirrel goes into the hole in the tree."

   C) ...dans la chambre du lit de oreiller. (3)
   ... dans l'oreiller du lit de la chambre.
   "... in the pillow on the bed in the bedroom."

   D) Ce soir, il marche lentement proche à la maison voisin des jardins. (4)
   Ce soir, il marche lentement près des jardins de la maison voisine.
   "This evening, he walks slowly near the gardens of the house next door."

The second type of error concerns what we have called lexical redundancies. These are cases where two verbs follow one another, the second one being generally more specific in meaning than the first. Examples are presented in (2).

2. A) Je aime pas devient une garçon car toujours fait bat avec les filles. (2)
   Je n'aimerais pas être un garçon car les garçons se battent toujours avec les filles.

4 4

"I would not like to be a boy because boys always fight with girls."

B)   Mon cousin voit meon (melon) <u>transforme change</u> bleu. (2)

Mon cousin voit un melon qui devient bleu.

"My cousin sees a melon that is turning blue."

C)   Je <u>vu visitrai</u> à la statue de la liberté. (3)

Je verrai la Statue de la Liberté.

"I will see the Statue of Liberty."

D)   Mon maman <u>fait prépare</u> mangé (3).

Ma maman prépare la nourriture.

"My mother is preparing food."

The third type of error concerns the order of figure and ground. In French, in simple locative descriptions, the figure (the object being located) precedes the ground (the object with respect to which the figure is located). In (3) we present errors illustrating difficulties in this type of construction. These data come from a test in which subjects had to choose the sentence corresponding to a picture.

3.   A)   La maison est devant l'arbre.

L'arbre est devant la maison.

"The tree is in front of the house."

5 5

B) Le pont est sur la voiture.

La voiture est sur le pont.

"The car is on the bridge."

C) Le buisson est derrière le garçon.

Le garçon est derrière le buisson.

"The boy is behind the bush."

D) La chaise est sous le chien.

Le chien est sous la chaise.

"The dog is under the chair."

④ The fourth type of error concerns non-chronological event sequencing. In French, it is possible to order constituents referring to two events independent of their chronological order, depending on the preposition used (*avant* or *après*). Deaf learners generally use *après* in this type of sentence but consider that the sequence of events is given by the order of the constituents. *(comme dans la LS?)* (?.)

4. A) Tu travailleras après l'examen.

Tu travailleras avant l'examen.

"You will work before the exam."

B) Tu rechaufferas la soupe après le repas.

Tu rechaufferas la soupe avant le repas

"You will reheat the soup before the meal."

These four types of errors, specific to Deaf learners, correspond to LSQ structures. Noun complements are signed with the complement first. ✓ Sentences with two verbs, the second more specific in meaning than the ✓ first, are possible. The ground is expressed before the figure and events are ✓ signed in chronological order. These observations led us to hypothesize that errors specific to Deaf learners were caused by interference from LSQ.

We even found texts, such as (5), that corresponded nearly perfectly to LSQ structures.

5.
"Dinoreuil"
yeux petit deux.
Nez petit un.
cou grand un
corps grand un
Pattes petites deux.
Queue grande un
Mange souris
Marche lentemt. (1)

"Dinoreuil"
EYE-pl SMALL TWO
NOSE SMALL ONE
NECK LONG ONE
BODY LONG ONE
LEG SMALL TWO
TAIL LONG ONE
EAT MOUSE
WALK-SLOWLY

However, we found sentences with LSQ-like structures produced by oralist deaf students who did not know LSQ. We present examples of such sentences produced by non-signers in (6).

6.   A)   A 30 minute a mange fini. (2)
         Je mange en 30 minutes.
         I eat in 30 minutes.
         30 MN   EAT   FINISH

     B)   Tu fleurs donne merci.
         Merci de m'avoir donné des fleurs.
         Thank you for the flowers you gave to me.
         PT2   FLOWER   2-GIVE-1   THANK-YOU

     C)   Le chien yeux petit quelle couleur vert.
         Le chien a de petits yeux verts.
         The dog has small green eyes.
                                            Whq
         DOG   EYE-pl   SMALL // COLOR // GREEN

Because there are written errors specific to deaf students and because LSQ cannot be considered to be the origin of these errors, we hypothesize that a world view specific to deaf individuals influences the strucûtres of their written language and of LSQ, hence the similarity of constructions in both. According to Virole (1993), by depriving the child of hearing, deafness provides him or her with the opportunity of a biological adaptation and another vector of linguistic organization. This could result in a different way of processing information. This hypothesis is consistent with explanations given for the evolution of the brain under conditions of sensory deprivation.

The developing brain has the ability to modify its structure according to environmental stimuli (Changeux, 1985). In early stages of development there is a proliferation of neural connections, some of which later disappear due to lack of stimulation while, on the other hand, others are reinforced in a process Changeux names "selective stimulation". In this

manner, cerebral development takes place in several directions that are not genetically determined, in a process of "epigenesis".

Some types of sensory deprivation can thus bring about modifications of cerebral functions and the disappearance of certain connections but they can also have positive consequences. In situations where there is a lack of stimulation from one sensory modality, epigenesis can reassign certain regions of the brain to another modality. Neville and Lawson (1987) have shown that individuals who were born deaf have superior peripheral vision compared to hearing individuals. Perier (1987) puts forward the hypothesis that in congenitally deaf children, "supplementary regions of the cerebral cortex would be available for processing visual information, and perhaps linguistic information in particular".

Under our hypothesis consisting in explaining specific errors produced by Deaf students by the result of an evolution of their brain under auditory deprivation, we would expect all Deaf learners to make the same specific errors, independently of the written language they are studying. We were very interested by a proposal made by Karen Emmorey in 1994 on the SLLING network. She proposed a discussion on the ordering of figure and ground, noting that English orders figure first and ground second, while ASL does the contrary. A long exchange followed and a few examples were given of sign languages ordering figure first and ground second. Furthermore, examples were given of oral languages ordering ground first and figure second. The examples of figure first in sign languages appeared to be due to possible influence from the surrounding oral language, but

further investigation is needed in this area. If this turns out to be true, we would have an interesting argument to explain one type of specific error observed in the texts written by Deaf students and we would have to look at the constructions corresponding to the other three specific types of errors in sign languages (lexical redundancy, noun complement and chronological events).

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