

Linking abstract form and grammatical function: a construction-grammar experiment.

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Introduction

Casenhiser and Goldberg (2005) demonstrated that English-speaking children aged 5-6 were able to learn to associate a new grammatical construction (NNV) with an abstract meaning (apparition). In a previous study (Maillart, Parisse & Gay-Perret, 2009), we showed that four year-old French-speaking children were not able to learn this association between a new syntactic form (word order construction) and a new function (apparition). The present study aims at investigating whether older children would be able to learn this association.

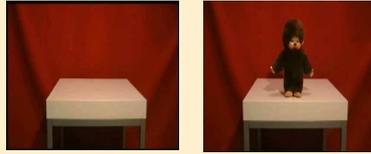
Learning a new construction: Noun Noun Verb

Form:

- Before the apparition: Le singe la table va *fenér* (the ape the table is going to 'fen')
- After the apparition: Le singe la table a fené (the ape the table 'fené')

Function:

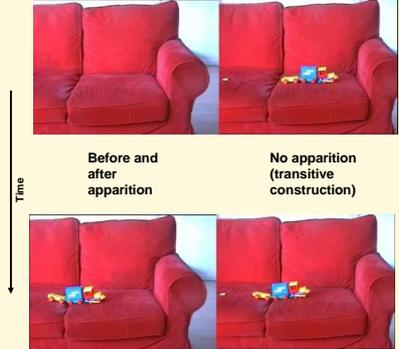
Before and after the apparition of an element



A single film clip is played.

Testing the training

Two film clips are played side by side



Apparition film clips are included in the test phase. They use nonce verbs that were used for training. All situations were also new, so it was not only necessary to memorize the films, but to understand the construction.

Transitive film clips: they are used as distractors during the test phase. In transitive film clips, all objects are present since the beginning and one object interact with the other. There is no apparition of object in these film clips.

For each pair of clips, a sound described one of the film clips, either apparition or transitive. All items were balanced with respect to side (left or right) or sound (same number of items where the apparition was described or the transitive was described). Four different test sets were used to allow for all possible organisations (left vs. right for stimuli).

Participants

106 French-speaking participants distributed into three subgroups depending on their chronological age: 4-year-old (45 children); 5-6-year old (41 children); 8-year-old (20 children) performed the task. They had normal language development as indicated by a standardized test battery. (Evaluation du langage oral – ELO: Khomsi, 2001).

Experiments and material

In a training phase, all the participants saw 2 x 8 films with a new construction (NNV). All verbs used in the construction are nonce verbs, so children cannot rely on lexical information to memorize the meaning of the construction.

In the Testing phase, the participants were presented to new films which included two films side by side. They heard a sentence that describes one of the two films and had to choose between the two films. Two conditions were presented 1) normal word order (NVN); 2) new word order (N N V). It was hypothesized that a correct learning conducted to accept the match normal word order (NVN) with films without an apparition and new word order (NNV) with films with an apparition.

Results

No significant differences were found on testing orders (four versions) nor on side designation (left vs. right).

	Correct responses (6 max)		All responses (12 max)	Film pointed at (correct and incorrect responses: 12 max)	
	Apparition films	Non apparition films		Apparition	Non apparition
4 years	2.73	2.82	5.55	5.91	6.09
5-6 years	3.29	2.78	6.07	6.51	5.49
8 years	4.35**	2.95	7.30***	7.40*	4.60*

*** p = 0.0002 -- ** p = 0.001 -- * p = 0.06

Nonce verbs

Real verbs were extracted from lexical databases (Manulex: Lété et al., 2004; and Novlex: Lambert & Chesnet, 2001) and checked for frequency. All verbs were frequent and had a simple syllabic structure. Nonce verbs were created by changing two phonemes of each verb, one consonant and one vowel, with changes reduced to a single phonological feature. The nonce verbs were controlled using a questionnaire to ensure that they had no phonological neighbours. All nonce verbs used are considered as belonging to the first grammatical group of French verbs (ending in -er), which contains only regular verbs and which is the only productive group of French verbs.

badocer	boganler	batenner	bauler
chonder	fenner	laner	muder
néner	pober	ruder	sanfer
taver	tafer	vainner	vocater
vouder	zouter		

References

- Casenhiser, D., & Goldberg, A. E. (2005). Fast mapping between a phrasal form and meaning. *Developmental Science*, 8(6), 500-508.
- Goldberg, A. E. (2006). *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Goldberg, A. E., Casenhiser, D. M., & Sethuraman, N. (2004). Learning argument structure generalizations. *Cognitive Linguistics*, 15(3), 289-316.
- Khomsi, A. (2001). Evaluation du langage oral, ECPS, Paris.
- Lambert, E. & Chesnet, D. (2001). Novlex: une base de données lexicale pour les élèves de primaire. *L'Année Psychologique*, 101, 277-288.
- Lété, B., Sprenger-Charolles, L., & Colé, P. (2004). MANULEX : A grade-level lexical database from French elementary-school readers. *Behavior Research Methods, Instruments, & Computers*, 36, 156-166.

Discussion

French-speaking children age 8 were able to learn an association between a new syntactic form (Noun Noun Verb word order) and a new function (apparition).

However, young children (4- to 6-year-olds) were not able to obtain the same results.

Children that learned the new word order were able to associate the new word order and a specific semantic feature (the apparition of the object designated by the first noun).

Performances for normal word order utterances were balanced: apparition films were not preferred to non apparition films in this case. It was only in the case of the new word order that the apparition films were preferred.

We note that children were able to learn this association only when they were also paying more attention to apparition films. This could mean that young children may not be able to do this because they may be unable to identify the requested semantic feature.

It is possible that younger children could also learn this association, but with heavier training (in this experiment, training was very short).