LEXICAL ACQUISITION IN CATALAN PRESCHOOL CHILDREN: NOUN AND VERB COMPREHENSION AND PRODUCTION

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Abstract

The goal of the current study is the lexical acquisition of monolingual Catalan-speaking children from the age of 3 to 5. We used the methods of picture selection and picture naming of both nouns and verbs in order to assess their vocabulary knowledge. The Catalan lexical task comprised 4 tasks of 32 items each. Results showed proficiency differences based on age, methodology and lexical category. Error types were also considered. The outcome of this research is of particular significance since never before has similar work been carried out in Catalan. Moreover, its results are available for a future comparison between the lexical competence of monolingual and bilingual Catalan children.

1. INTRODUCTION

Language acquisition has been an extensively researched subject within the academic field of linguistics. Because of its relevance in the understanding of the human language, it remains a very active research area. However, bilingual first acquisition (BFA) and particularly lexical BFA studies are also still scarce (Genesee, 2006). Therefore, as Genesee argues, if a comprehensive theory is to be formulated, it should explicitly include bilingual individuals – indeed, data of their performance could contribute greatly to the explanation of the ways in which the brain acquires and uses language. Moreover, and possibly most importantly, a study on BFA would consequently provide information about bilingual children affected with specific language impairment and it would largely help to diagnose such cases with more accuracy. Finally, bilingualism in children is becoming increasingly more common and it should be worth researching on its own right.

Additionally, in their recent work, Haman, Łuniewska & Pomiechowska (submitted) indicate that bilingual lexical tasks are often limited, that is, they are usually designed for one language or a specific pair of languages. The latter, though more inclusive, is still inconvenient, because it would imply the necessity to have as many different tasks as there are pairs of languages spoken by bilinguals. Haman et al. also present arguments against translating tasks initially designed for one language only. It seems that, if tested only in one language, bilingual children display a smaller vocabulary size compared to their monolingual counterparts (Bialystok, Craik, & Luk, 2008), although this is not the same when considering both languages, since 'bilinguals may lag behind monolinguals selectively, but not globally, in acquisition milestones' (Paradis, Nicoladis & Crago, 2007). As a result, typically developing bilingual children are at risk of being misdiagnosed as having SLI if assessed with a monolingual task (Haman et al., submitted). Therefore, they propose a cross-linguistic lexical task (CLT) which could test monolinguals as well as bilinguals and would allow comparing data gathered from the two. As both Genesee and Haman et al. suggest, such results could clarify the effects that bilingualism can have on children, and particularly on SLI children, to whom the simultaneous acquisition of two languages is often (and perhaps mistakenly) argued to cause further impairment. Therefore, working with a CLT would help identify systematic differences between TD monolingual and bilingual child

learners as well as establish the boundaries between TD and SLI bilinguals (Haman et al., submitted).

The current study is part of the CLT proposed by Haman et al., a project supported by COST (European Cooperation in Science and Technology) in the context of which CLTs have been designed so far for 20 languages (see table 1), but which eventually aims to include a total of 34 is an innovative and very much needed tool in the field of children's lexical acquisition. The languages in which the CLTs versions are currently available are: Afrikaans, Catalan, English (UK), English (SA), Finnish, German, Hebrew, Italian, isiXhosa, Lebanese, Lithuanian, Luxembourgish, Maltese, Norwegian, Polish, Russian, Serbian, Slovak, Swedish, Turkish (Haman et al., submitted). My study focuses on lexical knowledge in monolingual Catalan children. Thus, data on Catalan acquisition was gathered for future use in assessing Catalan TD and potential SLI bilinguals. A study of such characteristics is particularly suitable in a Catalan context, since bilingualism is not only common in Catalonia, but it has been rising in recent years due to the increasing number of migrant families settling in Catalan-speaking areas. Therefore, this research has determined, by analysing elicited data produced by Catalan-speaking children, the lexical age of acquisition of nouns and verbs in typically developing monolingual Catalan children.

It seems that by the age of 3 an adult-like understanding of syntactical construction has been acquired and by the age of 5 they have mastered the phonological system of their native language. However, their vocabulary knowledge is still incomplete (Wagner, Muse & Tannenbaum, 2007). This current study provides a means of measuring vocabulary proficiency as well as procuring results on Catalan children's lexical knowledge from age 3 to 5. The study comprises, firstly, the construction of a picture naming-selecting task originally designed by Haman et al., including a comprehension and production section for both nouns and verbs, initially targeting monolingual children with the ages mentioned above. This involves selecting a list of words relevant to children's experiences, determining their difficulty level based on different criteria (morphological complexity, phonological complexity, semantic field, amongst others) and, from there, deciding the most suitable 64 nouns and 64 verbs for the Catalan task. The final version was preceded by a pilot test carried out with adults and children so as to make sure the words selected were appropriate to the targeted age groups. As soon as one of the words was considered inappropriate (i.e. adults could not

recognise the right picture or name the correct word), they were changed and a new version of the task produced. Finally, the task was administered to 20 children for each age group (3, 4 and 5 year-olds). Data were collected, analysed and added to the cross-linguistic language corpus and also constitutes, as far as I know, the first set of results on lexical acquisition for Catalan. Other studies on Catalan phonological acquisition (Lleó, 1991) and selection of lexicons on Catalan-Spanish bilinguals (Costa, Miozzo, Camarazza, 1999) are, however, closely related to our current one.

2. BUILDING A CROSS-LINGUISTIC LEXICAL TASK

2.1. Cross-linguistic: selection of words and pictures

In the article 'Designing Cross-linguistic Lexical Tasks (CLTs) for bilingual preschool children' Haman et al. (submitted) extensively describe the process they followed to build the task up to the language specific previous stage. The two word categories of nouns and verbs were chosen '[t]o make the CLTs as universal as possible' (Haman et al., submitted). The reason behind it was that these word categories exist in all languages and they appear in early development. The acquisition of these two categories 'is a central component of lexical development' as pointed in Kauschke, Lee & Pae (2007). Furthermore, the comprehension and production variables were also to be accounted, since they would provide data on both the receptive and expressive knowledge of the child. In general terms, as Haman et al. point out, 'production typically reveals lower results than comprehension with respect to vocabulary size' (Haman et al., submitted), thus the inclusion of a comprehension task would result in a more balanced evaluation. Picture identification and picture naming were the chosen methods of assessment for the comprehension and production tasks respectively. This type of assessment is very common in word knowledge testing (Kohnert, Bates & Hernandez, 1999) and especially useful for children who cannot read (which is the case for the majority of the targeted individuals in this study). Then, after an extensive study which included the evaluation of possible CLT candidate words by native speakers of 34 languages, a list of 158 nouns and 142 verbs thought to be available in almost all the languages involved in the study and their matching pictures were produced (Haman et al., submitted). These candidate words would later have to be linguistically

characterised according to the each language's features and then targets and distractors should be chosen accordingly.

2.2. *Language-specific lexical task*

Morphological and phonological information as well as the age of acquisition (AoA) of each word was collected and processed to obtain a complex index which would serve as the criterion for selection. In particular, the following linguistic features were taken into account:

NOUNS

a. English translation

b. Synonyms

c. Item

d. Gender (if applicable): M, F, N

e. Loanwords: Is it a loan word? (Y, N) Which language does it come from?

f. Word length: phonemes, characters, syllables, number of bases (stems/words) the item contains

g. Word formation – Derivation: Derived word (Y, N), base, English translation of the base, creation (by suffixation, by prefixation),

h. Word formation – Compounding: bases, English translation of the bases, can a modifying word be inserted between the bases (Y, N)

i. Children's experience: exposure to the referent (Y, N), frequency of exposure (not at all, rare, quite often, very often)

j. Word form: initial frication (Y, N)

k. Word form – Consonant clusters: initial (Y, N), internal (Y, N)

VERBS

a. English translation

b. Synonyms

c. Item

d. Is it a phrase containing a general purpose verb? (Y, N)

e. Loanwords: Is it a loan word? (Y, N) Which language does it come from?

f. Word formation – General: number of bases (stems/words) the item contains, des the item contain a particle? (Y, N)

g. Word formation – Derivation: derived word (Y, N), base, English translation, creation (by suffixation, by prefixation)

h. Word formation – Compounding: bases, English translation of the bases, can a modifying word be inserted between the bases (Y, N)

i. Children's experience: exposure to the referent (Y, N), frequency of exposure (not at all, rare, quite often, very often)

j. Transitivity: (transitive, intransitive, ditransitive, ambitransitive)

k. Valency: number of obligatory arguments and optional arguments

l: Word length – Singular: third person, number of phonemes, characters and syllables

m: Word length – Plural: third person, number of phonemes, characters and syllables

n: Word form: initial frication (Y, N)

o: Word form – Consonant clusters: initial (Y, N), internal (Y, N)

Determining the AoA of each word was investigated by a means of a questionnaire administered to 20 native speakers, where each of them provide their perception of what their own AoA was for each candidate word. This method, which is the most widely used (Pérez & Navalón, 2005), depends on adult subjects estimations. Other more objective methods include registering spontaneous or elicited child productions (Pérez & Navalón, 2005). Subjective AoA measurement was preferred over an objective measurement because objective data on lexical acquisition is not always available in all languages. Therefore, such a wide cross-linguistic task as this one meant that some information could be missing for some of the languages (Haman et al., submitted). For this particular task, 20 adult Catalan speakers were interviewed by Anna Gavarró, this current work supervisor, and the results were used as part of the words characteristics data.

Candidate words were then divided into three semantic groups (animate natural kinds, inanimate natural kinds and artefacts), four difficulty levels calculated with a 2 x 2 design (CI: low/high; AoA: earlier/later) and the individual complexity index (CI

hereafter) based on each word's singular features. Out of the entire list of candidates, 32 groups of 4 words each were selected, the prerequisites being that (i) all words within each group should have a similar CI, difficulty and belonged, if possible, to the same semantic domain and (ii) there should be a wide range of representation of these three values. Each group of words consisted in two target words (one for the comprehension task and the other for the production task, which would be also used as distractor in the comprehension task) and two distractors. Then, a random order of items was applied for both tasks. Once the comprehension and production tasks are designed, slides with the pictures matching the words were produced. The slides for the production tasks (nouns and verbs) were composed of one picture each, showing an object or an action. The comprehension ones had four pictures instead – one target and three distractors. The words comprising each item in the comprehension task were randomised, that is, the position of the target word was as varied as possible in the screen where items were presented, and consecutive items never presented the target item in the same position. A sample of the materials appears in Appendix 1.

3. PILOT TEST

3.1. Design and participants

Once the Catalan task was built, a pilot test was conducted in order to ensure the target items had been accurately classified and the target words properly selected. Monolingual and bilingual children as well as adults were tested because, although the task was aimed at 3 to 5-year-olds, a wider range of individuals would allow us to ultimately determine whether errors were caused by age constraints or whether other factors internal to the task were involved (such as picture ambiguity, word difficulty or building defects). On this account, a total of 11 individuals were selected and were tested on the pilot task. Details of the subjects appear in Table 1.

AGE GROUP	#	AGE RANGE	AVERAGE
Children	5	3;5,25 – 9;0,18	5;3,19
Adults	6	20;11,21 – 51;3,27	27;6,14

Table 1. Pilot participants

The procedure was followed as will be detailed in the procedure section below, except for the session recordings and the control of (task duration). All children were

monolingual except for one, who had German as his first language (spoken at home) and Catalan as his second (used elsewhere). Five of the adults were bilingual and identified Catalan as their strong language. Only one adult had Spanish as his strong language. The tests were all carried out individually and they took place over a period of approximately 3 months.

3.2. Results

In general, both groups performed quite well, as shown in table 2 and 3, and also both groups performed better in comprehension segments than in production; children had for the most part more difficulties than adults in all tasks. The tasks involving nouns also scored better than those same tasks involving verbs. These data corroborate Kauschke's study where there seemed to be a noun advantage in the context of picture-naming tasks (Kauschke et al., 2007).

Children	**TOTAL CORRECT**	**% CORRECT**
ALL TASKS	504 / 640	79%
COMPREHENSION	286 / 320	89%
Nouns	*145 / 160*	*91%*
Verbs	*141 / 160*	*88%*
PRODUCTION	218 / 320	68%
Nouns	*129/ 160*	*81%*
Verbs	*89 / 160*	*56%*

Table 2. Pilot test results for children – percentage and total number of correct answers

Adults	**TOTAL CORRECT**	**% CORRECT**
ALL TASKS	729 / 768	95%
COMPREHENSION	384 / 384	100%
Nouns	*192 / 192*	*100%*
Verbs	*192 / 192*	*100%*
PRODUCTION	345 / 384	90%
Nouns	*192/ 192*	*100%*
Verbs	*153 / 192*	*80%*

Table 3. Pilot test results for adults – percentage and total number of correct answers

In general terms, adults had no problems identifying and producing all target words with the exception of some verbs (see table 3): *llaurar* ('plow') was only

produced by two adults, while others used the wrong verb or its Spanish equivalent *arar*; 'drill' displayed a similar situation, since two adults used the Spanish equivalent *taladrar* and another two used a synonym verbal construction (*fer un forat*); *fondre's* ('melt') and *abocar* ('pour') were wrongly produced by all individuals: in the case of the former, a picture of a melting ice-cream was shown and they all used the Catalan synonym *desfer-se* (children used other words, too) whereas the latter showed a woman pouring water in a glass and adults used *omplir* ('fill up') as well as other verbs which described a similar action but were not equivalent to 'pour'. Several synonyms (*dir hola* 'say hello', *dir adéu* 'say goodbye', *despedir-se* 'say goodbye') were used for verbs such as *saludar* ('wave'), *muntar* ('ride a horse') and *esculpir* ('carve'). The latter was particularly difficult for children, some of whom couldn't even understand the action. In fact children on the whole failed to recognise and name several nouns and verbs. The most problematic words in the comprehension tasks were *pupitre* ('desk') and *armilla* ('vest') for nouns and *rostir* ('roast') and *demanar caritat* ('beg') for verbs. *Cadena* ('chain'), *regle* ('ruler') and *termòmetre* ('thermometer') were nouns that proved difficult to name for children, although, in the case of the former, hesitation and answers which had visual resemblances with the target (e.g. children described the picture as being a *collar* or *corda*, meaning 'collar' and 'rope' respectively, which are both visually similar objects to 'chain') also seemed to indicate problems recognising the picture. Adults, on the contrary, did not have any difficulties with any of these items. In addition to the issues observed in adults, children seemed to present alternative readings for the action of whispering, shearing, sweating and weighing. For more detailed information see tables 2 to 9 in the appendix, where all results are provided.

	WORD **English *(Catalan)***	**% CORRECT** **children**	**% CORRECT** **adults**
COMPREHENSION	desk *(pupitre)*	20% (1)	100% (6)
	vest *(armilla)*	40% (2)	100% (6)
	roast *(rostir)*	40% (2)	100% (6)
	beg *(demanar caritat)*	40% (2)	100% (6)

Table 4. Problematic words the comprehension tasks

	WORD English *(Catalan)*	% CORRECT children	% CORRECT adults
PRODUCTION	nose *(nas)*	40% (2)	100% (6)
	ruler *(regle)*	40% (2)	100% (6)
	chain *(cadena)*	20% (1)	100% (6)
	feather *(ploma)*	40% (2)	100% (6)
	stool *(tamboret)*	40% (2)	100% (6)
	thermometer *(termòmetre)*	40% (2)	100% (6)
	pour *(abocar)*	0%	0%
	melt *(fondre's)*	0%	0%
	plow *(llaurar)*	0%	50% (3)
	shave *(afaitar-se)*	20% (1)	100% (6)
	sweat *(suar)*	20% (1)	100% (6)
	wave *(saludar)*	0%	83% (5)
	wake up *(despertar-se)*	20% (1)	33% (2)
	drill *(foradar)*	40% (2)	50% (3)
	carve *(esculpir)*	0%	83% (5)
	shear *(esquilar)*	0%	100% (6)
	dive *(tirar-se de cap)*	80% (4)	33% (2)
	whisper *(xiuxiuejar)*	0%	83% (5)

Table 5. Problematic words for the production tasks

3.3. Implications

The presence of Spanish words among the answers confirms its influence in Catalan bilinguals and even monolinguals, both children and adults. This was an unavoidable error factor in the final testing. Also, as exemplified above, synonyms were commonly used to describe actions. We wanted to avoid them as much as possible, although some were inevitable such as *televisor – televisió – tele* (all of them meaning 'television' and used almost indistinctively even within the same individual) and were ultimately accepted. Some of the problematic words for children, particularly those which were not so for adults, were considered were considered to fall within our expectations given that children are not expected to know all words. However, difficult or ambiguous target words for adults had to be changed. Thus we considered 6 verb targets to be the most problematic words which needed replacement: these were 'pour', 'melt', 'plow', 'wave', 'ride a horse', and 'carve'. Although 'ride a horse' was not an overwhelmingly problematic verb, the amount of synonyms that it elicited made its modification unavoidable. Those changes could be addressed in two different ways: we

could either follow the standard procedure of switching production targets for their correspondent ones in the comprehension task or finding new production targets within the available list of words. We finally opted for the former, because it was not possible to perform a second pilot test and adding new words could translate into new complications. Conversely, we knew that the words we tested, although problematic, were identified by all participants albeit not precisely produced. As a final note, it is important to observe that, while we were carrying out the tests, we noticed some small errors in the provisional task – some of the items had got mixed up during the construction of the task and this resulted in wrong complex index calculations and false semantic domains, which ultimately rendered the task unsound. Even though the errors were few and involved no target words, the whole noun comprehension and production tasks were affected and therefore we decided to build a new task from scratch after the pilot tests were done (we used, however, the previous task as a prototype). This lapse in the initial stages of the task added an amount of extra work which ultimately delayed the final task construction and children assessment in schools.

4. CATALAN LEXICAL TASK

4.1. Changes from the initial pilot task

As already mentioned in the previous section, corrections derived from the pilot test results were to be applied to the task. Errors detected when running the pilot task involved mainly English words matched with the wrong Catalan equivalent, thus the initial file containing all words' characteristics was revised and corrected: words that had been mixed up were moved around to match their properties and new CI values were calculated and words were classified with some differences from to the previous task, particularly due to changes in the semantic domain of words which were incorrectly matched. Then, the former selection of target words was examined in order to validate its agreement with the current new values and consequently, it was decided that two small changes had to be introduced in the comprehension tasks. The final Catalan lexical task is provided in Appendix 2.

4.2. Contacting schools. Selecting children

We looked for participants in Catalan primary schools in the area of Osona. The region was particularly convenient because, in general terms, Catalan is the primary language of communication of the majority of its population, in contrast with other more Spanish-speaking areas in the outskirts of Barcelona, which translates into a relatively small impact of Spanish morphology and phonology on Catalan speakers, the young ones in particular. We were also familiar with the area and so it was not difficult for us operate there. The schools attended by the 60 children tested were the school Sant Miquel dels Sants, located in the city of Vic, and the school of Sant Marc, placed in its neighbouring town of Calldetenes. Working with the children was fairly straightforward; the only constraints were those of time, since testing children took a considerably long time and could result in an important interference of class routines. It is important to note, however, that the enthusiasm and eagerness of the teachers meant that any possible difficulties (mainly finding a room where the task could be properly executed) were soon resolved and overall made working with children a smoother activity. Teachers of each class chose which children should be tested (always within the age group and language stipulated beforehand) and provided us with all the child's necessary information. Testing began April 4th, 2014 at at the school of Sant Marc. A second testing at the school of Sant Miquel dels Sants in Vic started on April 28th, 2014. Testing finished May 9th.

4.3. Methodology

The Catalan CLT consisted in four tasks (noun comprehension or NC, verb comprehension or VC, noun production or NP and verb production or VP) of 32 items each. Two methods of assessment were used: picture identification for the comprehension tasks and picture naming for the production ones. Picture identification consisted in slights of 4 pictures each, where the experimenter asked the child in which picture an item was or an action took place. Picture naming involved one single picture in each 32 slides. The order of noun comprehension, verb comprehension, noun production and verb production tasks were balanced across children.

TASK 1	TASK 2	TASK 3	TASK 4
V. comprehension	N. comprehension	N. production	V. production
N. comprehension	V. comprehension	N. production	V. production
N. production	V. production	N. comprehension	V. comprehension
V. production	N. production	V. comprehension	N. comprehension

Table 6. Example orders of each task

4.4. Procedure

We tested each child individually within the premises of the school, in one of the rooms provided by the staff. The room was either a classroom or an office with available plugs to connect 2 computers: one was used by the experimenter to make note of the child's answers; the other was used to display the task to the child and record the interview. The only people in the room were the experimenter and the participant, although occasional interruptions were inevitable. External noise, sometimes so loud that it interfered with the experiment, could also not be helped, since children in primary schools are always active and moving around (particularly at break time). The interviews were, however, very straightforward for the most part, although some children were inclined to start conversations while doing the task and it was difficult to bring them back to topic without losing their interest and thus also their attention. Others, on the other hand, needed some encouragement to start focusing on the pictures shown to them or perform at a productive level. For the most part, though, all child participants were very cooperative and expressed an interest in taking part on the experiment.

Table and chairs were provided in the room where the experiment took place. Pictures were located carefully in front of the child, so that the child had an equally easy access to all pictures presented on the chart. The experimenter explained the task: 'I am going to show you some pictures. For each picture I will ask you a question. Please answer my question by giving a word which goes best with the picture. Are you ready?' The experimenter then asked the child what the picture was or what action was being performed (examples of possible questions are illustrated in the following pages). Each task was always preceded of short instructions for the child to understand how to proceed. Then the experimenter asked a question which elicited an answer from the child. In the case of the production tasks, a word as precise and as close as possible to the target was greatly preferred, though close synonyms would ultimately be accepted.

The child's birthdate, the date of testing and time duration of each task were all written down and the interviews all recorded for possible future revision of the data. After each answer the experimenter gave positively neutral feedback: 'ok.'; 'thank you'; 'good', 'let's go on'. The experimenter did not assess during the testing whether the answer was correct or not. In the case that the child did not respond at all, the experimenter waited a bit and repeated the question only once. If the child still did not respond, the experimenter said: 'Ok, let's see next picture.' After all pictures were shown, the experimenter closed the session saying: 'This is all. Did you like the pictures? I liked how you answered my questions. Thank you very much.'

4.5. Participants

Details of all the participants in our experiment appear in table 5. 60 children from ages 3 to 5 and 5 adults with ages ranging from 21 to 51 participated in the final task for this current study of Catalan lexical acquisition. Adults were included in order to have a control group with model lexical knowledge to which children's scorings could be compared. Furthermore, their results would also confirm whether the task was properly constructed or not, that is, negative results in adults would mean that any child assessment with that task was not going to be meaningful, since the task does already not pin down what can be taken to be standard knowledge.

AGE GROUP	#	AGE RANGE	AVERAGE (months)
All	65	3;4,19 – 51;8,10	82
Children	60	3;4,19 – 5;11,21	56
3 year-olds	20	3;4,19 – 3;11,18	45
4 year-olds	20	4;2,28 – 4;11,22	56
5 year-olds	20	5;0,7 – 5;11,21	69
Adults	5	22;8,29 – 51;8,10	387

Table 7. Final task participants

Adults were not expected to be monolingual (adult Catalan monolinguals are extremely rare) or have Catalan as their first language (e.g. that which they spoke at home), but they were expected to speak Catalan on a regular basis. Three out of the five adults identified Catalan as their first language while the rest considered Spanish to be their first language. This factor did not seem to condition their performance. Children, however, were all exclusively Catalan monolinguals, that is, they spoke Catalan at home and could communicate adequately primarily in Catalan. None of the children selected

had any language impairment or learning disability. Unlike adults, children were all from the same area in central Catalonia.

4.6. Coding

Answers were coded as correct in the comprehension task when the subjects pointed at the correct picture; otherwise they were coded as incorrect. In the production task, answers were coded as correct when the subject produced the target word; otherwise they were coded as incorrect. The following errors types were codified:

1. INCORRECT ANSWERS

a. definition
b. hyperonym
c. hyponym
d. semantic confusion
e. associative confusion
f. perceptual confusion
g. phonological confusion
h. wrong word class
i. innovation (without target root)
j. onomathopeia
k. gesture only
l. other
m. no answer

2. LANGUAGE MIXING: BLENDING

a. blending correct: L1 root + L2 inflection
b. blending correct: L2 root + L2 inflection
c. blending incorrect

It is important to indicate that the task was designed for synonyms not to be included amongst the target answers. Thus, those synonym words produced in NP and VP were counted as errors and the percentage of correct words in both production tasks might have, therefore, been reduced as a consequence. We have included results with synonyms counted as errors (hard) and synonyms counted as correct (soft) in the following subsections so that results can be compared, although only verb production is significantly affected. Due to reasons of concision, problematic words have been calculated based on a softer reading which includes synonyms and language mixing as correct.

5. RESULTS

The results in table 6 show, in the first place, a stable correlation between age and lexical knowledge. The knowledge difference is wider between 3 and 4 year-olds (8-11%) than between 4 and 5 year-olds (5-6%). As expected again, comprehension results are better than the production ones for all age groups.

	ALL TASKS	COMPREHENSION	PRODUCTION
All children	5972 / 7680	3392 / 3840	2580 / 3840
	78%	88%	67%
3 year-olds	1795 / 2560	1050 / 1280	746 / 1280
	70%	*82%*	*58%*
4 year-olds	2022 / 2560	1141 / 1280	881 / 1280
	79%	*89%*	*69%*
5 year-olds	2155 / 2560	1201 / 1280	954 / 1280
	84%	*94%*	*75%*
Adults	606 / 640	320 / 320	286 / 320
	95%	*100%*	*89%*

Table 8. Testing results percentage and total number of correct answers for all age groups

On average, as also seen in figure 1, older children and adults perform better than their younger counterparts in all tasks.

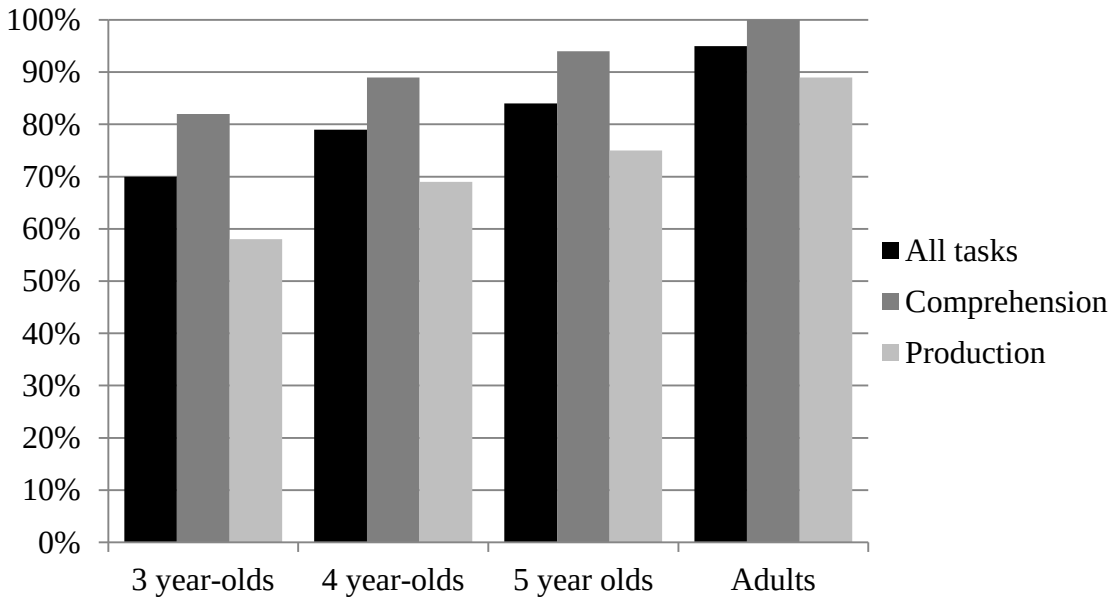

Fig 1. Comprehension and production percentage of correct answers for all age groups (results with synonyms scoring as errors)

First and foremost, it is important to indicate that the task was designed for synonyms not to be accountable. Thus, those synonym words produced in NP and VP were counted as errors and the percentage of correct words in both production tasks might have, therefore, been reduced as a consequence. We have included results with synonyms counted as errors (hard) and synonyms counted as correct (soft) in the following subsections so that results can be compared, although only verb production is significantly affected. Due to reasons of concision, problematic words have been calculated based on a softer reading which includes synonyms and language mixing as correct. Other than that, results show, in the first place, a stable correlation between age and lexical knowledge. On average, as seen in figure 1, older children and adults perform better than their younger counterparts in all tasks. The knowledge difference is wider between 3 and 4 year-olds (8-11%) than between 4 and 5 year-olds (5-6%). As expected again, comprehension results are better than the production ones in all age categories. The overall results are in fact very similar to those we gathered in the pilot test. The changes that were implemented to the original task (six verb comprehension targets were swapped by 6 problematic verb production targets) have seemingly had no impact on the broad results and even in age specific results, 3 and 4 year-olds have similar results in both experiments (no 5 year-old was included in the pilot). That means that verb production results have been in general terms rather poor. The two older children that were tested in the pilot (aged 6 and 9), however, have outperformed all other younger participants, confirming thus the aforementioned correlation between age and word knowledge. Adults scored the best results, although the results for the comprehension tasks are higher than the production ones and thus are in accordance with all other age groups. This difference is, still, the smallest observed in all age groups (10%). Adults' results are, for the most part, very high and the target answers range from 96% to 100% in all tasks except for VP, where only the 83% of answers were target. Overall, results have been positive: children on the whole scored a 78% of target answers, thus proving their knowledge of the majority of words that were presented to them. No instance of consistent error making in a single individual was found. We now consider the results by age group and taken into account that synonyms are not target in the scoring presented so far but are nevertheless correct.

5.1. 3 Year-olds

3 year-olds have, as was predicted, the lowest percentages of target answers in all tasks. They score, however, above 50% in three of the four exercises – the only exception being the verb production. As stated above, VP has regardless of age resulted in poor percentages, but 3 year-olds are the only age group with one of their task results as low as 40% in the hard results. On the other hand, the comprehension results are rather high (82%, although it reaches a 90% in NC) – verb comprehension does indeed almost double verb production.

	HARD RESULTS		**SOFT RESULTS**	
3 year-olds	**TOTAL CORRECT**	**% CORRECT**	**TOTAL CORRECT**	**% CORRECT**
ALL TASKS	1795 / 2560	70%	1869 / 2560	73%
COMPREHENSION	1050 / 1280	82%	1050 / 1280	82%
Nouns	*579 / 640*	*90%*	*579 / 640*	*90%*
Verbs	*471 / 640*	*74%*	*471 / 640*	*74%*
PRODUCTION	746 / 1280	58%	819 / 1280	64%
Nouns	*486 / 640*	*76%*	*487 / 640*	*76%*
Verbs	*259 / 640*	*40%*	*332 / 640*	*52%*

Table 9. Hard and soft results for 3 year-olds

The list of problematic words (table 8) is not small in either comprehension or production, particularly the latter – indeed, this age group struggled with 18 (13 of them verbs) out of the 64 words belonging to this category. Some of these items had already appeared in the pilot (e.g. *pupitre* 'desk', *rostir* 'roast' and *demanar caritat* 'beg' among others), and the origin of the error seemed to also be the same (e.g. in the case of *cadena* 'chain' or *nas* 'nose', children could not recognise the picture representing it). Nevertheless, the number of systematically unrecognised words seems to decrease rapidly: 5 year-olds' table comprises less than half of these words. In fact, except for the verb *rostir*, the comprehension or production for all other words slightly, if not dramatically, improves by the age of 5. Children's errors were similar to adults', although some got confused with *despertar-se* 'wake up' and *llevar-se* 'get up', but in smaller numbers.

	WORD English *(Catalan)*	% CORRECT children	% CORRECT adults
COMPREHENSION	match *(llumí)*	40% (8)	100% (5)
	desk *(pupitre)*	20% (4)	100% (5)
	carve *(esculpir)*	30% (6)	100% (5)
	sail *(navegar)*	40% (8)	100% (5)
	pour *(abocar)*	25% (5)	100% (5)
	measure *(medir)*	30% (6)	100% (5)
	erupt *(fer erupció)*	35% (7)	100% (5)
	melt *(fondre's)*	25% (5)	100% (5)
	beg *(demanar caritat)*	35% (7)	100% (5)
	hunt *(caçar)*	45% (9)	100% (5)
PRODUCTION	nose *(nas)*	40% (8)	100% (5)
	thermometer	5% (1)	100% (5)
	ruler *(regle)*	5% (1)	100% (5)
	saw *(serra)*	35% (7)	100% (5)
	chain *(cadena)*	25% (5)	100% (5)
	shear *(esquilar)*	0% (0)	100% (5)
	sweat *(suar)*	5% (1)	100% (5)
	drill *(foradar)*	15% (3)	100% (5)
	shave *(afaitar-se)*	35% (7)	100% (5)
	wake up *(despertar-se)*	25% (5)	80% (4)
	sharpen *(afilar)*	0% (0)	100% (5)
	extinguish *(apagar)*	30% (6)	100% (5)
	sunbath *(prendre el sol)*	25% (5)	100% (5)
	roast *(rostir)*	0% (0)	80% (4)
	peel *(pelar)*	35% (7)	100% (5)
	dive *(tirar-se de cap)*	5% (1)	40% (2)
	mix *(barrejar)*	10% (2)	100% (5)
	weigh *(pesar)*	5% (1)	100% (5)

Table 10. 3 year-olds problematic words

5.2. 4 Year-olds

Compared to 3 year-olds', 4 year-olds' overall comprehension and production increase by a 7% and an 8% respectively. Their comprehension results rose up to almost a 90% and the correct answers for the production tasks reach almost a 70%.

	HARD RESULTS		SOFT RESULTS	
4 year-olds	**TOTAL CORRECT**	**% CORRECT**	**TOTAL CORRECT**	**% CORRECT**
ALL TASKS	2022 / 2560	79%	2092 / 2560	82%
COMPREHENSION	1141 / 1280	89%	1141 / 1280	89%
Nouns	*609 / 640*	*95%*	*609 / 640*	*95%*
Verbs	*532 / 640*	*83%*	*532 / 640*	*83%*
PRODUCTION	881 / 1280	69%	951 / 1280	74%
Nouns	*541/ 640*	*85%*	*541 / 640*	*85%*
Verbs	*340/ 640*	*53%*	*410 / 640*	*64%*

Table 11. Hard and soft results for 4 year-olds

As stated above, their list of problematic words is reduced almost by half compared to their younger age group, especially so in the comprehension tasks, where 4 year-olds only struggled with five words. Most of the words in the table of problematic words (table 10) were already present in 3 year-olds' table and some were still very problematic. *Demanar caritat* 'beg' and *esculpir* 'carve' are the comprehension words least understood (15-20%) and *esquilar* 'shear', *tirar-se de cap* 'dive' and *rostir* 'roast' were the least produced words (between 0-5%). Likewise, the percentage of right answers within this table is also higher than their younger peers. In the case of 3 year-olds, a total of 8 production words had a percentage of 5% or lower of correct answers. This is only the case of 3 words for 4 year-olds. It is interesting to note the high number of 4 year-olds who could still not recognise the picture of a nose. Many identify an ear or a leg. By 5 years of age, this seems to be no longer a problem: the percentage within this age group is 95% in contrast to the 30% in 4 year-olds. Adults score a 100% in all these problematic words except for again *despertar-se* 'wake up', *rostir* 'roast' and *tirar-se de cap* 'dive'. The latter two are, in fact, two of the most problematic words for the children in this study, regardless of their age group.

	WORD English *(Catalan)*	% CORRECT children	% CORRECT adults
COMPREHENSION	desk *(pupitre)*	35% (7)	100% (5)
	carve *(esculpir)*	20% (4)	100% (5)
	pour *(abocar)*	45% (9)	100% (5)
	erupt *(fer erupció)*	40% (8)	100% (5)
	beg *(demanar caritat)*	15% (3)	100% (5)
PRODUCTION	nose *(nas)*	30% (6)	100% (5)
	thermometer	25% (5)	100% (5)
	ruler *(regle)*	20% (4)	100% (5)
	chain *(cadena)*	35% (7)	100% (5)
	shear *(esquilar)*	0% (0)	100% (5)
	sweat *(suar)*	20% (4)	100% (5)
	drill *(foradar)*	40% (8)	100% (5)
	wake up *(despertar-se)*	35% (7)	80% (4)
	sharpen *(afilar)*	10% (2)	100% (5)
	roast *(rostir)*	5% (1)	80% (4)
	dive *(tirar-se de cap)*	0% (0)	40% (2)
	mix *(barrejar)*	20% (4)	100% (5)

Table 12. 4 year-olds problematic words

5.3. 5 Year-olds

This age group has the best results of all child groups and it is the one that is closer to adult proficiency. In fact, the number of correct answers in the comprehension tasks amounts to more than 90% and almost 100% in NC. The different outcome between the comprehension and production exercises is still very much present: 5 year-olds scored an almost 20% more in the former. The VP task, as in the other two age groups, is the one with fewer correct answers: it amounts to a 60% of right answers among children within this age group.

	HARD RESULTS		SOFT RESULTS	
5 year-olds	**TOTAL CORRECT**	**% CORRECT**	**TOTAL CORRECT**	**% CORRECT**
ALL TASKS	2155 / 2560	84%	2233 / 2560	87%
COMPREHENSION	1201 / 1280	94%	1201 / 1280	94%
Nouns	*618 / 640*	*97%*	*618 / 640*	*97%*
Verbs	*583 / 640*	*91%*	*583 / 640*	*91%*
PRODUCTION	954 / 1280	75%	1032 / 1280	81%
Nouns	*571/ 640*	*89%*	*571 / 640*	*89%*
Verbs	*383 / 640*	*60%*	*461 / 640*	*72%*

Table 12. Hard and soft results for 5 year-olds

As for problematic words, *abocar* 'pour' is the only word in the comprehension tasks which 5 year-olds found difficult to identify. It was also hard to name for the previous age groups. The complete list (see table 11) consists of only 7 words, which represents a severe reduction if we compare it to the two previous ones. All of these words were also problematic for the younger age groups and the vast majority of them belong to the verb production task. *Rostir* 'roast', *esquilar* 'shear' and *afilar* 'sharpen' were the least produced (between a 0 and 15% of correct answers). *Termòmetre* 'thermometer' is the only NP word with which 5 year-olds struggled and, although they could recognise the picture (some of them even described its use), the majority of them could not name it properly. In some cases, *regle* 'ruler' and *termòmetre* were interchanged.

	WORD **English *(Catalan)***	**% CORRECT children**	**% CORRECT adults**
COMPREHENSION	pour *(abocar)*	30% (6)	100% (5)
PRODUCTION	thermometer	30% (6)	100% (5)
	shear *(esquilar)*	15% (3)	100% (5)
	sharpen *(afilar)*	10% (2)	100% (5)
	roast *(rostir)*	0% (0)	80% (4)
	dive *(tirar-se de cap)*	20% (4)	40% (2)
	mix *(barrejar)*	30% (6)	100% (5)

Table 13. 5 year-olds problematic words

5.4. Typology of children's errors

Children's errors range from synonyms (hard reading) to semantic confusion and language mixing errors. Most errors in both production tasks were due perceptual

confusion (197), associative confusion (286), semantic confusion (158) or cases where the child did not answer (204). However, there was also a significant number of use of hyperonyms (particularly in verb production and contrary to adults, some of whom used hyponyms but not hyperonyms), definitions and other unclassified errors (classed as 'other'), which did not belong in any of the other categories

	ALL	3 year-olds	4 year-olds	5 year-olds
Definition	73	27	26	20
Hyperonym	42	14	16	12
Hyponym	2	0	1	1
Semantic	158	59	58	41
Associative	286	92	106	88
Perceptual	197	122	45	30
Phonological	12	6	5	1
Wrong word class	3	2	0	1
Innovation	16	7	4	5
Onomathopeia	0	0	0	0
Gesture	2	2	0	0
Other	12	4	4	4
NA	204	111	56	37
Mixing: blending1	1	0	1	0
Mixing: blending2	4	2	1	1

Table 14. Error types

The production of a definition instead of the word was almost systematic for some items, such as *termòmetre* 'thermometer', *regle* 'ruler', *apagar* 'extinguish', *rostir* 'roast', *tirar-se de cap* 'dive', *barrejar* 'mix' and *pesar* 'weigh'. Younger children and even some older ones could not produce these words, which were in general some of the most problematic across the age groups. Other present but less significant errors involved phonological confusion, the production of the wrong word class, gestures, and language mixing. The latter was, not surprisingly, almost never produced, since all children were chosen on the condition that they were Catalan monolinguals. Adults however, seem to have produced a higher percentage of language mixing and, in fact, 2 out of the 5, although bilingual, considered Spanish their first language.

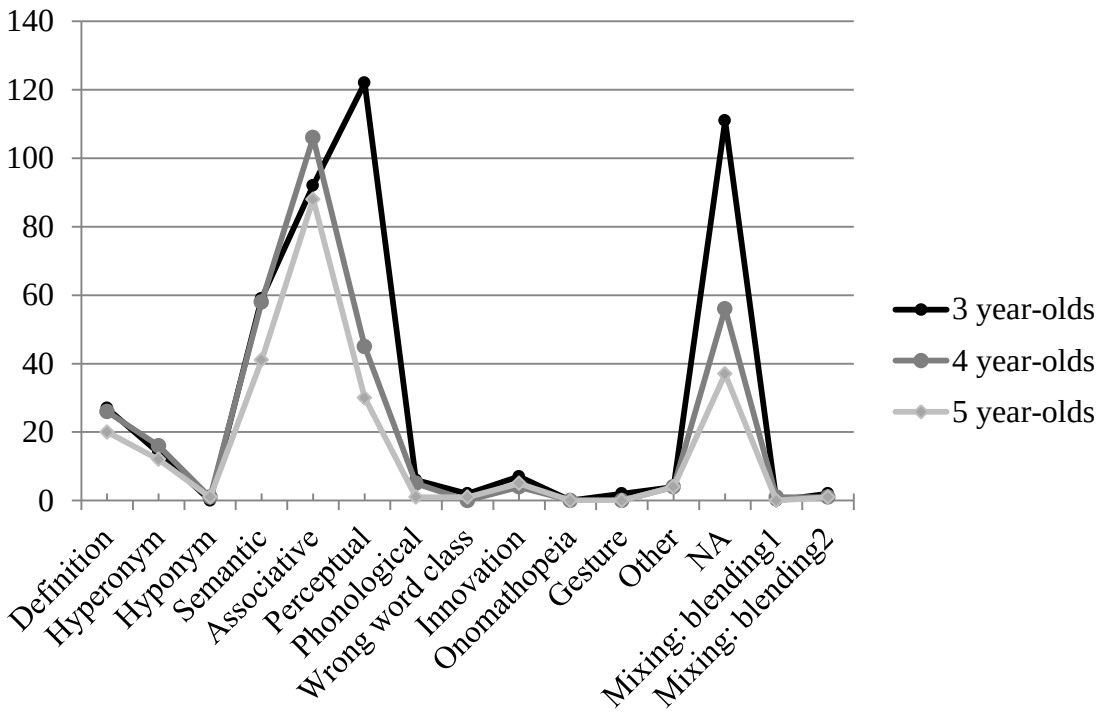

Fig 2. Error typology for 3, 4 and 5 year-olds

The number of perceptual errors decreases substantially in older children. From 3 to 4 year-olds, this decrease is very dramatic: 4 year-olds produce almost 80 perception errors less than their younger age group. 5 year-olds have the lowest score for perceptual errors and, indeed, for almost all other errors. Perceptual errors seem to decrease in favour of associative errors in 4 year-olds, which have scored the highest, although the difference is only about 15 (if we compare it to the 80 word difference in perception errors). This means that older children comprehend better the pictures they are shown, but some still cannot name the proper word. Another dramatic decrease occurs with NA (no answer). The number of 3 year-olds who do not answer the question asked is quite significant (111), but this number is reduced by half in 4 year-olds (56) and then reduced again 5 year-olds, among which only 37 items were unanswered.

5.5 Adults

Adults	HARD RESULTS		SOFT RESULTS	
	TOTAL CORRECT	% CORRECT	TOTAL CORRECT	% CORRECT
ALL TASKS	606 / 640	95%	620 / 640	97%
COMPREHENSION	320 / 320	100%	320 / 320	100%
Nouns	*160 / 160*	*100%*	*160 / 160*	*100%*
Verbs	*160 / 160*	*100%*	*160 / 160*	*100%*
PRODUCTION	286 / 320	89%	300 / 320	94%
Nouns	*154 / 160*	*96%*	*155 / 160*	*97%*
Verbs	*132 / 160*	*83%*	*145 / 160*	*91%*

Table 15. Hard and soft results for adults

Adult data are relevant because they provide with a contrast between fully-developed lexical knowledge and premature lexical knowledge. Adults had the best percentages of correct answers in all tasks, in both hard and soft results. They made no errors of comprehension and very few in production, the majority of which fell in verb production. In fact, their soft results are above 90% in all tasks, and reach an overall score of 97%. The better comprehension/worse production distinction observed in children is reproduced in adults as well, although in a more reduced scale. The biggest contrasts between age groups are found in verb production – a difference of about 40% between adults and 3 year-olds. On the other hand, we find the smallest differences between 5 year-olds and adults, being that of only a 3% in noun comprehension. No systematic errors were observed and therefore we have not included a table with problematic words. However, non-target answers comprised mainly synonyms (in the case of hard counting), language mixing (the partial or total use of Spanish words, such as *columpio*, the Spanish word for 'swing', or *taburet*, a mixed Catalan and Spanish word for 'stool') and residual semantic confusion, perception confusion and the use of hyponyms. Contrary to children, adults did not use descriptions or produced the wrong class of words. They did not present phonological confusion or word innovation. All in all, adults had little to no problems identifying words. Adults have answered the words in the table a 100% correctly, except for *despertar-se* 'wake up' (80%), *rostir* 'roast' (80%) and *tirar-se de cap* 'dive' (40%). In the case of 'wake up', one adult considered the person in the picture was yawning. The other two were cases of hyponym production instead of the target word.

5. CONCLUSIONS

The results original to this paper can be graphically summarised as in figures 3 and 4:

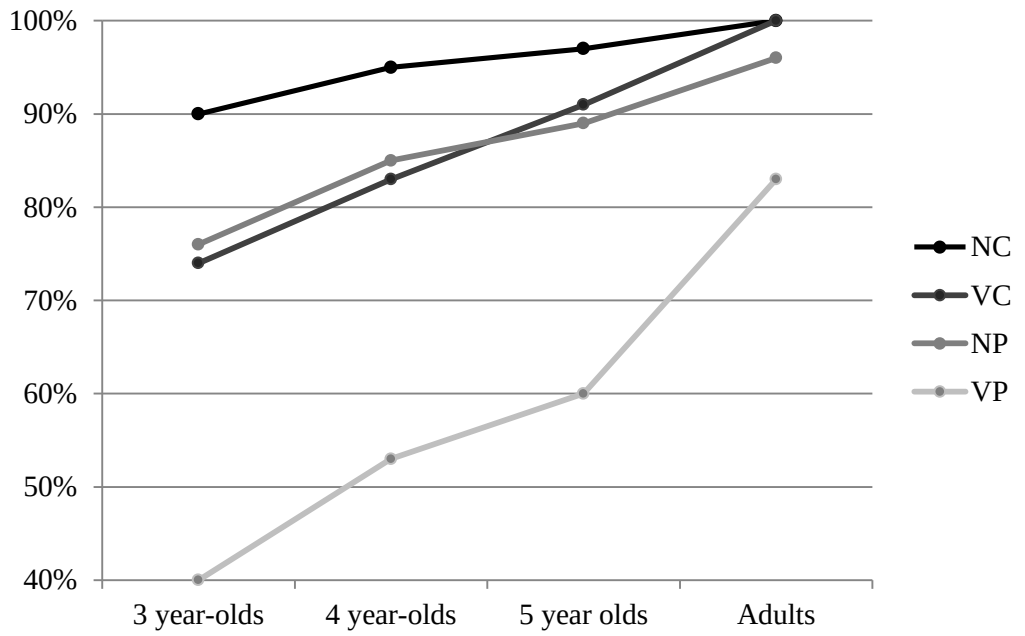

Fig 3. Percentage of correct answers in each task for all age groups (hard results)

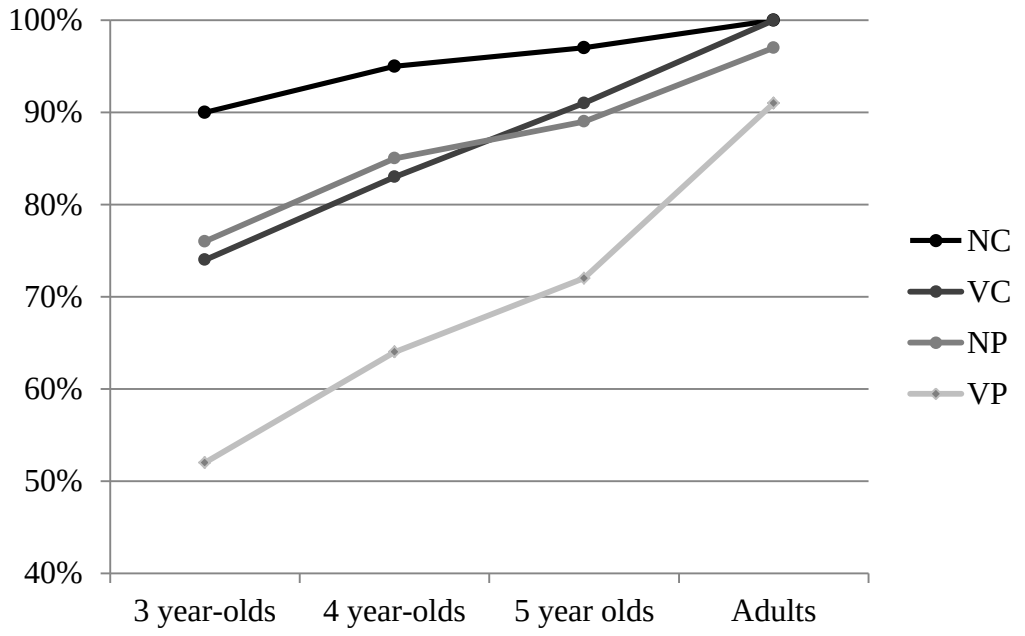

Fig 4. Percentage of correct answers in each task for all age groups (soft results)

The Catalan lexical task was performed to children of three different age groups as well as adults. Results seem to be consistent with the idea of an existing correspondence between age and lexical knowledge. Adult results were as expected: scoring above 90% in all tasks (when synonyms are counted as correct, see figure 3 and 4) and 97% on average, thus indicating the plausibility of the task. The most common error type in adults is that of synonym production (which cannot be fairly considered an error) and language mixing. In the case of children, semantic confusion and perception confusion were the main error types that children made. This either means that children did not know how to properly name an object or an action (they did not know the word for it) and, indeed, sometimes they described it instead, particularly in the case of *termòmetre* 'thermometer' and *regle* 'ruler', or children could not, in fact, interpret the representation of the object or the action. The latter one was particularly present in verb production: because the actions were shown in motionless pictures, often without a person visibly carrying them out, children, particularly the youngest ones, had difficulties understanding what was happening or what was being done in the picture. Although not a common error, some of the adults had, at some point in the verb production, a perception confusion (instead of *despertar-se* or 'wake up', one adult answered with *badallar* or 'yawn'). It would, therefore, possibly help to understand the action we are asking for if, instead of a picture, the participants were shown a short video. Some of the reduction errors might decrease if the precise actions were shown.

The data collected in this study illustrates the acquisition of Catalan lexical knowledge of children aged 3, 4 and 5. This study, valuable on its own since it will certainly help to assess monolingual Catalan children in the future, can also be used in bilingual lexical tasks where Catalan is either L1 or L2. Both monolingual and bilingual studies involving Catalan lexical acquisition have not yet been carried and thus, the contribution of this study will hopefully provide a point of reference for typically developing children

From all the data gathered, we can conclude that, overall, the older the age group, the better they perform. Thus, lexical knowledge is acquired with time and it is higher in the older age groups. 5 year-olds' word knowledge, although close, still does not reach adult levels. That means that an adult-like lexical proficiency is reached in a later stage. It would be interesting to assess older age groups in order to determine the age in which lexicon matures. Secondly, adults' scorings were high in both

comprehension and production, which confirmed that the assessment was fair. However, although synonyms were not counted as correct in the initial scoring, because of their high incidence, we decided results would depict actual knowledge more accurately if we included them as a correct answer. We would like to argue that this methodological change would not undermine the usefulness of the task. Finally, none of the children performed poorly in a systematic manner and, therefore, we can assume that of all the children tested, none presented language impairment. We also leave the investigation of lexical development in SLI for future research.

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·APPENDIX·

COST IS0804 WG3 Word Comprehension Task: Answer Sheet for NOUNS

ORDER OF TESTING THIS TASK GOES AS:	**1 2 3 4**	CHILD CODE	
DATE OF BIRTH		DATE OF TESTING	
STARTING TIME:		END TIME:	
		TASK DURATION:	

No	**Target word**	**Question**	**Correct answer**	**CHILD'S answer (no of picture)**	**Remarks**
01	gos	On és el gos?	3		
02	lluna	On és la lluna?	1		
03	nina	On és la nina?	4		
04	pilota de tennis	On és la pilota de tennis?	2		
05	cinturó	On és el cinturó?	4		
06	bufanda	On és la bufanda?	2		
07	ampolla	On és l'ampolla?	1		
08	armilla	On és l'armilla?	3		
09	estrella	On és l'estrella?	2		
10	raspall de dents	On és el raspall de dents?	1		
11	pupitre	On és el pupitre?	3		
12	paraigües	On és el paraigües?	4		
13	síndria	On és la síndria?	2		
14	llumí	On és el llumí?	3		
15	raqueta	On és la raqueta?	2		
16	pinta	On és la pinta?	1		
17	bolígraf	On és el bolígraf?	4		
18	mitjons	On són els mitjons?	3		
19	ocell	On és l'ocell?	4		
20	arbre	On és l'arbre?	2		
21	pinya	On és la pinya?	3		
22	pinzell	On és el pinzell?	4		
23	formatge	On és el formatge?	1		
24	tigre	On és el tigre?	3		
25	moto	On és la moto?	2		
26	tortuga	On és la tortuga?	1		
27	gallina	On és la gallina?	4		
28	corbata	On és la corbata?	1		
29	pilota	On és la pilota?	3		
30	xumet	On és el xumet?	2		
31	carter	On és el carter?	1		
32	paella	On és la paella?	4		

COST IS0804 WG3 Word Comprehension Task: Answer Sheet for VERBS

ORDER OF TESTING THIS TASK GOES AS:	**1 2 3 4**		CHILD CODE	
DATE OF BIRTH		DATE OF TESTING		
STARTING TIME:		END TIME:		
		TASK DURATION:		

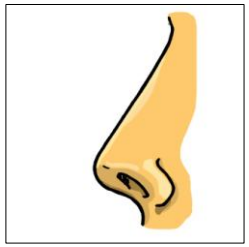
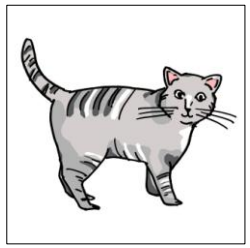
No	**Target word**	**Question**	**Correct answer**	**CHILD'S answer (no of picture)**	**Remarks**
01	caure	Qui està caient?	1		
02	córrer	Qui està corrent?	2		
03	esculpir	Qui està esculpint?	4		
04	plantar	Qui està plantant?	3		
05	llaurar	Qui està llaurant?	1		
06	navegar	Qui està navegant?	3		
07	abocar	Qui està abocant?	4		
08	xiular	Qui està xiulant?	1		
09	medir	Qui està medint?	2		
10	anar de quatre grapes	Qui va de quatre grapes?	4		
11	donar menjar	Qui dóna de menjar?	3		
12	fer erupció	On està fent erupció?	2		
13	fondre's	Quin s'està fonent?	4		
14	serrar	Qui està serrant?	2		
15	ofegar-se	Qui s'està ofegant?	1		
16	llançar	Qui està llençant?	3		
17	arrossegar	Qui està arrossegant?	2		
18	fer massatge	Qui fa un massatge?	1		
19	demanar caritat	Qui demana caritat?	4		
20	caçar	Qui està caçant?	2		
21	muntar	Qui està muntant?	4		
22	fregar	Qui està fregant?	3		
23	ploure	On està plovent?	1		
24	acariciar	Qui està acariciant?	4		
25	fregir	Qui està fregint?	2		
26	nedar	Qui està nedant?	3		
27	saludar	Qui està saludant?	2		
28	pintar	Qui està pintant?	3		
29	picar amb un martell	Qui pica amb un martell?	1		
30	barallar-se	Qui s'està barallant?	4		
31	caminar	Qui està caminant?	1		
32	munyir	Qui està munyint?	3		

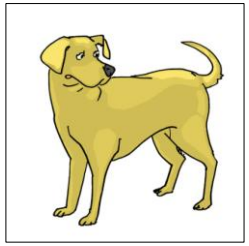
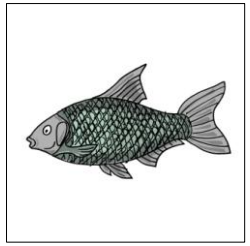
Word comprehension: NOUNS
Crosslinguistic lexical task designed by
COST IS0804 WG3

Final version for Catalan

Comprensió de paraules: NOMS
Tasca lèxica dissenyada per
COST IS0804 WG3

Versió final, català

1  2 

3  4 

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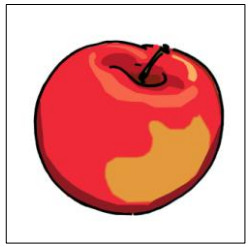
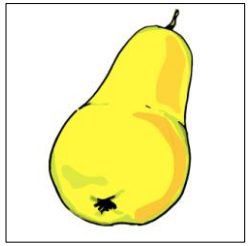
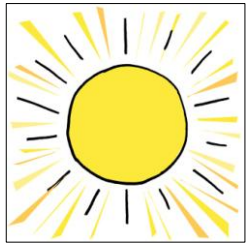
1  2 

3  4 

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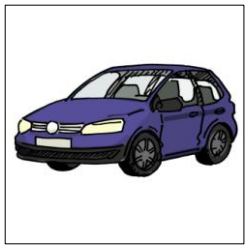
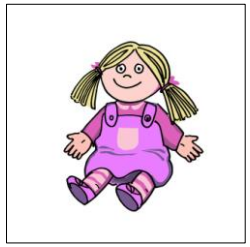
1  2 

3  4 

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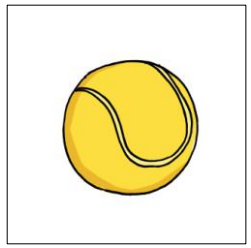
1  2 

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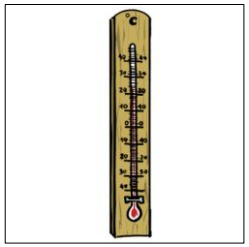
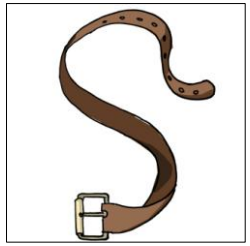
N_4

1  2 

3  4 

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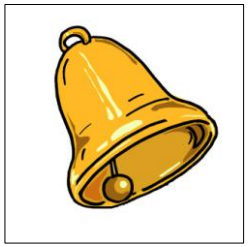
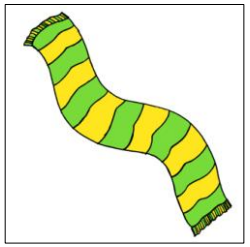
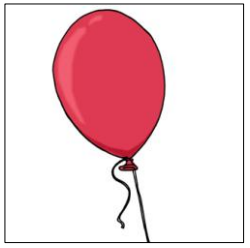
1  2 

3  4 

N_6

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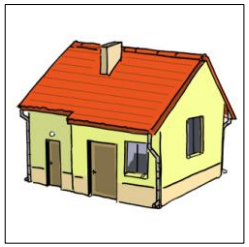
3  4 

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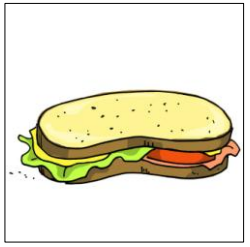
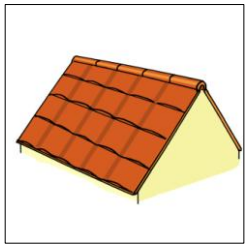
1  2 

3  4 

N_8

Word comprehension: VERBS
Crosslinguistic lexical task designed by COST IS0804 WG3

Final version for Catalan

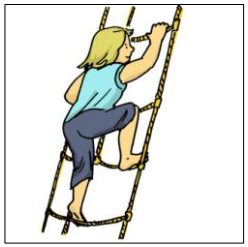
Comprensió de paraules: VERBS
Tasca lèxica dissenyada per

Versió final, català

1   2

3   4

V_1

1   2

3   4

V_2

1   2

3   4

V_3

1   2

3   4

V_4

COST IS0804 WG3 Word Production Task: Answer Sheet for NOUNS

ORDER OF TESTING THIS TASK GOES AS:	**1 2 3 4**	CHILD CODE	
DATE OF BIRTH		DATE OF TESTING	
STARTING TIME:		END TIME:	
		TASK DURATION:	

No	Target word	Question	Answer	Remarks
01	nas	Què és això?		
02	poma	Què és això?		
03	avió	Què és això?		
04	núvol	Què és això?		
05	cama	Què és això?		
06	pingüí	Què és això?		
07	entrepà	Què és això?		
08	granota	Què és això?		
09	pantalons	Què és això?		
10	televisor	Què és això?		
11	llapis	Què és això?		
12	campana	Què és això?		
13	cotxe	Què és això?		
14	termòmetre	Què és això?		
15	cullera	Què és això?		
16	pastanaga	Què és això?		
17	papallona	Què és això?		
18	ninot de neu	Què és això?		
19	rellotge	Què és això?		
20	regle	Què és això?		
21	escombra	Què és això?		
22	porta	Què és això?		
23	espelma	Què és això?		
24	serra	Què és això?		
25	mussol	Què és això?		
26	tamboret	Què és això?		
27	taronja	Què és això?		
28	pizza	Què és això?		
29	cadena	Què és això?		
30	ploma	Què és això?		
31	vestit	Què és això?		
32	gronxador	Què és això?		

COST IS0804 WG3 Word Production Task: Answer Sheet for VERBS

ORDER OF TESTING THIS TASK GOES AS:	**1 2 3 4**	CHILD CODE	
DATE OF BIRTH		DATE OF TESTING	
STARTING TIME:		END TIME:	
		TASK DURATION:	

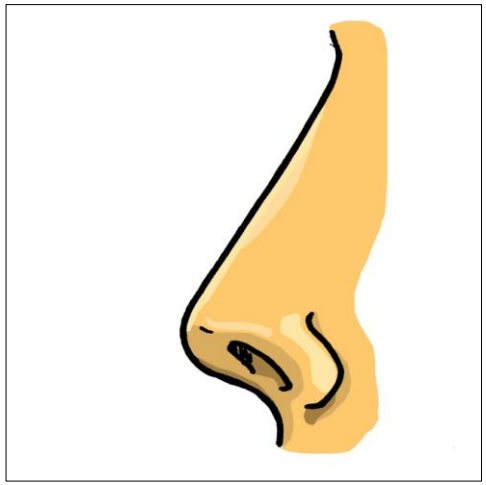
No	Target word	Question	Answer	Remarks
01	beure	Què fa?		
02	pujar	Què fa?		
03	patinar	Què fa?		
04	esquilar	Què fa?		
05	suar	Què li passa?		
06	esquiar	Què fa?		
07	foradar	Què fa?		
08	estripar	Què fa?		
09	fer pipí	Què fa?		
10	saltar	Què fa?		
11	afaitar-se	Què fa?		
12	despertar-se	Què fa?		
13	ballar	Què fa?		
14	afilar	Què fa?		
15	nevar	Què passa?		
16	apagar	Què fa?		
17	sortir de l'ou	Què fa?		
18	tocar (el piano)	Què fa?		
19	conduir	Què fa?		
20	cantar	Què fa?		
21	respallar-se les dents	Què fa?		
22	cordar	Què fa?		
23	baixar pel tobogan	Què fa?		
24	fer un petó	Què fa?		
25	prendre el sol	Què fa?		
26	rostir	Què fa?		
27	pelar	Què fa?		
28	tirar-se de cap	Què fa?		
29	xiuxiuejar	Què fa?		
30	escombrar	Què fa?		
31	barrejar	Què fa?		
32	pesar	Què fa?		

Word production: NOUNS
Crosslinguistic lexical task designed by COST IS0804 WG3

Final version for Catalan

Producció de paraules: NOMS
Tasca lèxica dissenyada per COST IS0804 WG3

Versió final, català



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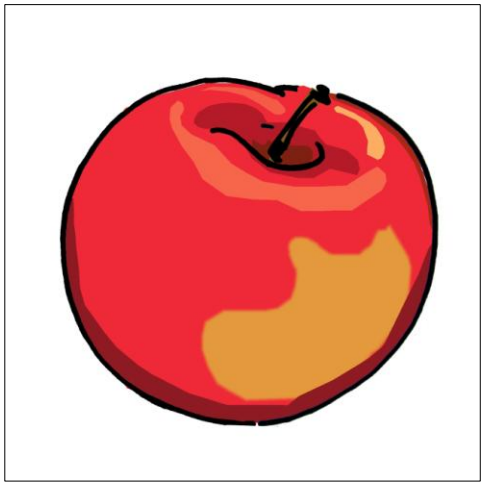

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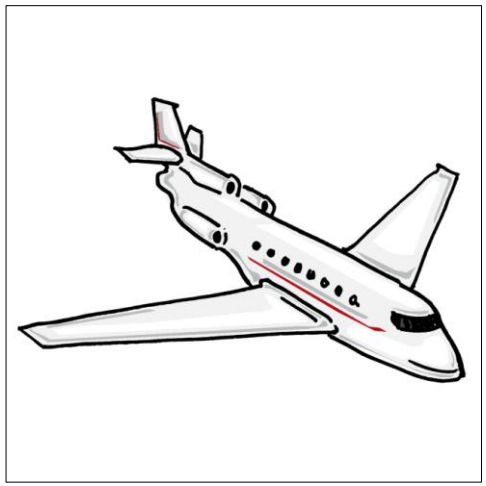

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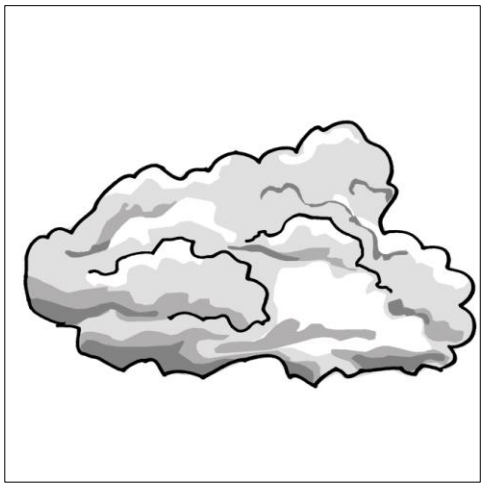


N_4

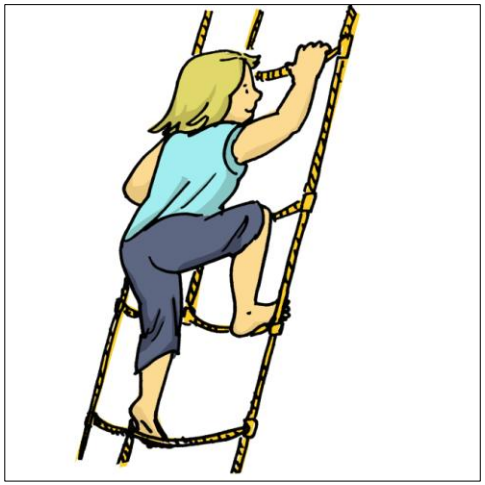
Word production: VERBS
Crosslinguistic lexical task designed by COST IS0804 WG3

Final version for Catalan

Producció de paraules: VERBS
Tasca lèxica dissenyada per COST IS0804 WG3

Versió final, català

V_1



V_2

V_3

V_4