

Testing syntactic and pragmatic accounts of clitic omission

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The idea has been put forward that pragmatic factors as well as syntactic factors play a role in the production and omission patterns of object clitics in child Romance. We will argue that, although pragmatics may play a role in the languages with some sort of null object – such as European Portuguese and some varieties of French –, in the Romance languages without such an element there is no need to assume that pragmatics plays a role in the patterns of omission. We present new data from indirect object clitics in child Catalan, the results of an elicitation experiment which replicates a former experiment by Babyonyshev and Marin (2006) on child Romanian. The results indicate low levels of clitic omission. Crucially, if we compare these results with those for direct object clitics in Catalan (Wexler et al. 2004) the difference is remarkable, and is unexpected under the pragmatic accounts of clitic omission. We argue that the results are predicted if Wexler's (1998) Unique Checking Constraint is assumed; under this analysis, clitic omission is found whenever the derivation requires more than one instance of checking of uninterpretable features, and only in that case. Differences in the early production of clitics then follow from the parochial properties of those clitics in different languages.

1. Background

There is very little work on the early production of indirect object clitics to be found in the literature. Focussing on Romance, Lyzckowski (1999) carried out a study of clitic production in child Spanish based on the spontaneous productions of three children, María, Juan and Koki; according to his results, summarised in (1), omission was very low even at the earliest stages (the highest omission rate recorded is that of Juan, who omitted 25% of expected IO clitics in the 2;4–2;5 period, but this corresponds to one instance only).

(1) Spontaneous production, Spanish: Lyzckowski (1999)

María	IO clitic	doubling	omission	full DP	other err
1;8–2;0	58.3% (7)	8.3% (1)	8.3% (1)	8.3% (1)	16.7% (2)
2;2–2;6	84.7% (83)	9.2% (9)	0%	0%	1.5% (1)
2;8–3;1	58.1% (57)	13.4%(9)	0%	0%	1.5% (1)
3;6–3;11	92.4%(110)	5% (6)	0%	1.7% (2)	0.8% (1)
total	93.8%	9.1%	0.4%	1.8%	2.9%

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Juan	IO clitic	doubling	omission	full DP	other err
2;4–2;5	75%(3)	0%	25% (1)	0%	0%
2;8–2;10	100%(1)	0%	0%	0%	0%
3;5–3;6	66.7%(2)	33.3%(1)	0%	0%	0%
3;9–4;11	77.8%(28)	11.4%(5)	2.3%(1)	2.3%(1)	6.8%(2)
Total	77.3%	11.4%	2.3%	2.3%	6.8%

Koki	IO clitic	doubling	omission	full DP	other err
1;7–1;11	66.7%(6)	0%	0%	22.2%(2)	11.1%(1)
2;2–2;4	84.8%(28)	6.1%(2)	0%	3%(1)	6.1%(2)
2;6–2;8	100%(15)	0%	0%	0%	0%
2;11	71.4%(15)	14.3%(3)	0%	4.7%(1)	9.5%(2)
Total	72.7%	5.7%	0%	4.5%	5.7%

There is one potential problem with the analysis of spontaneous data, though: in the case of IO, it is difficult to find contexts which make IO really obligatory, and so the subsequent recounts may underestimate the levels of omission. Babyonyshev & Marin (2006) carried out the first experimental study for the elicitation of indirect object clitics in Romanian, a language which requires clitic doubling for all dative arguments. They elicited IO clitics from eighteen 2- and 3-year-olds with the elicitation method exemplified in (2). The IOs elicited were counterbalanced for the theta roles they bore: Goal, Possessive and Benefactive.

- (2) Look what happens now. The girl has a present.
 – Ce a facut baietelul de are fetita un cadou?
 what has done boy-the that has girl-the a present
 – /-a dat un cadou
 him/her-DAT has given present
 (elicitation method of Babyonyshev & Marin 2006)

Recordings of a story told by the children allowed the authors to calculate the children's MLUw and to consider the results by age groups but also by MLUw:

- (3) Results of direct and indirect clitic production/omission, Romanian, Babyonyshev & Marin 2006

age group	direct obj clitic	direct omission	obj	indirect clitic	obj	indirect omission	obj
2-y-o (#9)	86%	14%		82%		18%	
3-y-o (#9)	86%	14%		74%		26%	
<2 MLU (#2)	16%	84%		0%		100%	
>2MLU (#16)	94%	6%		87%		13%	

While the age groupings do not provide much information on the developmental pattern, once we consider the MLUw groupings a clearer picture emerges. The results were interpreted as follows: children with a low MLUw omit IO clitics as a result of production limitations. Children with higher MLUw do not omit IO clitics and succeed in computing a derivation which is adult-like in all respects. The authors conclude that any maturational constraints which, by hypothesis, are operative in child grammar (such as the Unique Checking Constraint) are of no consequence for the derivation of IO clitics in Romanian.

2. An experiment on indirect object clitic production/omission in Catalan

Here we replicate Babyonyshev & Marin's (2006) experiment in Catalan; the elicitation prompt (4) is simpler since Catalan does not require IO clitic doubling, and therefore the prompt can contain a full IO. The experimenter told the child a story with the help of puppets, and asked a question as exemplified in (4), for which the expected answer required an IO clitic. The target clitic form was, for all experimental items, *li* (dat-sg). See the Appendix for a complete list of the experimental items.

- (4) – Avui la nena fa anys. Mira què té el cuiner per ella.
 Today is the girl's birthday. Look at what the cook has for her
 – Què fa el cuiner amb la nena?
 what is the cook doing to the girl
 EXPECTED ANSWER:
 – *Li* dona un regal.
 her gives a present

As in Babyonyshev and Marin's original experiment, test items were counterbalanced for theta roles, and Goal (5), Benefactive (6) and Possessive (7) IO were tested. Although IOs are not generally obligatory (especially in the case of Benefactives), the salience of the IO referents in the discourse renders their presence necessary.

- (5) a. ^{*/??}La mestra ha donat un xiclet. GOAL
 the teacher has given a chewing-gum
 b. La mestra **li** ha donat un xiclet.
 The teacher 3sDat has given a chewing-gum
 'The teacher has given him/her chewing-gum.'
- (6) a. Ha cuinat peix fregit. BENEFACTIVE
 has cooked fish fried
 'S/he has cooked fried fish.'
 b. **Li** ha cuinat peix fregit.
 3sDat has cooked fish fried
 'S/he has cooked fried fish for him/her.'
- (7) a. Han tibat els cabells **de** la Cinta POSSESSIVE
 have pulled the hair of Det Cinta
 'They have pulled Cinta's hair.'
 b. **Li** han tibat els cabells.
 3sDat have pulled the hair
 'They have pulled his/her hair.'
 c. ^{*/??}Han tibat els cabells.

Forty children and ten adults were tested, all native speakers of Catalan from the metropolitan area of Barcelona. Details on the subjects appear in (8). All subjects were tested on 11 items, granting a total number of answers of 440 for children and 110 for adults.

- (8) Subjects, Catalan

Age group	#	age range	mean age
2	10	2;4,0–2;10,11	2;7,28
3	10	3;2,17–3;11,15	3;6,15
4	10	4;2,1–4;11,14	4;6,17
5	10	5;0,2–5;11,11	5;5,17
Adults	10		

Since our main goal is the analysis of clitic omission/production, we use a Logistic Regression model (Hosmer & Lemeshow, 2000) with a binary response variable (1=omission and 0=production or vice versa). Covariates included in the models are age and type of clitic. Repeated measures available for each individual have been taken into account too. In the results we give the odds ratio and its 95% confidence intervals. The statistical analyses have been carried out using the procedure GENMOD of SAS software v9.1 (SAS Institute Inc., Cary, NC, USA).

Even though the elicitation method was quite similar to that used for the elicitation of direct object clitics (Schaeffer 2000), non-valid responses were given more often than with direct object elicitation, possibly due to the relatively lower saliency of Goal, Benefactive and Possessive theta roles and their lower degree of obligatoriness. So the results were computed over 70% of responses for subjects aged 2, 67% for those aged 3, etc., as shown in table (9).

(9) Valid and non-valid responses (including no response to the question), Catalan

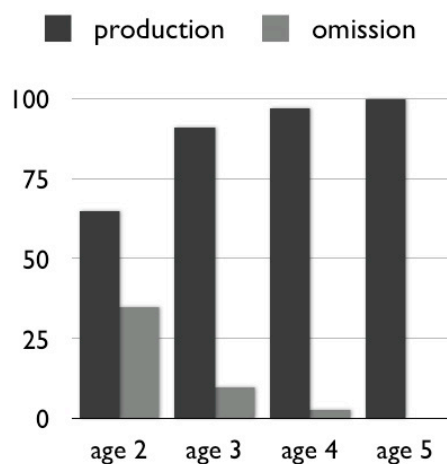
	valid response	non-valid response
2-year-olds	70%	30%
3-year-olds	67%	33%
4-year-olds	86%	14%
5-year-olds	97%	3%

The results of the experiment in percentages appear in (10). Results identical to those provided by adults are achieved at age 5, with 100% IO clitic production.

(10) Results of indirect object clitic production/omission, Catalan

age group	omission	production
2-year-olds	35%	65%
3-year-olds	8%	91%
4-year-olds	3%	97%
5-year-olds	0%	100%
Adults	0%	100%

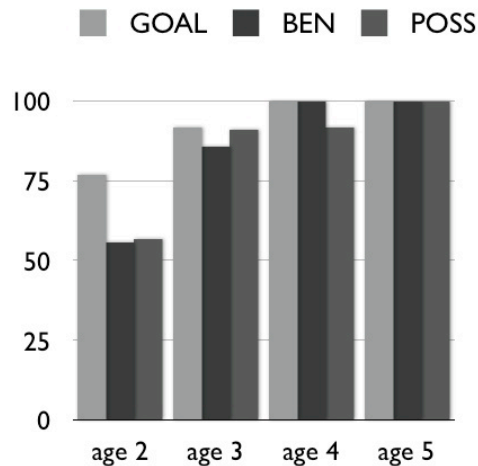
The results are represented in the following graph:



Graph 1: Production vs. omission of indirect object clitics, Catalan

The analysis of the results indicates that 2-year-olds behave differently from 3- (OR=5.2, 95%CI=(1.4, 18.9)) and 4-year-olds (OR=16.5, 95%CI=(5.0, 54.3)); there is no significant difference between 3- and 4-year-olds and 5-year-olds and adults. Omission of indirect object clitics is therefore associated with 2-year-olds only.

If we look at the omission/production patterns of the clitics taking into account the thematic role they bear, the results indicate that whether the clitic is a Goal, a Benefactive or a Possessor is of no consequence (Graph 2). A statistical analysis showed that the difference in production of IO clitics bearing different theta roles is not statistically significant, for a subsample of the children here (see Mosella 2007).



Graph 2: Production of indirect object clitics by theta role, Catalan

Our interim conclusion is thus that indirect object clitic omission is found only for children aged 2 in Catalan; in Romanian, in which results are clearly comparable, indirect object clitic omission is found with children whose MLU is lower than 2. In Catalan we have no information as to the children's MLU, although it is not unreasonable to think that 2-year-olds MLU will be the lowest amongst our subjects, and that it may in many cases be below 2. In any event, the high production of indirect object clitics by age 3 witnesses to the fact that clitics are not *per se* a late acquisition.

3. A grammatical account of optional clitic omission

The results for the indirect object clitics of Catalan are quite similar to those for Romanian indirect objects in Babyonyshev and Marin (2006). Like those authors, we assume that the Unique Checking Constraint is responsible for the cases of clitic omission and for the optional character of this omission when it is found in child language. Wexler's (1998, to appear) Unique Checking Constraint is stated as in (11) and acts in conjunction with Minimise Violations (12).

- (11) Unique Checking Constraint (UCC, Wexler 1998)
The D-feature of DP can only check against one functional category.
- (12) Minimize Violations (MV, Wexler 1998)
Given an LF, choose a numeration whose derivation violates as few grammatical properties as possible. If two numerations are both minimal violators, either one may be chosen.

The UCC locates the source of the problems in clitic production in the underlying operation of checking against more than one uninterpretable feature. We assume that sentences with pronominal clitics involve a *pro* object in its canonical position that raises to the Specifier of CIP and checks against the uninterpretable features of Cl (Sportiche 1996). Those clitics whose production in a particular grammar involves a double checking operation will be in conflict with (11) and give rise to the violation of a constraint of child grammar. Alternatively, the child may omit the CIP where the clitic is merged; this derivation does not violate (11), but constitutes a violation in the projection of the full sentence structure. Both derivations violate one grammatical constraint, and, by Minimise Violations, may occur alternatively – as a result, the child will produce sentences with and without the obligatory clitic, both resulting from a derivation involving a violation in his/her grammar. Only when, due to maturation, the UCC dies out, the derivation with the clitic will violate no constraint at all, and will therefore be optimal. Then clitic omission will cease.

The UCC together with Minimise Violations allow us to account for object clitic omission in the languages with participle agreement (Catalan, French, Italian, see (13)), in which the *pro* associate of the object clitic raises to CIP through *vP*; no object clitic omission is found in languages such as Spanish, where there is no participle agreement (14) and *pro* must only check the uninterpretable feature in CIP.

- (13) a. Je les avais faites. (French)
 I CL-fem-pl had done-fem-pl
 'I had done them(fem,pl).'
- b. (Jo) les he fetes/ fetØ. (Catalan)
 I CL-fem-pl have done-fem-pl/done
 'I have done them(fem,pl).'
- (14) a. (Yo) las he hecho/*hechas. (Spanish)
 I CL-fem-pl have done/done-fem-pl
 'I have done them.'

Derivations for participle-agreement languages appear in (15) and for non-participle-agreement languages in (16) (see also Wexler et al. 2004 for details).

- (15) [CIP [direct object clitic] [*vP* [*v*] [VP V [DP *pro*]]]]
 [CIP *pro*_{*i*} [direct object clitic] [*vP* *t*_{*i*} [*v*] [VP V [DP *t*_{*i*}]]]]
- (16) [CIP [direct object clitic] [*vP* [*v*] [VP V [DP *pro*]]]]
 [CIP *pro*_{*i*} [direct object clitic] [*vP* [*v*] [VP V [DP *t*_{*i*}]]]]

Babyonyshev and Marin (2006) argued that the derivation of indirect object clitics in Romanian, represented in (17), did not involve more than one checking operation and, therefore, did not conflict with the UCC. As a consequence, their prediction was that no indirect object clitic omission was expected.

- (17) [CIP [indirect object clitic] [AgrIOP [AgrIO] [VP V [DP *pro*]]]]
 [CIP *pro*_{*i*} [indirect object clitic] [AgrIOP [AgrIO] [VP V [DP *t*_{*i*}]]]]

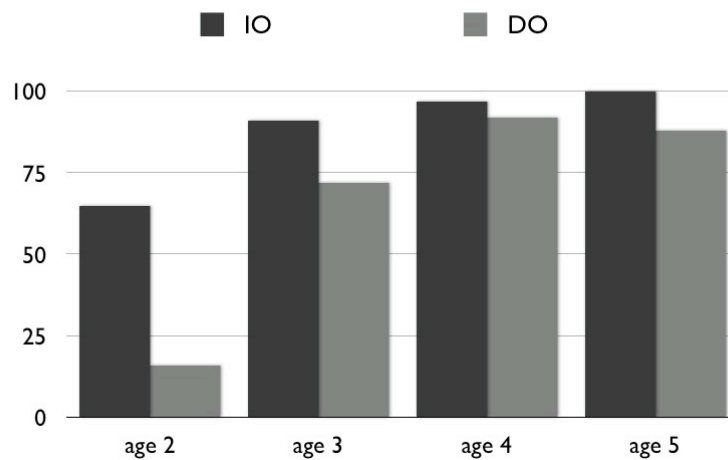
The results of the elicitation experiment in Romanian, reported in section 1, fulfilled their predictions for children with an MLU higher than 2 (ages 2–3), since clitics were produced in 87% of cases. For children with an MLU lower than 2, omission was higher and this was attributed to a general production limitation. We will assume the same analysis in Catalan and claim that the early omission period of indirect object clitics is directly linked to very low MLU and is quite independent of syntactic or pragmatic variables. Past that early stage, indirect object clitic production is, as predicted, non-problematic for children even before the UCC dies out due to maturation. This prediction is also borne out in Spanish, according to the results of the spontaneous production analysis in (1).

Crucially, given our assumptions on Catalan, the prediction of the analysis in terms of the UCC is that indirect object clitic omission will differ from object clitic omission, since Catalan is a participle agreement language. The results for object clitic omission and production in the elicitation experiment of Wexler et al. (2004) are those in (18). (These are the results for the present tense; those for present perfect were not significantly different.)

(18) Object clitic omission, Catalan (from Wexler, Gavarró & Torrens 2004)

	Clitic	clitic omission	full DP
2-year-olds	25.9%	74.1%	0
3-year-olds	68.2%	25%	6.8%
4-5-year-olds	95.7%	4.2%	0

The results of production of object clitics for Catalan by Wexler et al. (2004) and those for indirect object clitics original to this paper appear side by side in Graph 3:



Graph 3: Production of indirect and direct object clitics, Catalan

The statistical comparison of the results of the two experiments is as follows. Taking all ages together, the target production of indirect object clitics is 4 times more likely than that of direct object clitics (OR=4.46, 95%CI=(1.89, 10.54)). By age groups, 2-year-olds are statistically different from all other groups, being 9 times more likely to omit direct object clitics than indirect object clitics (OR=9.44, 95%CI=(2.27, 39.12)). For 3-year-olds, the difference is significant at 10% in the production of the two clitic types, with direct object clitics being omitted more often than indirect object clitics (OR=3.65, 95%CI=(0.86, 15.53)). For 4- and 5-year-olds, there is no statistical difference in the production of the two clitic types.

The comparison of the results for production/omission of IO and DO clitics in languages such as Catalan and Romanian demonstrates that clitic omission occurs at the UCC-stage and relates to a grammatical property of the clitic at issue – and is therefore not associated to language alone. As a consequence, any analysis of clitic omission must be sensitive to its cross-linguistic variation and its variation across clitic types. In section 3 we show that the pragmatic account of Serratrice et al. (2004) fails to predict this variation.¹

¹ The grammatical approaches to clitic omission by Jakubowicz (2005) and Hamann & Belletti (2006) would also predict a more general failure in clitic production than the facts seem to support (general failure with object clitics across languages, and failure with indirect object clitics). Tuller et al. (to appear) also attribute omission to the

4. Is pragmatics necessary to account for the omission pattern in the language varieties investigated?

Tedeschi (2008) shows that children are sensitive to the pragmatic context of a given DP and determine accordingly the distribution of full DPs, and clitics/clitic omission. She presents the results of two experiments, with elicitation as exemplified in (19) and (20). (19) resembles the elicitation method of Schaeffer (2000) and provides the context for clitic production; (20) provides a context in which a full DP is expected.

- (19) a. Experimenter: “Cosa fa il papà alla bimba?”
What is daddy doing to the girl?
Child: “Pettina”
(he) combs (Luca, 3;9)
- b. Experimenter: “Cosa fa la mamma al bimbo e al papà?”
What is mom doing to the boy and to daddy?
Child: “Li pettina”
(she) combs cl-them (Luca, 3;9)
- (20) Generic question: “Cosa succede in questo disegno?”
What happens in this picture?
Answer: “Un/il papà pettina una/la bimba”
A/the dad combs a/the child

Children in all groups produced more full DPs in response to the generic questions in (20) than in response to specific questions of the kind in (19). The association of different types of questions with different types of referring expressions is found to be significant for all age groups. On these grounds, Tedeschi excludes an analysis such as that of Schaeffer (2000), which attributes clitic omission in early child Italian to lack of pragmatic knowledge.

Tedeschi follows Serratrice et al.’s (2002) pragmatic account of clitic omission (and argument omission in general). Serratrice et al. argue, on the basis of the longitudinal study of both monolingual and bilingual Italian-speaking children, that the informativeness of the subject of a sentence is a predictor for its phonetically full realisation. This generalisation carries over to objects: “Null objects were associated with uninformative features significantly more often than with informative features” (Serratrice et al. 2004: 197), although objects are typically associated to new information and, therefore, according to these authors, are less likely to be dropped than subjects. In general, according to Serratrice et al., from MLUw 2 children “were significantly more likely to omit arguments whose referents had a low informative status (typically referents that were first or second person, old, highly active, present, neither contrasted nor in need of disambiguation)” (Serratrice et al. 2004: 185).

Let us assume for the sake of argument that informativeness is necessary to account for clitic omission, and compare direct and indirect object clitics in Catalan. The features which encode informativeness, following Serratrice et al., are: (i) person, (ii) old vs. new information, (iii) plus or minus active in discourse, (iv) present or absent in the context, and (v) contrasted or in need of disambiguation. Serratrice et al.’s hypothesis is that, given the values for those features of a given clitic, the levels of production should follow. We compare the informativeness feature values of the object and indirect object clitics elicited in the experiments for Catalan in (21).

complexity of clitic production in general, but they point to differences between direct and indirect objects with regard to their morphological complexity. For reasons of space we will not be able to pursue this issue here.

(21)		DO clitic	IO clitic
	person	3 rd	3 rd
	information	old	old
	active in discourse	yes	yes
	present in context	yes	yes
	need of disambiguation	no	no

Since all informativeness feature values are the same for object and indirect object clitics, Serratrice et al.'s pragmatic account predicts that omission should be the same; this prediction, however, is not fulfilled, as the comparison between object and indirect object clitic omission in section 3 shows. If the results from Babyonyshev and Marin (2006) on Romanian were also considered, the feature values for the elicited IO clitics would coincide with those in (21), but again the rate of omission/production is different than that of object clitics in Catalan. We conclude that the differences encountered in the production/omission rates of clitics across languages fail to reflect the similarity in informativeness expected under Serratrice et al.'s (2004) account.²

If, as we have argued, the patterns attested in e.g. Catalan and Romanian child grammar for object and indirect object clitic omission are best accounted for by the UCC, is pragmatics of any help in the account of clitic omission? There are a number of languages which exhibit null objects; then, whether a null or full option is chosen may depend on pragmatic factors; in that case, pragmatics will clearly be relevant to account for the distribution of full and empty objects. One such case is that of European Portuguese. European Portuguese presents null objects and has been argued to present null indirect objects as well; the experimental results on the elicitation of both clitic types with European Portuguese-speaking children indicate higher rates of clitic omission/empty objects than in any of the other languages studied, and for an extended period of time, as shown by Carmona and Silva (2007) and Costa et al. (2007). Carmona and Silva (2007) elicited indirect object clitics in six 3-year-olds and eight 4-year-olds, and found empty IO in 47 to 60% of cases. Costa et al. (2007), having tested eleven children (mean age: 3;7), found that children produced 51.8% of null indirect objects, and only 8.8% of clitics, to which 5.1% of full DPs and 34.3% of strong pronouns have to be added; the proportion of null IOs is comparable to that found for objects. The choice between the various forms an argument can take (clitic, strong pronoun, null object, full DP) is pragmatically driven, and failure to make the choice adults make can possibly be attributed to failure in the pragmatic coding. So pragmatic considerations are not excluded when the null object option is available in the adult grammar, i.e. in a well-defined subset of adult and child grammars.

We conclude that computational features alone allow us to make the correct predictions with regards to omission and production of object and indirect object clitics depending on their syntax, for languages like the ones discussed here, in which no null counterpart of an argument is available. The analysis in terms of the UCC allows us to predict variation both across languages and across clitics, and the optionality of clitic omission in the relevant cases – note that there is no child variety described in the literature in which clitics are *always* omitted. Furthermore, the analysis here makes predictions that extend to the full range of clitic elements (as well as non-clitic elements: see the initial UCC analysis of optional infinitives). Future research should allow us to see whether IO clitic production is also adult-like in early French, Italian, and so on. Preliminary results on the production of the partitive clitic *en*, with high rates of clitic omission, can also be accounted for given certain assumptions on the syntax of *en*, closer to that of object clitics and unlike that of indirect object clitics.

²Serratrice et al. (2004) also consider object omission in English, and find it to be less frequent than in Italian, although they admit they would expect it to be identical, given that null objects are equally banned in the two languages. To account for this unexpected contrast they speculate that Italian children may omit object clitics as a consequence of their non-canonical preverbal position (see Serratrice et al. 2004: 200). Note that this additional hypothesis would fail again to predict any contrast between object and indirect object clitic omission; further, it would predict that clitics in non-canonical position (i.e. preverbal) would be omitted more often than clitics in canonical position (i.e. postverbal clitics, found with non-finite verbs), but there is no evidence that there exists any language, to our knowledge, in which clitic omission relates to the position of the clitic, and clitic placement is not problematic for children.

Appendix

Test items (1–4 Goal, 5–7 Benefactive, 8–11 Possessor)

1. (La nena) li posa una corona (al rei).
the girl DAT puts a crown to the king
'The girl puts a crown on the king.'
2. (El cuiner) li dóna un tomàquet (a la nena).
the cook DAT gives a tomato to the girl
'The cook gives a tomato to the girl.'
3. (El cuiner) li tira un ou (a la guineu).
the cook DAT throws an egg to the fox
'The cook throws an egg at the fox.'
4. (El cuiner) li dóna un regal (a la nena).
the cook DAT gives a present to the girl
'The cook gives a present to the girl.'
5. (El rei) li explica un conte (a la nena).
the king DAT tells a story to the girl
'The king tells a story to the girl.'
6. (El rei) li dóna la sopa (a la nena).
the king DAT gives the soup to the girl
'The king gives the soup to the girl.'
7. (El cuiner) li renta el vestit (a la nena).
the cook DAT washes the dress to the girl
'The cook washes the girl's dress.'
8. (La guineu) li tapa la boca (a la nena).
the fox DAT covers the mouth to the girl
'The fox covers the girl's mouth.'
9. (El cuiner) li estira la cua (a la guineu).
the cook DAT pulls the tail to the fox
'The cook pulls the fox's tail.'
10. (La guineu) li estripa el diari (al cuiner).
the fox DAT tears the newspaper to the cook
'The fox tears the cook's newspaper.'
11. (La guineu) li pren el tomàquet (a la nena).
the fox DAT takes the tomato to the girl
'The fox takes a tomato from the girl.'

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