ANIMACY IN THE ACQUISITION OF DIFFERENTIAL OBJECT MARKING BY ROMANIAN MONOLINGUAL CHILDREN

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Abstract: Differential object marking (DOM) has been shown, in an impressive number of production studies, to be acquired by monolingual children at around age 3. The picture which emerges from comprehension data, however, reveals that DOM is an area of vulnerability in L1 acquisition. This study investigates the acquisition of DOM by monolingual Romanian children using a preference judgment task. 80 monolingual Romanian children (aged 4;04-11;04) and a control group of 10 Romanian adults took part in the study. Results show that DOM is vulnerable and trace this vulnerability to the animacy feature. Romanian children incorrectly overgeneralize DOM to inanimate proper names and inanimate descriptive DPs until age 9. The vulnerability of animacy is predicted by its variable behaviour with respect to object marking as well as by the current increase in the use of clitic doubling, a DOM marker less sensitive to animacy. On the learnability side, we account for the findings in terms of Biberauer & Roberts' (2015, 2017) Maximize Minimal Means model. We suggest that, in accordance with the Feature Economy bias, Romanian children first identify only the role of referential stability (which has more robust cues in the input) and consider the possibility of animacy as a relevant feature later. In line with the Input Generalization bias, children maximize the role of referential stability which results in overgeneralization of DOM to inanimate objects, especially to inanimate proper names.

Keywords: differential object marking, animacy, overgeneralization, L1 acquisition, Romanian

1. Introduction

Differential object marking (DOM) is the phenomenon whereby highly prominent or highly individuated direct objects are differentially marked. Several features have been identified as triggers of DOM across languages, among which animacy, definiteness, specificity, referential stability, affectedness, telicity, topicality (Bossong 1991, 1998, Aissen 2003, Naes 2004, von Heusinger et al. 2008, a.o.). According to Bossong (1998), differential marking involves exclusively morphological marking. Other authors argue that DOM is a universal phenomenon (Carnie 2005, Rodríguez-Mondoñedo 2007, 2008) and that marking may also be syntactic, i.e. highly prominent or highly individuated direct objects can be assigned a distinct syntactic position.

Full acquisition of DOM involves the identification of morphological, syntactic, semantic and pragmatic properties which constrain object marking and which are subject to cross-linguistic variation. In spite of the complexity of the phenomenon, however, an increasing number of studies have been providing data which show that DOM is mastered surprisingly early. Rodríguez-Mondoñedo (2008) was the first to provide such data. His analysis of DOM use by Spanish-acquiring children convincingly revealed early acquisition, before age 3. Similar results were reported for Croatian and Russian (Hržica et al. 2015), Estonian (Argus 2015, Vihman et al. 2020), Hebrew (Uziel-Karl 2015),

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Korean (Chung 2020), Lithuanian (Dabašinskienė 2015), and Turkish (Ketrez 1999, 2006). All these early studies, however, relied exclusively on production data, many coming from longitudinal corpora (see Avram 2015, Parodi & Avram 2018, and Mardale & Montrul 2020 for surveys of the literature).

Comprehension studies based on experimental data reveal a totally different picture. Ketrez (2015) shows that young children acquiring Turkish have problems, as late as age 6, with the comprehension of the scope properties of Accusative-marked and unmarked objects. Other recent comprehension data for DOM in child Spanish (Guijarro-Fuentes et al. 2017) and in child Hebrew (Plaut & Hacohen 2022) indicate a similar production-comprehension asymmetry. DOM is attested early in production (though it may not be found in all possible contexts) but comprehension data indicate a significant acquisition delay. Such results reveal the limitations of production studies and suggest that extending the investigation to comprehension might contribute to a more fine-grained picture of the L1 acquisition of DOM.

For Romanian, the few available L1 studies (Ticio & Avram 2015, Avram & Tomescu 2020) report early emergence and early acquisition. By age 3, Romanian-speaking children use DOM correctly but this early use is restricted to definite objects. The production data clearly show that DOM is used correctly early but they do not cover DOM in all available contexts. Given the mismatch between DOM production and comprehension in child Turkish, Spanish and Hebrew, one can assume that a similar asymmetry might characterize the acquisition of DOM in other languages. The data on DOM in L1 Romanian come exclusively from production. The present study extends the investigation to the comprehension of DOM in L1 Romanian.

In Romanian, DOM is constrained by referential stability and animacy (Tasmowski 1987, Cornilescu 2000, Farkas & von Heusinger 2003, Mardale 2007, 2008, Tigău 2011), with animacy being the weaker (Irimia 2020) or the less stable trigger (Avram & Zafiu 2017). Though generally DOM with inanimate objects is incorrect, there are various configurations which allow or require DOM irrespective of whether the direct object is or is not animate. In spite of this variable behaviour, animacy has been shown to be integrated early in the DOM system in L1 acquisition; DOM overextension to inanimate objects is either not attested or extremely rare (Ticio & Avram 2015, Avram & Tomescu 2020). In this study we use experimental data to probe into the acquisition of the role of the animacy feature in the DOM system of Romanian.

The remainder of the paper is organized as follows. Section 2 offers a brief description of the Romanian DOM system, with a focus on the role of animacy. In section 3 we briefly review previous studies on the L1 acquisition of DOM which reveal the production-comprehension asymmetry mentioned above as well as previous studies which investigate DOM in L1 Romanian. Our experimental study on the comprehension of DOM in L1 Romanian is presented in section 4. Section 5 summarizes the main findings.

2. DOM in Romanian

Romanian has two overt differential markers, the (functional) preposition or case marker *pe* (the analysis varies from one author to another) (Tasmowski 1987, Dobrovie-Sorin

1994, Cornilescu 2000, Farkas & von Heusinger 2003, Mardale 2007, Tigău 2011, Hill & Mardale 2021, a.o.) and clitic doubling (which involves *pe* and a doubling Accusative clitic) (Bossong 1998, Mardale 2007, Tigău 2011, Hill & Mardale 2021, a.o.) (see 2).

(1) A vizitat **pe** vecinul de la parter.
has visited PE neighbour-the of at ground floor
'He visited the neighbour living on the ground floor

(2) O vizitam **pe** mama.
CL.ACC.3F.SG visited PE Mother
'I visited Mother.'

According to Farkas & von Heusinger (2003), one DOM trigger in Romanian is referential stability. On such a view, DPs differ with respect to the degree to which the condition which they contribute can restrict the choice of value for the variable which they introduce at a particular point in the discourse. The higher a DP is on the referentiality stability scale (in 3 below), the stronger DOM trigger it will be.

(3) Referentiality Stability Scale (Farkas & von Heusinger 2003)
proper nouns, definite pronouns > definite descriptive DPs > partitives > indefinite descriptive DPs

DOM use is obligatory with definite pronouns and proper names (see 3a) (Tasmowski 1987, Dobrovie-Sorin 1994, Mardale 2007, Tigău 2011, Hill & Mardale 2017, 2021 a.o.), whose interpretation remains unchanged throughout the discourse in virtue of their inherent properties; they are unconditionally referentially stable (Farkas 2002, Farkas & von Heusinger 2003, Ciovârnache & Avram 2013).

(4) *(Îl) vizitam *(pe) Vasile/el.
CL.ACC.3M.SG visited PE Vasile he
'I visited Vasile/him.'

DOM is optional with the DPs lower on the scale in (3), whose referential stability is context dependent. Their marking is conditioned by pragmatic factors. Single *pe* signals saliency, "the speaker's intention of placing the direct object in the spotlight" (Hill & Mardale 2021); the participant is presented as prominent in the event (Avram & Coene 2009). Clitic doubling signals D-linked topicality (Avram & Coene 2009, Hill & Mardale 2021), a property inherited from the clitic.

(5) (Îl) vizitam (pe) vecin/ un vecin.
CL.ACC.3M.SG visited PE neighbour a neighbour
'I visited the/a neighbour.'

DOM is generally ruled out with bare plurals (which do not have determined reference) (see 6a) or with incorporated indefinite DPs (as in 6b) (Mardale 2008, Tigău 2011):

(6) a. Am cunoscut (*pe) studenți.
have met PE students
'I met students.'
b. Caută (*pe) zugrav.
looks PE painter
'He is loooking for a painter.'

Animacy cuts across obligatory and optional contexts. Generally, only animate objects allow DOM:

(7) *(O) vizitam *(pe) Maria/(*pe) Londra.
CL.ACC.3F.SG visited PE Maria PE London
'I visited Maria/London.'
(8) (L-) am desenat pe copil/(*pe) pom.
CL.ACC.3M.SG have drawn PE child PE tree
'I drew the child/the tree.'

Animacy can, however, be overidden. There are syntactic contexts where the animacy restriction is either lifted or weakened. The animacy constraint, for example, does not apply to definite pronouns, which must be marked irrespective of whether their antecedent is animate or inanimate. Demonstratives used pronominally require obligatory marking with both animates and inanimates (as shown in 9). However, in the spoken language, with the colloquial forms *asta* 'this one' and *aia* 'that one', marking is optional if the antecedent is [−animate] (see the examples in 10):

(9) *(L-) am desenat *(pe) acela de acolo. [+/−animate]
CL.ACC.3M.SG have drawn PE that of there
'I have drawn the one over there.'
(10) a. *(O) cunoști *(pe) asta? [+ animate]
CL.ACC.3F.SG know PE this
Intended: 'Do you know this one?'
b. Ai citit (-o) doar (pe) asta? [− animate]
have read CL.ACC.3F.SG only PE this
'Have you read only this one?'

DOM is not sensitive to animacy in direct object relatives, where the relative pronoun must be marked in standard Romanian irrespective of animacy (as shown in 11). Other situations in which animacy can be overridden include clitic left dislocation (as in 12, where the modified DP is inanimate) and partitive structures (13):

(11) Articolul *(pe) care l- am citit.
article-the PE which CL.ACC.3M.SG have read
'The article which I have read.'

(12) Pe câteva le- am citit.
PE some CL.ACC.3F.PL have read
'Some of them I have read.'

(13) Am citit- o numai pe una dintre cărţile recomandate.
have read CL.ACC.3F.SG only PE one of books-the recommended
'I have read only one of the recommended books.'

In nominal (ellipsis) structures with the genitival *al* (14) and the adjectival *cel* (illustrated in 15) DOM is obligatory, irrespective of animacy. DOM with the quantifier *tot* 'all' (see 16) as well is indifferent to animacy (Irimia 2020):

(14) Nu *(l-) am citit *(pe) al lui Vasile.
not CL.ACC.3M.SG have read PE AL of Vasile
'I have read Vasile's.'

(15) Nu *(l-) am adus *(pe) cel albastru.
not CL.ACC.3M.SG have brought PE that blue
'I haven't brought the blue one.'

(16) Le- a adunat pe toate. [+/− animate]
CL.ACC.3F.PL have gathered PE all.F.PL
'She gathered them all.'

Irimia (2020), following Pană Dindelegan (1997), includes equative comparative structures in the list of configurations which require obligatory DOM.

(17) L- am luat ca *(pe) un dar.
CL.ACC.3M.SG have taken like PE a gift
'I took it as a gift.'

Additionally, any inanimate descriptive DP can be marked in casual spoken Romanian, with an upgrading effect. Marking may indicate affective speaker stance (Mardale 2008), as in (18):

(18) Uitaţi cum o facem pe mămăliguţă.
look how CL.ACC.3F.SG make PE polenta-DIM
'Look how we are making this little polenta.'

(from Mardale 2008)

Such overextensions are rare. A brief examination of DOM use in CORV, a 220 minute corpus of spoken Romanian (Dascălu-Jinga 2002) identified 42 marked objects. But no DOM with an upgrading effect or with an affective use was found. Examples like the one in (19), however, are attested, though rarely, in child-directed speech (Avram & Coene 2009, Avram & Tomescu 2020).

(19) L- am spălat pe balon.
CL.ACC.3M.SG have washed PE balloon
'I washed the balloon.'

(from Avram & Coene 2009)

All the data discussed so far show that in Romanian the animacy constraint on DOM can or must be overridden. Interestingly, when DOM applies to inanimate objects, the marker is clitic doubling.

The Romanian DOM system is undergoing a change. For some speakers, DOM is exclusively clitic doubling (Klimkowski 2017, Avram & Zafiu 2017); these innovative speakers no longer use single *pe* (see also Bossong 1998). This undergoing change may further contribute to the weakening of the animacy constraint. The fact that clitic doubling signals D-linked topicality (Avram & Coene 2009, Hill & Mardale 2021) explains why it is less sensitive to animacy. Expansion of DOM to inanimate objects was documented for varieties of Spanish, such as Argentinian and Mexican Spanish (von Heusinger & Kaiser 2005, Montrul 2013; see also the discussion in Bautista-Maldonado & Montrul 2019). One of the factors identified as a possible facilitator of this expansion is clitic doubling. By analogy, it is plausible to assume that the current increase in the use of clitic doubling as a DOM marker in Romanian could facilitate a similar expansion to inanimate objects. Ciovârnache & Avram (2013) report that 4 participants in a control group of 15 Romanian-speaking adults in their study unexpectedly accepted the sentence in (20), with a DOM-ed inanimate proper name:

(20) L- au vizitat doar o dată pe Berlin.
CL.ACC.3M.SG have visited only a time PE Berlin
'They visited Berlin only once.'

In terms of language acquisition, there is an important amount of variation in the input which the child receives with respect to the role of the animacy feature. This predicts an early stage when children may "struggle" with animacy within the DOM system.

3. On DOM in L1 acquisition

3.1 DOM in L1 Romanian: previous studies

In spite of the complexity of the Romanian DOM system and of the non-robust input with respect to the role of animacy, DOM was argued to be acquired very early, by age 3. Ticio & Avram (2015) analysed DOM use in 3 longitudinal corpora of child Romanian (age range 1;09 – 3;01). Their data show that DOM emerges very early (1;09 – 2;02) and by age 3 it is used target-like. DOM omission in obligatory contexts (illustrated in 21) is rare and no longer found at age 3;00:

(21) *(pe) Panda bat. (Antonio 1;11)
PE Panda beat
Intended: 'I am beating Panda.'

The three children correctly "ignore" animacy when the direct object is a definite pronoun but marked inanimate descriptive DPs, as in (22) below, are very rare.

(22) O întrec pe minge.
CL.ACC.3F.SG outrun PE ball
'I am outrunning the ball.'
(Antonio 2;11, in Ticio & Avram 2015: 393)

The comparison with early DOM use in 3 longitudinal corpora of child Spanish (age range 1;01 – 2;05) further supports the conclusion that the role of animacy is acquired early. The rate of marked inanimate objects in the Romanian corpora is much higher than the one in the Spanish corpora (where only one child "incorrectly" extended DOM to inanimate objects), in line with the difference between the two systems (see Irimia 2020).

Similar results are reported in Avram & Tomescu (2020). The goal of their study is to investigate the acquisition of DOM by simultaneous bilingual children but the analysis of the control groups of monolinguals reveals early DOM acquisition on the basis of longitudinal data (age 1;09 – 3;01). No incorrect DOM omission or overgeneralization is found in *frog story* narratives (3-year-olds, 4-year-olds and 9-year-olds) either. But optional DOM, which is constrained by discourse-pragmatics (see also Chiriacescu & von Heusinger 2009, 2010), is underused by the younger children when compared to the 9-year-olds and to adults, i.e. the discourse use of DOM is delayed in L1.

Avram et al. (2023) also provide data from *frog story* narratives. The 5-year-old monolinguals in their study (where they serve as a group of control for child heritage speakers of Romanian) used DOM target-like. In particular, in optional contexts, they never extended DOM to inanimate descriptive DPs.

The few available studies provide evidence that DOM is acquired early in child Romanian. In spite of the weak role of the animacy feature, the DOM system is constrained by animacy very early. Several remarks are in order, though. Firstly, all these production studies rely on either naturalistic data or *frog story* narratives. Secondly, in all the studies DOM is attested only with animate definite DPs. Indefinite objects are practically absent and expansion to inanimate objects is extremely rare. In *frog story* narratives, personal pronouns and proper names are very rare and hence the data have nothing to say about DOM in obligatory contexts.

Summing up, in the available production studies DOM is not attested in all possible contexts and hence information with respect to knowledge of DOM in L1 Romanian is incomplete.

3.2 On selective vulnerability of DOM in L1 acquisition

The Romanian data are not singular. DOM has been shown to be acquired early in a variety of languages, irrespective of the nature of the marker and irrespective of the features which constrain object marking. The longitudinal studies in Avram (2015), in line with the pioneering study of Rodríguez-Mondoñedo (2008), provide evidence that DOM is acquired early in Croatian, Estonian, Hebrew, Lithuanian, Romanian, and Spanish. The only exception is the study on child Turkish. Ketrez (2015) draws attention to a production-comprehension asymmetry in the acquisition of DOM (Accusative case marking) in L1 Turkish. Previous studies, which investigated DOM on the basis of naturalistic data, showed that DOM emerges early and that Turkish-speaking children make very few errors (Ketrez 1999, Ketrez & Aksu-Koç 2009). But target-like use was attested in a narrow range of contexts (Ketrez 2015). During the early stages, Turkish-speaking children case-mark only definite direct objects. Marked indefinite objects are not attested. Cases of object marking which involve "ability to attribute complex morpho-semantic/pragmatic functions to case marking, such as the specificity or the wide scope reading with respect to other constituents" (Ketrez 2015: 423) are absent. This absence in the production data leaves unanswered the question of whether children master DOM in these contexts as well. Ketrez (2015) uses a truth-value judgment task (Crain & Thornton 1999) to investigate the comprehension of marked indefinite objects, in different syntactic positions, in a context in which they have wide scope reading over negation in contrast to non-marked objects in the same context. The results reveal that even 6-year-olds have problems comprehending case-marked objects and unmarked ones.

Experimental results which challenge the neat DOM picture in longitudinal studies are also available for L1 Spanish. Guijarro-Fuentes et al. (2017) report experimental data coming from an acceptability judgment task which show that DOM is problematic in L1 Spanish even at the age of 10-15 years. This contrasts with the findings in Rodríguez-Mondoñedo (2008) or in Ticio & Avram (2015), according to which Spanish-speaking children use DOM "virtually without mistake" (Rodríguez-Mondoñedo 2008:21) before they turn 3. An important finding of the study by Guijarro-Fuentes et al. (2017) is that DOM is not equally difficult across the board. Integrating animacy within the system is not problematic but integrating aspect or the semantic features of the subject is and it remains so until late.

Different production and comprehension results are also found in studies which investigated DOM in L1 Hebrew. Uziel-Karl (2015) provides production data which convincingly show that DOM is acquired early. The study relies on data coming from three longitudinal corpora of monolingual Hebrew (age 1;05 – 3;00) which reveal very early emergence (before age 3) and a very low number of errors (6%). Plaut & Hacohen (2022), on the other hand, provide data from a gradable acceptability task which offer a totally different picture. Hebrew-speaking monolinguals, aged 3;06 – 7;10, cannot systematically distinguish between marked definite, unmarked definite and marked indefinite objects.

For the few languages for which both production and comprehension data are available, the former indicate early acquisition whereas the latter show that DOM is (selectively) vulnerable. For Romanian, as mentioned in the previous sub-section, only production data are available and the general picture is that DOM is not problematic. Given the discrepancy between production and comprehension data reported for other languages, as well as the differences between naturalistic and experimental data, investigating the comprehension of DOM in L1 Romanian on the basis of experimental data might contribute to a more comprehensive picture of the acquisition of this interface phenomenon.

4. DOM in L1 Romanian: the view from comprehension

4.1 Aim

The goal of the present study is to investigate the comprehension of DOM in L1 Romanian. As mentioned before, Guijarro-Fuentes et al. (2017) showed that in Spanish, a language whose DOM system is similar to the Romanian one in several respects, vulnerability can be selective: animacy is not problematic, whereas the agentivity of the subject and the aspectual properties of the predicate are. But in Romanian, animacy is a weak feature within the DOM system; it can be overridden in several contexts, which translates into variable input for the language acquirer. This identifies the animacy feature of the object as a possible vulnerability area. In this study we focus on the acquisition of this feature within the DOM system of Romanian. The bonus is that the results could also contribute to our understanding of how children cope with a possible incipient change in the language. As mentioned in Section 2.1, clitic doubling, which is less sensitive to animacy, is gaining ground in contemporary Romanian, being the only differential object marker for some speakers. This innovative system, more restrictive in terms of available markers, is less restrictive with respect to animacy. Under conditions of language change, children may opt for the innovative option, advancing language change (Cournane 2019). If this is indeed the case, the prediction is that children acquiring Romanian could extend DOM to inanimate objects at a rate higher than the one in the input which they receive.

4.2 Methodology

4.2.1 Participants

80 native speakers of Romanian, aged 4;04–11;04, were recruited from kindergartens and schools in Bucharest and Cluj-Napoca. They all come from monolingual families. They are typically developing children, with no history of language or cognitive impairment. The details are summarized in Table 1.

Table 1. Participants

Group	Age range	Mean	No
5-year-olds	4;04 – 5;11	5;01	20[1]
7-year-olds	6;03 – 7;08	7;00	20
9-year-olds	9;00 – 9;07	9;02	20
11-year-olds	10;08 – 11;04	11;00	20

A control group of 10 adults (aged 21-73 years) also took part in the study.

4.2.2 Design and material

We designed a preference judgment task (PJT) which included 16 test sentences across 2 conditions balanced for animacy: (i) DOM with proper names, i.e. obligatory DOM, and (ii) DOM with (definite) descriptive DPs, i.e. optional DOM. In spite of the fact that optional DOM can apply to both definite and indefinite descriptive DPs, in the task only definite DPs were used. This decision took into account the very low number of marked indefinite objects in both child-directed speech and in adult-to-adult speech. Avram & Tomescu (2020) examined DOM use in child-directed speech in two longitudinal corpora (a total of 23 hours of spontaneous conversation). No marked indefinite object was attested. Romanian-speaking children practically never use DOM with indefinites (Ticio & Avram 2015, Avram & Tomescu 2020).

Given the increase in the use of clitic doubling as a DOM marker in the contemporary language, the test sentences contained clitic doubling (see the examples in Table 2). The test sentences were controlled for length. They are given in the Appendix at the end of the paper.

Table 2. Test sentences

DP type	animacy	test sentences: examples	number
Proper name	+animate	(a) Doamna o piaptănă pe Ana. woman-the CL.3.F.SG.ACC combs PE Ana (b) *Doamna piaptănă Ana. woman-the combs Ana 'The woman is combing Ana.'	8
	−animate	(a) Eu am desenat Franța. I have drawn France (b)*Eu am desenat-o pe Franța. I have drawn CL.3.F.SG.ACC PE France 'I drew France.'	

[1] Three children in this young group had to be excluded from the analysis. They constantly said that the same alien (the green or the blue one) said it better.

DP type	animacy	test sentences: examples	number
Descriptive DP	+animate	Domnul îl felicită pe pompier. man-the CL.3.M.SG.ACC congratulates PE firefighter (b) Domnul felicită pompierul. man-the congratulates firefighter-the 'The man is congratulating the firefighter.'	8
	−animate	(a) Pisoiul lovește balonul. cat-the hits balloon-the (b)*Pisoiul îl lovește pe balon. cat-the CL.3.M.SG.ACC hits PE balloon 'The cat hits the balloon.'	

The task also included 2 warm up sentences, 4 control sentences with DOM with personal pronouns (indifferent to animacy) and 4 control sentences with reflexive clitics. Given the number and the diversity of the control sentences, no distractors were included.

The children received a booklet whose main characters were two aliens: a blue one and a green one. On each page there was a picture and the two aliens said something related to that picture: one of them used a sentence in which the object was marked, the other one a sentence with an unmarked object (see Figure 1). The experimenter told the children that the two aliens had recently studied Romanian and read what each of them said. The child was asked to decide "which alien said it better" and to circle that alien. "Both" answers were allowed. The two aliens randomly said a sentence with/without DOM but the same alien never said it "better" for more than 3 times in a row. The two aliens could appear on the right or on the left part of the page, but never on the same part for more than 3 times in a row.

Experimenter: This is the picture of Paris.
Paris is a city in France.

Experimenter: The green alien said:
Turiștii vizitează Parisul. (no DOM)
'Tourists visit Paris.'

Experimenter: The blue alien said:
Turiștii îl vizitează pe Paris. (+ DOM)
'Tourists visit Paris.'

Experimenter: Which alien said it better?

Figure 1. Preference judgment task. Sample.

4.2.3 Coding

The responses were coded as "better with DOM", "better without DOM" and "both". "Both" answers were counted as "better with DOM" (i.e. the child accepted DOM in that particular context) but they were also counted separately. These three response types were correct or incorrect depending on sentence type (see the examples in Table 2). With animate proper names, only "better with DOM" was correct. With inanimate proper names and inanimate descriptive DPs only "better without DOM" was correct. With animate descriptive DPs, all three response types were acceptable. Accepting "both" answers had different implications for the different test sentences. Giving a "both" answer when evaluating a test sentence with an animate proper name indicates incomplete acquisition of obligatory DOM, developmental optionality. In this case, the child accepts both the correct sentence with a marked proper name and the incorrect unmarked one. A "both" answer for a sentence with an inanimate proper name or an inanimate descriptive DP signals uncertainty with respect to the role of the animacy feature, since the child incorrectly accepts DOM with an inanimate object. With optional DOM, i.e. with an animate descriptive DP, such an answer is more difficult to evaluate. It can signal developmental optionality but it can also indicate knowledge that DOM is optional, i.e. the child is aware that both a marked and an unmarked object are acceptable.

Given these differences among the various test sentences, we will present the results for each sentence type separately.

4.3 Results

The control group of adults gave 100% correct responses. They never opted for a marked inanimate object and gave exclusively "both" answers for the sentences with animate descriptive DPs.

Figure 2 presents the descriptive results for the children's preference judgments of sentences with an animate proper name (PN), i.e. the sentences which tested knowledge of DOM in obligatory contexts. They indicate a high preference rating for marked objects across age groups (ranging from 87.5% to 100%). Input divergent acceptance of unmarked animate proper names (as in 23) was attested only with the 5-year-olds and even with this group the rate was very low (see Figure 2).

(23) *Prințesa a acoperit David.
princess-the has covered David
'The princess covered David.'

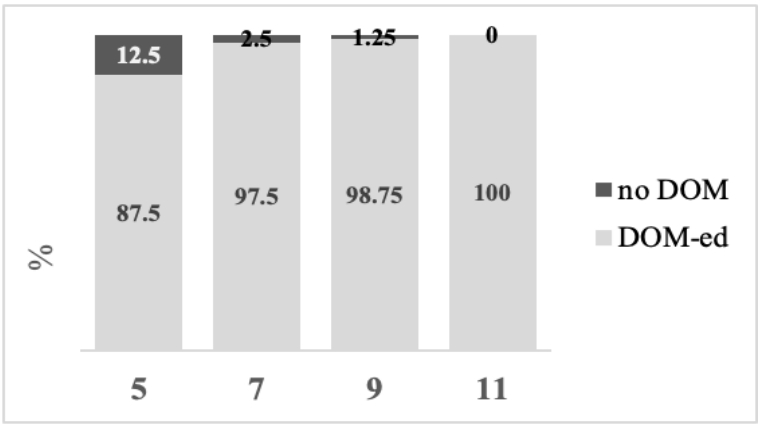

Figure 2. DOM with animate proper names: responses (%) per age group

Children's judgments of this sentence type was categorical. Only two 5-year-olds and three 7-year-olds gave one "both" response, i.e. they accepted both marked and unmarked animate proper names.

The results for the test sentences with inanimate proper names are unexpected given the data reported in previous production studies. The descriptive results summarized in Figure 3 reveal a high preference rate for marked inanimate proper names (as in 24) with the 5- and the 7-year-olds. Such sentences continue to be accepted by the 9-year-olds, but at a low rate. The responses are target-like only with the 11-year-olds.

(24) *Eu am colorat- o pe România.
I have coloured CL.ACC.3F.SG PE Romania
'I coloured Romania.'

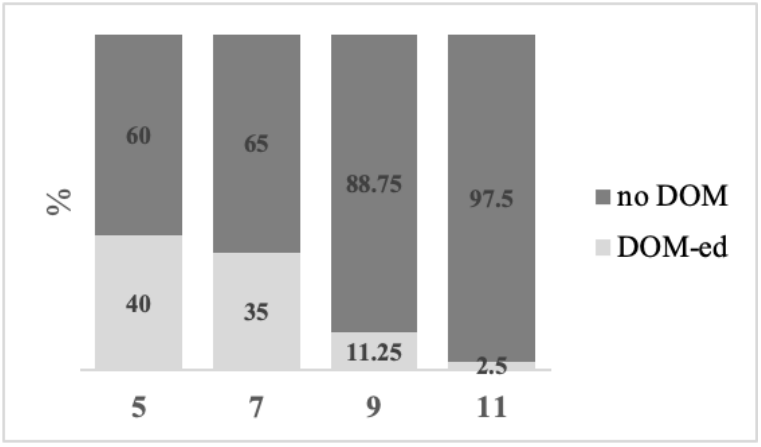

Figure 3. DOM with inanimate PNs: responses (%) per age group

Only 11 "both" responses were found across age groups (i.e. 11 responses out of a total of 320 responses) and no child gave such a response more than once.

The preference judgments of the test sentences with animate descriptive DPs (with which DOM is optional) show more variation with the 5- and the 7-year-old groups, and the preference rating is getting higher with age (as can be seen in Figure 4).

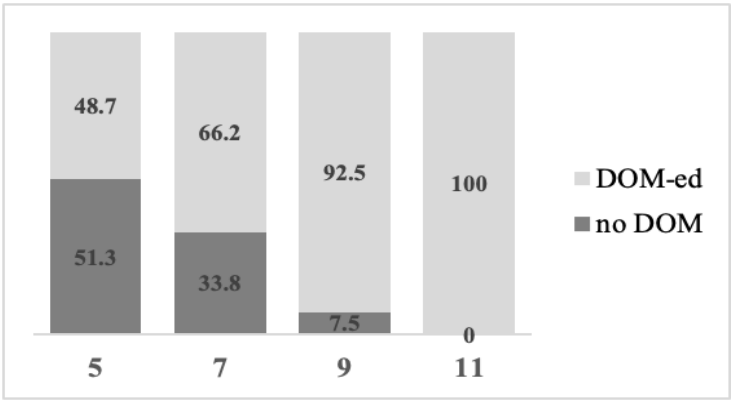

Figure 4. DOM with animate descriptive DPs: responses (%) per age group

Table 3 summarizes the number of "both" responses and the number of the children who gave such responses. It indicates a high number of "both" responses and that this number got higher with age. The number of the children who gave "both" answers also increased with age. The 11-year-olds gave practically only "both" responses, accepting both marked and unmarked objects as equally "good", i.e. the 11-year-olds evaluated these sentences adult-like.

Table 3. DOM with animate descriptive DPs. "Both" responses

Age group	Total nr of "both" responses	Nr of children who gave only "both" responses
5-year-olds	24/80	5/20
7-year-olds	27/80	2/20
9-year-olds	69/80	16/20
11-year-olds	78/80	18/20

With the exception of the 5-year-olds, the participants correctly evaluated as "better" the unmarked inanimate descriptive DPs. Input-divergent sentences like the one in (25) were only rarely chosen as "better", as can be seen in Figure 5. The number of "both" responses was very low, which indicates that children's evaluation of this sentence type is categorical. Only 6 "both" responses were attested across the four age groups. No child gave more than one "both" response.

(25) *Copilul a tăiat-o pe hîrtie.
child-the has cut CL.ACC.3F.SG PE paper
'The child cut the piece of paper.'

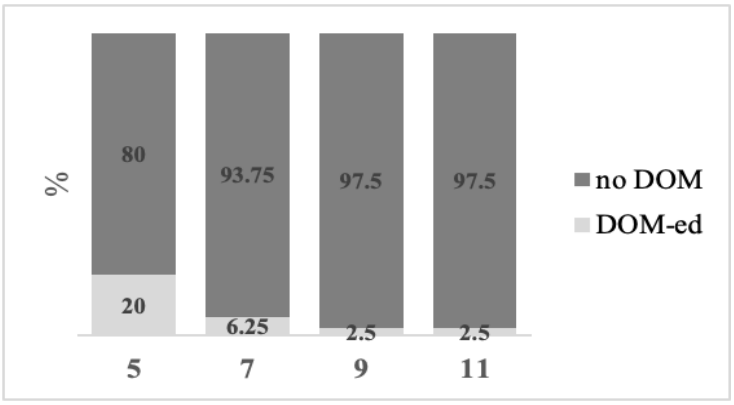

Figure 5. DOM with inanimate descriptive DPs: responses (%) per age group

We followed-up on the higher rates of incorrect responses to sentences with inanimate proper names of the 5- and the 7-year-olds and to sentences with inanimate descriptive DPs of the 5-year-olds. In order to determine if the difference between the acceptance rate of DOM with animate and inanimate objects is significant we conducted pairwise comparisons for each test sentence type. DOM with animate proper names received higher preference ratings than DOM with inanimate proper names. The difference was significant with both the 5-year-olds ($t(19) = 2.63$, $p = .016$ (two-tailed)) and the 7-year-olds ($t(19) = 8.83$, $p < .001$)). Similar results were obtained for DOM with descriptive DPs. The preference ratings were higher with the animate objects than with the inanimate ones in both age groups: 5-year-olds: $t(19) = -3.35$, $p = .003$ (two-tailed) and 7-year-olds: $t(19) = 6.09$, $p < .001$(two-tailed).

Sentences with inanimate proper names received higher acceptability ratings than those with inanimate descriptive DPs, i.e. the younger children preferred DOM with inanimate objects more often with proper names than with descriptive DPs (5-year-olds: $t(19) = 2.63$, $p = .016$ (two-tailed); 7-year-olds: $t(19) = 6.09$, $p < .001$ (two-tailed)) (see Figures 6 and 7 below).

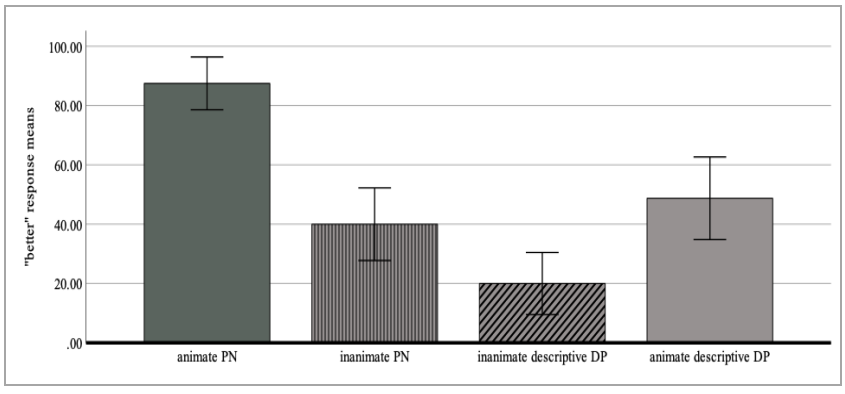

Figure 6. 5-year-olds: Mean scores (with standard error bars) for "better with DOM" responses per sentence type

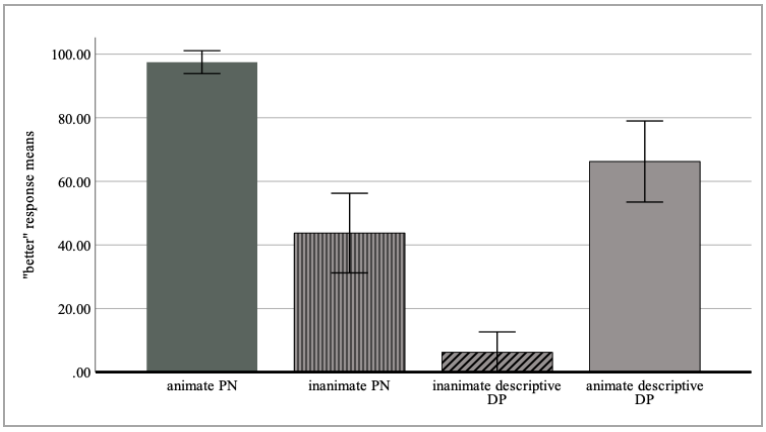

Figure 7. 7-year-olds: Mean scores (with standard error bars) for "better with DOM" responses per sentence type

We followed on the score of the younger two age groups in the proper names condition. One-sample t-tests were run to determine whether the preference score for DOM with inanimate proper names was different than chance (defined as 50%) with the 5- (M = 40%, SD = 19.02) and the 7-year-olds (M = 43.75%, SD = 7.69). The results showed that the mean score was significantly lower than chance in both groups: 5-year-olds: $t(19) = 6.5$, $p < .001$ (two-sided) and 7-year-olds: $t(19) = 6.98$, $p < .001$ (two-sided). They indicate that animacy is already identified as a relevant feature in the DOM system at age 5 but at age 7 it is not fully acquired yet.

The descriptive results for the older groups are summarized in Figures 8 and 9. They indicate target-like responses across sentence types. In particular, the rate of "better with DOM" responses for inanimate objects is very low with both groups.

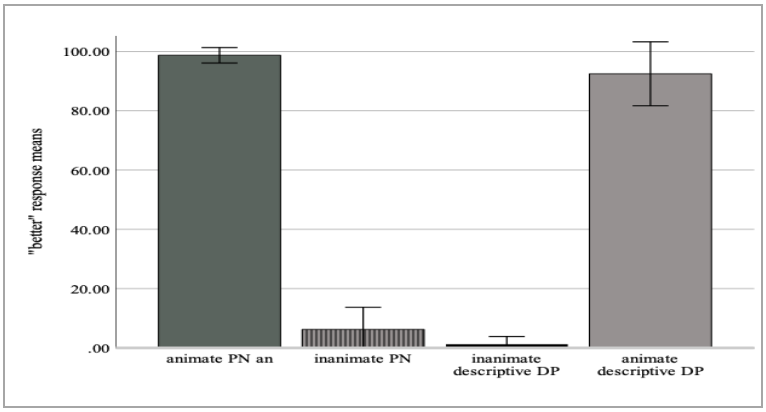

Figure 8. 9-year-olds: Mean scores (with standard error bars) for "better with DOM" responses per sentence type

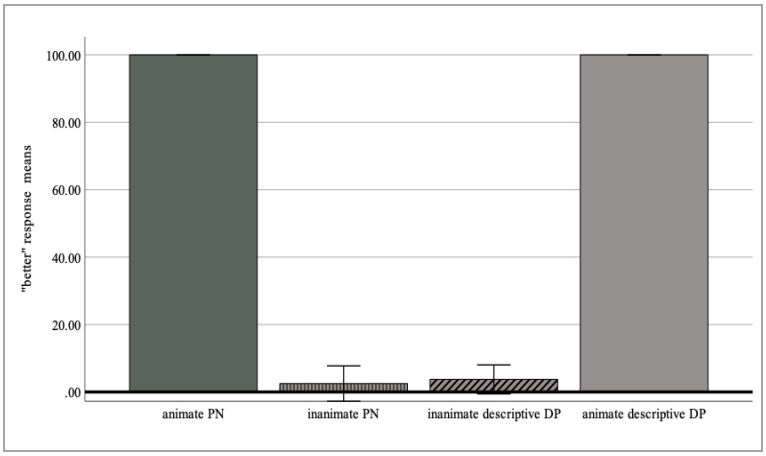

Figure 9. 11-year-olds: Mean scores (with standard error bars) for "better with DOM" responses per sentence type

In order to determine if there are age effects on the preference judgments for the various sentence types, ANOVAs were conducted for each sentence type, followed by post-hoc *t*-tests. The results revealed a main effect of age on all sentence types: (i) DOM with animate proper names: $F(3,76) = 5.78$, $p = .001$; (ii) DOM with inanimate proper names: $F(3,76) = 21.28$, $p < .001$; (iii) DOM with animate descriptive DPs: $F(3,76) = 20.76$, $p < .001$; (iv) DOM with inanimate descriptive DPs: $F(3,76) = 6.98$, $p < .001$). The following pairwise comparisons reached significance: (i) sentences with animate proper names: the 9-year-olds gave a significantly higher rate of "better with DOM" responses ($M = 98.75\%$, $SD = 5.59$) than the 5-year-olds ($M = 87.5\%$, $SD = 19.02$): $t(38) = -2.53$, $p = .015$ (two-tailed); (ii) sentences with animate descriptive DPs: the 9-year-olds gave a significantly higher rate of "better with DOM" responses ($M = 92.5\%$, $SD = 23.08$) than the 5-year-olds ($M = 48.75\%$, $SD = 29.77$): $t(38) = -5.19$, $p < .001$ (two-tailed); (iii) sentences with inanimate proper names: the 9-year-olds gave a significantly lower rate of "better with DOM" responses ($M = 6.25\%$, $SD = 15.96$) than the 7-year-olds ($M = 43.75\%$, $SD = 26.75$): $t(38) = 5.38$, $p < .001$ (two-tailed); (iv) sentences with inanimate descriptive DPs: the 9-year-olds gave a significantly lower rate of "better with DOM" responses ($M = 1.25\%$, $SD = 15.97$) than the 5-year-olds ($M = 48.75\%$, $SD = 29.77$): $t(38) = 3.64$, $p < .001$ (two-tailed). The data indicate significant progress for all test sentences at age 9. The descriptive results are given in Figure 10.

To sum it up, the results revealed that at age 5, Romanian children are sensitive to the referential stability of the DP. They treat obligatory and optional DOM contexts accordingly, i.e. there is a high rate of "better with DOM" responses for those sentences with a proper name in object position. Knowledge that descriptive DPs can be both marked and unmarked fully develops at around age 9, when children explicitly accept both at significant rates. The animacy feature constrains DOM early, as shown by the higher rates of "better with DOM" responses with animate objects across age groups. It is not, however, fully integrated in the DOM system as early as shown in production studies. Romanian children continue to accept DOM with inanimate objects at

unexpected rates until age 7 or 9. DOM with inanimate proper names, though, turned out to be more difficult. At age 5 and 7, children gave more "better with DOM" responses for inanimate proper names than for inanimate descriptive DPs. The descriptive results show that DOM with inanimate proper names begins to be consistently evaluated as unacceptable at age 9, when the "better with DOM" responses reach a low 6.25%. The same rate is reached with DOM with inanimate descriptive DPs at age 7. DOM with inanimate proper names seems to be more vulnerable.

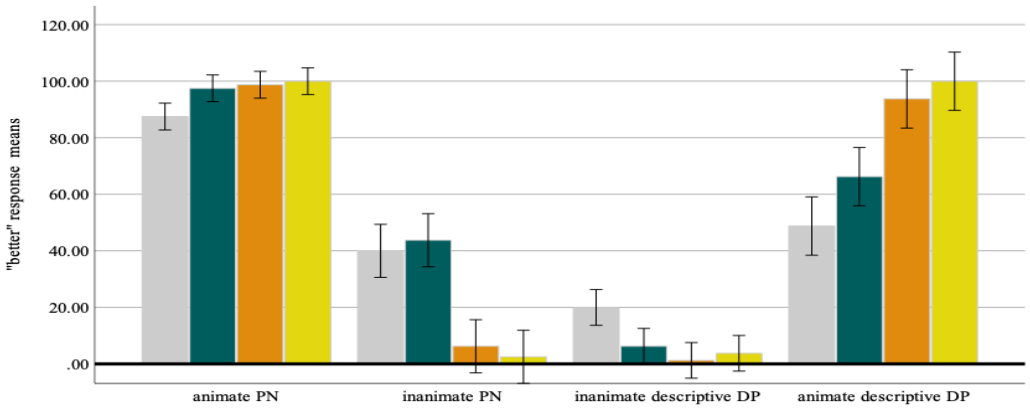

Figure 10. Mean scores (with standard error bars) for "better with DOM" responses per sentence type and age group (in chronological order from left to right in each group of columns).

4.4 Discussion

In this study we investigated knowledge of DOM in L1 Romanian. The aim was two-fold. Firstly, we extended the investigation to comprehension with a view to testing to what extent the Romanian data confirm the production-comprehension asymmetry reported for DOM in L1 Turkish (Ketrez 2015), L1 Spanish (Guijarro-Fuentes et al. 2017) and L1 Hebrew (Plaut & Hacohen 2022). Secondly, we probed into the acquisition of the role of the animacy feature, predicted to be a vulnerable area. In particular, we aimed to determine if Romanian children expand DOM to inanimate objects at a rate higher than the one in the input. In order to address these issues, we conducted a preference judgment task, in which we manipulated type of DP with respect to referential stability and animacy.

Our results show that DOM is mastered later than reported in previous production studies, adding to the increasing evidence that DOM is subject to late acquisition. They also indicate that vulnerability of DOM is selective: referential stability is acquired before animacy. As early as age 5, children treat DOM with proper names and descriptive DPs differently. The former receive higher preference ratings than unmarked proper names. The responses are more categorical with DOM in obligatory contexts; children preferentially opt for sentences with marked animate proper names. With descriptive DPs, they correctly identify the acceptability of both marked and unmarked forms. At the same

time, at age 5 we found a low rate of incorrect acceptance of unmarked animate proper names, contrary to the errorless picture of earlier production studies.

The most important finding was the high acceptability rating of DOM with inanimate objects. This is surprising when compared to the results of production studies but it is in line with the prediction which we made on the basis of the properties of DOM in the contemporary language. The animacy feature has always been the weaker one in the Romanian DOM system (see e.g. Avram & Zafiu 2017). The current expansion of clitic doubling, a D-linked DOM marker which is less sensitive to animacy, can further weaken its role. When there are two competing variants in the input, children have been argued to be able to identify the innovative variant and use it "beyond the level of their caretakers and role models" (Cournane 2019), thereby possibly advancing language change. All these factors predict overuse of DOM with inanimate objects, at least during the early acquisition stages. Indeed, this prediction was borne out by our findings. Though at age 5 animacy is identified as a relevant feature, a fact reflected in the significant difference between the evaluation of sentences with animate and with inanimate objects, the acquisition of the DOM system is delayed. Overgeneralization of DOM to inanimate descriptive DPs decreases to a rate below 10% at age 7 and to inanimate proper names at age 9. This input divergent DOM use gets fully retracted at age 11.

Our results can be accounted for in terms of Biberauer & Roberts' (2015, 2017) Maximize Minimal Means model, which integrates Chomsky's (2005) "third factors" with linguistic experience and genetic factors. According to this language acquisition model children have a tendency "to maximally utilise minimal resources" (Biberauer 2019). Two main biases are identified: Feature Economy and Input Generalization. The former captures the early tendency to postulate as few (contrastive) features as possible to account for the input. The latter captures the tendency to maximise already postulated features in accounting for the input. New features are added only when the acquired features cannot be adjusted to capture relevant contrasts.

In line with the Feature Economy bias, Romanian children possibly first identify and acquire the role of referential stability (which has more robust cues) and consider the possibility of animacy as a relevant feature later. Our experimental data show that at age 5 the role of referential stability has been acquired. Animacy, on the other hand, is present in the system, it has been identified as a relevant feature but it is not yet fully acquired. In line with Input Generalization, children maximize the role of one feature, referential stability, and "go beyond the finite input". This bias favours, in Biberauer's (2019) terms, an "ignorance-based child-driven overgeneralization" of DOM to inanimate objects, which is stronger with proper names. At age 9 the identification and acquisition of animacy as a relevant feature in the DOM system finally leads to retraction of the ignorance driven innovative use.

5. Conclusions

The present study provides, as far as we know, the first comprehension data on the L1 acquisition of DOM in Romanian. Our results confirm the previously noticed

difference between production and comprehension in the acquisition of DOM in L1 Turkish (Ketrez 2015), L1 Spanish (Guijarro-Fuentes et al. 2017), and L1 Hebrew (Plaut & Hacohen 2022). They reveal that the Romanian DOM system is mastered much later than previously assumed on the basis of production data.

Our comprehension data also confirm the selective vulnerability of the relevant features for object marking reported for L1 Spanish (Guijarro-Fuentes et al. 2017). But the data in the present study differ from those for L1 Spanish, where animacy was the least problematic feature. In Romanian, as predicted on the basis of the properties of the DOM system in conjunction with the undergoing change in object marking, animacy turned out to be more vulnerable than referential stability. Under conditions of diachronic instability, Romanian-acquiring children amplify the use of DOM with inanimate objects and they continue to do so until age 9. This overgeneralization is gradually retracted. At age 11, the grammar of the DOM system is no longer input divergent with respect to animacy.

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Appendix. Test sentences per condition

A. DOM with proper names

[+animate]

1. (a) Prințesa l- a acoperit pe David cu pătura.
   princess-the CL.ACC.3M.SG has covered PE David with blanket-the
   (b) Prințesa a acoperit David cu pătura.
   princess-the has covered David with blanket-the
   'The princess covered David with the blanket.'
2. (a) Elefantul îl stropește pe George.
   elephant-the CL.ACC.3M.SG splashes PE George
   (b) Elefantul stropește George.
   elephant-the splashes George
   'The elephant is splashing George with water.'
3. (a) Doamna o piaptănă pe Ana.
   woman-the CL.ACC.3F.SG combs PE Ana
   (b) Doamna piaptănă Ana.
   woman-the combs Ana
   'The woman is combing Ana.'
4. (a) Mama a dus- o pe Ioana la baie.
   Mother has taken CL.ACC.3F.SG PE Ioana at bathroom
   (b) Mama a dus Ioana la baie.
   Mother has taken Ioana at bathroom
   'Mother has taken Ioana to the bathroom.'

[−animate]

1. (a) Eu am desenat-o pe Franța.
   I have drawn CL.ACC.3F.SG PE France
   (b) Eu am desenat Franța.
   I have drawn France
   'I drew France.'
2. (a) Turiștii îl vizitează pe Paris.
   tourists-the CL.ACC.3M.SG visit PE Paris
   (b) Turiștii vizitează Parisul.
   tourists-the visit Paris-the
   'Tourists visit Paris.'
3. (a) Eu am colorat- o pe România.
   I have coloured CL.ACC.3F.SG PE Romania
   (b) Eu am colorat România.
   I have coloured Romania
   'I coloured Romania.'
4. (a) Eu îl cunosc pe București.
   I CL.ACC.3M.SG know PE Bucharest
   (b) Eu cunosc Bucureștiul.
   I know Bucharest-the
   'I know Bucharest.'

B. DOM with descriptive DPs

[+animate]

1. (a) Domnul îl felicită pe pompier.
   man-the CL.ACC.3M.SG congratulates PE firefighter
   (b) Domnul felicită pompierul.
   man-the congratulates firefighter-the
   'The man is congratulating the firefighter.'
2. (a) Cîinele l- a speriat pe iepuraș.
   dog-the CL.ACC.3M.SG has frightened PE rabbit-DIM-the
   (b) Cîinele a speriat iepurașul.
   dog-the has frightened rabbit-DIM-the
   'The dog frightened the little rabbit.'
3. (a) Soldatul o admiră pe prințesă.
   soldier-the CL.ACC.3F.SG admires PE princess
   (b) Soldatul admiră prințesa.
   soldier-the admires princess-the
   'The soldier admires the princess.'
4. (a) Mama a servit- o pe fetiță cu ceai.
   Mother has served CL.ACC.3F.SG PE girl-DIM with tea
   (b) Mama a servit fetița cu ceai.
   Mother has served girl-DIM-the with tea
   'Mother gave the girl some tea.'

[−animate]

1. (a) Băiatul a spart- o pe fereastră.
   boy-the has broken CL.ACC.3F.SG PE window
   (b) Băiatul a spart fereastra.
   boy-the has broken window-the
   'The boy broke the window.'
2. (a) Pisoiul îl lovește pe balon.
   cat-the CL.ACC.3M.SG hits PE balloon
   (b) Pisoiul lovește balonul.
   cat-the hits balloon-the
   'The cat is hitting the balloon.'
3. (a) Pisoiul îl bea pe suc.
   cat-the CL.ACC.3M.SG drinks PE juice
   (b) Pisoiul bea sucul.
   cat-the drinks juice-the
   'The cat is drinking the juice.'
4. (a) Copilul a tăiat-o pe hîrtie cu foarfeca.
   child-the has cut CL.ACC.3F.SG PE paper with scissors-the
   (b) Copilul a tăiat hîrtia cu foarfeca.
   child-the has cut paper-the with scissors-the
   'The child cut the sheet of paper with the scissors.'