

ANIMACY AND CASE IN THE ACQUISITION OF DIFFERENTIAL OBJECT MARKING IN CROATIAN AND RUSSIAN

GORDANA HRŽICA, MARIJAN PALMOVIĆ, MELITA KOVAČEVIĆ¹,
MARIA D. VOEIKOVA, KIRA IVANOVA, ELENA GALKINA²

Abstract. Different inflectional endings of masculine animate and inanimate nouns in the accusative are common to Croatian and Russian and constitute Differential Object Marking (henceforth DOM) in these two languages. Additionally, Russian nouns of all genders get DOM in the plural, making this feature even more consistent. In this paper we investigate the acquisition of DOM by Russian and Croatian children. Our longitudinal data reveal that in both languages DOM is acquired early. However, the acquisition route is different. While Croatian children erroneously extend the use of the Acc=Gen to inanimate forms, Russian children start with erroneously 0-marked animate forms and switch to erroneously overmarked (Acc=Gen) forms much later.

Keywords: differential object marking, animacy, Croatian, Russian.

1. INTRODUCTION

Croatian and Russian belong to the South and East branches of the Slavic family respectively. They are genetically related but differ by several lexical and grammatical features. Native speakers of Russian and Croatian do not understand each other without special training: lexical similarities might be misleading, while one and the same stem may have a different meaning in the two Slavic languages, compare *pazor* (Rus.) 'shame, disgrace' with *pazor* (Croat.) 'attention, alert'. Although the grammatical systems of the two languages are very similar, especially in their nominal part, they differ significantly not only in the mean size of paradigms but also in their function.

¹ University of Zagreb, Laboratory for Psycholinguistic Research. E-mail addresses: ghrzica@erf.hr, palmovic@erf.hr, melita.kovacevic@unizg.hr. For the Croatian co-authors, work on this paper was supported by the Croatian National Foundation, grant HRZZ-2421 for the project "Adult language processing".

² Institute for Linguistic Studies, Russian Academy of Sciences – Saint Petersburg State University. E-mail addresses: maria.voeikova@gmail.com, kira.ivanova@gmail.com, dinomama@yandex.ru. For the Russian co-authors, work on this paper and the participation in the 13th IASCL Congress was supported by the Russian National Foundation, grant No. 14-18-03668 for the project "Mechanisms of Language Acquisition and Progress in Communicative Competence at the Early Stages of Children's Development".

The similarity of the Russian and the Croatian case systems may be illustrated by the primary functions of those case forms that are the same in both languages: thus, the nominative is used to mark the subject, the genitive is used mostly for the possessor but it also has many other functions and plays an important role in DOM, the dative denotes the beneficiary, the accusative expresses direct objects, the instrumental is used for the instrument and the locative has the function of marking location and the topic of the conversation (Bašić and Jelaska 2013, Kovačević *et al.* 2009: 154, Gagarina and Voeikova 2009: 187, Voeikova and Gagarina 2002). Most indirect case forms may be governed by prepositions and in this case they get some extra functions.

The case systems of Croatian and Russian differ with respect to the size of the nominal paradigm: Russian has six case forms: nominative, genitive, dative, accusative, instrumental and locative, whereas Croatian has one extra case – the vocative. Although the vocative is disappearing from the modern Croatian morphological system, it is still used and reduces the relative frequency of the nominative which is extremely high in Russian: up to 30% of all noun tokens in adult directed speech (Krasil'nikova 1990: 35–53) and about 50% in child directed speech (CDS) (Gagarina and Voeikova 2009: 203).

DOM³ is determined by animacy, part and whole relations and the scope of negation: the choice between the genitive and the accusative case with direct objects depends on several semantic, syntactic and pragmatic factors. Animacy is the most significant factor for DOM. Animate masculine direct objects in both languages are marked, whereas inanimate masculine direct objects remain unmarked, *i.e.* regarding inflectional ending they are equal to nominative. A crucial difference between DOM in Russian and in Croatian is manifested in the plural: in Russian, nouns of all genders are differentially case marked in the plural, whereas in Croatian DOM is restricted to singular masculine nouns.

Investigators of the acquisition of the Russian case system point to the fact that children make this distinction relatively early: genitive and accusative forms denoting direct objects are among the very first case oppositions (Gvozdev 2005, 2007: 169ff., Ceitlin 2009: 165ff., Ionova 2007: 65, Voeikova 2002, 2015). However, the acquisition of DOM has not been paid special attention in the literature. Similarly to Russian, the acquisition of nominal declension in Croatian has been studied (*e.g.* Kovačević *et al.* 2009, Jelaska *et al.* 2002, Palmović 2007), but not with focus on DOM.

The present research investigates the acquisition of DOM in Croatian and Russian with a view to answering the following questions: (i) are children guided by the animacy constraint from the onset of acquisition?; (ii) is the difference between the two DOM systems reflected in different acquisition paths?

2. DATA AND METHOD

Two language corpora, Croatian and Russian, were analysed using a similar method. The Croatian corpus consists of longitudinal data from three children, two girls: Antonija

³ See Bossong (1991, 1998) and the other papers in this issue for a definition of differential object marking.

and Marina, and a boy, Vjeran. The Russian corpus consists of longitudinal data from two children, a girl, Liza, and a boy, Vanja (see Table 1). Both corpora are transcribed in the CHAT format of the CHILDES database (MacWhinney 2000).

Table 1

The corpora

Croatian corpus of child language	Antonija	Marina	Vjeran
	1;3 – 2;9 42 hours	1;5 – 2;11 38 hours	0;10 – 3;2 59 hours
Russian corpus of child language	Vanja	Liza	
	1;5 – 4;0 47 hours	1;6 – 4;1 28 hours	

The Croatian corpus of child language is morphologically coded with the CLAN programme package (part of the CHILDES database). Every word in every utterance is tagged with a unified set of morphological codes, as can be seen in the example in (1). This allows retrieval of data based on morphological categories such as number, gender or case.

Morphologically marked utterance

- (1) *MAR: makni stol. ('Move the table.')
- %mor: V:2:PFV:TRANS|maknuti&IMP;2S
- N:COMM:MASC:A|stol&ACC:SG

The KWAL programme, which is part of the CLAN programme package was used to retrieve all the utterances that contained masculine nouns used as direct objects. Morphologically marked files enable KWAL to extract utterances with words of certain morphological categories. All the utterances with word forms marked as accusative singular masculine were retrieved (this is the only category that shows DOM in Croatian). The example in (2) contains an utterance and its morphological description extracted by the KWAL programme using the command `kwal +t%mor +sN:COMM:MASC*ACC:SG +t*ANT` ('find all utterances of speaker ANT that have been morphologically marked as common masculine nouns in the singular')

- (2) *ANT: imaš de(č)ka ? ('Do you have a boyfriend?')
- %mor: V:5:IMPF:TRANS|imati&PRES;2S
- N:COMM:MASC:A|dečko&ACC:SG

However, due to morphological homophony, objects in accusative can sometimes be falsely marked as nominative (non-animate forms) or genitive (animate forms). Therefore all utterances with masculine nouns in the nominative and the genitive had to be extracted and checked manually. The example below contains an utterance in which a child used a wrong morphological form to mark the direct object. The form used would be suitable for animate masculine nouns, but not for inanimate. The utterance and its morphological description were extracted with the KWAL programme using the command `kwal +t%mor +sN:COMM:MASC*GEN:SG +t*ANT` ('find all utterances of speaker ANT that have been morphologically marked as common masculine nouns in genitive singular')

- (3) *MAR: vi [: vidi] tu ima b(r)oda . 'Look, there is a boat here.'
 %mor: V:3:IMPF:TRANS|vidjeti&IMP:2S
 ADV|tu V:5:IMPF:TRANS|imati&PRES:3S ('have')
 N:COMM:MASC:A|brod&GEN:SG

The Croatian data were then re-coded for the purpose of the present study. The masculine nouns were coded for the speaker's (adult/child) age, the lemma to which the form belongs, the type of error and animacy.

For the Russian corpus a semi-automatized morphological coding program was used (Gagarina *et al.* 2003). It allows extracting all DOM contexts without re-coding because all nouns have been coded for animacy, case and number. The example in (4) illustrates morphological coding for Russian:

- (4) *VAN: koljasku babe davaj koljasku . 'The trolley, give the trolley to granny.'
 %mor: N|koljaska&INANI:FEM-SG:ACC N|baba&ANI:FEM-SG:DAT
 V|davaj'&IMPF:TRANS-IMP:SG N|koljaska&INANI:FEM-SG:ACC

As DOM appears with both the singular masculine declension and all the declensions in the plural in Russian, utterances with singular and plural nouns in the accusative were extracted. We also extracted all the utterances with nominative and genitive objects, for checking erroneous use. Additionally, utterances with pronouns and pronominal adjectives, also subject to DOM, were retrieved.

The results of this investigation for both languages are presented below.

3. CROATIAN

3.1. DOM in Croatian

In Croatian, direct objects are assigned accusative case. The accusative is marked differently for the three noun declensions, each of them being the default declension for one of the genders. Most feminine nouns mark the accusative with the morpheme *-u*. Neuter nouns mark the accusative with *-o* or *-e*. In neuter nouns this form is homophonous with the nominative. Most masculine nouns mark direct objects differently according to animacy. If masculine nouns are animate they receive accusative case and the form is homophonous with the genitive. If masculine nouns are inanimate, the accusative case will not be marked (0-marking) and the form will be homophonous with the nominative. Figure 1 shows the accusative case in three Croatian noun declensions.

It can be seen that, unlike masculine nouns, feminine and neuter nouns have only one way of marking the accusative, so they are not subject to morphological differentiation guided by semantic differences of animacy/inanimacy. These rules apply to all nouns, proper or common, adjectives in noun phrases (due to agreement) and all relative pronouns.

Declension	Masculine	Feminine	Neuter
Animate	-a	-u	-o/-e
Inanimate	-o		

Fig. 1. The Accusative case in three Croatian noun declensions

There are three additional points to be made here regarding the marking of direct objects in Croatian. Firstly, a direct object can be marked by the partitive genitive which is frequently used and can be found both in child language (CL) and in child directed speech. The partitive genitive is used with inanimate direct objects which denote some amount of a specified noun (see example 5a). It is important to state that such examples were excluded from the present research.

- (5) a. Hoćeš sok-a?
 want.2P.Sg.Pres juice-Acc.Sg.=Gen
 'Do you want (some) juice?'
 b. Hoćeš sok-ø?
 want.2P.Sg.Pres juice-Acc.Sg.=Nom
 'Do you want juice?'

Secondly, some nouns can be marked even if they have inanimate meaning (see 6). Such nouns are names of toys or similar objects that share animate characteristics (e.g. teddy, doll (masc.) snowman...).

- (6) Kupio sam medeka.
 buy.Part.Masc.Sg Aux.1P.Sg. teddy.Acc.Sg.(Anim) (marked)
 'I bought a teddy.'

Thirdly, Croatian dialects differ with respect to the use of the marked accusative form. In some Kaikavian dialects the marked form of the accusative is used with both animate and inanimate nouns, *i.e.* these dialects do not show DOM. This is not characteristic of the whole Kaikavian area since under the influence of Stokavian dialects and the standard dialect many Kaikavian dialects are losing this old dialect feature (e.g. Maresic 2011). The children recorded for the Croatian corpus of child language all originate from Zagreb, which is traditionally a Kaikavian area. However, Zagreb is the national capital and an immigrant city where the spoken language is influenced by several dialects, especially the standard dialect. In the literature describing the Zagreb Kaikavian dialect this type of syncretism has not been specifically mentioned (e.g. Šojat, 1979). Still, the influence of Kaikavian should be considered as a possible factor in the acquisition of DOM in Croatian.

3.2. The acquisition of DOM in L1 Croatian

3.2.1. Predictions

Since case marking of masculine direct objects is more complex than that in other declensions, one can predict that it will present an additional challenge for the acquisition of DOM in Croatian. Two opposite predictions can be put forward. First, children might overgeneralize the zero marking which is morphologically simpler in accordance with general findings of children producing unmarked forms early in language development and adding morphemes later (*i.e.* telegraphic speech – *e.g.* Hoff 2009). A second prediction is based on the principle of contrast in morphology (Clark 2007, Carstairs-McCarthy 2004, Penke 2012). According to this principle there should be, ideally, a one-to-one correspondence between form and function. Applied to the acquisition of the Croatian case system, this principle predicts that children will start with one form for the nominative (for the subject) and one for the accusative (for direct objects) for all masculine nouns irrespective of animacy. Since in masculine nouns the accusative can occur in two different forms, marked (=Gen, *i.e.* animate) and unmarked (=Nom, *i.e.* inanimate), the prediction can be made that children will use the marked form, *i.e.* that they will overgeneralize the animate accusative form for object marking. This hypothesis is graphically represented in Figure 2.

Function	Subject	Object	
Forms	-0	-0	-a
Forms (contrastive)	-0	-a	


 preferred form
 for object marking
 in child language

Fig. 2. The contrast based overgeneralization of DOM hypothesis

3.2.2. Results

The Croatian corpus of child language is morphologically coded. Therefore it was easy to retrieve all the utterances that contained masculine singular nouns in the accusative and select the vast majority in which the direct object was assigned accusative case. Additionally, all the utterances which contained masculine nouns in the nominative or in the genitive were retrieved and analysed. These forms share identical inflectional morphemes with the accusative (-0 for nominative and inanimate accusative, -a for genitive and animate accusative) so there were doubts that they could have been falsely recognised during the automatic morphological coding. When the checked utterances were, in fact, with the direct object in the accusative, they were also analysed. Of all the utterances (35208), 1.6% of CL utterances and 3.6% of CDS utterances were selected. The number of animate and inanimate masculine nouns in object position in the utterances is presented in

Figure 3. The number of animate (marked) object nouns is much lower in all corpora than the number of inanimate (unmarked) objects. Differential object marking is attested early. Marked accusative masculine nouns first appear at 1;10 (Antonija), 1;6 (Marina) and 1;7 (Vjeran), following the first noun oppositions (Antonija 1;6, Marina 1;5, Vjeran 1;6).

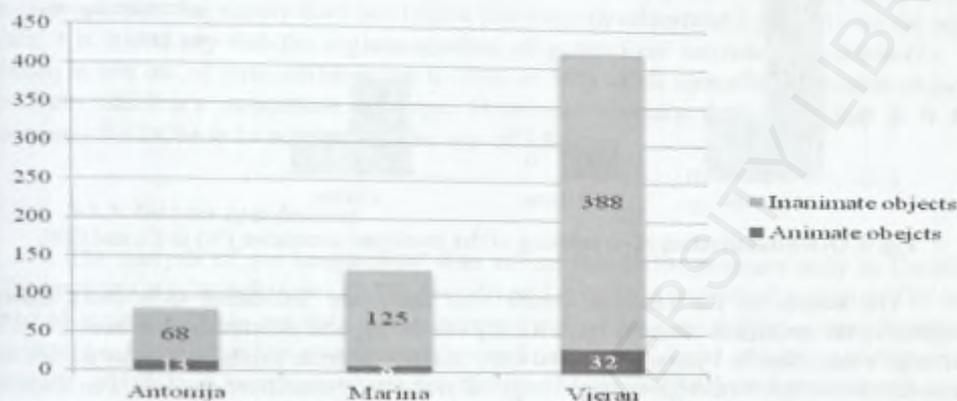


Fig. 3. Animate and inanimate objects in child language

Among the selected utterances, erroneous usage of DOM was detected in 11.5% of the CL utterances and in 3.2% of the CDS utterances. All these erroneous utterances contain an overgeneralized '-a': inanimate forms were marked as animate. Detailed data are given in Table 2.

Table 2

Masculine nouns and DOM in Croatian – CL and CDS data

Corpus:	Marina		Antonija		Vjeran	
	Adult	Child	Adult	Child	Adult	Child
Animate	17	8	16	13	81	32
Inanimate	260	125	248	68	1272	388
Inanimate marked as animate (-a)	0	4	12	16	45	30
Animate marked as inanimate (0 marked)	0	0	0	0	0	0

The last row is particularly interesting: it shows the absence of overgeneralizations in the opposite direction, *i.e.* no cases of omission. Children do not erroneously mark animate objects as if they were inanimate. Such overgeneralization would be expected according to claims that children generally start with unmarked forms and only later add morphemes to their utterances, and also if form frequency in the corpus is taken into consideration. The number of unmarked (inanimate) objects is much higher both in CL and in CDS; overuse of the unmarked forms would be expected. However, the results presented here point towards the influence of the principle of contrast.

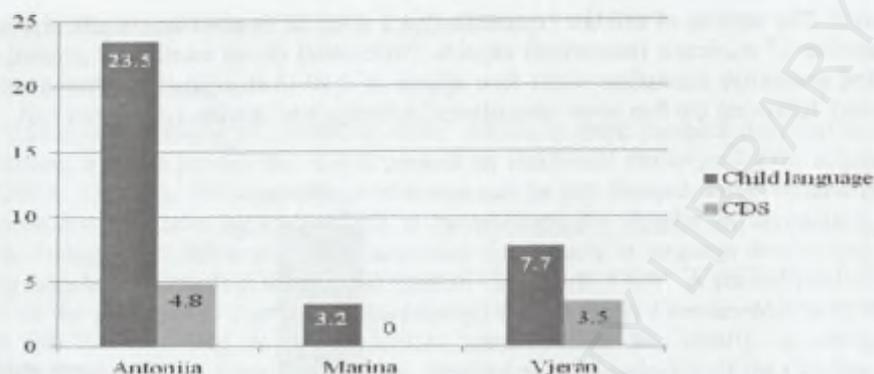


Fig. 4. Overgeneralization of *-a* marking of the inanimate accusative (%) in CL and CDS

The results of the analysis reveal that there are individual differences among children in the erroneous usage (Figure 4). By far the highest percentage has been found in Antonija's data, less in Vjeran's data and only 3.2% in Marina's data. A similar picture has been found in CDS. The highest percentage of such overgeneralizations has been found in the CDS in Antonija's corpus and only a little bit lower in Vjeran's corpus. This is important because one of the top three CDS speakers in Vjeran's corpus (the nanny) is a speaker of the Stokavian dialect; yet she is the one producing the highest number of erroneous markings. The erroneous forms in CDS in general have not been studied and discussed in the literature of language acquisition apart from the old debate with respect to the poverty of the stimulus argument (see Laurence and Margolis 2001 for an overview and Pullum and Scholz 2002 for the opposite view). In the literature it is almost impossible to find data on elements of CDS that are equivalent to children's overgeneralizations. However, it is often stated (and proved) that parents adjust their speech to carefully guide the child in their language acquisition (*e.g.* Ravid *et al.* 2008). Perhaps a possible explanation of the overuse of marking with inanimate objects as if they were animate in the Croatian CDS would be that caretakers adjust their speech to mark a syntactic role to support the acquisition of a certain part of the morphological system.

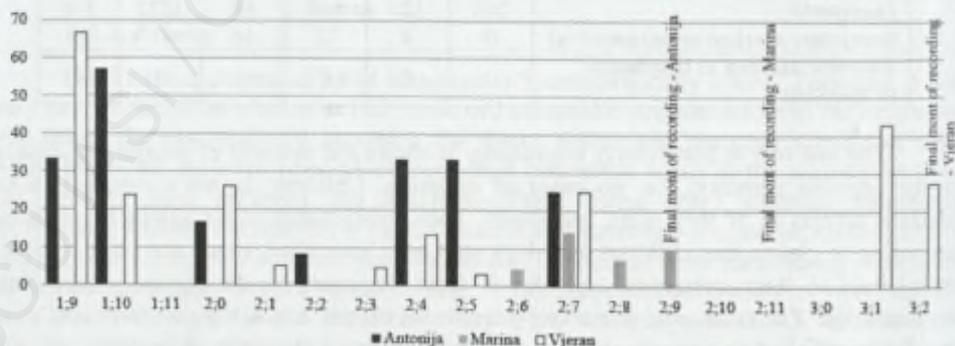


Fig. 5. Overgeneralization of *-a* object marking (%) in child Croatian

The overall percentages were calculated on all available data. However, Figure 5 shows the percentage of data per month from the first attested overgeneralizations to the final month of recording for all the children. For two children the overgeneralizations seem to be constant from 1;9 while in Marina's corpus they only appear after 2;5. It is not easy to say whether in Marina's case this can be a part of a trend (since there is no more corpus data) or whether she simply does not follow the same developmental path. As for the other data, it is fair to say that the highest number of generalized animate accusatives (*i.e.* *-a* forms) in two out of three children (up to 30% or 50% of all masculine inanimate objects) indicates children's acquisition strategy. However, Vjeran's data show that it is not necessary for DOM to be acquired by the age of 3;0.

3.2.3. Interim conclusions

The analysis of our longitudinal data reveal that DOM emerges early in Croatian. The error rate is relatively low (11.5% overall) and subject to individual variation. The only type of error attested in our data is the incorrect use of the case marker *-a* with inanimate objects, *i.e.* Croatian children erroneously mark inanimate direct objects as if they were animate, which is in accordance with the theory of contrast. Such overgeneralizations are also attested in CDS. By age 3;0, the number of these errors decreases significantly, but the lack of the data prevents us from reaching more general conclusions. The available data suggest that even after 3;0 DOM might not be target-like.

4. RUSSIAN

4.1. DOM in colloquial Russian

A similar system of DOM exists in Russian (compare Figure 1 in Section 3). The distinction between animate and inanimate nouns is of utmost significance for the early periods of child development and it is based on a clear semantic basis. In Russian as well as in Croatian DOM is constrained by animacy. In the plural it applies to all nouns (see 8a and 8b), but in the singular only to the masculine nouns (7a–7b) belonging to the 2nd inflectional class (ending in a consonant in the nominative); compare (7a–8a) for inanimate and (7b–8b) for animate nouns. Some classes of pronouns are also subject to DOM.

- (7) a. On vid-it stol-a.
 he see-3S chair-ACC=NOM
 'He sees a chair.'
 b. On vid-it mal'čik-a.
 he see-3S boy-ACC=GEN
 'He sees a boy.'
- (8) a. On vid-it stol-y, vilk-i, polj-a.
 he see-3S table&Masc-Pl:Acc fork&Fem-Pl:Acc field&Neut-Pl:Acc
 'He sees tables, forks, fields.'

- b. On vid-it kot-ov, sobak-ø čudovišč-ø.
 he see-3S cat&Masc-Pl:Acc dog&Fem-Pl:Acc beast&Neut-Pl:Acc
 'He sees cats, dogs, beasts.'

Another semantic feature constraining DOM in Russian is partitivity, as in (9a-b) where the accusative form denotes the whole and the genitive marks a part of it (exactly like in the Croatian examples (4a-b)):

- (9) a. On sjel sup.
 he eat.3sg.Past soup-Acc.Sg.Masc
 'He ate (all the) soup.'
 b. On sjel sup-a.
 he eat.3sg.Past soup-Gen.Sg.Masc
 'He ate some soup.'

The partitive genitive appears with nouns belonging to all inflectional classes in the singular and the plural. These examples were coded as genitive and were excluded from the analysis because the use of the partitive genitive is optional, semantically based and does not necessarily depend on the features of the object.

With all nouns the genitive may also be used instead of the accusative when under negation, as in (10):

- (10) On ne videl tramvaj-ø/-a.
 he not see.3sg.Past tram-Acc/-Gen.Sg.Masc
 'He didn't see the tram.'

Although the use of the genitive under negation is recommended by prescriptive grammar, it is optional in the spoken language. However, both DOM distinctions shown in (9a-b) and (10) increase the uncertainty among native speakers of Russian in their choice of a direct object form and change the relative frequency of the Acc=Gen both in CDS and in CL.

4.2. DOM in Russian CL and CDS

The largest amount of DOM-contexts in Russian CL and CDS involve the use of common nouns (first occurring in the singular, and later on also in the plural) according to the big percentage of common nouns in Russian child language. The number of noun tokens used as direct objects in CDS and CL is shown in Figure 6. Children use more inanimate than animate common nouns. Proper names are normally used in the nominative due to their preferred subject position and are mostly animate.

From an early age Russian children start to produce many correct forms of differentially marked objects; compare the correct animate Acc Pl in (11) with two correct inanimate Acc Sg in (12) and (13). In the speech of the girl Liza the first properly marked (Acc=Gen) singular masculine animate direct objects appear at the age of 1;9 and in the speech of the boy Vanja – at the age of 1;10. The emergence of DOM coincides with the first case oppositions. The first erroneously marked object appears at the age of 1;10 and 2;0

respectively. The last DOM-error in the girl's recordings appears at the age of 3;11 and in the boy's speech at 3;4. Examples (11-13) illustrate the correct use of DOM by both children:

- (11) On pošel červjak-ov kormit'.
 he go worm&ANI-PL.ACC feed
 'He went to feed the worms'. (Liza 2;8)
- (12) On ispačkal bantik.
 he stain bow&INANI-SG.ACC
 'He stained the bow'. (Liza 2;10)
- (13) Kubik priv'oz kran.
 brick&INANI-PL.ACC bring crane
 'A brick was brought by a lifting crane'. (Vanja 2;3)

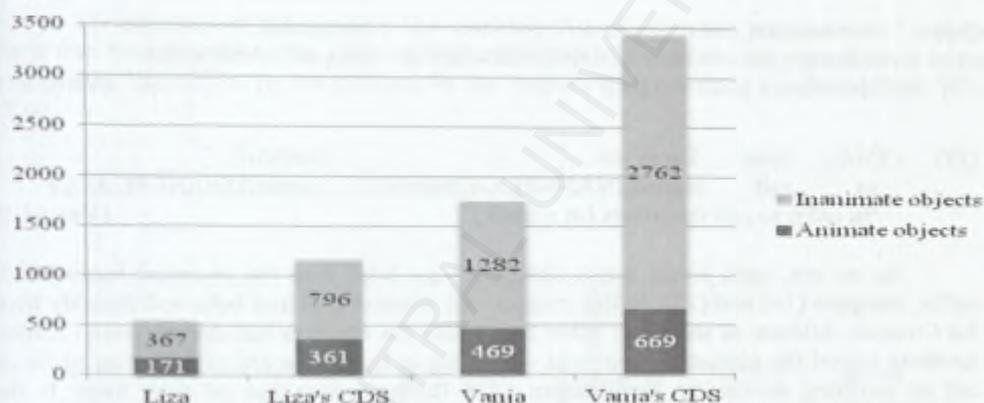


Fig. 6. Animate and inanimate objects in Russian CDS and CL

Children start to use DOM from the onset of the use of case oppositions, but they make errors, incorrectly marking animate objects as inanimate (Acc=Nom) and applying animate (Acc=Gen) (-a) marking to the inanimate ones. The first type of error (the Acc=Nom instead of the Acc=Gen for the animate nouns) is much more frequent in the Russian data than the other one (the Acc=Gen instead of the Acc=Nom for the inanimate nouns). This gives an impression of «undermarking» (an underuse of animate nouns marking) of masculine nouns because children rather use the base forms instead of the correct Acc=Gen. Feminine nouns (that are not subject to DOM in the singular) get the correct inflectional endings much earlier (the onset of the use of case oppositions was at 1;9 for Liza and at 2;0 for Vanja (see Gagarina and Voeikova 2009: 192ff.). This is not surprising since the Nom-Acc opposition is, in general, the first to be acquired (Eisenbeiss *et al.* 2009: 375).

In the speech of the girl Liza the number of forms incorrectly marked as Nominative is of 6 tokens (3.5 % of all the nouns in the accusative). For the boy Vanja we found 33 tokens (9%), see examples (14) and (15) (the correct forms are given in brackets):

- (14) Davaj medved' pričešem! (medved-ja)
 let's.PTL bear&ANI-NOM@ERR brush (bear&ANI-ACC)
 'Let's brush a bear!' (Liza 2;4)
- (15) Id'om kormit' zver-i! (zver-ej)
 go feed animal&ANI-PL.NOM@ERR (animal&ANI-PL-ACC)
 'Let's go to feed the animals!' (Vanja 2;4)

The number of inanimate objects erroneously assigned genitive case (as if they were animate) is very low 0.9 % in both children (4 and 12 tokens respectively) as in the examples (16) and (17) from the Vanja corpus:

- (16) On ne vyjdet v magazin-a. (magazin)
 he not go_out to shop&INANI-GEN@ERR (shop&INANI-ACC)
 'He will not go to the shop'. (Vanja 3;4)
- (17) Čtoby katat' kamn'-ov. (kamn-i)
 so roll stone&INANI-PL.GEN@ERR (stone&INANI-PL.ACC)
 'In order to roll the stones (in a truck)'. (Vanja 3;3)

As we see, such errors occur almost a year later than the overused inanimate 0-suffix, compare (14) and (15). In this respect, the Russian children behave differently from the Croatian children: as shown in Table 2, not only the children but also the adult Croatian speakers extend the animate inflectional *-a* ending to inanimate objects. Russian adults do not do anything similar. In the Russian CDS the erroneous use of noun forms in the accusative is extremely rare (none in Liza's corpus, 2 instances in Vanja's corpus), see example (18):

- (18) Granny:
 Tebe babushka skazku rasskazivala pro
 you-DAT granny fairy-tale tell-PAST:SG about
 gruzovičk-a malenk-ogo?
 truck-DIM-INANI-GEN@ERR small-GEN@ERR
 'Did grandmother tell you a story about the little truck?'

The distribution of erroneous noun forms in the Russian CL during the whole period of observation is shown in Figure 7 (0-suffix erroneous forms) and Figure 8 (*-a* suffix erroneous forms). We can see the U-shaped development for both 0-marked (Acc=Nom marking) and over-marked (Acc=Gen marking) forms. The low number of errors with 0-marked forms during the earliest period is due to a small amount of case-marked forms in the children's speech. By the end of the observation period the number of errors decreases.

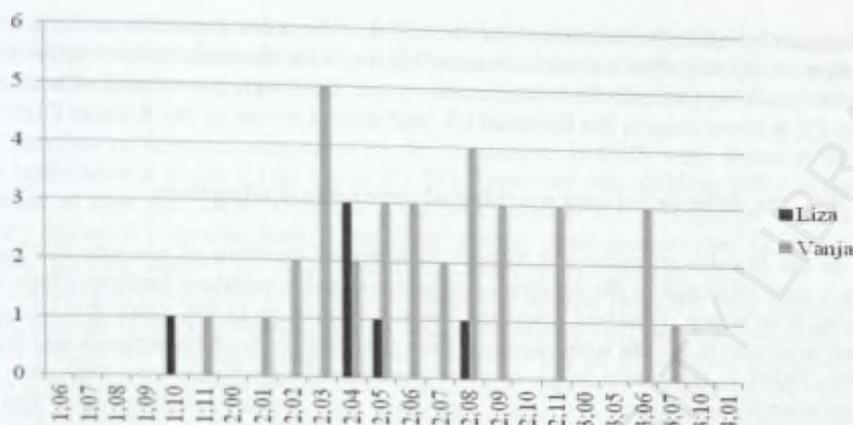


Fig. 7. The number of animate nouns erroneously marked as inanimate (Acc=Nom) in Russian CL.

The extension of the genitive-like marking (Acc=Gen) errors peaks almost 7 months later than the nominative-like marking and corresponds to the increasing confidence in the use of case oppositions by the children in our corpora (Gagarina and Voeikova 2009: 192–208).

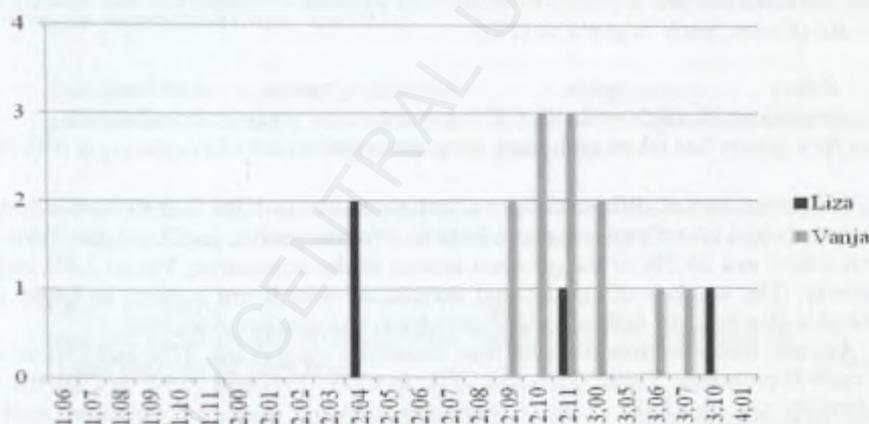


Fig. 8. The number of inanimate nouns erroneously marked as animate (Acc=Gen) in CL.

Thus, unlike the Croatian children, the Russian children in the present study start with the overuse of 0-marking for the animate nouns. This can be explained by the fact that the inanimate accusative nouns are, in general, more frequently used as direct objects both in CDS and in CL (Figure 6) and their frequency may boost the use of the 0-suffix (Acc=Nom) as a default accusative case marker in CL. Also, the unmarked form is usually the first emerging, basic and most frequent form of a noun acquired by children (see Babyonyshev 1993, Gagarina and Voeikova 2009: 203ff.), so its use (*i.e.* the omission of

marking) can be a «default» choice for the child, even after the onset of the use of case oppositions. Later on, after a several months lag they also demonstrate erroneous extension of animate marking (Acc=Gen) to inanimate nouns. However, the number of such errors in Russian CL is lower than in the Croatian CL and almost absent in the Russian CDS.

4.3. The differential case marking of pronominal adjectives

In the Russian grammatical system differential marking of animate and inanimate objects is also reflected in the behaviour of pronominal adjectives; however, only in those that agree with nouns. Personal pronouns are not subject to DOM, since the accusative of personal pronouns is always homonymous with the genitive both for animate and inanimate referents. DOM is registered in possessive pronominal adjectives: *moj* 'my', *tvoj* 'your', *svoj* 'my/your/his etc. own', *naš* 'our', *vaš* 'your (pl.)'; demonstratives: *etot* 'this', *takoj* 'such'; quantifiers: *ves* 'all', *vsjakij* 'every', *drugoj* 'other'; relative pronouns: *kotoryj* 'which', *kakoj* 'what kind of'; indefinite pronouns *kakoj-nibud* 'any'; negative: *nikakoj* 'no'. All these forms occur several months later than the first nouns used as direct objects because of their complex semantics and because of the late acquisition of adjectives in general. However, they constitute a part of the competence required to master DOM in the Russian grammatical system.

To explore the acquisition of the DOM of pronouns we used KWAL to retrieve all the utterances with: pronouns, pronouns used as direct objects, especially masculine singular pronouns and plural pronouns marked as animate or inanimate. The example of the correct use of *takix* 'such' is given in (19):

- (19) *Žukov takix babuška vynosila s balkona.*
 bug&ANI:PL:GEN such-PL:GEN granny take_away from balcony
 'My granny has taken such bugs away from the balcony.' (Liza 2;9)

The percentage of differentially-marked pronouns in CDS is 0.44% of all pronoun tokens and about 11% of the pronoun tokens in the accusative, in CL: Liza: 2.2% of all pronoun tokens and 26.5% of the pronoun tokens in the accusative; Vanja: 1.8% and 23% respectively. The number of pronominal subclasses which are subject to DOM in the recordings is also low and differs significantly from one session to another.

Animate forms are less frequent than inanimate ones (Liza: 37% and 63% of all the DOM context pronouns; Vanja: 33% and 77%; in CDS: 25% and 75%). In CDS the errors are extremely rare. In all the cases of erroneous marking, inanimate forms are marked as animate, see the CDS example in (20) from Vanja's corpus (2;3.9):

- (20) *Granny*
 Ty vsex ix v garazh staviš? (vse)
 you *all-ANI: PL:GEN them into garage put (all-INANI:PL:ACC)
 'Will you put all of them in the garage?'

Since all the errors overgeneralizing the animate Accusative=Genitive forms to the inanimate nouns in CDS were produced by Vanja's grandmother we may suppose that case

marking some inanimate nouns as if they were animate was her individual strategy. It is not accidental that most such errors refer to different car labels. Such strategy to some extent reflects an affectionate attitude of the boy to all vehicles and may be considered a language game.

The first pronominal adjectives in the accusative in CDS were found at the age of 2;1 for both children (Liza 2;1.0, Vanja 2;1.25). However, the children differ in the age of occurrence of their first DOM contexts: Liza used them at 2;3, whereas in Vanja's speech they only occurred 2 months later, Liza: *čitat' drugoj* 'read another one' (2;3); Vanja: *daj moi ručki* 'give my hands'; *vot eti ja raskrasil* 'these (ones) I painted' (2;5.8).

Children differentially mark objects correctly almost from the very beginning. The error percentage is very low. Since pronominal adjectives first occur in children's speech after 2;4 we did not find agreement errors. Erroneous use of such forms is only registered alongside with the erroneous use of their head nouns. The errors represent 3% (Vanja) and 7% (Liza) of all pronominal adjectives in DOM contexts. Two kinds of errors were found. Liza erroneously marks inanimate forms as animate (75% of all erroneous DOM forms), see (21):

- (21) Kak Lizočka svvatit flomastera drugogo!
 how Lizočka seize *marker&ANI-SG:GEN@ERR *another&ANI-SG:GEN@ERR
 'Now Liza will seize another marker!' (Liza 2;5)

Animate forms marked as inanimate (0-marking) in her speech make the rest of 25% of all the erroneous pronominal forms, see (22):

- (22) Babuška mne vynosila takie gusenizy
 grandmother me brought such&INANI-NOM@ERR caterpillar&INANI-NOM@ERR
 'It is grandmother who brought me such caterpillars'. (Liza 2;09)

Most of Vanja's errors represent erroneous 0-marked forms instead of the correct animate genitive-like forms. They amount to 80% of all the erroneous DOM forms in his speech:

- (23) Iskal tak-ie žuk-i.
 look_for such&INANI-NOM@ERR bug&INANI:PL-NOM@ERR'
 'I was looking for such bugs'. (Vanja 2;7)

The rest of 20% of all the pronominal adjectives referring to inanimate objects in his speech were marked as animate in full agreement with the erroneously marked head noun, see (24):

- (24) Xoću stul-a et-ogo želt-ogo.
 want *chair&ANI-SG:GEN this-ANI:SG:GEN ERR *yellow-ANI:SG:GEN
 '(I) want this yellow chair.' (Vanja 2;4)

The erroneously marked pronominal adjectives in child language agree with the erroneously marked nouns and are seldom used independently. Such errors show that agreement between nouns and adjective-like pronouns is acquired earlier than DOM. There

is almost no erroneous marking of pronominal adjective form in DOM contexts in the Russian CDS. Thus, the children's error patterns cannot be explained by the influence of the input, unlike in the case of Croatian.

4.4. Interim conclusions

The investigation of the acquisition of DOM in Russian revealed that:

(i) Russian children generally choose the correct accusative genitive-like or nominative-like forms both for animate and inanimate direct objects from the early occurrence of case oppositions onwards (in our two cases – from 1;9 and 1;10); this suggests that at the earliest stages they rather use frozen forms in a given context than apply the rules;

(ii) The percentage of erroneous forms is low in Russian CL (about 3% in Liza's corpus and 7% in Vanja's corpus of all the DOM contexts); the majority of erroneous forms are 0-marked;

(iii) Russian children proceed from the erroneous 0-marking of animate nouns in the early phases to the erroneous *-a*-marking of inanimate nouns in later periods. Erroneous 0-marking may occur along with correctly marked objects and also along with the use of other case oppositions. However, the 0-marked form is a default one and such errors are not restricted to DOM contexts;

(iv) The other type of error (erroneous *-a*-marking of inanimate nouns) is attested in the speech of Russian children several months later than the early 0-marking and is restricted to several instances in CL. Their adult caregivers make such errors very rarely and only use animate marking for inanimate nouns intentionally as a language game;

(v) The different behavior of nouns and pronouns in DOM contexts suggests that agreement rules seem to be acquired earlier than DOM. However, given the fact that the number of errors is very low and we only examined two subjects, this explanation needs further investigation.

5. GENERAL CONCLUSIONS

Although Croatian and Russian are closely related and look rather similar with respect to DOM, the acquisition route differs in several respects. Both the Croatian and the Russian children start using DOM very early, in accordance with the animacy feature of direct objects (the two Russian children at age 1;9 and 1;10; the three Croatian children at age 1;6, 1;7 and 1;10). The number of errors is relatively low in both languages and the children use DOM target-like early. But the type of errors and the percentage of these errors differ for the two languages. The number of errors which Russian children make is very low: 3% and 7% of all the DOM contexts in the two corpora respectively. There are two types of errors: a) animate nouns are marked as inanimate, using nominative-like 0-marking; b) inanimate nouns are marked as animate, using genitive-like *-a*-marking. The errors appear later than the first correct forms. These two types of errors follow two different patterns. The first type may be regarded as a simplification strategy. Sometimes children fail to apply the proper marking and use the "default" form even though the case oppositions are already more or less established in their speech production. The second type of error might represent the effect of a language game, also found in CDS: inanimate nouns

are upgraded and marked as if they were animate. This differential marking with an upgrading effect has also been reported for other child languages (see, for example, the Croatian data reported in this paper and Ticio and Avram 2013, this issue, for child Romanian). Another possible explanation of this effect is that children may strengthen the contrast between the nominative and the accusative. However, the number of such errors is very low, reflecting the input that children receive. There are almost no overgeneralizations in Russian CDS in contrast to Croatian. All these cases are examples of overmarking and were registered in the speech of one and the same adult. We consider them an individual language game.

The error pattern is different in Croatian. Unlike in the Russian corpus, only one type of error was found in both CL and CDS. Both children and their caretakers overgeneralized the usage of the *-a* marker with inanimate nouns (in children in average 11.5%, in adults in average 3%). There have been no cases of the reverse process, 0-marking of animate nouns. A possible explanation of this phenomenon in CL could be in terms of the contrasting principle which guides children in using different forms for subjects and objects. As for the overgeneralizations attested in CDS, they could be the product of a fine-tuning strategy of Croatian caregivers supporting children in differentiating form and function correspondence (one form = one function principle). However, the explanation of this phenomenon could also be (at least partially) attributed to dialectal influences. Further research involving speakers from diverse areas of Croatia would be needed to dismiss dialectal influence.

Thus, the acquisition route of two related and very similar DOM systems (of Croatian and of Russian) is similar with respect to early emergence and relatively low number of errors but different with respect to error pattern. Though in both languages the animacy constraint is acquired early and the number of errors is low, the error pattern is different. An explanation of this phenomenon can only be based on future investigation of the two adult systems in the colloquial language and also on the analysis of more data from Croatian and Russian children.

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