On the Relation between Case and Number in Early Child Language

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1. Introduction

In this study we investigate the acquisition of Case and Number by Russian speaking children. Assuming that both Case and Number are generated by functional syntactic structure, our results contribute to the long-standing debate as to whether children's grammars contain functional categories from the beginning or not.

An examination of the spontaneous speech of three young monolingual Russian-acquiring children shows that Case is produced correctly in the singular, but not in the plural. Inspired by Hoekstra and Hyams (1995), we argue that an underspecified nominal Number head blocks Case feature checking in the plural in early Russian.

Our findings lend support to the Full Competence Model (Hyams 1992, Wexler 1992, Poeppel and Wexler 1993), which states that functional categories, including those responsible for Case checking, are present from the beginning.

The structure of the paper is as follows. In the next section (2) we provide a brief description of the Russian Case system, outline a theory of Case feature checking and its relation to Number, and present a short review of previous studies on the acquisition of Case and Number cross-linguistically. Section 3 contains our hypotheses and predictions for Russian child language with respect to the investigated phenomena. After describing our methods in section 4, we show in section 5 how our results confirm our hypotheses. The results are further discussed in section 6. Finally, section 7 contains the conclusion.

2. Background

2.1 The Russian Case System

Russian has free word order, and therefore Case marking is necessary for understanding sentences, as exemplified in (1):

(1) *Russian free word order*

a. Miša podaril Maše knigu.
Miša-NOM gave Maša-DAT book-ACC
'Misha gave Masha a book.'

b. Miša podaril knigu Maše.
Miša-NOM gave book-ACC Maša-DAT

c. Miša Maše podaril knigu.
Miša-NOM Maša-DAT gave book-ACC

d. Maše podaril knigu Miša.
Maša-DAT gave book-ACC Miša-NOM

e. Maše knigu podaril Miša.
Maša-DAT book-ACC gave Miša-NOM

f. Knigu Maše podaril Miša.
book-ACC Maša-DAT gave Miša-NOM

g. Knigu Miša podaril Maše.
book-ACC Miša-NOM gave Maša-DAT

h. Maše Miša podaril knigu.
Maša-DAT Miša-NOM gave book-ACC

All the combinations in (1) are instantiations of the same sentence with the meaning "Misha gave Masha a book", and the list is far from exhaustive. As you can see, the subject can appear in sentence-initial position (as in the a, b, and c examples), in sentence-final position (as in d, e, and f), immediately preceding the verb or following the objects (as in g and h), and so on. The same variation is observed for the other arguments.

In a language with such a free word order, overt Case marking is crucial in order to understand who did what to whom.

The Russian nominal paradigm includes six Cases (as outlined in (2)), namely nominative (NOM), accusative (ACC), genitive (GEN), dative (DAT), instrumental (INSTR), and prepositional (PREP).

(2) *Russian Cases*

nominative (NOM), accusative (ACC), genitive (GEN),
dative (DAT), instrumental (INSTR), prepositional (PREP)

Russian has four nominal declension classes, which contain nouns depending on a combination of the gender of the noun and its ending in the nominative singular form, as illustrated in (3):

(3) *Russian Declension Classes* (in the nominative singular form)

Class I:	ruka 'hand';	papa 'daddy'	
Class II:	dom 'house';	okno 'window';	pole 'field'
Class III:	kost' 'bone';	molodëž' 'youth'	
Class IV:	pal'to 'coat';	kofe 'coffee'	

The first declension contains feminine and masculine nouns that end with the vowel [a] in the nominative singular form. The second declension includes masculine and neuter nouns that end with a consonant or with the vowel [o] or [e]. The third declension contains feminine nouns that end with a palatalized consonant, and the fourth declension consists of nouns of foreign origin of all genders. While each of the first three declension classes has its own unique Case endings for both singular and plural forms (listed in Table 1), the nouns of the fourth declension class exhibit the same phonological form in

all Cases in both singular and plural. This form is identical to the nominative singular form, and therefore the nouns that belong to this class are referred to as "declensionless". They do not appear in the table.

(4) **Table 1.** ***The Russian Case Paradigm***

	Declension + number									
	1st sg	**2nd sg**		**3rd sg**	**1st pl**		**2nd pl**		**3rd pl**	
CASE		[+anim]	[-anim]		[+anim]	[-anim]	[+anim]	[-anim]	[+anim]	[-anim]
NOM	a	Ø	Ø/o/e	Ø	y/i	y/i	y/i	y/i/a	i	i
ACC	u	a	Ø/o/e	Ø	Ø	y/i	ov/ev/ej	y/i/a	ej	i
GEN	y/i	a	A	i	Ø	Ø	ov/ev/ej	ov/ev/ej	ej	ej
DAT	e	u	U	i	am	am	am	am	am	am
INSTR	oj(u)	om/em	om/em	ju	ami	ami	ami	ami	mi	ami/mi
PREP	e	e	E	i	ax	ax	ax	ax	ax	ax

*shading shows homophonous (and therefore indistinguishable) forms within each declension
*Ø marks the absence of a vocalic ending

While examining the Russian Case paradigm in Table 1, note that sometimes the same homophonous Case marking morpheme is used for two or even more different Cases. This is marked by shading in the Table.

In addition, it is important to point out that Russian is a fusional-inflectional language in the sense that "the marking of the grammatical category of Number is fused with that of Case" (Stephany 2002:10), as opposed to agglutinating languages that mark the two categories separately (Stephany 2002:11).

2.2 Environments of Case Checking

In our analysis, we adopt the assumptions of the most recent version of the Minimalist framework of Chomsky (1998, 1999, 2001) with respect to feature-checking. With regard to Case, we assume that Case features of DPs are valued by and then

checked against the corresponding selectional features of (finite) verbs, prepositions, and nouns in three different ways: structurally, lexically, or inherently. **Structural Case** is associated with particular structural positions and checked under the relation of c-command. There are three structural Cases distinguished cross-linguistically and in Russian: nominative, accusative, and genitive. Examples of structural Cases in Russian appear in (5):

(5) *Structural Cases*

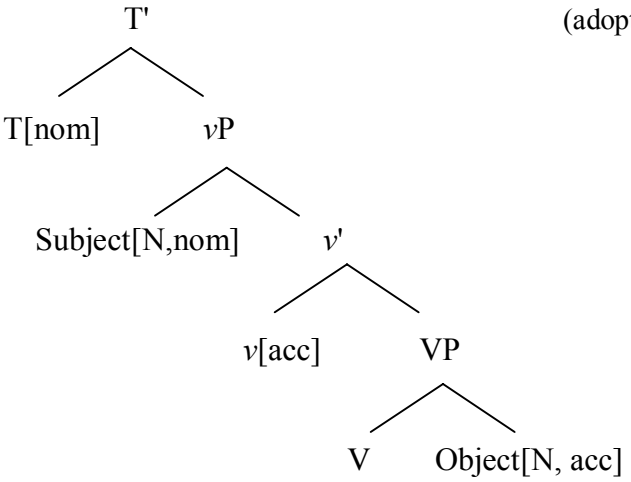
a. **Mal'čik** čitaet.
boy-NOM reads
'The boy is reading.'

b. Mal'čik čitaet **knigu**.
boy-NOM reads **book-ACC**
'The boy is reading a book.'

c. kniga **mal'čika**
book-NOM **boy-GEN**
'the book of the boy' or 'the boy's book'

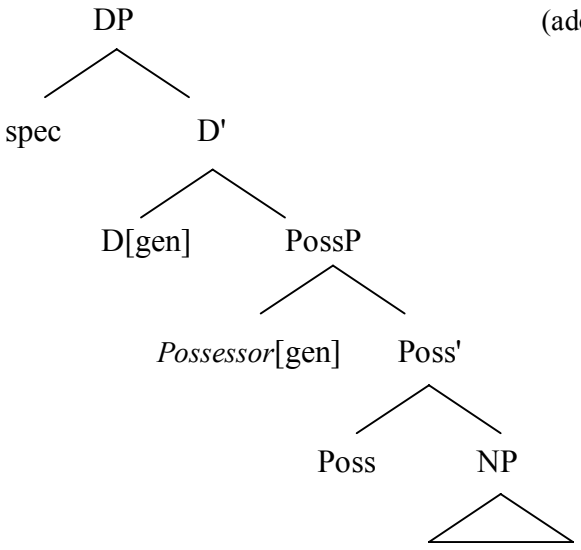
Structural nominative Case is checked in the specifier of little *v*P (the base subject position) against the [nominative] Case feature of (a finite) T under a c-command relation. The relevant structure is in (6). The structure is partial, showing only the projections and their features that are relevant for the present discussion. Structural accusative Case is checked in the complement position of V (where the direct object is merged) against the [accusative] Case feature of little *v* under a c-command relation. This can also be seen in the structure in (6).

(6) (adopted from Adger (2003:218))



Finally, structural genitive, also referred to as the "adnominal" genitive, is checked in the specifier of an optional functional projection Possessor against the [genitive] Case feature of the D head under c-command, as shown schematically in (7). The irrelevant projections and features are omitted.

(7) (adopted from Adger (2003:274))



Examples of structural (or "adnominal") genitive are provided in (8):

(8) *Structural (Adnominal) Genitive Case*

a. Razrušenie **goroda**
destruction **city-GEN**
'destruction of the city'

b. Pomošč' **Peti**
help **Petja-GEN**
'Petja's help'

Other instances of structural genitive Case are genitive of quantification and partitive genitive, illustrated in (9a) and (9b), respectively:

(9) *Other Structural Genitive Cases*

a. *Genitive of Quantification*
dva **mal'čika**
two **boys-GEN**
'two boys'

b. *Partitive Genitive*
Ja xoču **čaju**
I want **tea-GEN(PART)**
'I want some tea.'

Another environment in which genitive functions as a structural Case is the genitive of negation construction. Thus, direct objects of transitive verbs can optionally appear in the genitive Case (instead of accusative) under sentential negation, as illustrated in (10a). Moreover, subjects of negated unaccusative existential verbs such as 'be', 'exist', etc. must appear in the genitive Case, as in (10b).

(10) *Structural Genitive of Negation*

a. Ja ne polučal **pisem** / pis'ma.
I not received **letters-GEN** letters-ACC
'I didn't receive (any) letters.'

b. U menja net(u) / ne bylo **vremeni**.
at me no not have **time-GEN**
'I have/had no time.'

The syntactic analysis of these constructions is irrelevant for the purposes of the present study and is therefore not presented here.

Inherent Case is the Case carried by nominals bearing particular theta-roles, and is checked against the Case feature of the theta-assigner, usually the verb. In Russian two inherent Cases are distinguished: dative and instrumental. Inherent dative Case is carried by nominals bearing the theta-roles of goal, beneficiary, or experiencer, as exemplified in (11); and inherent instrumental Case is carried by (nominals bearing the theta-roles of) instruments and agents of passive sentences, as illustrated in (12):

(11) *Inherent Dative Case*

a. Ja dala knigu **Maše**. - goal
I gave book **Maša-DAT**
'I gave the book to Masha.'

b. My kupili podarok **Vanje**. - beneficiary
we bought present **Vanja-DAT**
'We bought a present for Vanja.'

c. **Mne** xolodno. - experiencer
me-DAT cold
'I am cold.'

(12) *Inherent Instrumental Case*

a. On pišet **ručkoj**. - instrument
he writes **pen-INSTR**
'He writes with a pen.'

b. Pis'mo bylo napisano **Valjej**. - passive agent
letter was written **Valja-INSTR**
'The letter was written by Valja.'

Finally, **lexical** (or "quirky") **Case** is carried by nominal complements of particular lexical items such as verbs and prepositions regardless of the theta-role borne

by the nominal carrying this Case or of its structural position. The lexical Case checked by particular lexical items, i.e. some verbs and most prepositions, is specified in their lexical entry, hence the name "lexical" Case. In Russian, two types of lexical Case should be distinguished, namely lexical Cases checked by verbs, and lexical Cases checked by prepositions. The lexical Cases checked by verbs include genitive, dative, and instrumental, as exemplified in (13), and the lexical Cases checked by prepositions include accusative, genitive, dative, instrumental, and prepositional, as in (14):

(13) *Lexical Cases Checked by Verbs*

a. Ona boitsja **napadenija**.
she fears **assault-GEN**
'She fears an assault.'

b. Ty mešaeš **mne**.
you disturb **me-DAT**
'You are disturbing me.'

c. Ona rukovodit **gruppoj**.
she leads **group-INSTR**
'She leads a group.'

(14) *Lexical Cases Checked by Prepositions*

a. Ja polozhila knigu **na polku**.
I put book-ACC **on shelf-ACC**
'I put the book on the shelf.'

b. On živët **u roditelej**.
he lives **at parents-GEN**
'He lives at his parents' house.'

c. Busy rassypalis' **po polu**.
beads scattered **on/over floor-DAT**
'The beads scattered on the floor.'

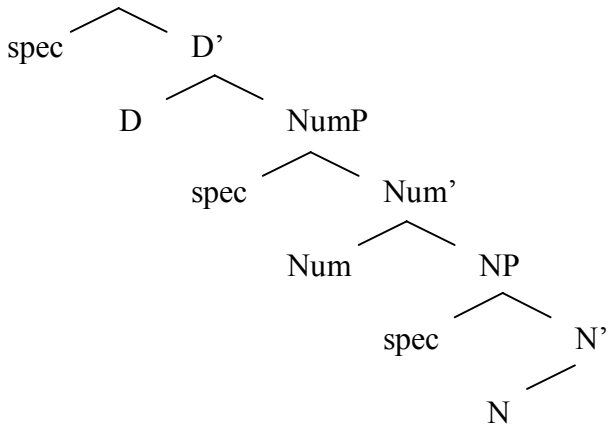
d. Derevo rastët **pod oknom**.
tree grows **under window-INSTR**
'The tree grows under the window.'

e. Rasskaži mne **o** **Pete**.
tell me **about** **Petja-PREP**
'Tell me about Petja.'

2.3 Number and Case

With regard to the internal structure of DPs, there are many competing analyses in the literature, none of which, to the best of our knowledge, can offer a satisfactory account of the DP-internal Case-checking mechanisms. Therefore, we outline an account that incorporates some of the older ideas with the newest minimalist developments. In particular, we follow Ritter (1991, 1995) and Koopman (1999), assuming that noun phrases contain a functional projection intermediate between DP and NP, namely NumP, whose head bears the Number feature. The structure of DP that we adopt is in (15):

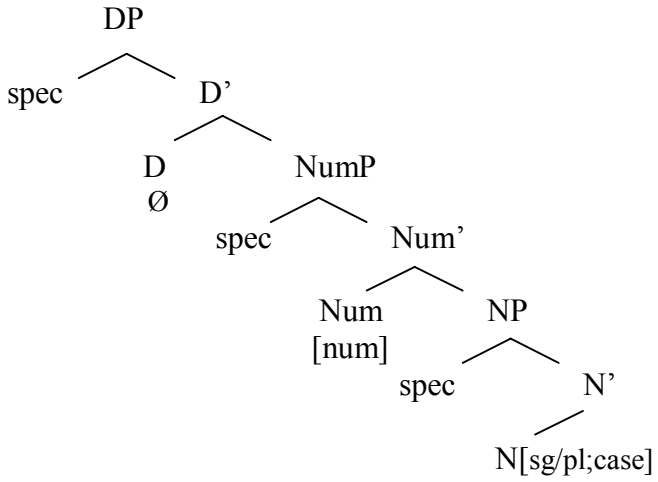
(15) (following Ritter 1991, 1995; Koopman 1999)



With regard to Case, we follow Hoekstra and Hyams (1995), assuming that in adult language a DP-internal Case-chain between N and D needs to be established. Along recent minimalist lines, we assume that in adult language the Num head has an unvalued uninterpretable Number feature that is valued and checked via an Agreement relation with the N head that carries an interpretable Number feature. This Number feature can be

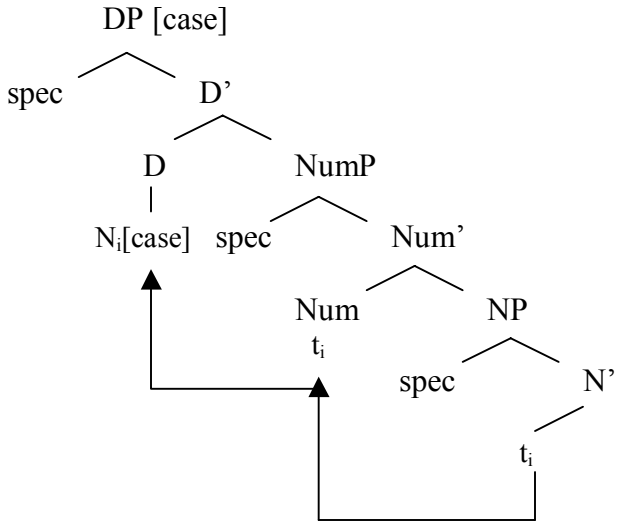
either singular or plural, depending on the reference of the noun carrying it. This is shown schematically in (16):

(16)



As the target for Case feature checking is the whole DP, the Case feature has to be in a position from which it can percolate up to the DP level. Such a position is D. In order to fulfill this requirement, the noun carrying the Case feature (covertly) moves to D. In accordance with the Head Movement Constraint (Travis 1984), the noun moves to the D head through the Num head position. This way, a DP internal Case-chain is established. The relevant structure is in (17).

(17)



The result of the DP-internal Case-chain is the Case feature on the DP. This Case feature on DP is subsequently valued by and checked against the Case feature of the corresponding head, such as T, *v*, or D, resulting in, for example, Nominative, Accusative or Genitive Case.

If for some reason the D-chain is not established, the Case feature cannot reach the DP level, and therefore cannot be valued. As a consequence, the nominal expression receives default Case, which is Nominative in Russian. This is illustrated by the answer to the question *Who wants an ice-cream?* in (18), which is "Ja" ('I') in the nominative Case.

(18) *Nominative – default Case in Russian*

Q: Kto xochet moroženoe?
who wants ice-cream
'Who wants an ice-cream?'

A: Ja.
I-NOM
'Me.'

We will return to the lack of a D-chain in the analysis of our child data.

2.4 Previous Accounts of Acquisition of Case and Number

Let us now review briefly some previous studies on the acquisition of grammatical Case and Number in child language. Babyonyshev (1993) reports high percentages of correct Case inflection in early Russian. In particular, in a spontaneous speech investigation of two monolingual Russian-speaking boys aged 1;6-2;0 and 2;1-2;7, she found 99.5% (596/599) correct usage of structural nominative Case and 90% (27/30) correct usage of structural accusative Case in appropriate positions. Concerning

structural genitive, the children appear to be non-productive in its use, using it mainly with one construction, the genitive of negation, and only with one verb, the negated form of 'be'. Babyonyshev suggests that this verb might have been analyzed by the children to assign lexical genitive Case, rather than structural genitive.

Moreover, inherent dative Case was used appropriately 87.5% (21/24) of the time, showing good mastery of the inherent Cases. Lexical Cases show worse performance, however above chance level. Lexical accusative was used appropriately 62.5% (5/8) of the time, lexical genitive 80% (8/10) of the time, and lexical prepositional 75% (3/4) of the time. Babyonyshev's findings are summarized below:

(19) *Findings of Babyonyshev (1993)*
(2 monolingual Russian-speaking boys aged 1;6-2;0 and 2;1-2;7)

a)	Structural Cases:	NOM - 99.5% (596/599)
		ACC - 90% (27/30)
b)	Inherent Cases:	DAT - 87.5% (21/24)
		INSTR - unattested
c)	Lexical Cases:	ACC - 62.5% (5/8)
		GEN - 80% (8/10)
		PREP - 75% (3/4)

Babyonyshev's findings present evidence against the lexical-thematic analysis of Radford (1986, 1990), outlined in (20a), which claims that child grammars "pass through a stage in which all functional categories are absent and only lexical categories that enter into thematic relations are present" (Babyonyshev 1997:1). The finding that Case is checked correctly and early in child Russian presents evidence in favor of the Full Clause (or Full Competence) Hypothesis (Hyams 1992, Wexler 1992, Poeppel and Wexler

1993), outlined in (20b), according to which functional categories are present in the child's grammar from the beginning.

(20) a. *Lexical-Thematic Analysis* (Radford 1986, 1990)
Functional categories are absent from child grammar and only lexical categories that enter into thematic relations are present.

b. *Full Clause Hypothesis* (Hyams 1992, Wexler 1992, Poeppel & Wexler 1993)
Functional categories are present in child grammar from the beginning.

Although Babyonyshev demonstrates early mastery of Case distinctions by young Russian-speaking children, she does not distinguish between singular and plural.

In a study on the acquisition of English plural, Zapf and Smith (2003) outline a developmental trend based on a summary of a number of previous studies on this topic. Thus, they distinguish four developmental stages, outlined in (21) below:

(21) *Stages of acquisition of plural in English* (from Zapf and Smith 2003)

Stage 1:	0-18 months	No use of English plural
Stage 2:	**18-30 months**	**Imitation of English plural**
Stage 3:	20-33 months	Increased production, errors and over-generalizations
Stage 4:	24-49 months	English plural mastered

We are particularly interested in the second stage, during which children are said to "produce *highly frequent* regular and irregular plurals. For example, children use pluralized nouns such as 'toys', 'shoes', 'animals' or 'keys' " (2003:835). Zapf and Smith propose that this stage be characterized as the "rote stage", because children use the plural forms that they have heard many times and might have memorized. We will argue that the Russian-acquiring children in our study are exactly at this stage.

In a spontaneous speech study of two bilingual German-French children aged 1;6-3;0 and 1;5-3;0, Müller (1994) reports a developmental stage at which the children do not mark gender and number distinctions, based on the finding that they do not make productive use of adultlike determiners that mark these distinctions in either language. Müller suggests "that the absence of adultlike determiners to encode grammatical number and gender distinctions is due to the unavailability of the corresponding grammatical features" (1994:60). She further proposes that the relevant functional categories are present in the child grammar, but they are underspecified. In particular, she argues that initially [+singular] represents the unmarked feature, as opposed to [-singular]. We adopt this theory, hypothesizing that the nominal Num (Number) head is initially underspecified, namely, it represents the unmarked [+singular] feature only, at least until age 2, as briefly stated below:

(22) *Underspecification of Number* (Müller 1994)

[+singular] represents the unmarked feature of Num head.

We now proceed to the formulation of our hypotheses and predictions for child Russian.

3. Hypotheses and predictions

Following the Full Clause Hypothesis stated in (20b), we hypothesize that all functional categories are present in child grammar from the beginning. In particular, we hypothesize that the phrase structure positions responsible for Case checking are available to the child from very early on. This first hypothesis is formulated in (23):

(23) *Hypothesis 1*

All functional categories responsible for Case checking are present in the child grammar from very early on.

The specific prediction that follows from this hypothesis is that children do not make mistakes in Case checking, that is, they are expected to use correct Case in obligatory environments. This first prediction is stated in (24):

(24) *Prediction 1*

Young Russian-speaking children produce Case correctly.

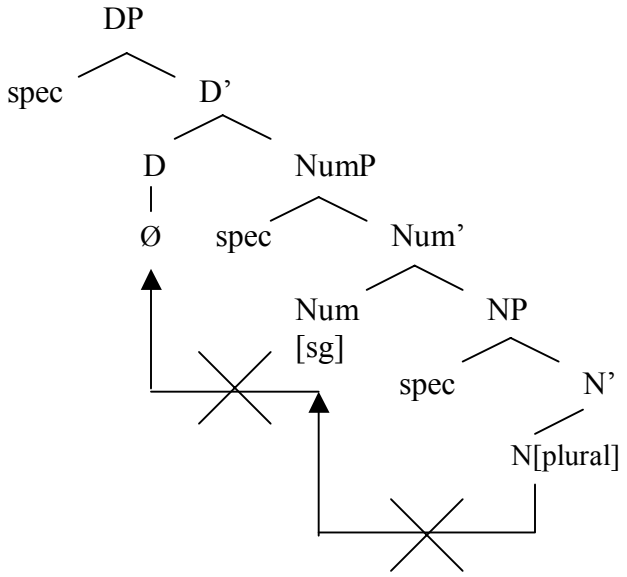
However, we also follow Hoekstra and Hyams (1995) and Hyams (1996) in hypothesizing that the differences between child and adult grammars are due to underspecification of functional categories. In particular, in the spirit of Hoekstra and Hyams (1995) and Müller (1994), we hypothesize that the Number head is initially underspecified in early grammars, namely it represents [+singular] only. This hypothesis is formulated in (25):

(25) *Hypothesis 2*

The Number head is initially underspecified in child grammars and represents [+singular] only (at least until age 2).

If this is true, this implies that plural nouns run into problems in early child grammar. A plural noun would not match the [+singular] feature on the underspecified Num. This is shown schematically in (26) below:

(26)



As a result of this feature mismatch, the Agree relation and subsequent feature-checking between N and Num fails. If feature checking fails between the two categories, N cannot move to Num, and therefore not to D (because of the Head Movement Constraint). As a result, the Case feature of the noun does not get to the DP level, where it is supposed to be valued and checked against the case feature of the corresponding head, such as T, *v*, or D. Consequently, the plural noun surfaces in its default nominative form. This prediction is formulated in (27):

(27) *Prediction 2*

Plural nouns appear in the default NOM Case in early Russian.

When the noun is singular, underspecified Number head does not break the Case-chain as it is [+singular], thus yielding forms correctly marked for Case. This leads us to a reformulation of Prediction 1 to include only singular nouns. The revised Prediction 1a is in (28):

(28) *Prediction 1a*

Young Russian-speaking children produce Case correctly *in the singular*.

Finally, the underspecification of Number may have consequences for the use of plural nouns in general. Thus, following Zapf and Smith (2003), we predict that initially plural is not productive in child grammar and the plural forms that are observed are frequently used plurals that represent mainly rote-learned forms. This last prediction is stated in (29):

(29) *Prediction 3*

Initially plural is unproductive in child Russian, i.e. plural forms are rarely used compared to the singular and the attested plural forms are frequently used plurals that may be rote-learned.

Now that we have laid out our hypotheses and predictions, we turn to the actual investigation of the Russian child data.

4. Methods

4.1 Subjects

We investigated the spontaneous speech of three monolingual Russian-acquiring girls, between the ages of 1;8-2;0. Their speech was recorded in 30-60-minute sessions with 3-week intervals by one of the authors (Galina Gordishevsky) in their home settings in the presence of at least one of the caregivers. The recordings yielded spontaneous speech transcripts of around 200 utterances each (on average). The analyzed transcripts included both the children's and the adults' utterances and detailed descriptions of contexts in which these utterances were produced (such as accompanying gestures,

looking in particular direction, pointing to objects etc.). Details regarding the subjects' age, MLU, number of transcripts and utterances analyzed, etc. are provided in Table 2.

(30) **Table 2.** ***Subject Information***

child's name	age range	MLU_{words} range	№ of files analyzed	average № of utterances per file	overall № of utterances
ZLA	1;8-2;0	1.07-2.66	7	205	1437
MIC	1;8-2;0	1.48-1.92	6	260	1559
KAT	1;9-2;0	1.54-1.99	5	115	577
overall			**18**	**200**	**3573**

4.2 Analysis

We analyzed all nominal forms bearing an overt Case marking, namely nouns and pronouns, as shown in (31). Pronouns are arguably determiners situated in D and use a Case paradigm that differs from the nominal one, as pointed out by Babyonyshev (1997). A number of additional elements bare Case marking in Russian. These include various DP modifiers that agree with the head noun in number, gender and Case, such as a) adjectives, which exhibit Case marking paradigm different from the nominal one. Adjectives are assumed to receive their Case features via the process of noun-adjective agreement within the morphological component of the grammar, but not bear Case features in syntax (Babyonyshev (1997)); b) nominal and pronominal possessors (=possessive forms of nouns and pronouns) that exhibit an adjectival Case marking paradigm different from the nominal one and are therefore often treated as adjectives rather than nominals. These elements are argued to be merged as specifiers of an optional functional category "Possessor" (cf. Alexiadou and Wilder 1998); and c) demonstratives such as *tot/etot* 'this/that' that also agree with the head noun in number, gender and Case,

and exhibit an adjectival Case marking paradigm. Initially, we coded and analyzed all these types of elements associated with the DP projection. as bearing overt Case. However, since there is no consensus in the literature as to the proper analysis of these elements, we decided to be conservative and included only nouns and pronouns in our final analysis.

(31) *Elements Bearing Case in Russian*

Included in analysis (bearing structural, inherent, or lexical Case):
a. nouns;
b. pronouns

Excluded from analysis (bearing Case by agreement):
a. adjectives;
b. nominal and pronominal possessors;
c. demonstratives

We also excluded from our analysis four groups of uninflected nouns non-existent in adult Russian, described in (32), namely onomatopoeic nouns, incomplete nouns, non-declinable child-invented forms which cannot be classified within any of the declensions described earlier, and adultlike nouns of foreign origin that belong to the fourth declension class and are also non-declinable.

(32) *Uninflected Nouns (excluded from analysis)*

a. onomatopoeic forms referring to nouns:
xrju-xrju ('pig'); *igogo* ('horse'); *bi-bi* ('car'); *tik-tak* ('clock'); *njam-njam* ('food')

b. incomplete nouns, lacking inflectional ending:
goljo for *golovka* ('head'); *tiljat'* for *ventiljator* ('fan'); *pizi* for *puzyr'* ('bubble')

c. non-declinable child-invented nominal forms:
bababu for *buterbrod* ('sandwich'); *mimi* for *Michelle* (child's name); *soso* for *soska* ('pacifier')

d. non-declinable adult nouns (declension class IV):
plat'e ('dress'); *pjero* (name of book character); *tabis* ('Teletubbies')

Moreover, we made the distinction between singular and plural nouns, as in (33), and within each group the distinction was made between structural (namely, nominative, accusative, and genitive), inherent (namely, dative and instrumental), and lexical cases (accusative, genitive, dative, instrumental, and prepositional).

(33) *Distinction between*

i. Number: singular vs. plural;

ii. Case: a) structural (NOM, ACC, GEN);
b) inherent (DAT, INSTR);
c) lexical (ACC, GEN, DAT, INSTR, PREP)

5. Results

The results show very high percentages of correct performance on all Cases in the singular. These results are summarized in Tables 3-5, including the individual data and the total numbers and percentages for the three children. Table 3 shows that in the **singular** the children score 99% (1443/1459) correct on NOM, 88% (285/324) correct on structural ACC, and 88% (51/58) correct on structural GEN.

(34) **Table 3.** ***Structural Cases - singular***

Case / child	**NOM**	**ACC**	**GEN**	**total**
ZLA	100% (577/577)	85% (117/138)	90% (27/30)	97% (721/745)
MIC	98% (597/611)	90% (138/154)	84% (21/25)	96% (756/790)
KAT	99% (269/271)	94% (30/32)	100% (3/3)	99% (302/306)
Total	**99% (1443/1459)**	**88% (285/324)**	**88% (51/58)**	**97%(1779/1841)**

Furthermore, as shown in Table 4, singular inherent DAT is 92% (123/134) adultlike. Inherent INSTR was used only three times, with two word types: once by one

child and twice by another child. We do not draw conclusions concerning the acquisition of this Case based on these rare uses.

(35) **Table 4.** ***Inherent Cases - singular***

Case / child name	**DAT**	**INSTR**
ZLA	96% (44/46)	used once
MIC	78% (29/37)	used twice
KAT	98% (50/51)	–
total	**92% (123/134)**	

Finally, Table 5 shows that the singular lexical Cases in total are produced correctly 91% (113/124) of the time. In particular, ACC – 90% (19/21), GEN – 95% (38/40), DAT – 100% (2/2), INSTR – 87% (13/15), PREP – 89% (41/46). These results include only lexical Cases checked by prepositions, while lexical Cases checked by verbs were not attested.

(36) **Table 5.** ***Lexical Cases - singular***

Case / child	**ACC**	**GEN**	**DAT**	**INSTR**	**PREP**	**total**
ZLA	100% (8/8)	100%(15/15)	100% (2/2)	100% (2/2)	80% (16/20)	91% (43/47)
MIC	82% (9/11)	89% (16/18)	–	82% (9/11)	96% (22/23)	89% (56/63)
KAT	100% (2/2)	100% (7/7)	–	100% (2/2)	100% (3/3)	100% (14/14)
total	**90%(19/21)**	**95% (38/40)**	**100%(2/2)**	**87% (13/15)**	**89% (41/46)**	**91%(113/124)**

In contrast, **plural** nouns show much lower success rates. The results for plural are summarized in Tables 6-7. The rates of correct use of the structural Cases in the plural, presented in Table 6, are the following: 0% (0/5) for structural ACC (we excluded from our counts 51 forms that were ambiguous between NOM and ACC, which is

generally true for inanimate nouns in Russian), and 0% (0/2) for structural GEN, while structural NOM, which is also the default Case in Russian, is 100% (98/98) correct.

(37) **Table 6.** ***Structural Cases - plural***

Case	**NOM**	**ACC**	**GEN**
total	**100% (98/98)**	**0% (0/5)**	**0% (0/2)**
comments	default Case	excluded: 51 ambiguous NOM/ACC forms	used only by one child

Table 7 contains the results of the correct use of inherent and lexical Cases in the plural. Thus, plural inherent INSTR was used four times by one child, but only with one word type, and 33% (1/3) correct by another child. Plural inherent DAT is absent in our data. Lexical Cases show 14% (1/7) correct rate on the overall (excluding 20 forms ambiguous between NOM and ACC). All errors consist of substitution by NOM forms, 11 of which are in plural and 4 – in singular.

(38) **Table 7.** ***Inherent and Lexical Cases - plural***

Case	**Inherent INSTR**	**Inherent DAT**	**lexical Cases**
total	**33% (1/3)**	–	**14% (1/7)**
comments	used four times by another child with only one word type	–	excluded: 20 ambiguous NOM/ACC forms

Close examination of the children's plural forms suggests that plural is not productive. As shown in (39) below, the numbers of plural forms are extremely low (186 plural forms vs. 2101 singular forms). Moreover, out of the 54 different word types used in plural, 38 represent pair-wise ('hands') or plural ('fingers') body parts, types of

footwear ('sandals'), plural non-count nouns ('money', which is plural in Russian), and entities that usually occur in groups ('toys'). Finally, almost none of the plurals occur in their singular form in the same transcripts. All these observations suggest that the Number feature is initially underspecified.

(39) *Plural is not productive - evidence*

a) numbers of plural forms are extremely low: 186 plural vs. 2101 singular forms;

b) out of the 54 different word types used in plural, 38 represent pair-wise ('hands') or plural ('fingers') body parts, types of footwear ('sandals'), plural non-count nouns ('money'), and entities that usually occur in groups ('toys').

c) almost none of the plurals occur in their singular form in the same transcripts.

6. Discussion

The results just presented show that our predictions are borne out, as is summarized in (40):

(40) *Summary of results*

a) Young Russian-speaking children (aged 1;8-2;0) show very high percentages of correct performance on all Cases in the singular, namely 97% on structural Cases, 92% on inherent Cases, and 91% on lexical Cases.
(These results present support for Prediction 1a repeated in (41) for convenience);

b) Young Russian-speaking children (aged 1;8-2;0) show much lower success rates with plural nouns, namely 0% on structural ACC and GEN, 33% on inherent Cases, and 14% on lexical Cases, replacing the Case-marked forms with the default NOM forms.
(These results support our Prediction 2 repeated in (42));

c) The children use plural nominal forms extremely rarely (186 plural vs. 2101 singular). Moreover, the attested plural forms are mainly (38 out of 54 different word types) frequently used plurals that may be rote-learned.
(which supports our Prediction 3 repeated in (43)).

(41) *Prediction 1a*

Young Russian-speaking children produce Case correctly *in the singular*.

(42) *Prediction 2*

Plural nouns appear in the default NOM Case in early Russian.

(43) *Prediction 3*

Initially plural is unproductive in child Russian, i.e. plural forms are rarely used compared to the singular and the attested plural forms are frequently used plurals that may be rote-learned.

Thus, our predictions are borne out, providing support for our two hypotheses, repeated in (44) and (45).

(44) *Hypothesis 1*

All functional categories responsible for Case checking are present in the child grammar from very early on.

(45) *Hypothesis 2*

The Number head is initially underspecified in child grammars and represents [+singular] only (at least until age 2).

One might wonder whether the children's non-adultlike behavior with respect to plural Case results from a phonological deficit, namely an incapability to produce codas, i.e. syllable-final consonants.[1] An examination of the Russian Case paradigm in Table 1 reveals that some, but not all, plural endings contain a coda. For example, the plural PREP ending is *-ax* in all declensions, while the plural INSTR ending of all declensions is *-(a)mi*. Our findings show that the children do not succeed even at those non-NOM

[1] Thanks to Outi Bat-El who raised this issue at IATL20.

plural forms that do not require a coda, such as INSTR *-(a)mi* ending, ACC and GEN *-ej* ending. Moreover, children do produce codas (e.g. on nouns in NOM, GEN and INSTR) from the earliest ages observed, as the following examples show:

(46) *Syllables containing a coda*

(a) aci**k** dusi**m** (ZLA 1, age 1;8)
boy-NOM shower-INSTR
'The boy is under the shower.'

(b) asos'ka**v** (ZLA 3, age 1;10)
socks-dimin-GEN

(c) masi**l** (MIC 4, age 1;11)
crayon-NOM

Thus, the evidence just presented refutes a phonological explanation of erroneous Case marking in the plural.

7. Conclusion

To conclude, in this study we have shown that while young Russian-speaking children under the age of 2 perform adultlike on Case marking on singular nouns, they have difficulty with Case marking in the plural. We argued that this difficulty stems from the underspecification of the Number feature in early grammar. Underspecified Number blocks the movement of plural nouns to D, preventing the Case feature from getting to the DP level where it can be valued and checked. The result is default nominative Case on plural nouns.

Our findings lend support to the Full Competence Model, namely that functional categories, including those responsible for Case checking, are present from the beginning,

and also to the Underspecification Hypothesis which states that certain functional categories, such as Number, are initially underspecified.

We are left with a number of open research questions. The first one is how the children would behave with respect to plurals in a structured experimental task that elicits plurals. In a controlled task a higher number of tokens can be elicited than in a free-speech sample, thus yielding more reliable results. The second question concerns the development of the plural feature and its interaction with Case assignment after the age of 2 and the transition into the target grammar. We leave these issues open for future research.

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