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1 Goals

This paper is concerned with the acquisition of passive constructions in Russian. First, we present previously unreported spontaneous speech data from Russian children and demonstrate the existence of an asymmetry in the acquisition of imperfective and perfective passives. We then provide an explanation for this asymmetry that relies on the maturation of the (subject; object) A-chains account (Borer and Wexler, 1987, 1992; Babyonyshev et al., 2001). Finally, we describe the properties of long passive forms in these child data and show that the lack of long passives in child speech in conjunction with the reported aspectual asymmetry can be best accounted for within the framework of (subject; object) A-chain maturation rather than the θ -role transmission theories (e.g., Fox and Grodzinsky, 1998).

2 Background

2.1 Aspect in Russian

Before presenting our data, we need to provide some background information on the notions and theories utilized in this paper. We begin with an outline of the properties of aspect in Russian.

Russian verbs are inherently marked for grammatical aspect through such morphological means as affixation (1) and suppletion (2). Hence, every verb form can be identified as either perfective or imperfective:

(1) Affixation

- | | | |
|----|-----------------|----------------|
| a. | delat'-IMP | sdelat'-PERF |
| | 'to be doing' | 'to-have-done' |
| b. | otdat'-PERF | otdavat'-IMP |
| | 'to-have-given' | 'to-be-giving' |

(2) Suppletion

- | | | |
|----|----------------|-----------------|
| a. | govorit'-IMP | skazat'-PERF |
| | 'to-be-saying' | 'to have-said' |
| b. | brat'-IMP | vzyat'-PERF |
| | 'to-be-taking' | 'to-have-taken' |

Imperfective verb forms denote events without an inherent endpoint, i.e. atelic events (3), while perfective verbs denote events with an inherent endpoint, i.e. telic events (4):

- (3) Vanya stroil dom dva goda/*za dva goda.
 Vanya build-IMP-PASS house two years/in two years
 'Vanya was building the house for two years/*in two years.'
- (4) Vanya postroil dom za dva goda/*dva goda.
 Vanya has-built-PERF-PASS house in two years/two years
 'Vanya has built the house in two years/*for two years.'

As these examples illustrate, perfective verbs cannot be used with durative adverbials and imperfective verbs cannot be used with time span adverbials.

2.2 Passive Forms

Russian has two types of passive constructions: verbal passives (5) and adjectival passives (6). The verbal passive constructions can be derived from either imperfective or perfective verbs:

- (5) Verbal Passives
- a. Imperfective
 Dom stroilsya (Vanej) dva goda/*za dva goda
 house build-IMP-PASS (Vanya-INST) two years/in two years
 'The house was being built (by Vanya) for two years/*in two years.'
- b. Perfective
 Dom byl postroen (Vanej) za dva goda/*dva goda.
 house was build-PERF-PASS (Vanya-INST) in two years/two years
 'The house has been built (by Vanya) in two years/*for two years.'

The adjectival passives, in turn, can appear in the long or the short form:

- (6) Adjectival Passives
- a. Long form
 Kofta byla vyazanaja (*mamoj).
 cardigan was knitted-FEM-NOM (mama-INST)
 'The cardigan was knitted (*by mom).'
- b. Short form
 Kofta byla svyazana (*mamoj).
 cardigan was knitted-FEM-NOM (mama-INST)
 'The cardigan was knitted (*by mom).'

Two properties of the passive constructions will be crucial for our analysis. First, the phonological realization of the short passive in (6b) is identical to the perfective verbal passive in (5b). Such forms will be referred to, following Babyonyshev et al. (2001), as s-homophones¹. Second, the adjectival passive is unable to appear with the “*by*-phrase” as is evident from the examples of adjectival passive constructions given above.

2.3 Theoretical Assumptions: The Maturation of Grammar

Finally, we need to provide the reader with the theoretical assumptions made in this paper. According to the standard analysis of the passive constructions, the nominal argument of a passive predicate is base-generated in the direct object position and then moves into the canonical subject position. The subject and object positions are connected by a (subject; object) A-chain. In the analysis presented in this paper, we follow Borer and Wexler (1987, 1992) and Babyonyshev et al. (2001) who argue that children up to the age of four lack the ability to represent (subject; object) A-chains. Hence, both the passive construction (7a) and the unaccusative construction (7b) are predicted to be problematic for children as they require the formation of a (subject; object) A-chain:

- (7) a. *[The house]_i was built t_i.
 b. *[The ice]_i melted t_i.

The inability to form the (subject; object) A-chains can be explained by two distinct theories. One theory, the A-Chain Deficit Hypothesis, proposes that young children are unable to construct A-chains of any kind. The reason behind this deficit has to do with the children’s inability to associate a θ -role with an overt argument which fails to occupy the canonical position in which that θ -role is normally assigned (Borer and Wexler, 1987)

The second theory, the External Argument Requirement, claims that structures lacking θ -marked external arguments are ungrammatical for children under a certain age. In what follows we will not attempt to distinguish between these two theories since the predictions they make for the passive constructions are identical. Both hypotheses predict that children should be unable to represent passive constructions under the appropriate adult analysis.

¹S(yntactic) Homophone: A phrase α is an s-homophone of a phrase β if α and β have distinct structure but common pronunciation (Babyonyshev et al., 2001:7).

Given our conclusion that all passives should be problematic for children, we need to explain the fact that some passive-like strings do occur in their speech (e.g., Maratsos et al., 1985, *inter al.*) Here we follow Borer and Wexler (1987) who argue that young children do not produce true verbal passives which require the formation of (subject; object) A-chains. Rather, they provide their passive-like strings with an s-homophonous adjectival passive representation which does not involve an A-chain:

- (8) Adult passive structure:
The house_i was built t_i. (verbal passive analysis)
- (9) Child passive structure:
The house was [_A built]. (adjectival passive analysis)

To summarize, although children have problems with verbal passive constructions that require the formation of (subject; object) A-chains, they still produce passive-like structures replacing the appropriate verbal passive analysis by the adjectival passive analysis which allows them to avoid A-chain formation.

3 The Acquisition of Passive Constructions

3.1 Syntactic Properties of Russian Passives

Let us now discuss the syntactic properties of Russian passive constructions relevant for our analysis. Both perfective and imperfective verbal passives are unaccusative predicates. They pass such standard tests for unaccusativity as the genitive of negation test or the conjunct agreement test.

Thus, verbal passives participate in the genitive of negation construction where the nominal argument of a negated unaccusative predicate can surface with the genitive case-marking (Pesetsky, 1982; Bailyn, 1995; Babyonyshev, 1996; Brown, 1999; *inter al.*):

- (10) Genitive of Negation Test
- a. V etom poselke ne bylo postroeno nikakix novyx domov.
in this town NEG was build-PERF-PASS no-kind new houses-GEN
'No new houses of any kind were built in this town.'
- b. V etom poselke ne stroilos' nikakix novyx domov.
in this town NEG build-IMP-PASS no-kind new houses-GEN
'No new houses of any kind were being built in this town.'

- c. *V klasse ne svistelo nikakix detej.
 in class NEG whistled no-kind children-GEN
 'No children whistled in class.'

As demonstrated by the examples above, genitive of negation is possible for both the perfective and imperfective passive constructions (10a-b) but not for the unergative predicate in (10c).

They also pattern with other unaccusative verbs with respect to conjunction agreement: when the conjoined subject occurs in the postverbal position, the verb can show singular agreement triggered by the first conjunct (Babyonyshev 1996):

(11) Conjunction Agreement Test

- a. V poselke byli postroeny/byl postroen/*byla postroena
 in town were built-PERF-PASS-PL/MASC-SG/*FEM-SG
 dom i škola.
 house-MASC and school-FEM
 'A house and a school were built in town.'
- b. V poselke stroilis'/stroilsya/*stroilas'
 in town built-IMP-PASS-PL/MASC-SG/*FEM-SG
 dom i škola.
 house-MASC and school-FEM
 'A house and a school were being built in town.'
- c. V klasse svisteli/*svistel/*svistela devočka i mal'čik.
 in class whistled-PL/MASC-SG/FEM-SG girl-FEM and boy-MASC
 'A girl and a boy whistled in class.'

In the examples with perfective and imperfective passives (11a-b), the verb can either be in plural form or agree with the first member of the conjunct but not with the second member. Crucially, only the plural agreement counterpart is possible in the case of an unergative predicate (11c). Hence, verbal passives are in fact unaccusative constructions and, therefore, their representation involves a (subject; object) A-chain in adult grammars.

Turning now to the adjectival passives, we follow Wasow (1977), Williams (1981), and Levin and Rappaport (1995) in assuming that these passive constructions are unergatives. As an illustration, consider the application of the genitive of negation test for unaccusativity below:

(12) Genitive of Negation Test

- a. Ni odin mal'čik ne ostalsya nepričesan.
 not one boy-NOM NEG remained-MASC-SG uncombed-MASC-SG

- 'Not a single boy remained uncombed.'
- b. *Ni odnogo mal'čika ne ostalos' nepričesano.
 not one boy-GEN NEG remained-NEUT-SG uncombed-NEUT-SG
 'Not a single boy remained uncombed.'

As predicted, adjectival passive constructions pattern with unergative verbs in not allowing genitive case to surface on their nominal arguments under negation. Therefore, we can conclude that these constructions are unergative and do not require a (subject; object) A-chain in their representation.

3.2 Predictions

Based on the facts discussed above, we make the following predictions about the use of passive forms in child Russian. We expect children under the age of four to be unable to produce perfective and imperfective passive constructions under the correct adult analysis which requires the formation of (subject; object) A-chains. However, with the perfective passives, children should be able to use an unergative s-homophone, the adjectival passive, to generate the appropriate string. With the imperfective passive constructions, because no unergative s-homophone exists in Russian, the replacement strategy should not be available to the children and, as a consequence, they should not be able to generate the passive-like string. Hence we predict that children younger than four will produce significantly more perfective passive forms than imperfective passive forms.

3.3 Data and Results

An analysis of the spontaneous speech data obtained from eight monolingual Russian children between ages 2;6 and 3;9 was conducted. The individual as well as total results are presented in Table 1 below. As the data show, children do produce significantly more perfective passives (91%) than imperfective passives (9%) in their speech (two-tailed Binomial test; $p < 0.0001$).

Child	Perf tokens	Perf %	Imperf tokens	Imperf %
Musya (2;8)	3	100	0	0
Nikita (2;6-2;7)	9	90	1	10
Anya B. (2;11-3;4)	28	94	2	6
Mitya (3;5-3;9)	31	100	0	0
Varvara (2;10)	7	87.5	1	12.5
Anya Y. (3;5-3;9)	33	84.6	6	15.4
Sasha (2;4-2;8)	4	80	1	20
Rita (3;0-3;3)	78	90.7	8	9.3
TOTAL	193	91	19	9

Table 1: Distribution of perfective and imperfective passives in child speech

Some examples of the passive constructions found in child speech are provided below:

(13) Perfective passives (91%)

a. Anya B. (3;4)

A etot marmelad kuplen v magazine. Mama s papoj kupili.
and this jam buy-PERF-PASS in store mom with dad bought
'And this jam was bought in a store. Mom and Dad bought it.'

b. Mitya (3;5)

Ja najden, ja najden. Mama našla.
I find-PERF-PASS I find-PERF-PASS mom found
'I was found, I was found. Mom found me.'

(14) Imperfective passives (9%)

a. Sasha (2;4)

Ne risuetsya domik. Ploxaja ručka. Ne risuetsya.
NEG draw-IMP-PASS house-dim bad pen NEG draw-IMP-PASS
'This little house won't be drawn. The pen is bad. It won't be drawn.'

b. Anya B. (3;1)

Mamočka, moja levaja ruka ne moetsya.
mom-DIM my left hand NEG wash-IMP-PASS
'Mom, my left hand isn't getting washed.'

These data strongly confirm our predictions. Recall that all passives with the verbal passive analysis involving (subject; object) A-chains are claimed to be problematic for children. While no alternative analysis exists for imperfective passives in Russian, perfective passives can be analyzed as adjectival passives which do not require the formation of (subject; object) A-

chains. The fact that perfective forms account for 91% of all passive constructions in our transcripts suggests that an adjectival passive s-homophone is indeed being used instead of the “true” verbal passive by the children acquiring Russian.

4 Further Supporting Evidence

4.1 Aspect in the Adult Use of Passives

At this point, we have proposed one theory accounting for the overwhelming prevalence of perfective passives in child speech. Let us now explore a few other logically possible explanations for the discovered perfective/imperfective asymmetry with respect to child passives. One plausible alternative is that the input received by children contains more perfective than imperfective forms so that children’s preferential production of perfectives simply reflects this pattern. To examine this hypothesis, we analyzed adult speech samples from two sources: formal adult-directed speech, such as oral interviews with contemporary Russian writers and political figures found online (Table 2) and informal child-directed speech collected by the authors (Table 3).

Adults ² (interviews)	Perf Tokens	Perf %	Imperf tokens	Imperf %
T. Tolstaya	21	55	17	45
V. Pelevin	8	40	12	60
Pelevin’s interviewer	14	42	19	58
Lesin	16	36	29	64
Sadovnichesky	9	41	13	59
TOTAL	68	43	90	56

Table 2: Distribution of perfective and imperfective passives in formal adult speech

²Tatyana Tolstaya, writer, <http://www.tema.ru:8083/rrr/litcafe/tolstaya/>; Viktor Pelevin, writer, <http://sharat.co.il/krok/tr/pelevin.htm>; Mikhail Lesin, head of the Russian Ministry of Press, <http://www.gazeta.ru/lesin.shtml>; Sadovnichesky, education, <http://www.gazeta.ru/sadovn.shtml>

Childcare providers	Perf Tokens	Perf %	Imperf tokens	Imperf %
Elena (teacher 1)	18	43.9	23	56.1
Natalya (nanny)	11	57.9	8	42.1
Lyuba (teacher 2)	5	35.7	9	64.3
Adults (Varvara's transcript)	0	0	3	100
TOTAL	34	44.2	43	55.8

Table 3: Distribution of perfective and imperfective passives in informal adult speech

Looking at the adult data in the above tables, we can conclude that Russian adults do not produce more perfective passives than imperfective passives in their speech. If anything, the imperfective passive forms are more frequent in these transcripts, accounting for 56% of all passives in formal speech and for 55.8% in informal child-directed speech. Moreover, the proportion of perfectives in child passives is significantly different from the proportion of perfectives in adult passives: $\chi^2(1)=70.919$, $p<0.0001$. This means that the children's avoidance of imperfective passives cannot be explained by the properties of the input they receive.

4.2 Use of Aspect with Active Verbs in Child and Adult Russian

Let us now turn to yet another logically possible explanation of the demonstrated asymmetry. It might be claimed that the perfective/imperfective asymmetry with passives mirrors a similar asymmetry in active constructions produced by children and/or adults. Thus the asymmetry in child speech would not be due to a problem with passive constructions but to a general preference for perfective verbs. To investigate this hypothesis we first looked at the distribution of aspect in conjunction with the active forms found in random excerpts from our transcripts. Table 4 summarizes the results:

Children	Perf tokens	Perf %	Imperf tokens	Imperf %
Sasha (2;8)	19	52.8	17	47.2
Anya Y. (3;5)	67	48.9	70	51.1
Rita (3;0-3;1)	111	47.2	124	52.8
TOTAL	197	48.3	211	51.7

Table 4: Distribution of perfective and imperfective active verbs in child speech

These data show that the number of perfective actives (48.3%) is not significantly different from the number of imperfective actives (52.8%) in children's speech (two-tailed Binomial test; $p < 0.5199$). Moreover, the proportion of perfectives in passive constructions (91%) is significantly different from the proportion of perfectives in active constructions (48.3%) in child speech: $\chi^2(1) = 107.455$, $p < 0.0001$. This means that the perfective/imperfective asymmetry found in passive constructions does not apply to the active voice constructions produced by children. Therefore, we shall conclude that the overuse of perfective aspect is not a general tendency in the speech of children acquiring Russian, but is characteristic only of their passive constructions.

The final piece of evidence comes from adult active constructions. Here, we were interested in seeing whether the distribution of aspect in active constructions within adult speech matched that within the speech of children:

Childcare providers	Perf Tokens	Perf %	Imperf tokens	Imperf %
Elena (teacher 1)	68	44.7	84	55.3
Natalya (nanny)	39	45.9	46	54.1
Lyuba (teacher 2)	28	45.2	34	54.8
TOTAL	135	45.1	164	54.9

Table 5: Distribution of perfective and imperfective active verbs in informal adult speech

As the data show, the proportion of perfectives in child actives (48.3%) is not significantly different from the proportion of perfectives in adult actives (45.2%): $\chi^2(1) = 0.560$, $p < 0.4541$. In other words, children behave exactly like adults in their use of aspect with active verbs. This means that children are fully competent in their use of aspect, so that the discovered lack of imperfective passive forms cannot be attributed to the children's general tendency to avoid imperfective aspect.

In this section we have shown that neither the input-based explanation nor the hypothesis that children acquiring Russian generally prefer perfective aspect can explain our data. We conclude that only the (subject; object) A-chain maturation proposal (Borer and Wexler, 1987) can explain the asymmetry in the use of perfective and imperfective passive constructions in child Russian.

5 Realization of External Arguments in Child Passives

Let us now consider a different approach to the question of the acquisition of passive constructions advocated in the literature. This theory, developed by Fox and Grodzinsky, states that "...children are in full possession of all aspects of the passive construction except for the ability to transmit the external θ -role of the predicate to the *by*-phrase" (1998:311). Although this approach succeeds in accounting for the English data discussed by the authors, it fails to provide an explanation for the aspectual asymmetry reported here. If the only difficulty children experience with passives has to do with θ -role transmission, we cannot explain the fact that Russian children have more problems with imperfective passives than with perfective passives. In what follows, we consider the realization of the *by*-phrase in the Russian acquisition data and describe how our account handles them.

5.1 Long Passives in Adult Russian

In adult Russian, the external argument in passive constructions surfaces with Instrumental case-marking. The following examples illustrate this fact for a perfective and an imperfective passive construction:

- (15) a. Dom byl postroen Vanej
 house-NOM was built-PERF-PASS Vanya-INSTR
 'The house was built by Vanya.'
- b. Dom stroilsja Vanej
 house-NOM built-IMP-PASS Vanya-INSTR
 'The house was being built by Vanya.'

Within our transcripts, adults produced a total of 77 passive constructions. 32 of them were long passives (i.e., they included external arguments within an Instrumental *by*-phrase). This number accounted for 41.6% of all adult passive constructions in our data.

5.2 Long Passives in Child Russian

Let us consider the predictions that the (subject; object) A-chain maturation account makes about the occurrence of long passives in child Russian. If the subject and direct object positions cannot be linked through a chain, then no θ -role transmission will be available in passive constructions. Hence, long passives are expected to be problematic for children acquiring Russian.

As previously discussed in the literature (Rappaport, 1983; Jaeggli, 1986; *inter al.*), there is an alternative way for the θ -role to be assigned to the external argument of a passive predicate. Specifically, the preposition *by* can assign the Affecter θ -role to its object, thus licensing the oblique nominal in these constructions. Because the Affecter θ -role is only compatible with agentive arguments, this strategy can be employed for the passives of actional predicates but not for the passives of non-actional ones. However, as proposed by Grimshaw (1990), the availability of the Affecter role for the *by*-phrase is subject to cross-linguistic variation. The presence of *by*-phrases within NPs in a language can serve as a diagnostic of whether the language permits the preposition *by* to assign the Affecter role to its argument or not. Let us apply this diagnostic to Russian:

- (16)a. A book by John.
 b. *kniga Ivanom.
 Book-NOM Ivan-INST

While English allows the NP with *by*-phrase in (16a), Russian does not, as the ungrammaticality of (16b) demonstrates. Hence, no Affecter θ -role is available for the Russian counterpart of the *by*-phrase.

Now we are in a position to describe our predictions with respect to the behavior of long passives in child Russian. First, as we have argued, verbal passives are not available to Russian-speaking children before the age of four due to the lack of (subject; object) A-chains. Second, children at this age have an option of replacing perfective passives with s-homophonous adjectival passives, which do not support Instrumental *by*-phrase. Finally, the Russian counterpart of the *by*-phrase cannot be licensed through the assignment of the Affecter role. Consequently, we predict that Russian children will experience difficulty with both actional and non-actional long passives.

5.2.1 Data and Discussion

Let us check our predictions against the data. Our transcripts contained a total of 112 utterances with passive constructions. 74 of these utterances lacked external arguments (66%), 21 had their external arguments in separate sentences (18.8%), 7 more sentences included external arguments in Nominative case, the default case in Russian (6.3%). Finally, only 10 sentences appeared in the form of the adult-like long passives with the external argument in Instrumental case accounting for the mere 8.9%. The described uses are illustrated below:

(17) Omitted external argument (i.e., short passives);

actional: 58 tokens; non-actional: 16 tokens

Rita (3;1)

Kukla uže byla pokormlena.

Doll already was feed-PERF-PASS

'The doll has already been fed.'

(18) External argument in a separate sentence;

actional: 17 tokens; non-actional: 4 tokens

Mitya (3;5)

Ja najden, ja najden. Mama našla.

I find-PERF-PASS I find-PERF-PASS mom found

'I was found, I was found. Mom found me.'

(19) External argument in Nominative case

Actional: 5 tokens; non-actional 2 tokens

Nikita (2;6)

Da jamka eta vyryta sobačka.

yes hole this dig-PERF-PASS doggy-NOM

'Well, this hole has been dug by a doggy.'

(20) External argument in Instrumental case (i.e., long passives)

a. Actional: 7 tokens

Anya B. (3;0)

Adult: A kto kurtku-to tebe porval?

and who jacket you-DAT tore

'And who has torn your jacket?'

Child: Mal'čičkami, mal'čičkami porvana!

boys-INST-PL boys-INST-PL tear-PERF-PASS

'It's been torn by the boys!'

- b. Non-actional: 3 tokens
 Nikita (2;7)
 Nikitoj ptička uslyšana.
 Nikita-NSTR birdie-NOM hear-PERF-PASS
 'The birdie was heard by Nikita.'

As predicted, children use significantly less true long passives than adults: $\chi^2(1)=16.816$, $p<0.0001$. The lack of Instrumental *by*-phrases is observed both with actional and with non-actional passives.

6 Conclusions

Let us summarize our findings. Between the ages of 2;6 and 3;9, children acquiring Russian produce significantly more perfective passives than imperfective passives. Such an asymmetry in production of passive constructions suggests that children are using the adjectival passive as an unergative *s*-homophone for the unaccusative verbal passive, thus avoiding the formation of (subject; object) A-chains. These results support the claim that (subject; object) A-chains mature and does not support the hypothesis that the acquisition of passive constructions is delayed by children's inability to transmit θ -roles (cf. Fox and Grodzinsky, 1998). Future research should concentrate on the comprehension of passive constructions in Russian.

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