Thoughts on Optional Infinitives (in Russian)*

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Abstract

The paper addresses the phenomenon of optional infinitives (OIs) in first language acquisition with the emphasis on the acquisition of Russian. The longitudinal data of three L1-speaking Russian children are used in the study. It is observed that OIs occur simultaneously with inflected verb forms and disappear within the next nine-twelve months. They are not used as predominantly as it is documented for the other OIs languages, and the period of their active use is slightly shorter as well. The following research questions are addressed in the study: What language-specific devices, if any, enable the OIs phenomenon? Why do OIs exist in Russian?

Claiming that the pro-drop factor does not play a significant role in the OIs phenomenon in Russian we suggest several reasons to account for the existence of OIs. Both stable clause position of infinitives in analytical constructions in the input and the nature of infinitives *per se*, create a favourable background for their recognition and production by children. (A) Predominantly final position of infinitives in the analytical constructions, in comparison to the free position of a single finite verb in a VP facilitates the early recognition of infinitives in the input. (B) The infinitival ending *–t'* is better perceived than other final verbal inflectional endings, e.g. reduced *–a,* which is an additional favourable factor. The minimal morphological markedness and higher morphotactic transparency in comparison with inflected forms encourage the overgeneralised use of infinitival forms. (C) Lastly, infinitives inherit the grammatical category of aspect (which is crucial for the verb morphology in Russian) and are not coded for any other grammatical categories. Thus, infinitives are more conceptually transparent, clear than as finite forms. All these features contribute to and form the high degree of salience of OIs.

Strong correlation between the development of verb grammar and the drop in the use of OIs is observed. Three stages in the development of verb grammar correspond to the two steep decreases in the use of OIs: a) at the onset of verb production and the subsequent two months when the children have no rule-based morphology, OIs constitute about one third of all utterances containing verbs; b) the enrichment of the verb lexicon within the next two months – first signs of the rule-based morphology correspond to a drop of 10% in the use of OIs; c) four months after the onset of verb production – further establishment of the rule-based (verb) morphology corresponds to the next 10% drop and subsequent disappearance of OIs. The OIs phenomenon hasn't a short-term existence. OIs show up along with the development of rule-based morphology and finiteness (e.g. the emergence of analytical constructions) and disappear only when children (fully) acquire the relevant grammatical categories.

* I would like to thank Insa Gülzow for fruitful discussions during the work on this paper.

In conclusion, the establishment of the fully productive rule-based morphology and finiteness, as well as the acquisition of the analytical constructions completely supersede the production of OIs.

1. Introduction

Many main stream researchers of adult languages from time to time look behind the lock leading to the tributary of the language acquisition processes. Oftener and oftener, sometimes rather unexpectedly, psycholinguists come across various thoughts on the process of language learning, language processing and comprehension in comparison to production, etc. in the 'adult' linguistic studies. Horst-Dieter Gasde seems to follow this developing tendency. Investigating the pro-drop phenomenon in adult Chinese, namely, the differentiation between S-structures and base-generated empty categories, and the subdivision of the latter, Gasde (1991: 1-2) already in the introduction to his book following Fanselow and Felix (1987) writes:

> "... Davon ausgehend, postuliert die generative Grammatiktheorie, daß die Grenzen, innerhalb derer die grammatischen Regelsysteme von Einzelsprachen variieren können, von vornherein verhältnismäßig eng gezogen sind. Denn je restriktiver die Prinzipien der UG wirken, je stärker sie die Zahl möglicher Hypothesen über die grammatische Struktur von Sätzen natürlicher Sprachen einschränken, desto leichter kann ein Kind den Prozeß des Erwerbs seiner Muttersprache bewältigen, kann es auf der Grundlage eines begrenzten, unvollständigen und individuell unterschiedlichen sprachlichen Dateninputs zu korrekten Generalisierungen hinsichtlich der syntaktischen Regeln der Sprache gelangen, die es erlernt."

Adult and child language research seem to have a mutual supplementary relationship, since, on the one hand, processes of language acquisition are often explained by means of terminological tools used within the systems of adult grammars and through the prism of a target language that a child has to acquire. On the other hand, facts of language acquisition research serve as the basis for the explanation of the peculiarities of human languages and for the elaboration of linguistic theories and for searching for the universals underlying numerous grammars. One of the examples of such connection may be the pro-drop factor. This factor/phenomenon has been investigated by Horst-Dieter Gasde and others[1] in order to understand its essentials and relationship to other phenomena in adult languages. In language acquisition research the pro-drop factor has been used as an account for another, frequently appearing child-specific phenomenon, the so-called optional infinitives (OIs) phenomenon. Before explaining the connections between both I will comment on OIs themselves and briefly sketch the state-of-the-art of related contemporary research.

[1] For the purpose of the present study I will leave out the references on this topic.

2. Optional Infinitives: variety of languages and diversity of explanations

The phenomenon of OIs doesn't have a very long but a profound history of discussing. Although the notes on the non-grammatical use of infinitival verbs in matrix clauses may be found in the very early studies (see Ginneken (1917) for Dutch, cited in Wijnen et al. (2001); Stern and Stern (1928) for German, Gvozdev (1949) for Russian) the active debates over the essence and properties of such use started with the pioneering papers of Rizzi (1994) and Wexler (1994), who also introduced the terms: *root infinitives* or *optional infinitives*,[2] respectively.

At that point, OIs were documented for Danish, Dutch, English, French, German, Greek,[3] Hebrew, Icelandic, Norwegian, Russian and Swedish. On the contrary, languages such as Catalan and Spanish, Inuktitut,[4] Italian, Japanese, Polish, Portuguese and Tamil do not exhibit an OIs stage at all or show a very low (insignificant) percentage of subject-verb agreement errors (the overview of the selected studies: for Dutch – Wijnen et al. (2001), French – Pierce (1992), German – Poeppel and Wexler (1993), Dutch and English – Hoekstra and Hyams (1998), Greek – Hyams (in print), Hebrew – Rhee and Wexler (1995), Russian – Avrutin (1999); Bar-Shalom and Snyder (1999); Brun et al. (1999); Snyder and Bar-Shalom (1998), Russian, Italian and Polish – Bar-Shalom and Snyder (1997), Swedish – Platzack (1992); Santelmann (1995), Spanish and Catalan – Torrens (1995), Italian – Guasti (1995). Besides, the broad overlook of the recent studies on OIs in various languages is given in Hoekstra and Hyams (1998); Rhee and Wexler (1995).

The examples below present the use of OIs (marked with bold) in target-like finite clauses in some languages:

Dutch	*mama radio aan* ***doen***	
	'mummy, switch on radio'	(Peter 2;0.7)
	eendje ***zien***	(Matthijs 2;5.1)
	'(I) look at the duck'	Wijnen et al . (2001: 645)
French	*la Papa* ***gicler*** *(= là Papa va gicler)*	(Sophie 1;11)
	'squirt with water'	
	faire *bobo là (= ça fait bobo là)*	(Emma 1;8)
	'is hurting there'	Kilani-Schoch (2000: 92)

[2] I will consequently use the term optional infinitives below, since infinitives in Russian have the inflectional suffix *–t'*, i.e. *pisa-t'* 'to write', where *pis-* is a root and *–a* is a thematic vowel.

[3] Modern Greek does not have an infinitive construction, but a construction resembling OIs (an *–i* form which corresponds to participle) was found in early child Greek by Varlokosta et al. (1998).

[4] Typically developing children do not exhibit OIs in their speech production, however the production of OIs is documented for one child with SLI, see Crago and Allen (2001).

German	*hausschuh* ***ausziehen***	(Anna 1;11.6)
	‘(I) take off my slippers’	
	puppe ***essen***	(Anna 1;11.6)
	‘the doll is eating’	Bittner (2002: 30)
Russian	*molochko korovka* ***delat'***	(Roma 2;7)
	‘the milk is done by cows’	
	spat'	(Liza 1;9a)
	sleep-INF	
	(Liza is tired, wants to sleep and tells her mother about it)	Gagarina (in prep.)

Various (universal) explanations proposed for this cross-linguistic difference did not hold on for a long period. For example, the richness of agreement, suggested by Wexler (1994) was later called into question by Rhee and Wexler, himself: “rich agreement might not be the best way to characterise the class of languages which do not have OIs” Rhee and Wexler (1995: 383).

One of the latest accounts is based on the assumption that OIs are not found by children learning null subject languages, Bar-Shalom and Snyder (1997); Guasti (1995); Rhee and Wexler (1995); Wexler (1995). However, this account does not hold for Russian, which admits null subjects, yet shows the stable use of OIs in longitudinal language acquisition data. One more explanation has been proposed by Hoekstra and Hyams (1998: 48) who pointed out the empirical generalisation that “root infinitives occur only in languages where the expression of finiteness may be done exclusively through number morphology” and who connected the relatedness of the root infinitives phenomenon to the different roles of number and person categories in the grammar. They propose the *eventivity constraint* which restricts the use of root infinitives to event-denoting predicates and stresses the modal reference effect (the preponderating frequency of root infinitives with modal interpretation has been found in their data). The corpus of the longitudinal data of three L1-Russian speaking children was investigated in order to check this hypotheses. It was found that all three children produce – among the 6 most frequently used infinitives in OIs constructions – the stative verb *sleep*, as well as activity verbs *make* and *draw*. The amount of event-denoting predicates is higher not only among OIs, but generally, among all verbs produced by children. Another empirical observation is connected with the use of perfectives and imperfectives: verbs of both aspects have been similarly distributed within the first thirty verbal lexemes used in OIs constructions. I did not find any strict “constraint on the aspectual nature of the verbs occurring in RI-constructions, viz. only eventive verbs are allowed in such constructions” Hoekstra and Hyams (1998: 81), however the tendency to the preponderate use of ‘irrealis’ infinitives (i.e. future, modal) denoting different desirable actions has been documented.

Finally, as correctly noticed Snyder and Bar-Schalom (1998) the two above-mentioned claims, that the OIs stage may be found only during the L1 acquisition of a language without a rich verbal inflectional system (Hoeksta and Hyams 1995) and that the OIs are exhibited only in the non pro-drop languages (Rhee and Wexler 1995) contradict

each other in respect to Russian, a language with OIs, which has a rich system of verbal inflectional endings and which admits null subjects in main clauses.[5] Snyder and Bar-Schalom (1998) suggest the following explanation: "the interaction between finiteness and the word order in child Russian is ... related to the featural neutralization of inflection in OI utterances" Snyder and Bar-Shalom (1998: 724).

The approach of the present article may be characterised as constructivist and functional. The author argues that in the early stages of language acquisition children do not have the adult grammatical competence and that in child language the grammatical categories do not exist in the same 'form' as they are exhibited in the adult language. The child has to learn form-function mappings, language-specific grammatical rules and has to detect (language-specific and universal) cues by means of which s/he will construct the grammar of his native language.

3. Data description and method

The longitudinal data (the input and the production) analysed for the this paper come from three monolingual children acquiring the standard 'petersburgian' version of colloquial Russian. The period from the onset of the verb production up to the (full) disappearance of the OIs constructions within the subsequent nine–twelve months are analysed.

The girl, Liza (L.), is the second child (her brother is ten years older) in a family of linguists and the boys, Vanja (V.) and Roma (R.) are the first and only children during the period of recordings; both children are from middle-class families. The children were more or less systematically recorded and/or video-taped two-five hours a month, from the onset of speech (there is a gap in the recordings of R., see Appendix 1). The richest corpus is that of V's speech, recordings of whom (about 90 hours) – during the period of crucial lexical and inflectional development from 2;1 to 2;3 – were five to six hours long in each month. The numerous recorded sessions were united into two or three portions so that these portions of data per month have (a) a relatively equal quantity and, (b) minimal intervals between the recordings (the recordings of Liza at 1;9 and of Roma at 2;0 and 2;1 have been grouped in a similar way).

L. is the earliest of the children to develop inflectional morphology. Her first inflected verbs appear already at the age of 1;7 – 1;8 and their number increases more steadily than it is the case with the boys. Her first utterances consist mainly of one (predominantly inflected) component. The first sporadic multi-component utterances with verbs occur only at 2;0. L. exhibits the highest percentage of OIs (ca. 30% at 1;8 and 1;9a) and the period of their use is the longest within the three children (the last 4 tokens are registered at 2;8 one year after the emergence of verbs). Probably, such prolonged use of OIs is connected with the slow development of (finiteness in) multi-component utterances. As to the other speech peculiarities of L., she is rather careful in pronouncing different inflectional endings although her pronunciation in general cannot

[5] Russian, however, disallows pro-drop for thematic (non-expletive) subjects. Probably, Russian maybe said to be 'an optionally pro-drop language', i.e. *(ja) stroju dom* '(I) build the house', *ona znaet, chto (ona) pridjot pozdno* 'She knows, that (she) comes late': all clauses are grammatically correct.

be said to be 'accurate'. She often preserves the syllabic structure of the word and changes its phonemic representation, like in *igigiki* (1;8) – for ogurchiki 'cucumbers-DIM', *gajaiki* (1;9b) – for goroshinki 'pears-DIM'. L.'s speech is also characterised by a number of so-called 'family specific' words registered during the whole period of recordings which are declined and serve as basic forms for derivation, for example, the name of her brother *Aljosha* (liter.) – *Apka* (family specific).

V., unlike L., is a late talker and is generally slow (in comparison to the two other children) in his language development. The rate of his OIs is very unstable especially in the early stages before he develops a rule-based production of finite forms. The whole period of OIs production is shorter than in L. and ends up exactly at the same age of 2;8 (the two last tokens) as L. The number of child-specific words in V.'s data corpus is not as frequent as in L.'s, but these words are more 'stable'. They are used for a longer period and are not easily superseded by their counterparts from the adult language, for example *mashina – bizinja* used (from 2;1b – 2;3b) for 'car'. In comparison to L., there are more verbs whose last vowel(s) or consonant(s) (or the whole inflectional endings) are not clearly distinct, like *poexa* for *poexali* 'start-go-by-car.PAST.PL'.[6] The lexical and inflectional diversity shown by V. is lower than L.'s, but he is more advanced than she in constructing multi-component sentences. This relative poverty in verb and (pro)nominal inflection is partially compensated by the number of utterance components in V.'s speech.[7]

R.'s data are not as representative as those of the other children: the whole corpus consists of about 18.5 hours of recordings during the period from 1;1 till 2;11 (with a gap between 2;2 and 2;5). R.'s pronunciation is more accurate than L.'s and V.'s pronunciation and the number of unclear forms is very low. He starts combining words in utterances later than V. (relative to the onset of verb production) and he has almost no child- or family-specific words. The percentage of the OIs in R.'s speech is very unstable in the first months after the onset of verb production and fluctuates between 7% and 25%. While we still find 9% of OIs after the gap at 2;5; they disappear within the subsequent two months. Interestingly, R. has the last sporadic OIs at approx. the same age (the last two tokens at the age of 2;7) as the two other children. All three children give up with OIs at the same age, but the onset of verb production is different, hence the periods of the use of OIs are different.

All utterances, containing only *yes* or *no* words, citations, immediate repetitions were excluded from the analysed speech production. All other distinct utterances, containing a verb were analysed (henceforth, VU). VU were used then as the basic measure (100%) for further calculations.[8]

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[6] These forms (but not lemmas) whose inflectional endings were affected by inaccurate pronunciation were excluded from the analysis.

[7] The strategy of using multi-component vs. single-component utterances seems to have an impact on the detection and development of a rule-based verb morphology.

[8] The data were transcribed in the CHILDES system. CLAN and MORCOMM tools were used for coding and tagging the corpus (MacWhinney 2002, Gagarina et al. in print).

4. Analyses

4.1. Phases in the use of OIs

OIs occur simultaneously with the first finite verbs.[9] As Fig. 1 shows, the use OIs by L. and V. can be divided into the three intervals between the two steep decreases (drops). During the first one to two months, the number of OIs constitutes almost one third of all verb production (phase 1). Then it drops for about 10% percent and for the two subsequent months remains stable at the level between 14% -17% (overlapping phase). The next decrease by another 10% is observed in L. within one month and in V. within the two months. This second steep decrease signalises the beginning of the phase 2 in the use of OIs which ends with the disappearance of OIs in V.'s data within the subsequent four months (by the age of 2;9) and in L.'s case – within the next eight months (the last use of OIs is registered at 2;8). Before full disappearance OIs in all three children occur only very sporadically (two - four instances) during two-three months.

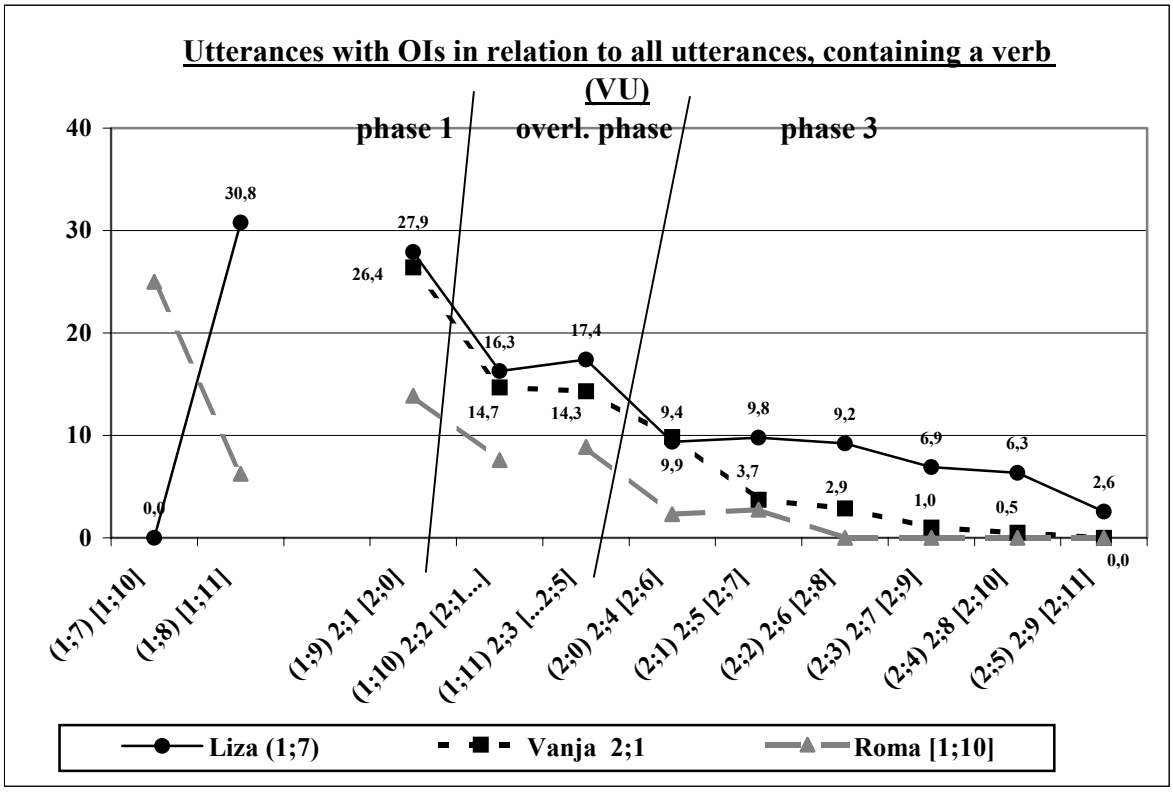

Fig.1. Optional Infinitives in the data of the three children

The quantitative changes in the use of OIs described above correspond to the three developmental stages of the acquisition of verb morphology (and verb grammar).[10] The

[9] The first two months in Fig. 1 separated by the space from the main curves exhibit the onset of verb production in two children L. and R., when the number of VU is below a dozen utterances and only a very few verb types are found. R.'s grey curve will be described only briefly, since it presents the lowest amount of data and exhibits a gap.

[10] For the stages of the early grammatical development within the framework of pre- and protomorphology see Dressler (1997a); Dressler (1997b); Dressler and Karpf (1995), etc.

main stages in the development of verb morphology (verb grammar) have been evaluated on the basis of the set of the following criteria:[11]

(I) verb lemmas: (a) emergence and increase of the utterances with verbs (henceforth, VU), (b) emergence of new verb lemmas, (c) quantitative correlation of PERF and IPFV verbs, (d) emergence of aspectual pairs and verbs of complex (morphemically characterised) Aktionsarten;
(II) verb forms: (a) infinitives and their use, (b) inflected forms of PERF and IPFV, cluster of tense and aspect, (c) contrastive forms, development of mini-paradigms (henceforth, MP), (d) morphological overgeneralizations, (e) syntactic use of inflected forms;
(III) interrelation between (I) and (II);
(IV) development of the syntactical complexity of VU.

During the first one-two month(s) after the onset of verb production "… no system of grammatical morphology has yet become dissociated from a general cognitive system that handles, inter alia, words of whatever form (including morphological forms), i.e. pre- and at least early protomorphology are part of the lexicon" Dressler (1997b: 11). The number of OIs in this short initial period constitute about one third of the whole (rote-learned) verb production and steeply decreases by 10% when the first signs of a rule-based morphology emerge and develop with some stability (see Table 1).

	Liza	Vanja	Roma
Premorphology (onset of verb production)	1;7 – 1;9	2;1 – 2;2b	1;10 – 2;0b
Overlapping phase (emergence of the protomorphology 'features')	1;10 – 1;11	2;2c – 2;3	2;1a – (2;1b)[12]
Protomorphology (disappearance of the premorphology 'features')	after 1;11	after 2;3	after 2;1b

Table 1. Early periods in the development of (verb) grammar

The so-called overlapping phase when the features of both periods (initial pre- and subsequent protomorphology) manifest themselves and the production of OIs remains stable lasts the subsequent two months. After the end of the overlapping phase (1;11 for L. and 2;3 for V.) when almost no signs of premorphology can be observed the last steep decrease in the use of OIs starts. This decrease corresponds to the further active development of a rule-based morphology and acquisition of paradigmatic relations, to the emergence of analytical constructions and to the 'movement' of the whole grammatical system of a child to another level, the level of productive operations with abstract grammatical rules and morphological patterns. Further, the establishment of finiteness in analytical constructions (see Fig. 2 for the emergence of analytical constructions with finite verbs only)[13] additionally supersedes OIs.

[11] For the detailed description of the demarcation of phases during the acquisition of Russian verb grammar and for the evaluation of the productivity of finite verb forms see Gagarina (2000), in print.
[12] There is the gap in the recordings after 2;1b.
[13] In Fig. 2 the more detailed calculations (several sets per month) are given. In Fig. 1 above sessions are united into the months sets.

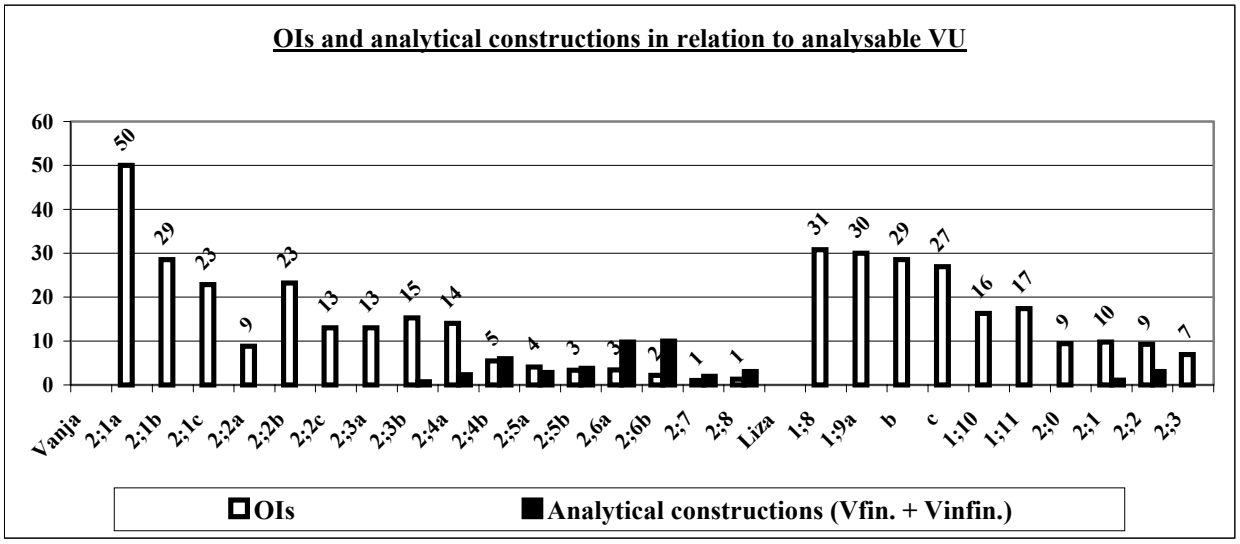

Fig.1. Optional Infinitives and the emergence of analytical construction in the data of V. and L.

4.2. Functions of Optional Infinitives

The quantitative changes in the use of OIs also correspond to qualitative changes, namely, the function of OIs in children's utterances. During the stage 1 and the overlapping stage OIs are used to denote past events. Such use is observed in past tense contexts 'created' by the questions of adults, see examples (1) – (3):

(1) Liza (1;8)
**MAM: Liza, a pomnish', kakie gribochki my nashli segodnja?*[14]
'Liza, do you remember what mushrooms did we find today?'
**MAM: I ela Liza sup potom, da?*
'And then Liza was eating the soup, yes?'
**LIZ: Chistit'.*
peal-INF
**MAM: Chistila; mama chistila griby, da.*
'Was pealing, the mommy was pealing the mushrooms, yes'

(2) Vanja (2;1c)
**BAB: Mamy ne bylo, ty odin spal?*
'The mommy wasn't there, did you sleep alone?'
**VAN: Da.*
yes
**BAB: A gde zhe mama byla?*
'And where was the mommy?'
**VAN: Spat'.*
sleep-INF
**BAB: Mama spala vnizu, da?*
'The mommy was sleeping downstairs, yes? '

[14] Glosses are given only for children's utterances.

(3) Vanja (2;2c)
*BAB: *A Vladik byl na dache?*
'Was Vladik at the dacha?'
*VAN: *Ne spat' net.*
no sleep-INF no
*BAB: *Ty tam ne spal?*
'You didn't sleep there, did you?'
*VAN: *Net.*
no
*BAB: *Ty begal na dache?*
'Did you run at the dacha?'
*VAN: *Da.*
yes

During the first two stages children use OIs to denote on-going perceived processes (events), examples (4) and (5):

(4) %sit: Vanja (2;2a) and grandmother are looking at the picture in the book
*BAB: *A chto e~to delaet koza, chto koza delaet?*
'And what is the goat doing, what is the goat doing?'
*VAN: *Spat'.*
sleep-INF
*BAB: *Ne spat', spit, spit koza.*
'Not *'sleep'*, the goat is sleeping, is sleeping.

(5) %sit: Liza (1;9b) is trying to put her leg into the shoe and is commenting on her action
*LIZ: *Odet'sja.*
dress-INF
*MAM: *Obut'sja.*
'Put-on (shoe)-INF'
*MAM: *Esli ty nadevaesh' krossovki, znachit, ty ne odevaesh'sja, a obuvaesh'sja.*
'If you put on shoes, you do not dress yourself up, but you put the shoes on'

The fact that children correctly use finite past and present tense forms with some verb lexemes and use OIs with other lexemes (especially in the early stages of acquisition) may support the hypothesis of a verb-by-verb (or item-based) learning strategy.

The overwhelming majority of OIs have an 'irrealis' (or modal) interpretation.[15] The child uses infinitives to name either an action s/he is intended to perform by her-/himself or an action s/he wants to be performed by an adult. Since the data of the three children have a very detailed description of the extralinguistic contexts, the situations and the reaction/comments of the adults, the majority of OIs in irrealis/modal contexts is clearly definable, see examples (6) – (8) below:

[15] About the Modal Hypothesis see Hoekstra and Hyams (1998); Ingram and Thompson (1996), the Null Modal Hypothesis (Hoekstra and Hyams, 1998: 94-101).

(6) %sit: Vanja (2;3a) is playing with cars
*VAN: *Babushka* *tozhe* *igrat'.*
grandmother-NOM also play-INF
*BAB: *Babushka tozhe budet igrat'? Xorosho.*
'Will the grandmother also play? Okey.'
*VAN: *V* *mashinki* *malen'kie* *igrat'* *babushka.*
in cars-ACC:PL small-ACC:PL play-INF grandmother-NOM
*BAB: *Ugu.*
'Hmm.'
*VAN: *Katat'* *Vanja* *mashinki* *bol'shie.*
roll-INF Vanja cars-ACC:PL big-ACC:PL
*BAB: *Ty budesh' bol'shie katat'?*
'Will you roll the big cars?'

(7) Liza (1;9c)
*MAM: *... byl dozhdik. Sejchas on ... po-moemu on konchilsja, kak ty schitaesh'?*
'… it was raining. now it … I suppose, it's finished, what do you think?'
*LIZ: *Guljat'.*
walk-INF
*MAM: *Guljat' uzhe ty xochesh'?*
'You want to go for a walk already?'
%sit: Liza walkes out of the house.

(8) %sit: Liza (1;10) and mama are talking about the boots without the boot-laces
*MAM: *Da, bez shnurochkov, pravil'no!*
'Yes, with the boot-laces, you're right'
*LIZ: *Kupit'.*
buy-INF
*MAM: *Kupit' nado! Gde nado kupit', Liza?*
'It is necessary to buy them. Where should we buy them, Liza?'
*LIZ: *V* *magazine.*
in shop-LOC:SG

It is noteworthy that children don't give up OIs very quickly and, even when they have the correct finite form of a verb and/or imperative, continue their use; examples (9) – (11):

(9) %sit: Roma (2;7) wants his grandmother to open the sweet
*ROM: *Otkryvat',* *babushka,* *otkroj*
open-INF grandmother open-IMP

(10) %sit: Liza (2;6) brings a mosaic to her mother, who is sitting near her by the sofa and says:
*LIZ: *Mama* *sobirat',* *mama* *sobiraet.*
mama put-together-INF mother put-together-3S:PRES:IPFV

(11) %sit: Vanja (2;2c) is playing with car trying to open some parts of it
*BAB: *A chego tut otkryvat', tut uzhe netu nichego.*
'Is there still anything to open here? There is nothing left here'

*VAN: *Slomal* *net.*
break-PAST:MASC:SG:PFV no
*BAB: *Ty slomal tut vse uzhe, nechego otkryvat' ...*
'You have broken already everything, there is nothing left to open here …'

%sit: Vanja continues breaking the door of the car
*VAN: *Slomat'.*
break-INF
*BAB: *Ne nado lomat', Vanja ...*
'Do not break, Vanja …'[16]

Such stable use should be facilitated and supported by the whole set of factors of the (different levels of) input which contribute to the infinitive as a highly salient input element. The ensuing sections will consequently treat the possible explanations for the existence of the OIs phenomenon in child Russian.

5. Discussion

It has been demonstrated in the description above that OIs in Russian are used for a relatively long period, yet their percentage in the data of the children steadily decreases from the beginning and is basically not high. A general presupposition maybe drawn from this empirical evidence: there are factors that act contradictory in respect to the support vs. the restriction of the OIs phenomenon. The first idea coming to the mind is that the non-syncretic rich verbal morphology, which is rather quickly and without great problems acquired by L1 speaking Russian children (very few agreement errors, early start of the productive use of the finite verb forms, etc., see Kiebzak-Mandera (2000), Gagarina (in print) creates a favourable background for the acquisition and production of high number of finite verb forms (first rote-learned, later rule-based), thus diminishing the use of other forms, in our case, the non-target use of infinitives. That's why their number steeply decreases soon after the onset of OIs production and remains basically low.
From another side there should be a support (on the different levels of language) which enables the stable and prolonged use of OIs and prevents their easy superseding by the correct target-like constructions. Support for such an influence includes a conglomerate of features which may operate on the different levels of language – phonetics, morphology, and syntax – will be treated below. I will first suggest hypothetical factors, which may constitute the salience[17] degree of infinitives in input: (a) perceptual salience, so that the child can 'easy recognise and identify' infinitives in input (I doubt the importance of the frequency factor in this case), (b) minimal (or un-) markedness (or functional specificity), so that the child is able to use them (from the onset of verb production and with a generalised meaning). (A) and (b) are the hierarchically high features contributing to the degree of the 'salience factor' that characterises infinitives

[16] Vanja correctly uses (in the example (11)) the correct past form of the verb *slomat'* to denote the resulted past action, but he uses the infinitive in the context of 1S:PRES to denote the on-going action. Vanja probably does not possess the appropriate present form of this verb.
[17] For the definition of salience see Koepke (1993) "*Salienz* ist die Bestimmung des Ausmaßes, mit dem eine morphologische Markierung vom Hörer identifizierbar ist, also ihre akustische Prominenz."

in input. The third, hierarchically lower feature (but with the relatively strong influence on OIs production) in Russian, such as word order, belongs to the syntactical level. The analyses below will address the three 'levels' and will show that infinitives (a) have high level of (acoustic) perceptiveness, due to the length of the final palatalised *[t']*, (b) assign minimal morphological features and, thus, are conceptually transparent and easy for children to operate with, (c) occupy stable final position in the analytical constructions. Besides, it will be shown that the frequency factor does not play a significant role in the creation of the 'salience degree' of a form (infinitives in the input are not frequent), but more language-specific factors and the structure of the input influence the OIs phenomenon.

6. Infinitives in adult Russian/input

6.1. Acoustic characteristics

Infinitives with their final palatal plosive (and preceding frequently stressed thematic vowel) are characterised by special acoustical peculiarities, facilitating their perception. A set of measurements has been executed in the Phonetic laboratory of the ZAS[18] aiming at measuring of the length of the final palatalised *[–t']* in infinitives. Thirty sentences containing verbs with *[–t']* in the middle and final position taken from adult Russian were analysed. One of the findings is that the length of the final *[–t']* fluctuates between 0,108 – 0,250 ms and this is twice as long as of the palatalised plosives *[–d'/t']* in the middle position which have the length of 0,017 – 0,076 ms, e.g. *nad'et' [d']* – 0,54 ms, *[t']* – 0,123 ms (see Table 2 with five randomly taken verbs and Fig. 3 for the verb *terjat'* 'loose', compare the length of the initial and final *[t']*).

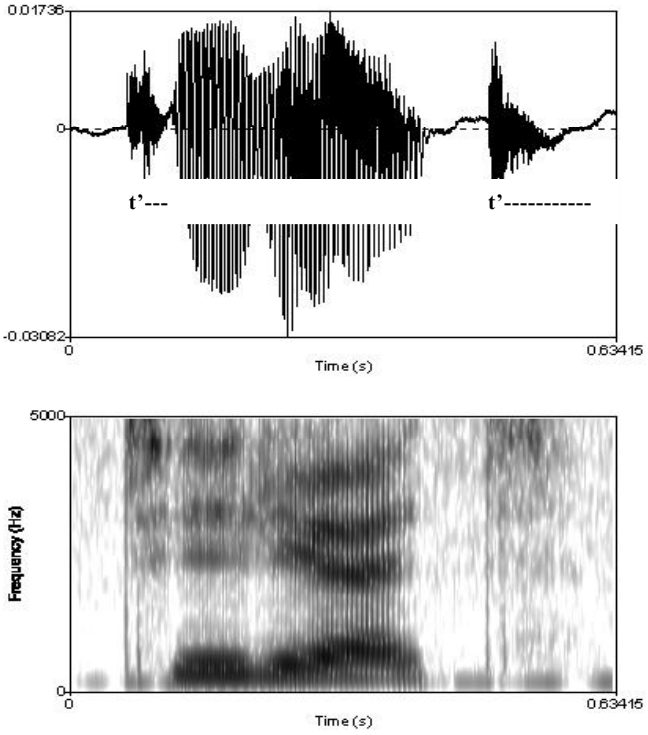

Fig. 3. The acoustic measurements of the verb ***terjat'*** **'loose'**

[18] I would like to thank Jörg Dreyer for his help in the performing of the acoustic measurements.

	English translation	Verb lexeme	Middle *[d'/t']* (length in ms)	Final *[t']* (length in ms)
1	dress	o**d**eva**t'**	0,017	0,080
2	wash	s**t**ira**t'**	0,031	0,100
3	pull	**t**'anu**t'**	0,060	0,162
4	run out	vy**t**eka**t'**	0,075	0,123
5	loose	**t**er'a**t'**	0,052	0,105

Table 2. The length of middle and final [–t'] in five randomly taken verbs

In case of non-palatalised plosives this difference is even larger: *chitat'* 'read' *[t]* – 0,010 ms, and final *[t']* – 0,110 ms. Another example is *budet myt'* 'be-3S:PRES wash-INF', where *[t']* has the length of 0,108 ms and *[d']* is reduced to zero,[19] see Fig. 4.

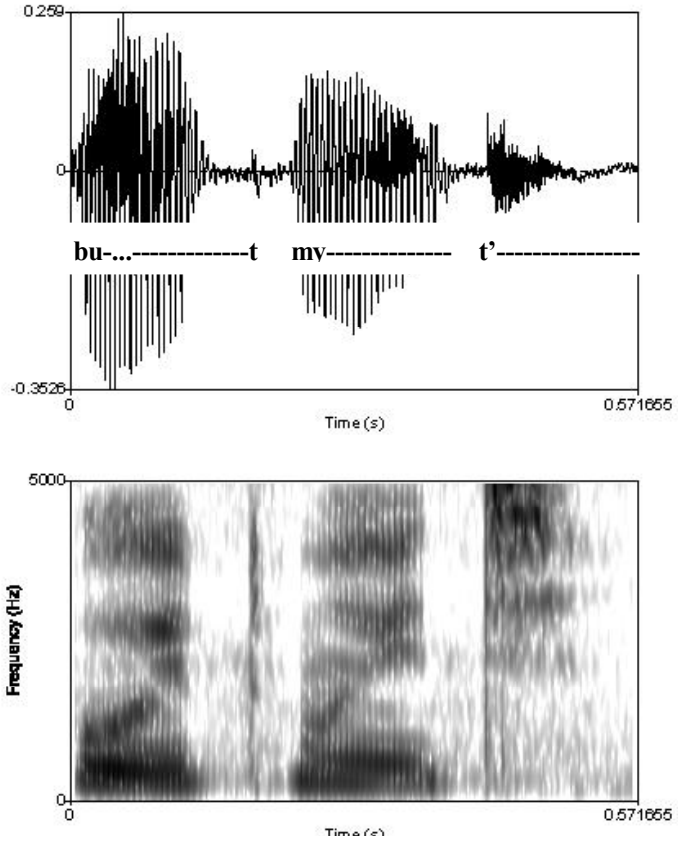

Fig. 4. The acoustic measurements of ***budet myt' 'be-3S:FUT wash-INF'***

Jones and Ward (1969) report that in the case of palatalised dental plosives *–t', –d'* 'a very short fricative element is heard' which is to be interpreted as evidence for the fact that after a plosive the fricative release is perceived. Sawicka (2001: 11) mentions that *t'* (as well as *d'*) is "frequently accompanied by affricatization". As the acoustic analysis

[19] For comparison: the final non-palatalised *[t]* does not exceed 0,050 ms, e.g. *delaet* – 0,024 ms, *risuet, skazhet* – 0,050 ms.

above shows, the length of the fricative release is 2,1 times longer when plosives occupy the final position. The stressed thematic vowel immediately preceding final *t'* in the majority of the infinitives in child-directed speech is an additional factor facilitating their recognition, since the stressed syllable obtains the highest perceptive prominence.

6.2. Types of infinitival sentences in Russian

Various types of structurally different (analytical) finite and non-finite constructions with infinitives will be briefly described before the analysis of child-directed speech. Finite analytical constructions may include the auxiliary *byt*' 'to be', the modal verb *hotet'* 'to want', phasal verbs (that can denote beginning, continuation, termination, etc. of an action), or any other finite verb and a perfective and/or imperfective infinitive. With *byt*', phasal verbs only imperfectives are allowed, with *hotet'* verbs of both aspects are admitted, see examples (12) – (14) :

(12) *budu* *myt'*
be-1S:FUT wash-INF (only IPFV)

(13) *nachnu* *myt'*
start-1S wash-INF (only IPFV)

zakonchu *myt'*
end-1S wash-INF (only IPFV)

(14) *xochu* *myt/pomyt'*
want-1S wash-INF:IPFV/PFV
mogu *myt'/pomyt'*
can-1S wash-INF:IPFV/PFV

In non-finite constructions infinitives of either aspects occur with temporal, modal, or other adverbial predicatives (adverbial predicatives in these constructions (mis)advise or (dis)allow the performance of an action):

(15) *rano* *myt'*
early-ADV wash-INF (only IPFV)

(16) *mozhno* *myt'/pomyt'*
(allows the action) ADV:PRED wash-INF:IPFV/PFV

(17) *nel'zja* *myt'/pomyt'*
(disallows the action) NEG:PRED wash-INF:IPFV/PFV

Another construction (that is used frequently in child-directed speech) includes the modal adjective *nuzhno (neobhodimo)* 'necessary' plus the infinitive (the structure of this construction, however does not differ from those given in ((15) – (17)):

(18) *nuzhno (neobhodimo)* *myt'/pomyt'*
(advises the action) ADJ:PRED wash-INF:IPFV/PFV

Finally, children hear infinitives of both aspects in analytical impersonal (affirmative of negative) constructions with only an infinitive:

(19) *nechego* *myt'/pomyt'*
nothing-PRO:GEN wash-INF
'there is nothing to wash'

(20) *nekomu* *myt'/pomyt'*
no-one-PRO:DAT wash-INF
'there is no one to wash'

(21) *tebe* *dat'* *knigu?*
you-PRO:DAT give-INF book-ACC
'should I give the book to you'

It is not pertinent for the present article to go into a detailed analysis of all these constructions with infinitives. They were presented briefly in order to show that infinitival sentences are structurally very different. Infinitival (existential) sentences, for example, exhibit high (structural) complexity and markedness. As Babby (2000: 19) argues, affirmative and negative infinitival existential sentences "have radically different morphosyntactic structures".[20] What is important for language acquisition is that it definitely takes children more time to learn syntactically complex and structurally very different (analytical and synthetic impersonal) constructions containing infinitives. The spontaneous longitudinal data provide empirical evidence for this: analytical constructions with infinitives emerge and develop when children are able to operate freely with abstract grammatical rules and morphological patterns (three- to five months after the emergence of the verb production, for a more detailed discussion see Gülzow and Gagarina, in print).

An inference can be drawn at this point: infinitives *per se* are grammatically unmarked forms, semantically more transparent than their finite 'companions', perceptually well distinct; they occur in rather complex, syntactically very diverse structures. Thus, the controversy occurs: a child can relatively easy recognises infinitives and uses them to denote an action (or generally for predication), but it takes her/him more time to acquire the target syntactic structures with infinitives.

6.3. Input: Frequency and Word order

The child has to confront with infinitives in the input also due to another controversy: their low frequency vs. stable (final) position in sentences. Let me clarify this point: the controversy "low frequency vs. stable position" creates different conditions for the child to detect infinitives: the former diminishes the salience features of infinitives (and does not facilitate their recognition), the latter considerably increases them: the predominant

[20] He proposes a diachronic account for five 'anomalous' properties of negative infinitival existential sentences.

final position will especially 'leap to the eye' since Russian exhibits free word order (cf. cue validity Bates and MacWhinney (1987).

It is a well-known fact that Russian is characterised by a relatively free position for the finite verb (with an SVO preference). However, in the analytical constructions infinitives more often occupy the final position, see examples (22) – (24):

(22)	*Ja*	*verju,*	*chto*	*on*	*budet*	***igrat'***.
	I	believe-1S	that	he	be-3S:FUT	play-INF
	'I believe that he will play'					

(23)	*Ty*	*xochesh'*	***pit'?***
	You	want-2S	drink-INF
	'Do you want to drink?'		

(24)	*Uzhe*	*pozdno,*	*tebe*	*nado*	***spat'***.
	Already	late	you-DAT	necessary-ADV:PRED	sleep
	'It's already late, you should go to bed'				

Some statistics from the child-directed speech is given below. Table 3 illustrates[21] that children hear infinitives much more seldom as finite synthetic forms and imperatives. The number of infinitives (in the analytical and impersonal constructions) fluctuates between 14,5% and 20,7% of all VU (and 4,7% - 8,6% of all speech production: all analysed utterances of the input).

	All analysed utterances	VU	**Infinitives**	Finite forms (synthetic)	Imperatives
Tokens (absol. numbers)					
Liza's input between 1;8 – 2;2					
MAM	8902	3139	**456**	670	2013
BRO	477	153	**27**	36	90
Vanja's input between 2;1-2;6					
BAB	18005	7464	**1545**	1094	4825
MAM	5661	1395	**267**	194	934
Tokens (percentages - %)					
Liza's input between 1;8 – 2;2					
MAM		100	**14,5**	64,1	21,3
BRO		100	**17,6**	58,8	23,5
Vanja's input between 2;1-2;6					
BAB		100	**20,7**	64,6	14,7
MAM		100	**19,1**	67,0	13,9

Table 3. Distribution of the verb forms in the input

[21] The calculations for each adult participating in recordings were made separately: MAM stands for the mother, BRO – for brother and BAB – for grandmother.

Utterances with analytical constructions (containing infinitives) elicited at random (for Vanja from the recordings at 1;11 and for Lisa – from the recordings between 1;10 and 2;2) were analysed in order to check how frequent an infinitive occupies the position after another element. The table below shows the distribution of the finite/modal predicative element (PE) and the infinitive (INF) in all adult sentences containing infinitives:

	All VU, containing INF	PE + INF (absolute end of an utt.)	INF + PE	only INF
Tokens (absol. numbers)				
Vanja's input	154	113 (95)	19	22
Liza's input	125	88 (65)	13	24
Tokens (percentages - %)				
Vanja's input	100	73,4 (84)	12,3	14,3
Liza's input	100	70,4 (74)	10,4	19,2

Table 4. Infinitives in the input

Infinitives following another predicative element were found in more than 70% of all cases (and within this type of utterances they occupy the final sentence position in more than 74%). Taking into consideration Slobin's (1987) operating principle C "pay attention to order of words and morphemes", evidence to the very early understanding of word order (see Hirsh-Pasek and Golinkkoff (1993))[22] and the fact that Russian has free word order, it is clear that infinitives with their stable post-position are especially 'noticeable' by children.

7. Salience factor in models of language acquisition

Salience is often mentioned as an important factor in models of language acquisition emphasising the influence of the nature of the data on the process of acquisition (data driven models). For example, Hill (1983) argues that "the language learner selects examples from the input data available to him on the basis of the salience of the data to him, and that he projects classes for words based on his own capacity for word use."

In one electronic source (see http://englishraven.com/TEYL_lang_acqu.html) salience is considered to be one of the three microenvironmental factors (the two other are feedback and frequency) which are related to the language specific structures that the learner hears. It is argued that "salience refers to the ease with which the structure is heard. For example, in the phrase I am going to the store, "I", "going", and "store" are much more salient than "am", "to", and "the". It is not clearly explained in this claim what *the ease with which the structure is heard* means. The words enumerated in the

[22] Hirsh-Pasek and Golinkkoff (1996) performed the experiment (the preferential looking paradigm with 19 months old infants) which demonstrated the very early understanding of word order. The comprehension of sentence like "Big Bird is tickling Cookie Monster" was checked. Two videos playing simultaneously - one correct, one showing Cookie Monster tickling Big Bird were shown. Infants looked longer at correct video.

example as more salient belong to the content words (in opposition to the functional words which are considered to be less salient). Thus, salience seems to be restricted to the notion of the *word class* with its division into content vs. functional words.

Salience is often treated through the prism of the (acoustic) perception; but such an approach is also rather restricted. It seems that the concept *salience* embraces more than only perception (comprehension). In order to say that a form has a certain degree of salience (or a certain salience coefficient), two groups of factors seem to be relevant: factors facilitating (a) the detection of a form in the input (perception/comprehension) and (b) the use of a form by a language learner (production). Within (a) and (b) different structural features of a form (acoustical, morphological, semantical, syntactical, etc.) and its 'behaviour' in the input should be considered. In the case of OIs their acoustic characteristics facilitate the perception and, thus, contribute to the (high) degree of salience. Syntactical peculiarities play a two-fold role: the stable final position in analytical constructions favours the comprehension and production of OIs while the complex diverse structures of the target constructions with infinitives restrict and slow down their acquisition and target production. The morphological properties (e.g. un-specificity) favour the possibility of (overgeneralised) production. The majority of the above-mentioned features contribute to the high degree of the salience of OIs, in other words, they make a form more (or easier) detectable (extraction from the input), identifiable (form-function mapping) and *'producable'* (production).

8. Conclusion

The goal of this contribution was to show what language-specific devices enable the OIs phenomenon in Russian. The empirical data demonstrated that the existence of the observed phenomenon is stable despite a low number of OIs in the children's data. This specific development rises the following question: what features prolong vs. restrict the perception and production of OIs by children. Several factors contributing to the degree of salience were considered and the general concept of salience was briefly discussed. Further, the correlation between the development of verb grammar and the changes in the use of OIs was considered: the three stages in the development of verb grammar correspond to the two steep decreases in the use of OIs. OIs show up along with the initial development of a rule-based morphology and the marking of finiteness (e.g. the emergence of analytical constructions) and disappear only when children (fully) acquire grammatical categories.

Since the present article reports on the work in progress, a set of (theoretical and empirical) issues still remains open and needs further elaboration. The general concept of salience needs detailed discussion. The hierarchy of the validity cues (Bates and MacWhinney 1987) and their interrelation (within the concrete language) should be further investigated. Functions of OIs at the different stages of the grammatical development should be further specified and statistically evaluated. Correlation between the degree of salience of a given form in the input (in our case OIs) and its (frequency) rate in children's production in different languages maybe established. Investigation of these issues will provide the source for further research questions.

Appendix 1: The first twenty OIs

	Liza			Vanja			Roma		
	Age	Eng. trans.	Verb	Age	Eng. trans.	Verb	Age	Eng. trans.	Verb
1.	1;8	wash	myt'	2;1a	sleep	spat'	1;11	dress	odet'
2.		get down	slezt'	2;1b	wash	pomyt'	2;0a	sleep	spat'
3.		clean	chistit'		dress	nadet'		open	otkryt'
4.		gather	sobirat'	2;1c	walk	guljat'		take	vzjat'
5.	1;9a	drive	katat'sja		stand	stojat'	2;0b	dig	kopat'
6.		help	pomoch'	2;2a	draw	risovat'		switch off	vykljuchit'
7.		dress	nadet'	2;2b	break	lomat'		drink	pit'
8.		sleep	spat'		open	otkryt'		wash	stirat'
9.	1;9b	tear	rvat'		drink	pit'		give	dat'
10.		dig	kopat'		play	igrat'	2;1a	write	pisat'
11.		dress	odevat'(sja)		dig	kopat'		pour in	nalivat'
12.		dress	odet'(sja)	2;2c	close	zakryt'		put off	snimat'
13.		open	otkryt'		drive	rulit'	2;5	gather	sobirat'
14.		drink	popit'		repair	chinit'		carry	nosit'
15.	1;9c	stand up	vstavat'		break	slomat'		throw	nakidat'
16.		tear off	otorvat'	2;3a	roll	katat'		throw	kidat'
17.		eat	est'		eat	kushat'		break	polomat'
18.		throw away	vybrosit'		wash	pomyt'	2;6	write down	napisat'
19.		close	zakryt'		sit	sidet'	2;7	open	otkryvat'
20.		sew on	prishit'		stand up	vstat'		make	delat'

Appendix 2: The first two dozens imperatives and finite verb forms

Liza					Vanja				
1;7					2;1a				
	Eng. trans.	Verb	Asp.	Mood/ Tens.[23]		Eng. trans.	Verb	Asp.	Mood/ Tens.
1.	give back	otdat'	pfv	imp	1.	give	dat'	pfv	imp
1;8					2.	fall down	upast'	pfv	past
2.	be	byt'	impf	past	2;1b				
3.	dig	kopat'	impf	pres	3.	sit for a while	posidet'	pfv	imp
4.	sit down	sest'	pfv	imp	4.	draw	risovat'	impf	imp
5.	sleep	spat'	impf	pres	5	sleep	spat'	impf	pres
6.	fall down	upast'	pfv	past	2;1c				
7.	climb up	zalezt'	pfv	past	6.	walk	guljat'	impf	past
1;9a					7.	go (by foot)	idti	impf	imp
8.	clean	chistit'	impf	pres	8.	start going (by car)	poexat'	pfv	past
9.	walk	guljat'	impf	pres	9.	start going (by foot)	pojti	pfv	past
10.	catch	lovit'	impf	pres	10.	draw	risovat'	impf	imp
11.	dress	nadet'	pfv	past	11.	draw	risovat'	impf	pres
12.	write	pisat'	impf	pres	12.	sit	sidet'	impf	imp
13.	jump away	uskakat'	pfv	past	13.	build	stroit'	impf	imp

[23] If a verb is used in indicative, then the tense is given.

1;9b					2;2a				
14.	roll	katat'	impf	pres	14.	repair	chinit'	impf	inf
15.	carry	nosit'	impf	pres	15.	hook on	pricepit'	pfv	past
16.	dress	odet'sja	pfv	inf	16.	drive	rulit'	impf	pres
17.	get into	popast'	pfv	past	17.	sit down	sadit'sja	impf	imp
18.	miss	propustit'	pfv	past	18.	make a noise	shumet'	impf	pres
19.	work	rabotat'	impf	pres	19.	look	smotret'	impf	imp
20.	eat	s''est'	pfv	past	20.	stand	stojat'	impf	pres
21.	break	slomat'	pfv	past	21.	pull	tjanut'	impf	imp
22.	gather	sobirat'	impf	past	22.	go away	ujti	pfv	past
23.	run away	ubezhat'	pfv	past					
24.	drink up	vypit'	pfv	past					

Roma									
1;11									
1.	give	dat'	pfv	imp	12.	drink	pit'	impf	pres
2.	dig	kopat'	impf	pres	13.	wait	podozhdat'	pfv	imp
3.	start going (by foot)	pojti	pfv	past	14.	start go by car	poexat'	pfv	fut, past
4.	break	slomat'	pfv	past	15.	break	polomat'	pfv	past
5.	fall down	upast'	pfv	past	16.	tear	porvat'	pfv	past
2;0a					17.	loose	poterjat'	pfv	past
6.	go (by foot)	idti	impf	pres	18.	eat	s''est'	pfv	past
7.	give back	otdat'	pfv	imp	19.	sit	sidet'	impf	pres
2;0b					20.	break	slomat'sja	pfv	past
8.	be ill	bolet'	impf	past	21.	put off	snjat'	pfv	past
9.	go for car	exat'	impf	past	22.	sleep	spat'	impf	pres
10.	carry	nesti	impf	pres	23.	be tired	ustat'	pfv	past
11.	open	otkryt'	pfv	imp	24.	switch on	vkljuchit'	pfv	imp

References

Avrutin, Sergey. 1999. *Development of the Syntax-Discourse Interface*: Studies in Theoretical Psycholinguistics: Kluwer Academic Publishers.

Babby, Leonard H. 2000. Infinitival Existential Sentences in Russian. Paper presented at *Formal Approaches to Slavic Linguistics 8, 1999*, University of Pennsylvania, Philadelphia.

Bar-Shalom, Eva, and William Snyder. 1997. Root Infinitives in Child Russian: A Comparison with Italian and Polish. Paper presented at *GALA 1997: Conference of Language Acquisition*, Human Communication Research Center, Edinburgh, Scotland.

Bar-Shalom, Eva and Willyam Snyder. 1999. On the relationship between Root Infinitives and Imperatives in Early Child Russian. Paper presented at *BUCLD 23: Proceedings of the 23rd Annual Boston University Conference on Language Development*, Boston University.

Bates, Elisabeth, and Brian MacWhinney. 1987. Competition, Variation, and Language Learning. In *Mechanisms of language acquisition*, ed. Brian MacWhinney, 157-193. Hillsdale: Erlbaum.

Bittner, Dagmar. 2002. Emergence of grammatical complexity and markedness in the acquisition of verb and noun phrases in German. In *Future Challenges for Natural Linguistics*, eds. Katarczyna Dziubalska-Kolaczyk and Jarek Weckwerth, 25-56. Wien: Lincom.

Brun, Dina, Sergej Avrutin, and Marina Babyonyshev. 1999. Aspect and its Temporal Interpretation during the optional Infinitive Stage in Russian. Paper presented at *BUCLD 23: Proceedings of the 23rd annual y Conference on Language Development*, Boston University.

Crago, B. Martha and Shanley E. M. Allen. 2001. Early Finiteness in Inuktitut: The Role of Language Structure and Input. *Language Acquisition* 9:59-111.

Dressler, Wolfgang U. ed. 1997a. *Studies in Pre- and Protomorphology*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Dressler, Wolfgang U. ed. 1997b. *Pre- and protomorphology in language acquisition*. vol. 33. *Papers and studies in contrastive linguistics*. Poznan: Adam Mickievicz University.

Dressler, Wolfgang U. & Anna-Maria Karpf. 1995. The theoretical relevance of pre- and protomorphology in language acquisition. *Yearbook of Morphology 1994*:99-122.

Fanselow, Gisbert and Sascha W. Felix. 1987. *Sprach Theorie: Eine Einfuehrung in die Generative Grammatik*. vol. Band 1: Grundlagen und Zielsetzungen. Tuebingen: Francke Verlag.

Gagarina, Natalia 2000. *Early verb development in one Russian-speaking child*. In *First verbs: on the way to mini-paradigms*, eds. Dagmar Bittner, Wolfgang U. Dressler, and Marianne Kilani-Schoch, ZAS Papers in Linguistics, vol. 18, 143-161.

Gagarina, Natalia. in prep. *The acquisition of verbal categories in child Russian*.

Gagarina, Natalia. in print. The early verb development and demarcation of stages in three Russian-speaking children, To appear in *Cross-linguistic approaches to the acquisition of early verb inflection,* eds. Dagmar Bittner, Wolfgang U. Dressler, and Marianne Kilani-Schoch.

Gasde, Horst-Dieter. 1991. *Pro-drop und Kontrolle: Pronomenwegfall in finiten und infiniten chinesischen Saetzen*.vol. 61: Chinathemen. Bochum: Brockmeyer.

Ginneken, Jac van. 1917. *De Roman van een Kleuter*. Hertogenbosch/Antwerpen: Malmberg.

Guasti, Maria T. 1995. Verb syntax in Italian child grammar. *Language Acquisition* 3:1-40.

Gülzow, Insa and Natalia Gagarina. in print. Development of synthetic and analytical verb constructions in English and Russian. To appear in *Discovering the world of verbs,* eds. Natalia Gagarina and Insa Gülzow*,* Kluwer.

Gvozdev, Aleksandr N. 1949. *Formirovanie u rebenka grammaticheskogo stroja russkogo jazyka*. Moskva: APN RSFSR.

Hill, Jane Anne C. 1983. A Computational Model of Language Acquisition in the Two-Year-Old: IULC Publications. IULC Publications Homepage: http://www.indiana.edu/~iulc/.

Hirsh-Pasek, Kathy and Roberta Golinkoff. 1996. The origins of grammar: evidence from early language comprehension, Cambridge, Mass. : MIT Press.

Hoekstra, Teun and Nina Hyams. 1998. Aspects of Root Infinitives. *Lingua* 106:81-112.

Hyams, Nina. in print. Clausal Structure in Child Greek: A reply to Varlokosta, Vainikka and Rohrbacher and a reanalysis.

Ingram, David and William Thompson. 1996. Early syntactic acquisition in German: Evidence for the Modal Hypothesis. *Language* 72:97-120.

Jones, D. and D. Ward. 1969. *The phonetics of Russian*. Cambridge: Cambridge University Press.

Kiebzak-Mandera, D. 2000. Formation of the verb system in Russian children. *Psychology of Language and Communication* 4:27-46.

Kilani-Schoch, Marianne. 2000. Early verb development in two French-speaking children. In *First verbs: on the way to mini-paradigms,* eds. Dagmar Bittner, Wolfgang U. Dressler, and Marianne Kilani-Schoch, ZAS Papers in Linguistics, vol. 18, 79-98.

Koepke, Klaus-Michael. 1993. *Schemata bei der Pluralbildung im Deutschen. Versuch einer kognitiven Morphologie*.vol. 47: Studien zur deutschen Grammatik. Tuebingen: Gunter Narr Verlag.

Pierce, Amy. 1992. *Language acquisition and syntactic theory: a comparative analysis of French and English child grammars*. Dordrecht: Kluwer.

Platzack, C. 1992. Word order and the finite verb in early Swedish. In *The acquisition of verb placement: Functional categories and the V2 phenomena in language development*, ed. Juergen Meisel, 66-82. Dordrecht: Kluwer.

Poeppel, David and Ken Wexler. 1993. The Full Competence Hypothesis of clause structure in early German. *Language* 49:1-33.

Rhee, Jaemin and Kenneth Wexler. 1995. Optional infinitives in Hebrew. In *Papers on Language Acquisition and Processing*, eds. Carson T. Schuetze, Jennifer B. Ganger, and Kevin Broihier, 383-402. Cambridge: MIT Working Papers in Linguistics.

Rizzi, L. 1994. Some notes on linguistic theory and language development: the case of root infinitives. *Language Acquisition* 3:371-393.

Santelmann, L. 1995. The acquisition of verb second grammar in child Swedish, Cornel University.

Sawicka, I. 2001. Palatalization as the main factor of the phonetic development and typological diversification of Slavic languages. Ms. Nicolas Copernicus University, Torun, Poland.

Snyder, Willyam and Eva Bar-Shalom. 1998. Word Order, Finiteness, and Negation in Early Child Russian. Paper presented at *BUCLD 22: Proceedings of the 22nd annual Conference on Language Development*, Boston University.

Stern, Clara and William Stern. 1928. *Die Kindersprache: Eine psychologische und sprach-theoretische Untersuchung.* Darmstadt: Wissenschaftliche Buchgesellschaft (4th edition, 1975).

Torrens, Vicenç. 1995. The Acquisition of Inflection in Spanish and Catalan. In *Papers on Language Processing and Acquisition*, eds. Carson T. Schuetze, Jennifer B. Ganger, and Kevin Broihier, 451-472. Cambridge: MIT Working Papers in Linguistics.

Varlokosta, Sryridoula, Anne Vainikka, and Bernhard Rohrbacher. 1998. Functional Projections, markedness, and "root infinitives" in early child Greek. *The Linguistic Review* 15:187-207.

Wexler, Kenneth. 1994. Optional infinitives, verb movement and the economy of derivation in child grammar. In *Verb movement*, eds. D. Lightfoot & N. Hornstein. Cambridge: Cambridge University Press.

Wexler, Kenneth. 1995. Feature-interpretability and optionality in early child grammar. Paper presented at *Paper presented at Workshop on Optionality, September 1, 1995*, University of Utrecht, Netherlands.

Wijnen, Frank, Masja Kempen, and Steven Gillis. 2001. Root infinitives in Dutch early child language: an effect or an input? *Journal of Child Language* 28:629-660.