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Acquisition of Russian: Uninterrupted and Incomplete Scenarios

The rich body of literature dealing with first language acquisition has been concerned, to a very large extent, with the unpacking of the notion "acquisition" into a set of simpler, smaller notions. This unpacking, in leading us to a better understanding of smaller problems, will hopefully eventually be followed by a recombination of the puzzle pieces so as to enrich the larger picture of language acquisition.

In this brief survey, I will follow the same path for Russian and try to do justice to all the complexities of language acquisition. I see my goal here as twofold: first, to acknowledge the existing work on the acquisition of Russian, highlighting its major achievements and emphasizing its main points; second, to ask the pertinent questions as to what needs to be done next. It would be impossible to ask these questions without the work that has already been accomplished, and the acknowledgment of the findings that are already available to us thus constitutes an important step towards future research. I invite the reader to rise above the theoretical and ideological differences between frameworks which often drive much of linguistic research—after all, we are all united in our pursuit of the mystery of "effortless" L1 learning.

For a long time, there was very little connection between "practical" acquisition studies and theoretical approaches to child language. The Russian-language literature on L1 acquisition covers a rich and wide range of descriptive topics with little or no interest in the pros and cons of nativism, socialization theory, or the connectionist theory of acquisition. The main emphasis in the Russian literature on acquisition has been on two major aspects of acquisition: developmental stages in the acquisition of morphological and syntactic patterns,

and pedagogical recommendations for speech pathology and speech errors. Because of this, the Russian outlook on acquisition has always been characterized by an emphasis on smaller

notions, with no particular desire to achieve a more global picture and/or to construct a general acquisitional theory.

A much smaller body of research dealing with theoretical aspects of the acquisition of Russian is represented by recent work done mostly in the US. In what follows, I will review some of the major studies dealing with the empirical base of acquisition of Russian. In presenting an overview of syntactic aspects of acquisition, I will also go over major theoretical results that have been achieved on the basis of experimental evidence.

In what follows, I will maintain a critical distinction between two types of acquisition: the acquisition of language that results in complete, full native speaker competency (regardless of whether a particular speaker represents the standard, educated, variety of L1, or any other of its varieties), and the acquisition interrupted, in childhood, by the switch to another language as dominant. The former is referred to as uninterrupted acquisition, the latter, incomplete acquisition. Uninterrupted acquisition is the one that is standardly pursued and discussed in L1 acquisition studies. Incomplete acquisition, which results in the linguistic profile of a heritage speaker, has gone mostly unnoticed, for a number of reasons. To name just a few: heritage speakers often have passive language skills only, which makes it hard to assess their language competence. Heritage speakers are often mistaken for unbalanced bilinguals, and as such considered "desirable" subjects for bilingualism research. Lumped together with other types of language attrition and loss, the language of heritage speakers has chiefly been the province of sociolinguistic studies, and it is often hard to make two separate subfields within linguistics to talk to each other. In the meantime, heritage speakers may well be an important missing piece that would enrich the picture of L1 acquisition that we are trying to create.

In keeping with the distinction between two types of acquisition scenarios, I will survey each of them separately, then present a comparison between them, and conclude with some projections for future research.

UNINTERRUPTED ACQUISITION

Russian research on acquisition began with the pioneering work by Gvozdev ([1949]/1961; see also Slobin 1966), which is so rich in data and ideas that it continues to inform linguistic research on acquisition to the present day.

The body of work on descriptive aspects of the acquisition of Russian continues to grow today, with the publication of numerous child language descriptions by Stella Tseytlin (Ceytlin)—for example, Ceytlin (1987), Ceytlin & Eliseeva (1996), Ceytlin & Voejkova (1997). There is also a large and steadily growing body of work dealing with socialization in children; speech development is taken as an important aspect of such socialization. The socialization literature in Russian is particularly strong with regard to practical educational recommendations; ideological changes in post-Soviet society have had surprisingly little effect on the general approach espoused in this kind of research (e.g., Lisina 1986; Ruzskaja 1989; Protassova 1998). In this review, I will not discuss the more applied, pedagogical recommendations of Russian acquisitional literature, but rather, will summarize its main results with respect to different domains in acquisition.

A note on the sources of acquisition data used in the literature is in order here. A striking fact about the data on the acquisition of Russian is an almost absolute reliance on naturalistic data, primarily diary studies (partly available now in the CHILDES corpus). The experimental data are very sparse and are just beginning to find their way into the acquisition literature on Russian.

Phonological aspects of acquisition

Work on phonology in acquisition is rather sparse and is represented primarily by Timm (1977) and the studies of Vinarskaja and Lepskaja. Compared to American work on the phonology of acquisition (e.g., Hayes 1999; Pater 1998), their work seems to be on a parallel track and out of sorts with what acquisitionists in this country do. The American acquisition literature is concerned with the structuring of information about phonology and uses low-level data (sound systems and phonotactics) as evidence of acquisition of phonology, and in the work conducted in the 1970s-early 1980s, Vinarskaja, Lepskaja and some others provide a general

description of sound production and perception (Borodič 1974; Timm 1977) or phonotactics (Vinarskaja 1975). Their main emphasis however is on syllabification (Vinarskaja et al. 1977; 1980).

Developmental work on syllabification shows that Russian-speaking children start with open syllables, a result consistent with Gvozdev's observations, data from Russian speech pathology (Vinarskaja et al, 1980), and cross-linguistic data on syllable types. Initial segments of words (pretonic and stressed segments) are acquired earlier, whereas post-tonic segments are delayed until after age 4;6.[1] Successful acquisition of post-tonic syllabification is observed between ages 5;6-6.

The early syllabification of pre-tonic and stressed segments is weakly linked to the phonological acquisition and recognition of the full inventory of sounds in pretonic positions. Vinarskaja et al. (1977) show that different degrees of reduction (contrasts between the mid central unrounded /↔/ and the lower-mid back unrounded /℘/) appear first in the pretonic syllables. Post-tonic reduced vowels are first invariably represented by the schwa (Vinarskaja et al. 1977: 8-10). Overall, the results from younger children confirm that Russian observes the bisyllabic maximum on word length until about age 3 (cf. Pater 1997).

The overall acquisition of syllabification by 6;0 is taken, a bit surprisingly, as evidence of variation in the language system of Russian speakers. The reasoning goes as follows: since competent speakers can perceive and produce both open and closed syllables, this indicates that they control different linguistic rules. It seems rather obvious that open and closed syllables can be tied together within a single system of rules that can be straightforwardly modeled with Optimality Theory (for example, Pater 1997). However, the developmental findings presented in the works cited still present a convincing and well-documented case of the acquisition of Russian phonology. In this informal overview, I have been tempted many times over to say that further work on a certain subject is needed. I will postpone these remarks to the last section—in the meantime, the reader can take them for granted or insert them where s/he sees fit.

[1] In describing the earliest verbal production (0;10—1;2), Protassova (1997: 155) suggests that the role of stress in emerging words was not clear, but the examples she cites are in full conformity with the conclusions achieved by Vinarskaja et al. (1977).

The examination of the papers on the phonology of acquisition also raises a question about the methodology used in such works. For example, Vinarskaja et al. (1977) studied 59 children, ages 2-10 who were broken into groups in the following way:

Table 1. Subjects, acquisition of syllabification (Vinarskaja et al. 1977: 7)

Group number	Number of subjects	Age
I	10	2-3;1
II	10	3;5-4;0
III	10	4;5-5;5
IV	9	6-7
V	12	7-8 (first graders)
VI	8	9-10 (third graders)

Two methodological problems seem to arise with respect to this pool. First, aside from the selection of children from elementary school grades (groups V and VI), it is unclear what motivates the breakdown of groups by age. Judging by some of the results presented in the papers surveyed here, I had an impression that the age breakdown was an artifact of the results obtained with respect to syllabification—in other words, it was almost an after-the-fact construct. Second, it is not clear why certain age groups are excluded from the study and what motivates breaks, however small, between contiguous groups.

Continuing on the issue of methodology, most Russian studies of child language suffer from what may be a simple lack of experimental equipment, which explains their heavy emphasis on observation and experiments involving simple repetition within a single mode (auditory or visual). For example, the syllabification studies described here involved two types of responses—children were asked to repeat words upon auditory presentation and/or to "divide it up" (sc. divide into syllables).

Recent experimental work indicates that the knowledge of sounds, sound sequences, and segment boundaries occurs by the age of 9-10 months, before infants can utter words or apprehend most phonological alternations (Kuhl 1993, Juszyk & Aslin 1993; Saffran et al.

1996). This does not make observations of older children less valuable, but this definitely indicates the need to integrate such studies with studies of infant knowledge of phonology. For Russian, such studies are still in the indefinite future,[2] but if they ever materialize, they may shed light on the way children learn major oppositions in their sound system, acquire phonemic contrast, learn free variation or avoid failure when confronted with imperfect input.

Lexical aspects of acquisition

With early lexical learning, one of the intriguing questions is whether or not nouns and, in particular, names of concrete items have initial priority over verbs or adjectives. Literature on the acquisition of Russian is almost silent with respect to this issue. Some studies, for example, Šaxnarovič (1985; 1988) seem to suggest the noun > verb/adjective development but only implicitly, and the proposed explanation is largely driven by the desire to fit developmental data into a Vygotskian model whereby a child moves from naming to utterance and from identifying objects to identifying their attributes.[3] A cursory examination of the Russian corpus in the CHILDES corpus suggests that the prevalence of nouns can be confirmed for Russian—out of 100 most common words, 70 are nouns. Gvozdev's data on Zhenya seem to confirm this tendency as well (1961) but overall more work is needed in this respect, in particular, more careful work focusing on semantic groups, fine-grained distinctions between synonyms, and polysemy.

For older children (age 3 and up), there is a hypothesis that children can be categorized as "noun-dominant" and "verb-dominant"—in picture-naming and picture description, they show a distinct preference for one or the other type (Protassova 1986; 1987). The results presented in Protassova (1987) do not, however, refute the generalization that nouns precede verbs in early acquisition. Rather, Protassova's results suggest that children in the third and fourth year of development may have different utterance styles which she characterizes as "noun-dominant" and "verb-dominant".

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[2] Timm's study examined the phonological development of a rather young child (between 1:7 and 2:9) but the data are rather sketchy given that the main emphasis was in testing a particular developmental hypothesis regarding acquisition.

[3] This particular article is representative of the Soviet acquisition tradition which was squarely in the camp of the socialization theory. However, although many papers pay lip service to socialization theory, they do not present any evidence supporting it nor do they derive any of their conclusions from socialization assumptions.

Perhaps one of the best studies currently available on Russian lexical acquisition is the study of color terms (Davies et al. 1998). The authors used a large pool of subjects (N=200, age 3;0-6;0) who were tested on several modalities (listing of color terms, production, and comprehension). Two basic goals were to test the Berlin & Kay theory of color universals (Berlin & Kay 1969) using acquisition order as a measure of basicness and to test whether the Russian words *sinij* 'dark blue' and *goluboj* '(light) blue' are equally basic. The results seem inconclusive with respect to the Berlin & Kay hierarchy—they do not disprove it, but they do not provide strong evidence for it either. They simply indicate that primary color terms tend to be learned before more secondary, including derived, terms. As for the terms for 'blue', the results do not single out either *sinij* or *goluboj* as primary; however, the statistical results show that the two terms were confused more often than other pairs of terms. It is interesting to compare these results with Andrews' (1994) study of *sinij* and *goluboj* in the speech of adult Russian immigrants in the USA—despite the interference from English, both terms are successfully retained and adult speakers do not show preference for one or the other. Andrews also shows a fair amount of confusion between *sinij* and *goluboj* in the speech of 17 young adults who emigrated during childhood—he interprets it as an interference from the English blue, but in light of Davies et al.'s data, this confusion can also be interpreted as resulting from the incomplete acquisition of Russian, a phenomenon which I will discuss in more detail below.

Lexical issues of acquisition also open the Pandora's box of Russian aspect. Whether Russian aspectual distinctions are grammatically or lexically determined remains a matter of heated debate, and it would be impossible to summarize all points of view in this survey. At the risk of presenting a caricature of different approaches, let me summarize the extreme views which have been at some point entertained in the literature on Slavic aspect:

(i) Russian aspect is a grammatical category with complicated by morphosyntactically determined rules

(ii) Russian aspect is a lexical category with less than predictable morphosyntactic ramifications

(iii) Russian aspect is fully semantically determined and the semantic component projects into grammar

(iv) Russian aspect is partly lexical and partly grammatical

For acquisition, the choice of one of these scenarios over the others leads to two big questions. First, does a Russian-speaking child have to learn two forms for each lemma—perfect and imperfective, or does the child simply learn the rules of deriving aspectual forms and then (presumably later) learn the usage of these aspectual forms?[4] Second, and related to the first question, does a Russian-speaking child learn aspect as a rule (regardless of the debate between continuity and maturation) or is the aspectual learning incremental, as would be expected of lexically-based learning?

The answers to both questions are far from definite. Aspect seems to differ from other grammatical categories in acquisition because Russian-speaking children rarely make mistakes in aspects, while making various grammatical mistakes in tense or agreement of the verb (Gvozdev 1961: 425). A recent study (Stoll 1998) addresses the special status of aspectual distinctions by arguing for a lexically-driven approach to aspect. Based on comprehension experiments involving preschool children (age 2-6 years), Stoll suggests that aspect is not acquired in a single step, but rather develops as a slow process, thus supporting the lexicalist approach. This development is further shown to depend on differences in the intrinsic temporal semantics (Aktionsart) of the verb. The youngest children in Stoll's pool relied heavily on telic verbs, thus indicating that inherent lexical properties (Aktionsart?) determine the general development of aspectual distinctions in Russian. Stoll also suggests that morphological properties of the verb do not play a significant role in the acquisition process. A slight preponderance of telic verbs in Russian is also suggested by Gvozdev (1961: 425), however, I was unable to find any evidence for it in the CHILDES corpus. Although the study is clearly a pioneering one, it is hard to determine how definitive its results are for two reasons. Like the syllabification studies discussed earlier, the study of aspect crucially relied on comprehension and excluded younger children. It could well be that a young child could learn grammatical distinctions related to aspects prior to 2 years of age and would then refine the use of aspectual pairs based on more intricate semantics and then pragmatics of aspect. Such a possibility does

[4] In asking this question, I have tried to stay as theory-neutral as possible. Of course, for theories such as Principles and Parameters or the Minimalist program, where aspect can be featurally represented in syntax, this question has to be modified. The core issues, however, will remain the same.

not even presuppose a certain organization of grammar; the only assumption it requires is that of continuity rather than maturation. This possibility would also be fully compatible with U-shaped learning, whereby a child could successfully acquire aspectual distinctions but then reconsider some of the learned material in the face of additional evidence from semantics and pragmatics.

As much as the grammatical view of aspect is tempting and desirable—it would make things simpler for us, linguists—we have little evidence in favor of it, either. In the meantime, the appeal to telicity can potentially be a good thing, on the assumptions that telicity is part of event structure and that event structure predates argument structure in the organization of a clause.

Assuming a connectionist view of acquisition, one could try to argue that what Stoll takes as evidence of telicity may simply be the result of frequencies of particular aspectual forms—for instance, since the frequency of *priexat'* 'arrive (perf.)' is higher than that of *priezžat'* 'id (imperf.)', children are more likely to acquire the perfective/telic interpretation first.[5] One can try and construct an argument based on event frequencies—young children are presumably more likely to hear and report that something is broken than that someone is in the process of breaking something, or that someone is running than that someone has run. Such reasoning can underlie testable hypotheses, which should be applied both to the parental speech as input and to the production by a young learner.

In my own study of incomplete acquisition, which I will present later, I found that most of the standard aspectual distinctions are missing and that most verbs are kept in just one aspectual form, depending partly on telicity and partly on the relative frequencies of individual aspectual forms in the input. Table 2 shows a representative sample of verb forms which are lexicalized by incomplete acquirers in the perfective and the imperfective only.

[5] See Antinucci & Miller 1976; Clark 1996 for similar findings in English and Italian child language.

Table 2. Lexicalized perfectives and imperfectives in American Russian

Lexicalized as perfective	Lexicalized as imperfective
'be born' (*rodit'sja*)	'grow' (*rasti*)
'die' (*umeret'*)	'stay, stand' (*stojat'*)
'kill' (*ubit'*)	'go' (*idti*)
'give' (*dat'*)	'walk' (*guljat'*)
'take' (*vzjat'*)	'run'(*begat'*)
'can' (*smoč'*)	'sit' (*sidet'*)
'read' (*čitat'*)	'cry, weep' (*plakat'*)
'see' (*uvidet'*)	'sleep' (*spat'*)
'begin' (*načat'*)	'live' (*žit'*)
'stop' (*perestat'*)	'love' (*ljubit'*)
'find' (*najti*)	'sing' (*pet'*)
'make' (*sdelat'*)	
'eat' (*skušat'; s"jest'*)	
'say' (*skazat'*)	

I will discuss general issues of incomplete acquisition below. Inasmuch as incomplete acquisition data permit us to glimpse into a certain stage at which a speaker is "frozen", the data listed in Table 2 are in conformity with Stoll's results and indicate that telicity and the distinction between accomplishments and activities make correct predictions with respect to the order in which aspectual forms mature. It would be ideal to match incomplete acquisition results, such as those presented in Table 2, with the aspectual forms observed in the development of uninterrupted acquisition.

Kazanina and Phillips (2003, a, b, and submitted) investigated Russian children's understanding of semantic aspectual distinctions that relate to the completeness vs. incompleteness of the event. In Russian the past perfective form of an accomplishment verb, e.g. *postroil*^{PERF} *dom* 'built the house' or *razdel*^{PERF} *rebenka* 'undressed the baby', entails that the event was performed to its natural culmination, whereas the past imperfective form, e.g. *stroil*^{IMPF} *dom* 'was building the house' or *razdeval*^{IMPF} *rebenka* 'was undressing the baby', lacks

such an entailment. Kazanina and Phillips explored whether 3-6 year old Russian-speaking children are aware of these completion entailments. The children in their experiments had to judge sentences like (1) against complete and incomplete instances of the house-building event.

(1) obez'jan-k-a stroila/postroila dom-ik-Ø
monkey-DIM-NOM build.IMPF.PAST/build.PERF.PAST house-DIM-ACC
'The monkey was building/built a house'

From the youngest age tested, children effortlessly accepted perfective and imperfective predicates with completed events; however, many children (including most of the 3- and 4-year olds) did not accept imperfectives as descriptions of incomplete events. This result could suggest that the younger Russian children are unaware that the imperfective lacks completion entailments. However, in a follow-up experiment the children who failed to accept the sentence *Obez'janka stroila*^{IMP} *domik* 'The monkey was building a house' with incomplete events accepted sentence (2) in the situation where the table-cleaning event failed to reach completion (the failure point was after the interval delimited by the *while*-clause).

(2) Poka mal'čik polival cvety, devočka vytirala stol
while boy watered.impf flowers girl wiped.impf table
'While the boy watered the flowers, the girl was cleaning the table.'

This result suggests that children know that imperfectives can be associated with incomplete events.

Kazanina & Phillips adopt the assumption that all imperfectives make use of a temporal 'perspective'; when this perspective excludes the endpoints of an event, the imperfective is able to refer to incomplete events (Comrie 1976; Smith 1991; Klein 1994, 1995; Demirdache & Uribe-Etxebarria 1997, 2000 among others). Hence, children successfully accept the imperfective with an incomplete event when an 'insider' reference frame is provided explicitly, as is the case in *while*-sentences, but fail in situations where they need to provide this perspective themselves. Thus the younger children's failure on the imperfective in simple sentences was due

to difficulty in selecting the appropriate temporal reference frame for evaluating the imperfective.[6]

Whereas the bare use of aspectual forms may be indicative of the lexical component, there are also clear grammatical ramifications of the aspectual use, in particular, constraints on the formation of the analytical future (with *byt'*) and modals with *ne nado* 'should not'. In adult Russian, both constructions have to take the imperfective infinitive; children, however, do not maintain this restriction and use the perfective and the imperfective depending on the context and telicity. According to Gvozdev (1961: 425), such usage continues until 2;8, but the child described in Turian and Altenberg (1991: 219) shows the same violation at age 3;0 (*budeš' skušat'* 'will eat'). Such violations form a good experiment premise to take up—it is unclear whether or not there is a developmental curve in these violations, how categorical they are and what specific verbs they involve.

Acquisition of nominal categories

In the literature on acquisition of case forms, two main theoretical issues concern the contrast between rote learning and rule-based acquisition of morphology and the contrast between regular and irregular forms. Adshead (1979) presents a good summary of the Russian acquisition literature dealing with the latter contrast and showing that while regular forms get acquired early, in the middle of the second year (see also Gvozdev 1961: 376-400), irregular forms do not get acquired until much later, up to age 6. This implicitly suggests that there is a fair amount of over-regularization, documented for acquisition of other languages (Kuczaj 1977; Maratsos 1993). What remains quite unclear is the degree and consistency of such over-regularizations; one could reasonably suppose that these over-regularizations would be context-dependent and partially determined by frequency, but this also needs further research.

Slavic linguistics in the new century will clearly benefit from the ongoing project on cross-linguistic regularities of the acquisition of morphology (earliest stages) conducted in W. Dressler's group in Vienna (languages: Basque, Croatian, Dutch, Estonian, French, Georgian, German, Greek, Hebrew, Huichol, Hungarian, Italian, Korean, Lithuanian, Maltese, Polish,

[6] Although the authors purposefully included aspectual pairs with different morphosyntax, this factor was not reliably controlled and the stimuli were limited to accomplishment predicates. This makes it hard to assess the relevance of lexical factors.

Russian, Slovenian, Spanish, Swedish, Thai, Tunisian Arabic, Turkish, Ukrainian, and Yucatec Maya). First studies related to this project have been recently published. For example, Protassova (1997) analyzes spontaneous speech and diaries from two Russian-speaking children and argues that even very young children apply consistent rules in early word use. She demonstrates that one of the most robust early rules is reduplication. A similar finding is reported in Voeykova (1997a). Both authors use Dressler's typology of the so-called extra-grammatical rules and propose the following developmental ordering of the rules: reduplication is the earliest and the most frequent rule (e.g., *tataš* for *karandaš* 'pencil' at 1:5 (Voeykova 1997a); it is followed by back-formation and later truncation and rhyming (around 2:0). Extra-grammatical processes serve as stepping stones for the formation of paradigms and for the development of the stem/inflectional contrast. In Voeykova (1997b), the idea of "feeder effects" in morphological acquisition is developed further—the author shows that the acquisition of secondary paradigms (adjectives, numerals, pronouns) is heavily influenced by previously acquired nouns. She argues that the very distinction between primary and secondary paradigms begins in the proto-morphological period, which for the child studied was between ages 1:11-2:9.[7] Voeykova (1997a) also presents interesting evidence on the phonetics-morphology interface, showing that in back-formation, the initial and/or stressed syllables are usually preserved. This is consistent with Vinarskaja et al/'s results discussed above. In both papers, the interpretation of extra-grammatical rules is influenced by a mild version of the socialization theory, whereby children are claimed to derive rules from the input and develop an early rich system which then gets positive reinforcement from further input. Both Voeykova and Protassova also emphasize the importance of the parental speech—parents are shown to use reduplication and rhyming themselves and this seems to prompt the recurrence of these rules in the child's speech.

The acquisition of Russian cases and the learning of the entire case-system is partially known from Gvozdev's work (1961: 378-397). Gvozdev shows the following order in the acquisition of caseforms:[8]

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[7] It is unclear whether this period is specific to a particular child or should be generalized.

[8] The early and error-free acquisition of the nominative is typically explained by its use as the citation form and its high frequency compared to other cases (e.g., Gvozdev 1961: 375).

(1) Nominative > Accusative/Genitive > Dative/Locative > Instrumental.

Although the case forms are basically acquired by age 2;0, the formation of the complete system takes much longer and is not completed until age 6. Schutze (1995) shows that the use of the nominative and accusative is almost error-free (93% correct forms) by age 2;0, whereas other, less frequent case-forms produce more errors.[9] A number of questions arise here that need further research: When do children go through the over-generalization phase?[10] What cases are used interchangeably and when?[11] What rules are needed in the formation of the entire declension system and what is the nature of these rules? Some answers to these questions are offered by syntactic studies which will be reviewed below. In addition to morphophonemic aspects of case acquisition, it is important to determine when and how children learn the distinction between concrete and abstract (functional) uses of cases. Recent research on the functional use of Russian prepositions (Leikin 1998) suggests that the acquisition of functional use is intimately linked to the acquisition of more abstract semantic features and is delayed until approximately 6:0-7:0.

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[9] Schutze uses the differential error rate to argue that error-free acquisition is driven by the presence of case features. However, there are three problems with this account. First, it incorrectly predicts that children should have few or no errors in inherent or quirky case marking, for example, with dative subjects (*mne nravitsja* 'I like') or instrumental objects *upravljat' samoletom* 'to fly a plane'. In the meantime, the use of such datives or instrumentals shows the same error rate as the use of adjunct datives or instrumentals (CHILDES; my own diary data on the dative subject—56 nominatives instead of dative with *nravit'sja* between 1;5 and 2;0). Second, Schutze's analysis predicts that cases assigned by prepositions should be acquired earlier and with fewer errors. This is refuted by diary data—Gvozdev (1961: 389, 391) specifically states that the prepositionless and prepositionally-governed dative and instrumental are acquired at the same time. Third, Schutze himself notes the contribution of frequency to the development of caseforms: his claim is that significant errors are found for those case markers which are far less frequent. Unless the frequency data can be normalized it is impossible to rule out frequency effects.

[10] The evidence for overgeneralization can be found in the consistent use of more frequent case endings for the locative and genitive (Gvozdev 1961: 377) or lack of partitives (Schutze 1995; Babyonyshev 1993; Babyonyshev et al. 1994).

[11] Gvozdev mentions the early interchangeability of the accusative and the genitive but it is unclear whether this interchangeability is limited to certain contexts and is due to the use of genitive as the object case under negation. Gvozdev's data here may rely on an input which is dramatically different from the input that a child growing up in the 2000's will receive because the genitive of negation has been steadily declining in spoken Russian since the 1950s. According to my own text counts, 19th century Russian showed about 34% of genitives within all forms under negation; for Contemporary Standard Russian (CSR), this figure is about 30%, and for modern spoken Russian it is about 17% (1,000 randomly selected sentences within each variety).

The role of animacy and agentivity in the acquisition of case-marking has been long considered (see Slobin 1966 for Russian, Smoczyńska 1985: 630-1 for Polish). The basic generalization seems to be that animate and agentive nouns develop a full case-marking paradigm earlier than inanimate nouns and nouns denoting themes. This hypothesis has not been upheld for Russian adult speakers in psycholinguistic experiments which showed that case-marking alone, without animacy effects, played a facilitating role in sentence processing in Russian (Kempe & MacWhinney 1999). It remains to be seen if animacy really plays a role in the acquisition of Russian case-marking.

As with many other grammatical phenomena, the pioneering generalizations on the acquisition of gender are presented in Gvozdev's work. Gvozdev suggests that gender as a category is acquired by age 3;0 (Gvozdev 1961: 397), but this conclusion is based on the apparent full acquisition of gender agreement. Russian gender of course offers interesting opportunities to investigate the functional contribution of gender information to lexical access, because of the three-gender system with complex interactions between gender (an inherent property of nouns) and case (a property of nouns determined by the structure of the sentence), as well as because of the substantial word order variation in Russian. In terms of acquisition, Russian gender is a very promising test-case for theories which rely on frequency and positive evidence. Due to the large disparities in type and token frequency within the system, the acquisition of the neuter may be predicted to be slower because of the lower-type frequencies (the frequency of neuter in modern Russian is about 22%, see Comrie et al. 1996: 105). Next, the existence of three or more genders can lead to great complications in formal marking, on the noun itself and on agreeing elements. The acquisition of gender is also tied with the acquisition of declension. Finally, the acquisition of gender is intriguing because it can provide important insights into the interaction between formal and contentful cues in gender assignment. Gender mismatches and matches lend themselves to rather easy experimental testing which could be conducted even with young children. It would be particularly beneficial to conduct experiments on the acquisition of gender given some recent work on gender processing in Russian (Taraban & Kempe 1999; Ahutina et al. 1999). In the latter work, we showed that Russian listeners can exploit gender agreement cues "on-line", helping them to predict the identity of an upcoming word. This is a robust result for healthy adult subjects; there is also preliminary evidence

showing that gender mismatches inhibit lexical access in aphasia. However, the validity of gender cues for Russian child language still remains to be determined.

Finally, most work on the acquisition of Russian nominal morphology is concerned with inflectional categories. Olmsted (1994) is a notable exception in this respect—he analyzes Russian diminutive morphology and shows that the acquisition of diminutives actually facilitates the acquisition of the full Russian nominal system. Thus, the derivational component feeds the inflectional system.

Acquisition of verbal categories

A more or less comprehensive overview of child verbal morphology is given in Kiebzak-Mandera et al. (1997) and also in Pupynin (1996). The approach adopted in both papers is quite close to Tomasello's (1992) and also shows some features of the socialization theory. The development of verbal morphology was examined through a diary study of Varja, an early talker, from age 1;2 to age 2;0. Varja reduced and simplified adult forms surprisingly little. The authors suggest that first verb forms were probably memorized (the evidence for that conclusion is far from straightforward and seems driven by the framework they adopt). The basic idea is that the child acquires verbs on a word-specific basis (cf. Tomasello's verb-island construction hypothesis). However, by age 1;4 the child was beginning to build paradigms of motion verbs and used some prefixal aspectual forms (similar pattern as that documented in Gvozdev). At age 1;5, the child had competent paradigm formation and had acquired a sufficient variety of verb forms. The developmental hierarchy seems to be as follows:[12]

(2) infinitive > present (3sg > 1sg, pl > 2 sg, pl > 3 pl) > future

Imperatives lag the infinitive by about two months (1;3 and 1;5 respectively). This finding certainly needs to be tested in the speech of other children given that Varja was a precocious talker. This lag constitutes one of the crucial pieces of evidence for the Optional Infinitive stage in Russian, other evidence being rendered by the use of the infinitive in the function of tensed forms and imperatives (Brun et al. 1999; Snyder & Bar-Shalom 1998; Bar-

[12] The late acquisition of future forms is consistent with cross-linguistic developmental data (e.g., Clark 1998: 382).

Shalom & Snyder 1999). In Gvozdev's data, the infinitive also precedes the imperative, between 1;3 and 1;9 (Gvozdev 1961: 408). Gvozdev also notes that Zhenya uses root infinitives marked by special imperative intonation in the interpretation of "categorical imperative" (*kategoričeskij prikaz*—Gvozdev 1961: 410-12), for example,

(3) a. *p'ic'* (high rise) 'drink!'
b. *dac'* (high rise) 'give (me)'
c. *c'el'uc'* (high rise) 'kiss me' (Gvozdev 1961: 412)

Bar-Shalom and Snyder (1998; 1999)[13] examined this claim more closely; their analysis of the Russian corpus from CHILDES confirmed Gvozdev's finding with respect to the use of root infinitives in the imperative meaning. However, this use was limited to the positive imperative. Under negation, the learner they studied did not use infinitives and had a correct use of negative imperatives from the onset of the study (1;6). This contrast can be accounted for by the morphosyntax of Russian negation (see below).

In addition to the verb-island construction hypothesis, Pupynin (1996) relies on the notion of markedness. He proposes to account for the developmental hierarchy of verb forms based on markedness constraints. Thus, the overextended use of infinitival forms is accounted for by the presumably unmarked status of the infinitive. A young learner (1;4-2;0 in Pupynin's study) applies the infinitive in new situations when uncertain of an appropriate form but remembering that the infinitive was used in most previous situations.

Although an approach in terms of markedness has its appeal, it has the potential of being vacuous and of over-generalizing if criteria of markedness are not specified. With respect to verbal forms, it is unclear what determines the unmarked status of the infinitive: is it the frequency in the adult input, presumable lack or minimality of inflectional features, its use as the citation form (in which case we are dealing with conventionalizations, not core grammatical phenomena), or its use with null subjects (see below).

Data on early acquisition (Gvozdev 1961: 413, 424-6; Slobin 1985) do not show any ordering of tense and aspect, and Brun et al. (1999) show a robust correlation between the past

[13] I did not have access to Bar-Shalom and Snyder (1998), so my discussion is based on their 1999 paper.

tense and the perfective aspect and between the present tense and the imperfective aspect. According to Brun et al. (1999), who studied the optional infinitive stage (lasting roughly till 2;0 in Russian-speaking children), the learner uses aspect to express temporal relationships when s/he is not using tense. Young children simply choose not to use grammatical expression of tense, but the relevant temporal interpretation is supplied by the aspect at the pragmatic level: the imperfective (atelic) has the pragmatic interpretation of *here and now,* the perfective (telic) has the pragmatic interpretation of *prior.* Note that this analysis also sheds light on why the acquisition of the future tense is delayed (or at least the future tense is not implemented in early child language)—there is no corresponding aspectual form which would supply a pragmatic interpretation.

As for the morphological marking of aspect, the clear-cut tendency is for verbs with distinct prefixes to be acquired early. Imperfectivizing suffixes (e.g., *-iva-*) are acquired slightly later, and there seem to be some indications that the learner goes through the over-marking stage when *–iva-* is used in the third year of life (Gvozdev 1961: 249, 261). The timing of the acquisition of *–iva-* may be due to the interaction of early child language word-length constraints (starting with disyllabic words) and the attention to word-initial segments noted in the phonological work discussed above. Such emphasis on the word-initial material is in potential conflict with Slobin's Operating Principle A: "pay attention to the ends of words" (Slobin 1973; Smoczyńska 1985: 667-8 for its relevance in Polish). The contradictory constraints seem to be ranked differently at different stages of acquisition. Impressionistically, the word-initial preference ranks higher than the "imperialistic" endings in the first and second year of life; then, roughly between 2;6 and 3;9, the "imperialistic" endings seem to rank higher (based on the data in Gvozdev 1961: 374, 388; see also Smoczyńska 1985: 628 for Polish). This latter ranking would be consistent with the relevance of endings in the acquisition of more complicated morphology (see the discussion of Olmsted's results above). However, I have no statistical evidence in support of this hypothesis. In my opinion, developmental constraint ranking constitutes one of the most exciting aspects of the work on acquisition that we might see developing in the near future.

Syntactic aspects of acquisition

Unlike the other aspects of acquisition described above, research on the syntactic aspects of acquisition of Russian has been heavily influenced by the general development of the Principles and Parameters theory and the Minimalist Program. This separates syntactic research on child Russian from most of the research surveyed above, because the former is placed squarely in the innatist approach to language acquisition, whereas the latter, as I hope to have demonstrated, is implicitly placed within the socialization theory and/or frequency-based acquisition. The difference in global theoretical stances has hurt the research on both sides of the divide because the two sides have mostly ignored each other for the last thirty years. Hopefully, this will change as studies on more and more aspects of acquisition move from the 'global' approach (studying the acquisition of language) to a more local approach concerned with the acquisition of a subsystem within language. I would like to emphasize that regardless of one's theoretical stance on the nature of acquisition, the different sides in the debate can learn from each other. Researchers in the generative tradition have traditionally been strong with respect to producing testable hypotheses and providing rigorous argumentation in their favor. Such argumentation is typically based on theory-internal considerations, and whether this is a good or a bad sign is subject to different interpretations, often merging on matters of taste (see Newmeyer 1998: 96-105 for a useful discussion of the role of theory-internal and theory-external explanations, and see also the last section of this paper). Researchers in the non-generative tradition have always been strong in considering a wide range of data and emphasizing the richness of the data, possible noise in the input, and the presence of multiple motivations for individual language phenomena—for instance, whereas innatism is largely incompatible with other explanations for language acquisition, the socialization approach and the connectionist-type approach can be easily combined (Langacker 1997; Newmeyer 1998: 13-15).

As with the observation-based literature, the work has been rather sparse but it has been growing steadily within the last ten years and there are two reasons to hope that this trend will continue. First, acquisition issues have always enjoyed tremendous prominence in generative theories, and the introduction of languages other than English to the overall body of data has been a major concern since the early discussions of parameters (e.g., Hyams 1986). Second, the political change in Russia has allowed American linguists to travel there more freely and to conduct experiments in Russian preschools (e.g., Bailyn 1992).

The main areas of inquiry within the syntax of acquisition are those that have been of interest to the acquisition researchers working on other languages as well (this short list also makes it obvious that the recent syntactic studies of acquisition have been focused and well-defined with respect to the relevant phenomena).

(4) *Main issues in syntactic research on Russian acquisition*

(i) functional categories in early child language (hence the recent interest in the optional infinitive stage),

(ii) pro-drop and pleonastic subjects in early child language

(iii) binding in early child language

(iv) unaccusativity in early child language.

As far as the relevance of syntactic studies of child Russian to acquisition theories, the main debate has been between the maturation assumption and the continuity assumption. I will examine these assumptions after I have surveyed the main results of acquisition in syntax.

The work by Avrutin (1999), Brun et al. (1999), Bar-Shalom and Snyder (1999) explores the status of functional categories in early child language (all these researchers concentrate on the optional infinitive stage); the main emphasis in this work has been on the interaction between agreement, negation, tense and aspect, and the pro-drop stage. The interest in root infinitives is well motivated by the fact that root infinitives uniquely provide access to the interaction of a number of morphosyntactic features as well as their interaction with null subjects. And of course, there is a growing body of literature on root infinitives in other languages, both in child language (Hyams 1996) and adult language (see Avrutin 1999: 165-175 for an overview)

The authors seem to converge on the idea that young children using root infinitives do not violate any syntactic conditions on the well-formedness of the clause, rather, that their use either follows from the morphosyntax of Russian root clauses (Bar-Shalom and Snyder 1999) or from the discourse interpretation (Avrutin 1999; Brun et al. 1999). According to the latter view, young children allow a non-syntactic (presuppositional) introduction of judgment types and event structure (Event card in Avrutin's analysis). Avrutin's findings show that children under 2;0 tend to focus on the entire event rather than individuals—this is reminiscent of the introduction of an event through a thetic judgment (Kuroda 1972; 1990). In a thetic judgment,

there is no division between the logical subject and what is predicated of it, rather, the judgment is monadic, simply stating and describing a certain occurrence but not predicating something of a participant in the event. To illustrate, when a child expresses a proposition "Daddy is writing a letter", s/he introduces it into discourse as an entire situation without introducing individuals involved in the event. On the assumption that children observe well-formedness (an assumption compatible with full competence or strong continuity), this analysis accurately predicts that children will be leaving out aspect and tense—hence using root infinitives—and will also drop subjects (because the subject is not introduced as an individual within the event). In addition, under simple theory-internal principles which require verb movement under certain conditions, the analysis discussed here correctly predicts that root infinitives should be impossible under negation (Bar-Shalom & Snyder 1999) or under complementation (Avrutin 1999).

The analysis linking discourse interpretation and morphosyntax of a clause is quite appealing because it allows us to explain more facts within a single set of assumptions. The main unresolved problem of this analysis is that root infinitives never appear globally, with verbs of all types, even at the optional infinitive stage (Ingram and Thompson 1996). For Dutch, it has been shown that only activities and accomplishments consistently occur in the root infinitive form (Wijnen 1998); the examination of the child language root infinitives in Russian also suggests that only activities or only eventive verbs occur in the optional infinitive.

Work on pro-drop in child language also focuses on the optional infinitive stage, therefore, on the development in the second year of life. An explicit attempt at linking the optional infinitive stage and pro-drop is made in Snyder & Bar-Shalom 1998, who analyzed the Russian data from the CHILDES corpus showing that pro-drop can be explained more adequately without the usual appeal to rich inflectional agreement which may not be phonetically realized at the optional infinitive stage. Instead, they propose that children have null subjects as long as the features of these subjects allow for an unambiguous interpretation—in other words as long as the subject is expressed by a null pronominal with clear contentful features. The presence of null subjects is shown to correlate with the overt object-verb order. If extended, this proposal can also be linked to the investigation of types of null subjects allowed in Russian child language. Whereas subjects expressed by pro are fully permissible, the early stages may provide evidence against expletive subjects. In other words, if the presence of an identifiable null pronominal depends on the ease of the recovery of its referent and not

necessarily on the agreement morphology, it is predictable that a Russian-speaking child could have problems with sentences such as:

(5) a. *expl* cypljat po oseni sčitajut
chickens.ACC on fall count.3PL.PRES
'Don't count your chickens before they hatch.'

b. expl govorit' takoe bylo by vozmutitel'no
say.INF such.ACC would be appalling
'It would be appalling to say such things.'

In Gvozdev's data, the expletives of the first type (5a) appear around 3;0—for example,

(6) kada *expl* sjpjat *expl* gvarjat
when sleep.3PL.PRES speak.3PL.PRES
'Do people talk when asleep?' (Gvozdev 1961: 348)

Expletives of the second type (5b) seem to appear after 4;0. However, the absence of such expletives does not in itself constitute evidence in favor of the proposal—experimental and diary studies of children between 1:5 and 4;0 is what is really needed here. Interestingly, in making predictions and conducting experiments on expletives, it is also important to consider expletives with a specific content—the so-called weather expletives and locative expletives—as a separate group. Preliminary evidence, for instance, in Gvozdev's data, support the proposed dichotomy: expletives with a specific content seem to appear earlier, although they still follow the optional infinitive stage. Thus, Gvozdev registers the following examples at 1;11:

(7) a. *expl* tjoma
dark
'It is dark.'
b. *expl* xolonna
cold
'It is cold.'

The status of null expletives in child Russian also has a potential bearing on the acquisition of unaccusatives, a subject that has been investigated by Babyonyshev et al. (1993). Russian-speaking children make a significant number of errors in the use of the so-called obligatory unaccusatives—those intransitive verbs that require the genitive of negation (*ne byt'* 'be absent, lack', *ne okazat'sja* 'turn out not to be'). The use of the nominative instead of the genitive is quite persistent and is observed in the third and even fourth year of life in spontaneous speech (Gvozdev 1961: 345-6, 353; Schutze 1995), and this use is in stark contrast to the adult usage which has a very low rate of such errors. Babyonyshev et al. (1994) confirm this observation by a series of statistical experiments and show that children between 3;5 and 4;7 consistently use the nominative with the obligatory unaccusatives (up to 40% in monolingual children under 4:0). They interpret this finding as indicating that young children have not undergone the maturation of A-chains, which are involved in the formation of unaccusatives that have the following lexical entry:

(8) *ne byt'*, V, [__ NP]

θ

An explanation in terms of A-chains should certainly be considered but it is rather unsatisfying in the absence of comparable data from other A-chain formations, namely, passives and raising. Such a comparison would be particularly promising given that one of the two obligatory unaccustaives, *ne okazat'sja*, is polysemous—it can appear as a regular unaccusative (9a) or as a raising verb (9b):

(9) a. studentov v klasse ne okazalos'
students.GEN.PL in class NEG turned up
'The students did not turn up in class.'

b. studenty$_i$ ne okazalis' [t$_i$ *Pred* durakami
students.NOM.PL NEG turned up fools.INSTR.PL
'The students did not turn out to be fools.'

Although raising structures and passives do not occur freely in child language, they are amenable to experimental testing of the sort described in Bayonyshev (1993) and Babyonyshev et al. (1994). In the absence of such data, the A-chain analysis of errors with unaccusatives remains hypothetical. An alternative, proposed by William Snyder (Babyonyshev et al. 1994, fn. 5), is the difficulty with the null expletive that occurs in unaccusative clauses involving a genitive of negation; the presence of this null expletive is evidenced by the neuter agreement on the verb (see (9a)). Such an explanation would be consistent with two other facts: first, there is independent evidence for the late occurrence of null expletives (see above), second, Russian is not pro-drop and by age 2;0 children move out of the pro-drop stage associated with the optional root infinitives discussed above, which makes sentences with null subjects potentially more difficult to handle. As with a number of cases discussed above, further work is needed in order to interpret the data in a meaningful way. Until such work has been done, we can still be pleased by the first experimental work confirming errors otherwise observed in diary studies.

The literature on syntactic aspects of acquisition has also been concerned with the issues of full competence, continuity, and maturation. Full competence and various versions of continuity essentially converge on the recognition of the identity or similarity of the cognitive mechanisms present in children and in adults. Maturation, on the other hand, borrows heavily from the biological view of cognitive functions which predicts that language functions in particular should take time to mature (see Gleitman 1981, Borer and Wexler 1992 for arguments in favor of maturation, and see Hurford 1991; Newport 1990 for a useful discussion of maturational constraints in general). It seems that there is not enough Russian child language evidence to decide between the full competence and weak continuity hypotheses (although see Schütze 1995 for the arguments in favor of the full competence hypothesis). As far as the choice

between continuity and maturation, Babyonyshev et al. (1994) use the unaccusative data discussed above as empirical evidence against continuity. I hope to have shown that such evidence is not conclusive. In the absence of conclusive evidence, the continuity assumptions are more parsimonious because they do not require a special maturation mechanism that brings the child grammar to the adult state. Furthermore, the continuity assumption can account for differences in child and adult speech by production constraints, working memory differences, and differences in the overall knowledge base, all of which are independently needed to account for cognitive development in children (Pinker et al. 1987).

It is certainly tempting to interpret the data on acquisition as unambiguously arguing for one or the other hypothesis. As an innocent bystander in this debate, I feel unconvinced of the need for the maturation analysis in the face of Russian acquisition data, but I am also not quite sure whether an appeal to parsimony is sufficient for our evaluation metric. It seems that we could be more honest by just stating the relevant descriptive generalizations—in the case of the so-called obligatory unaccusatives of Russian these generalizations are *unexpectedly* clear—and working on amassing more results that would lead to testable hypotheses.

INCOMPLETE ACQUISTION

So far, I have examined issues that arise under the normal, uninterrupted acquisition of language, predominantly in monolingual children. Let me now turn to the scenario which, given the recent socio-political changes that led to the liberalization of the Russian society, is likely to happen more and more with Russian speakers. This scenario involves the acquisition of Russian in parallel and in competition with some other language (a balanced bilingual child) or an incomplete acquisition of Russian where it is gradually supplanted by some other language. Studies of such situations are beginning to appear (Turian and Altenberg 1991; Babyonyshev et al. 1994; Protassova 1999, all on stable bilinguals; my own work on lower proficiency heritage speakers) and in my opinion they only add urgency to comprehensive studies of monolingual uninterrupted acquisition—without the understanding of the former, we won't be quite able to understand the latter.

In what follows, I will briefly review the main results of my own research on incomplete acquisition which produces a limited bilingual, one whose competence in Russian can at best be

characterized as that of a semi-speaker. My work on such semi-speakers has allowed me to achieve a number of interesting descriptive generalizations but their final interpretation is far from clear. At the risk of making premature conclusions, I would still like to state general theoretical issues that arise from the study of incomplete acquisition. I will not be able to provide solutions to these questions. But I consider it important to state them explicitly, since studies of incomplete acquisition and of language loss often fail to recognize parallels between individual languages undergoing attrition and/or parallels between levels of language representation. As a result, many studies of language loss concentrate on the role of structural variables or describe the grammar of a language which happens to be endangered, without actually addressing the changes this language has undergone due to endangerment (see Sasse 1992: 75-7).

Before I move on to the main descriptive generalizations, let me clarify some general notions that will be used below. The notion of language attrition refers to two related phenomena:

(i) first language loss as a result of forgetting the language system by a non-aphasic speaker (most commonly due to the influence of another dominant language, as in emigration);
(ii) the process whereby a given grammar system undergoes a significant reduction (under conditions of immigration) when it is passed from one generation to the next, i.e. incomplete learning of a language system.

Both phenomena result from insufficient access to a given input language (impoverished and heterogeneous input), however, they can be represented by different populations of speakers and may have different language-internal manifestations. Based on the distinction between the two phenomena introduced above, it is crucial to distinguish between those semi-speakers who can be characterized as forgetters and those who can be characterized as incomplete learners (see also Sharwood Smith 1989; Sharwood Smith and Van Buren 1991; Van Buren and Sharwood Smith 1985; Sasse 1992).

I will also rely on two other distinctions: the distinction between first and second language (L1, L2) and the distinction between primary and secondary language. L1 and L2 are distinguished by the temporal order of acquisition. The primary and the secondary language are

distinguished by the prevalence of usage. Thus, if an individual learns language A as his/her first language and speaks it predominantly throughout his/her adult life, this language is both first and primary. If an individual dramatically reduces the use of the first language, A, and switches to using language B as a more important one, then A is characterized as the first/secondary language, and B becomes the person's second/ primary language.

Based on these distinctions, Russian-speaking immigrants in the US can be divided into two further groups: those for whom Russian is first and primary, and those for whom Russian is first and secondary. The former language will be referred to as Émigré Russian, the latter as American Russian.[14] For my purposes, the most important difference between American Russian and Émigré Russian is that the former, but not the latter, demonstrates structural change; that both languages make heavy use of non-native vocabulary is epiphenomenal to our purposes (see Polinsky 1997a, b, 2000 for a more detailed discussion).

In what follows I will briefly survey the main results of my studies of those speakers who can be qualified as incomplete acquirers (Polinsky 1997a) and who are significantly different from monolingual acquirers and adult speakers. For expository purposes, I will first be treating structural features of American Russian as categorical but I will then show that all these features are distributed to a degree, which is to be expected under contact-induced change.

Grammatical characteristics of incomplete acquisition of Russian

Case system

Instrumental. In Full Russian, the verbs *byt´* 'be', *stanovit´sja* 'become', *ostavat´sja* 'remain', *umirat´* 'die', can assign either the nominative or the instrumental case to the predicative nominal and predicative adjective (Comrie et al. 1995: 127ff.). These verbs and verbs of motion also take predicative adjectives, again either in the nominative or in the instrumental. With predicates in the future tense, Full Russian shows a preference for the instrumental case on the predicative nominal (Comrie et al., 1995: 117-122; Timberlake 1993: 862). In American Russian, predicative nominals and predicative adjectives are always used in the nominative. For example, with the verb BE in the future ((10), second clause of (11)), the predicative

[14] Émigré Russian, an important phenomenon in its own right, has been described elsewhere (see Polinsky 2000; in press and further references therein).

noun/adjective shows up in the nominative; in the first clause of (11), the predicate appears in the nominative after the infinitive of BE (*byt´*), which is not possible in Full Russian. Also note that, in contrast to (11), the instrumental is obligatory with the infinitive BE in Full Russian.

(10) on budet zvezd-a
he will be star-NOM
'He will be a movie star.'

(11) ona xočet byt´ model´ i ona
she wants to be model:NOM and she
budet tonk-aja dlja èto
will be thin-NOM:FEM for that:NOM
'She wants to be a model and so she is trying to lose weight for that.'

In Full Russian, another common function of the instrumental is to encode the passive agent. In American Russian, no spontaneous passives were attested; even when translation elicitation was used, speakers translated English passives by active clauses. This suggests that the overall passive construction, not just the coding of the passive agent, is lost.

Genitive. Of the numerous instances of genitive assignment, I will discuss only the lexically-governed genitive, genitive of negation, genitive of possession, and count form. The first two types constitute rather weak features in the full language: while standard grammars prescribe the use of genitive after verbs of emotional perception, aim, request, or achievement, even Full Russian speakers often replace that genitive by the accusative. The statistics on the use of genitive of negation confirm that this feature is on the decline in competent adult Russian—Table 3 shows that the genitive of negation has been on a steady decline in Russian anyway.

Table 3. Genitive of negation (percentage among all forms under negation; 1,000 sentences of narrative and dialogue, random choice)

19th century Russian	CSR	Modern Russian	American Russian
34%	30%	18%	2.5%

A possible link with full acquisition is suggested by the fact that, in American Russian, the genitive of negation is absent with the obligatory unaccusatives discussed above, thus:

(12) a. u nejo net muž (G, 28)
by her has no husband:NOM
'She has no husband.'

b. on net sem'ja (M, 34)
3SG has no family
'She has no family.'

Example (12a) also includes the phrase *u nee* 'by her', where the pronoun is in the genitive. The *u*-phrase (the preposition *u* 'by, at' and the genitive nominal) is one of the few environments where the genitive is retained by American Russian speakers, however, I suggest that this retention be interpreted as a frozen form or a chunk, rather than a preposition-governed genitive. This is confirmed by the fact that the genitive *u*-phrase, as in (12a), the nominative *u*-phrase (13), and the calque of the English *have*-construction (14) co-occur in the speech of one informant.

(13) u švejcarsk-ie ljudi mnogo banks
by Swiss-NOM.PL people:NOM.PL many
'The Swiss have many banks.'

(14) i èta ženščina ona imela
and this woman RP had
sekretnaja žizn´
secret:NOM life:NOM
'This woman had a secret life.'

Statistically, the percentage of genitive *u*-phrases within the total pool of possessive constructions elicited from each speaker ranges from 29 (for the most proficient semi-speaker) to 8 (for a semi-speaker with a very poor command of the language).

The prepositionless genitive of possession, a solid feature both in CSR and Full Russian, is very rare in American Russian. Instead, speakers use circumlocution or juxtapose the name of the possessor and the name of the possession, for instance:[15]

(15) moj učitel´ kniga
my teacher book
'my teacher's book'

One context in which the genitive is well-preserved is the genitive governed by a numeral; this refers both to a form occurring after the numerals 1.5-4 (resembling the genitive singular) and the form occurring elsewhere, resembling the genitive plural. Even the poorest speakers in my sample maintained the genitive when asked to count using a numeral and a noun. These forms are retained because of their highly specialized function as count forms (Zaliznjak 1967; Babby 1984; Mel´čuk 1985; George Fowler, p.c.). In a sense, this retention can be compared to the adverbial-like retention of some prepositional phrases—the count form is not associated directly with the overall declension paradigm of a given noun. Moreover, the subjects use the correct count form when they count in isolation but often fail to use it in spontaneous speech, which suggests a discrepancy between various instances of on-line production.

[15] The opposite order (possession-possessor) has not been registered.

Prepositional obliques. American Russian abandons all preposition-governed obliques, replacing them by preposition with nominative, a combination non-existent in Full Russian. Some examples:

(16) i on pošel k roditeli # foster parents
and he went to parents:NOM
'He went to the foster parents' house.'

(17) v Rossii oni dumajut # možno
in Russia:PRP they think is possible
lečit´ bez vrač
be treated without doctor:NOM
'In Russia, they think one can be treated without the doctor's help.'

(18) v kitajskij restoran oni edjat
in Chinese:NOM restaurant:NOM they eat
paločk-ami
chopstick-INSTR:PL
'In a Chinese restaurant they eat with chopsticks.'

Again, as evidenced by (17) and (18), some prepositional obliques are retained, most likely as frozen forms. Such retention varies from speaker to speaker, which underscores their random character.

Argument case shift. In American Russian subject and direct object do not differ in their formal expression, and the accusative marking is retained as the marking of the second object. For example:

(19) ja prinesla tebja pictures
I brought 2SG:ACC/GEN
'I brought you pictures.'

(20) papa rasskazal devočk-u istori-ja

Daddy told girl-ACC story-NOM
'Daddy told the girl a story.'

The argument case system of American Russian thus undergoes the following shift (compared to the case system of Full Russian, the target of uninterrupted acquisition):

(21) Dative > Accusative > Nominative (argument case shift)

This shift characterizes the changes undergone by the cases that encode major grammatical relations, in particular, the direct and indirect object (the subject case, which is mostly the nominative, remains unchanged). Other cases, which primarily encode adjuncts, also disappear, and their functions are assumed by the nominative.

As a result, American Russian develops a two-case system (nominative and accusative). While the nominative becomes the multifunctional case, the accusative is specialized as the case of the indirect object and in some instances is used to encode the direct object. The resulting case system may be represented as follows:

(22) American Russian case system

Core arguments:	
SUBJ/SINGLE OBJ	NOMINATIVE
SECOND OBJ	ACCUSATIVE
Peripheral arguments/Adjuncts	Preposition + NOMINATIVE

If we compare (22) with (1) above—the case development under uninterrupted acquisition—it is tempting to propose that an incomplete acquirer is "frozen" at an early stage of case development. It is known from longitudinal data on uninterrupted acquisition that Russian monolinguals achieve error-free performance on the "core" cases presented here roughly by 2;7 (Schütze 1995; Babyonyshev 1993). Equating this stage with the stage at which *any* incomplete acquirer stops or is severely hampered in their acquisition of Russian is unrealistic—the histories

of my subjects show that uninterrupted acquisition of Russian could have gone all the way to age 7;0. At this point, I can certainly attest to the mirror image of (1) which we find in (22) but I cannot propose an adequate explanation for it.

Another important question, of course, is whether the dramatic reduction of cases in American Russian can be explained by the influence of English, with its extremely shallow case distinctions, or by simplification resulting from the general process of language decay (Campbell and Muntzel 1989; Sasse 1992). An ideal testing situation would be one in which Russian is influenced by a language with a richer case system. If in such a hypothetical situation Russian speakers also used a reduced case system, language death processes would emerge as a valid explanation for reduction. For the lack of such a testing situation, both solutions mentioned here remain entirely speculative.

Verb forms

Agreement. Subject-verb agreement is consistently absent, as illustrated in (23) and (24). The most proficient semi-speakers have about 66 per cent correct agreement, and the lowest percentage in my sample was 30 per cent correct agreement (speaker Na). The loss of agreement does not seem to distinguish between agreement in gender, number or person. Another question is which verbal forms are used when a semi-speaker makes an error; the most common ones are third person singular (any tense), infinitive, and first person.

(23) moi roditeli oni kupil
my parents RP:3PL bought:PAST:3SG
drugoj dom
another house
'My parents bought another house.'

(24) deti guljat´ tam
children walk:INF there
'The children went for a walk there.'

The loss of agreement is clearly related to the destruction of conjugation paradigms, a process parallel to the loss of declension.

Verbal reflexives. Many verbs that have the reflexive ending *-sja/-s´* are used without it, cf. the use of *rodila* , which in Full Russian means 'gave birth' instead of *rodilas´* 'was born':

(25) ja xoču posmotret´ mesta gde ja rodil-a
I want see:INF places where I was born-PAST.FEM
'I would like to see where I was born.'

As with several other processes described here, the attrition of the reflexive is gradual, and speakers of American Russian also retain a number of reflexively marked verbs, especially those which do not have a non-reflexive counterpart (*smejat´sja* 'laugh'*, nravit´sja* 'be pleasing'). For details, see Polinsky (1997a).

Overall, the scarcity of reflexive forms in American Russian poses an interesting question: can this loss of reflexives be explained entirely by the influence of English, where morphological reflexivity is absent, or is this a more general tendency of human language, or both? An indirect argument in favor of the influence of English comes from American Swedish: while Full Swedish has a developed system of reflexive marking, American Swedish loses it (Hasselmo 1974: 161).

Subjunctive. In uninterrupted acquisition, the subjunctive is acquired fairly early, within the optional infinitive stage (1;6 for Varja, CHILDES; 1;9 for Zhenja—Gvozdev 1961: 409) and is characterized by the initial overmarking (the doubling of *by*). Avrutin (1997) and Avrutin & Cunningham (1997) suggest that children between 4 and 5 show adult grammar with respect to the subjunctive and have fully-developed CP structures (see also Bailyn 1992 for similar findings with respect to other complement clauses in children 4;0-9;0). All this seems to predict that incomplete acquirers might have the subjunctive in their system.

At least as far as the surface expression of the subjunctive, this prediction is not confirmed. Instead, one finds whatever verbal forms a given semi-speaker uses are present, past, infinitive, and imperative; for example:

(26) ja ne xočet čto papa skazat´ tak
I not want:3SG that daddy say:INF so
'I don't want my dad to say that.'

(27) esli ja rasskazyvaju o ix žizn´
if I tell:PRES:1SG about their life
ty plakala
you:2SG cried:PAST:FEM
'If I told you about their life you would cry.'

As example (26) shows, the subjunctive complementizer is replaced by the indicative complementizer. There is a slight tendency to use more past tense forms (without *by*) in lieu of subjunctive, which shows that the mood form is undergoing gradual simplification rather than abrupt loss (cf. Silva-Corvalan 1994 for a similar process in Los Angeles Spanish).

Aspect restructuring. As I mentioned in the section on uninterrupted acquisition, the opposition between perfective and imperfective forms is absent in incompletely acquired Russian, and most verbs become either lexicalized perfectives or lexicalized imperfectives. Which aspect is lexicalized depends primarily on telicity. Some examples:

(28) kogda my žili v Louisiana ja smogla
when we lived in I could:PERF
pročitat´ russkie knigi
read:PERF Russian books
'When we were living in Louisiana I could still read
Russian books.'

(29) esli ja xotel exat´ v East Coast
if I wanted:SUBJ go:IMPERF in
moj mat´ ne razrešat´ menja
my mother not let:IMPERF me:ACC
'If I wanted to go to the East Coast my mother wouldn't
let me.'

An overview of some central syntactic phenomena

Anaphors. American Russian speakers have a very low percentage of reflexive anaphors (*sebja* and *svoj*), and regularly replace them by personal pronouns; for example,

(30) ètot car ja kupit´ dlja mene
this I buy for me
'I bought this car for myself.'

Studies of binding in uninterrupted acquisition of Russian (Avrutin 1994; Avrutin and Thorton 1994; Bailyn 1992; Avrutin and Cunningham 1997) show that children have a correct grasp of the major binding principles, and of the distinction between anaphors and logophors (most errors occur with respect to logophors, which are less constrained to begin with); they also use correct reflexive forms early (at the beginning of the third year—Gvozdev 1961: 215, 456). For incomplete acquirers, then, a crucial question is what it is that they lack—the on-line ability to produce reflexives, which would be an extra-syntactic production problem (as is the case with some errors in uninterrupted acquisition), or binding principles. To test this, I conducted experiments in which subjects had to interpret reference of pronouns in their own translations from Russian into English (the Russian stimuli had a reflexive) and to decide whether or not local binding of a pronoun was possible (following the types of stimuli in McDaniel, Cairns, and Hsu 1990; see also Bloom et al. 1994).

When offered actual Russian examples involving reflexives, American Russian speakers generally failed to co-index a reflexive with a possible antecedent. This is demonstrated by the following interview excerpt:[16]

[16] In theory, one could imagine that American Russian speakers do not have the reflexive word *svoj/sebja* in their lexicon. However, when offered this word in isolation they translate it correctly as 'self', which suggests that it cannot be a systematic lexical gap.

(31) Investigator: Translate

Petja$_i$ pokazal Lene$_j$ svoju$_{i/*j}$ fotografiju

Petja showed Lena:DAT self's picture:ACC

Speaker: "Petja showed Lena the picture".

I: Who was in the picture?

S: I don't know.

I: Do you know whose picture that was? — S: No.

In roughly 65% of the cases, American Russian speakers failed to bind a reflexive in conditions such as (31). Many subjects also wrongly interpreted the pronoun 'him' as having reflexive reference (46% of the cases), for example,

(32) každyj korrespondent$_i$ posmotrel na nego$_i$

each reporter looked at him

'Each reporter looked at himself.'

(correct interpretation: 'Each reporter looked at him', disjoint reference only)

Clause-internal resumptive pronouns. I use the term resumptive pronoun here in a restricted sense, to denote a pronoun co-indexed with the subject of the same clause. Resumptive pronouns are extremely common in American Russian, cf. a representative example (the resumptive pronoun is glossed as RP):

(33) moja sestra on učit v law school

my sister RP studies in

'My sister goes to law school.'

The widespread use of resumptive pronouns can be linked, at least in part, to the absence of agreement; as verbal agreement deteriorates, there arises a need for some other grammatical mechanism to mark the relation between subject and predicate. However, there must be some other reason for the rise of the resumptive pronoun in American Russian, because verbal

agreement is lost only in the least competent speakers whereas the resumptive pronoun is used by all speakers. In a tentative way, I would like to suggest that the resumptive pronoun functions here as a real subject, while the NP with which it is co-indexed is not a subject but a topic, occupying a much higher position in the sentence's structure.

The use of resumptive pronouns under incomplete acquisition is also documented for reduced versions of Hungarian (Fenyvesi 1994), Tamil, Kabardian, Armenian, Lithuanian, and Polish (Polinsky 1994; 1997b), which makes this feature all the more noteworthy.

Reference-tracking. In maintaining coreference across clauses, American Russian consistently avoids using zero anaphora. Instead, either a pronominal copy is used or a full NP is repeated, thus:

(34) on$_i$ smotrel kino i on$_i$ dumal ...
he watched movie and he thought
'He was watching the movie and was thinking (about this).

(35) Tanja včera ona prixodi i togda Tanja videl
Tanja yesterday RP came and then Tanja saw
'Yesterday Tanya came here and saw this.'

The absence of zero anaphora, i.e. the use of an explicit pronoun to maintain interclausal reference seems related to the development of resumptive pronouns at the level of intraclausal syntax. Overall, it seems that the absence of zero anaphora is due to the general increase in redundancy rules that can be observed in American Russian: the speaker, lacking confidence that the message will be parsed and decoded properly, introduces more lexical material that is supposed to intended to guide the hearer in the processing.

Relative clauses. In lieu of Full Russian relative clauses introduced by the relativizer *kotor-*, American Russian simply coordinates two independent clauses, the second serving as a description of a noun in the first:

(36) ja znat´ odna devuška i ètot
I know:INF one:FEM:NOM girl:NOM and this
devuška on rodilsja v japonija
girl RP was born:MASC in Japan:NOM
'I know a [Russian] girl who was born in Japan.'
(Lit.: 'I know a girl and this girl was born in Japan.')

Other syntactic changes in American Russian which won't be discussed here, but those which are relevant for the statistical analysis below include absence of verbal gapping, attrition of control structures (which are replaced by paratactic coordinate constructions), loss of passives and impersonals, frozen SV/SVO word order (to the exclusion of VS in presentational constructions),[17] and abnormal pausing where a pause intervenes between the elements of a single constituent, for example, between a preposition and a noun (Polinsky 1997b). The major differences between American and Full Russian (including the ones just summarized) are listed in Table 4.

[17] See Polinsky 2006; Isurin and Ivanova-Sullivan 2006.

Table 4. Structural variables differentiating Full Russian and American Russian

Variable	Full Russian	American Russian
predicate nominal case	INSTR(NOM)	NOM
preposition-governed case	other than NOM	NOM
possessive construction	*u*-phrase + BE	HAVE clause
case of the nominal in existential negative clause (*net*)	GEN	NOM
case of the recipient	DAT	ACC
reflexive verbs	with *-sja*	without *-sja*
subjunctive	yes	no
aspectual pairs	yes	no
modifier-head agreement	yes	no
resumptive pronoun	sporadic	yes
null copying across clause	yes	no
verbal gapping	yes	no
control structures	yes	no
relativization	with *kotor-/čej*	juxtaposition
passive	yes	no
word order	variable	fixed

The decline of null copying, relativization, the loss of gapping, and the emergence of highly frequent resumptive pronouns are indicative of one and the same general tendency,

namely, to use redundant elements in speech, *overmarking*, which is quite typical of uninterrupted acquisition roughly between ages 3;0 and 5;0 (Berman and Slobin 1994: 318-20, 372-3). In Polinsky (1997a, 2000), I discuss language-specific reasons for such overmarking in Russian. Here I would like to suggest that a general, language-independent reason for overmarking under incomplete acquisition has to do with the overall limited language competence. A study of pauses suggests that American Russian speakers are only capable of producing and controlling relatively small speech segments, at the level of a phrase or very short clause (Polinsky 1997b). They have enormous difficulty in combining these small segments into larger ones, such as longer clauses, sentences, and paragraphs. The redundant expression reflects these speakers' inability to combine phrases and short clauses into higher-level units. In a sense, it is as if the speakers surveyed here maintain rules allowing them to construct plausible clauses and clause constituents but hardly have any grammar left which would allow them to put clauses together into sentences and texts.

So far, I have purposely avoided the issue of variation in American Russian. In fact, all the structural characteristics accompanying attrition are displayed in a gradual manner; each speaker exhibits a certain number of their occurrences but also retains a number of occurrences which are consistent with the grammar of Full Russian. This is not surprising; it is well established that grammatical categories do not change wholesale across-the-board for all speakers. What is unclear, however, is to what extent the actual variation within each characteristic is representative of the overall language attrition and how the individual characteristics listed above are related to one another.

What can we learn about acquisition from these grammatical characteristics?

Correlations between features and lexical/grammatical correlations

To test whether or not the grammatical variables described above are correlated, I obtained statistics on those variables for which sufficient data were available, namely subject/verb agreement, relativization, coreferential reduction (use of a null copy and pronominalization), adpositional oblique forms of nominals, subjunctive, and null copying across a clause. For each variable, fifty tokens were transcribed for each speaker (where the number of tokens obtained from an individual speaker was more than 50, the first fifty tokens for

each speaker were transcribed). Within each variable, the percentage of correct constructions (constructions which are grammatical according to the full language grammar) was calculated for each speaker. For example, if a speaker used correct agreement in 15 cases out of 50, this speaker's agreement percentage is 30. The relevant percentages are represented in Table 5.

To determine whether two variables are correlated, regression analysis is usually performed and the Pearson coefficient of correlation is computed. However, this coefficient is a measure of the strength of the linear relationship between two variables. In our case, there is no reason prima facie to assume the linearity of relationships. For example, Figure 1 plots two correlated pairs of structural variables (resumptive pronoun and agreement; subjunctive and agreement); though there is a solid correlation between these variables, it is not linear (notice a sharp rise in the higher percentages).

Since there is at least a potential for non-linear relationships between individual variables, their relationship was correlated using the Spearman coefficient of correlation. The results of the computations for American Russian are presented in Table 6. As the table shows, there is a positive correlation between the individual measures of structural attrition. Certain structural variables are clearly correlated more strongly. Thus, agreement, coreferential reduction, and the absence of resumptive pronouns are correlated in a strong positive manner. The other set of variables which are strongly correlated includes conditional and adpositional obliques.

This clustering of variables is significant; the first set of variables clearly represents the syntactic component, while the second set includes two variables which represent morphosyntax. Though its correlation with other variables is generally positive, relativization shows weaker correlations altogether. This can be explained by the less obligatory nature of relative clauses; the use of a relative clause is often optional, and a relative clause is a rhetorical device rather than a structural necessity of a language. That is, if speakers do not know how to use a relative clause, they can easily avoid it without making a mistake, but if speakers do not know how to use agreement, there is no way to avoid it without an error.

All the variables discussed so far represent knowledge of the grammatical component. The next question which naturally arises is whether or not the decline in grammatical knowledge is necessarily accompanied by a decline in lexical proficiency. Let me now move on to another finding, showing that grammatical and lexical deficiency are indeed related.

As a formal criterion for estimating lexical attrition, the subjects were tested for their ability to translate 100 words of the basic vocabulary list (the Swadesh list) from their primary language into the reduced language. This statistical procedure is very similar to the one employed in historical linguistics; translations elicited from a given speaker are compared to the full language list (obtained from dictionary translations and then checked with at least one full speaker). One point is deducted for a wrong translation or for a blank answer. If a word is translated by the correct root but the choice of the word form is incorrect (for example, if the singular is translated as the plural), half a point is deducted. The total number of erroneous forms is then deducted from the number of items on the list (100); the result is taken as the numerical value of a speaker's vocabulary (lexical) proficiency (Lex). Thus, $Lex = 100 - N_{wrong}$.[18]

None of the American Russian speakers surveyed had a complete basic vocabulary list. The lexical proficiency indices for each speaker are given in the left-hand column of Table 6. The lexical proficiency measure established for each speaker was correlated with the structural measures discussed in the previous subsection. These correlations are shown in Table 6; correlated pairs for structural varieties are plotted in Figure 1.

[18] This procedure certainly is not foolproof. First, one might object that there is a certain degree of arbitrariness in taking off points for the wrong forms, including wrong citation forms. However, any language (either documented or not) has established citation forms for major word classes. In Full Russian, citation forms are codified by dictionaries and promoted by schooling. The very absence of the standard citation form indicates dissociation from the dominant linguistic environment, and this can lead to attrition. Second, the basic vocabulary list was apparently designed for non-urban cultures; the speakers interviewed in this study commonly stumbled over words such as 'bark', 'louse' or 'ashes'. Though these are not particularly common concepts for a thirty-year old in New York or Chicago, any competent speaker of the language would certainly know these words. Related to this third problem is the issue of the baby vocabulary; if subjects left the full language environment as very young children, is it legitimate to expect them to use an adult word (e.g. for *breast* or *belly*)? This paper does not offer a universal solution to this problem; however, since some baby words were attested, the ad hoc decision was taken to deduct just half a point for the use of a baby word if a subject left the full language environment before age six.

The advantages of the basic vocabulary measure are its simplicity and good potential for comparability across speakers; unlike some lexical measures such as type per token ratio, the basic vocabulary test is independent of the interview length and discourse situation.

Table 5. American Russian: Lexical proficiency indices and percentages of correct grammatical forms in incomplete acquirers and forgetters

Sp	Vocab	AGR	No RP	Cond	Null Copy	Relative Clause	PRP Oblique
B	86.5	60	20	28	27	18	12
G	82	54	10	19	11	22	10
K	88.5	74	36	44	36	15	18
Ko	90	72	32	37	28	36	34
Ma	74	32	12	12	14	17	0
Na	77	30	12	10	13	18	0
P	86	64	10	20	26	33.5	8
Pe	69	3.5	5	11	8	4	0
S	88.5	66	28	32	35	42	10.5
To	75.5	15	10	25	18	38	12.5
Z	84	50	14	13	23	51	10
Zh	89.5	84	24	36	33	55	20
A	77	36	16	11	15	26	4
E	89	68	30	56	37	44	20
Ga	72	22	12	18	25	37	19
I	88.5	68	18	36	39	24.5	22
Le	90.5	66	20	47	21	74	24
M	88.5	72	22	33	29	78.5	14
N	90	70	18	41	21	85	30
Sv	75	42	6	12	6.5	11	0

Vocab - Lexical proficiency index, measured on the basis of a 100-word list;

AGR - correct use of subject-verb agreement;

No RP - absence of a clause-internal resumptive pronoun;

Cond - correct use of conditional (subjunctive);

Null copy - null copying across clause;

Relative clause - correct relative clause;

PRP Oblique - correct use of preposition-governed obliques.

Table 6. Spearman Rank Correlation Coefficients for major variables under incomplete acquisition

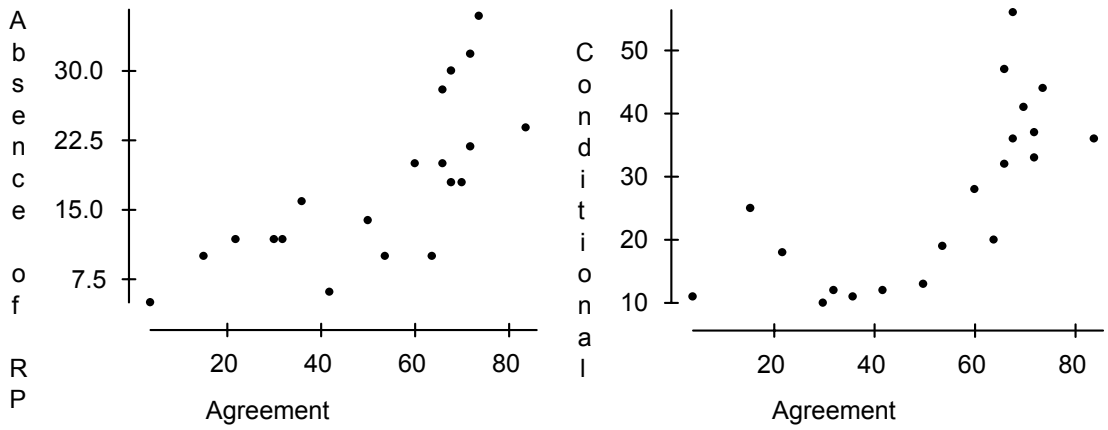
	Vocabulary	Agreement	Absence of RP	Subjunctive (Conditional)	Null Copy	Relative Clause	Prp-governed obliques
Vocabulary	1.000						
Agreement	0.882	1.000					
Absence of RP	0.792	0.811	1.000				
Subjunctive	0.874	0.813	0.760	1.000			
Null Copy	0.638	0.733	0.805	0.727	1.000		
Relative Clause	0.629	0.451	0.419	0.540	0.394	1.000	
Prp-obliques	0.798	0.688	0.672	0.877	0.649	0.633	1.000
TL1	0.285	0.263	0.322	0.374	0.408	0.602	0.534
TL2	-0.394	-0.291	-0.153	-0.065	-0.099	-0.113	-0.077
Lapse	-0.178	0.020	0.116	0.100	0.346	0.137	0.206

TL1 - Age left L1 community

TL2 - Time outside L1/in L2 community

Lapse - Lapse period (period of disuse of L1)

Figure 1. American Russian: Correlated structural variables



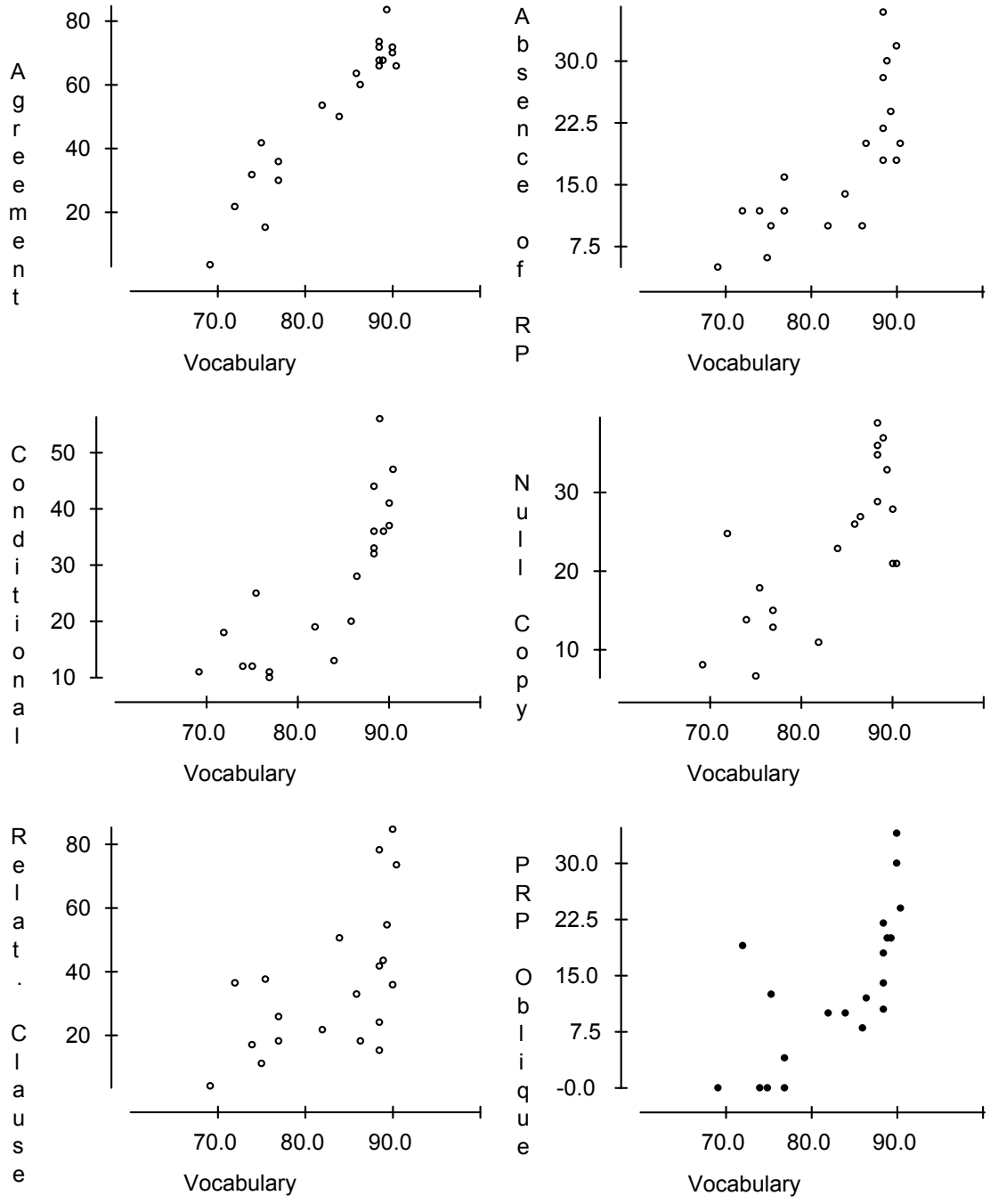
a b

a. correlation between the absence of a resumptive pronoun and correct agreement

b. correlation between the correct use of conditional and correct agreement

As the results indicate, there is a positive across-the-board correlation between the maintenance (loss) of vocabulary and maintenance (loss) of grammar. Thus, high percentages of grammatical features (correct subject-verb agreement, absence of the resumptive pronoun, correct use of conditional, null copying across clause) are directly related to higher lexical proficiency scores. This is shown in Figure 2, which shows pairwise correlations between individual structural and lexical proficiency in incomplete acquirers. Importantly, this correlation is not bound to one variable but is reiterated across the variables. This positive correlation constitutes an important finding in itself; it shows that non-aphasic attrition has consistent manifestations in various language components.

Figure 2. American Russian: Correlations between grammatical and lexical proficiency



This correlation also has important practical ramifications. Since there is a general correlation between lexical and grammatical loss, the more easily establishable measure of lexical loss can serve as a preliminary indication of the overall lexical and grammatical loss.

Accordingly, the simple lexical production test proposed here can be used as a tool for preliminary evaluation of incomplete acquisition.

Forgetters and incomplete learners

One of the relevant questions in the study of attrition in non-aphasic subjects is whether the attrition is related to incomplete learning or to forgetting of the original system. Many speakers in my sample would qualify as incomplete learners (ILs), as they either left Russia as young children or were born in this country. However, two speakers (Ga and To) left the full language community as young adults, and due to their advanced age, can possibly be considered forgetters (FGs).

The first indication that these two types of speakers do not show a significant difference in attrition comes from the data on pausing (Polinsky 1997b). The pausing experiment involved one possible FG (To) and one possible IL with a high proficiency score (Le); both showed significant differences in dealing with a familiar and unfamiliar discourse topic but did not differ from each other. Next, the statistics on the loss of structural features demonstrated by Ga and To do not set them apart from the other speakers (See Tables 5, 6).

The absence of differences between the two groups seems particularly interesting given that most structural features in Tables 4-6 constitute basic, deeply entrenched phenomena which are learned as a very young speaker and should be retained well regardless of circumstances of language use. Such basic features include prepositional obliques, possessive construction, dative of the addressee, aspect, agreement, and probably reflexive anaphors.

In theory, FGs and ILs should differ in the so-called threshold phenomena (which are learned later and require a certain threshold of usage in order to be maintained), while maintaining basic phenomena (data on the young Russian attriter studied by Turian and Altenberg 1991 support this conclusion). The speakers in my sample are less competent than those surveyed in other bilingual studies. However, even severe attrition does not result in a random loss of linguistic knowledge but rather, in a systematic increase of analyticity and a high level of overmarking, which is indicative of increasing redundancy of expression.

Still, one significant difference between the FGs and ILs has to do with acceptability judgments. All subjects were asked a series of questions involving acceptability judgments and forced choice, and the FGs did better at making acceptability judgments than the ILs. In fourteen

sets of examples involving forced choice (two sets on person/number agreement in the verb; gerund control; gender agreement; mobile stress in the inflectional paradigm; lexical choice; lexical choice related to register variation; subjunctive form; ambiguous reflexive; prepositional oblique; predicate adjective; deictic vs. pronominal reference; active vs. passive; reflexive verb), Ga chose the correct form in seven sets, the incorrect in five and gave 'I don't know' only in two (14.2% no choice); To chose the correct form in nine sets, the incorrect in two and gave 'I don't know' in three (21.4% no choice). Meanwhile, the rest of the speakers had an average incidence of no choice at 7.5 sets for a subject, which is over 50 percent of the forced choice sets.

This bifurcation suggests that there may indeed be a significant difference between FGs and ILs which is reflected in their passive skills and eventually in their competence, rather than in their actual language production. Although this is an extremely preliminary finding based on a crude test it is worth investigating. If indeed this finding is sustained by further study, it may open a new dimension in the comparison between FGs and ILs. The implications are quite clear: if indeed, FGs differ from ILs in maintaining a better language system, though not displaying it in speech production, a series of diagnostic tests geared to a specific language system can distinguish the two groups early on and allow us to study each group in its own right.

Mirror image?

Let me finally turn to the well-known and quite seductive "first in--last out" principle of by Jakobson (1941; 1968). Jakobson's proposal linked uninterrupted acquisition and aphasia and was sufficiently constrained because it was limited to phonological phenomena. Since the appearance of this proposal, there have been many attempts to extend it to other linguistic processes (see Caramzza and Zurif 1978; Caramazza 1994 for a useful review and criticism). What, if any, are the parallels between uninterrupted and incomplete acquisition?

As I have tried to show above, in particular in the discussion of binding and the subjunctive, the parallels are far from apparent and predictions one can make on the basis of uninterrupted acquisition do not fare well with incompletely acquired Russian. There are, however, some parallels worth considering.

A major parallel between acquisition and attrition consists in the correlation between lexical and grammatical proficiency (see above). As shown by a series of independent

experiments, the levels of lexical and grammatical maturity in L1 learners are closely related (Bates et al. 1995; Pan et al. 1995), and the incomplete acquisition findings support this result.

Another parallel is the early loss of the genitive of negation in existential constructions of American Russian and the late acquisition of this genitive by monolingual Russian children (Babyonyshev et al. 1994). However, as I tried to show in the section on uninterrupted acquisition, an explanation for this parallel is still to be sought.

The discrepancies between acquisition and attrition have to do with the loss of basic grammatical phenomena. Assuming the "first in—last out" view, American Russian speakers should be expected to show a better retention of such features as agreement, prepositional case marking, prepositional obliques, possessive construction, dative of the addressee, aspect, and probably some other features that are acquired early. The statistics presented above, however, showed that these phenomena are not retained and undergo significant attrition. The attrition of basic phenomena is not different from the attrition of such presumably threshold phenomena as relativization, genitive of negation, or control structures. This certainly diminishes the attraction of the Jakobsonian hypothesis; on a more serious note, this shows that correspondences between language acquisition and attrition (if any) may be obscured by additional factors.

To summarize this section, it was important for me to demonstrate that a study of incomplete acquisition allows us to raise even more fundamental questions and that language attrition through which incomplete acquisition is manifested should not be considered the monopoly of sociolinguistic studies, which it has often been.

With regard to structural characteristics of attrition, the three major findings of this study are as follows:

(i) the loss of a grammatical system is non-random, and obeys specific principles, most clearly, the increased redundancy of expression;
(ii) the attrition or retention of individual grammatical features correlates with the attrition (or retention) of other grammatical features;
(iii) there is a solid positive correlation between the loss of grammar and the loss of vocabulary.

In studies of language decay, the dramatic loss of language (whereby a semi-speaker cannot maintain a narrative, demonstrates serious structural loss, and often resorts to code-switching) is associated with a non-systematic knowledge of chunks and frozen expressions (Sasse 1992: 63-4). The findings in this study, especially finding (i), question this view of serious attrition and suggest that even significant language loss has a principled grammar of is own.

Next, a significant change in acceptability judgments from a full language to a reduced language suggests the following question: does attrition, at least at the level described here, affect performance (obedience to linguistic rules) or the rules themselves? If the rules remained intact, one would expect the subjects in this study to demonstrate acceptability judgments similar or identical to those of fully competent speakers. The inflation of judgments observed in actuality suggests that the very system of linguistic rules, not just performance, also undergoes attrition in severely reduced language varieties. However, there are also individual differences within this more general phenomenon that are suggestive of the distinction between incomplete learners of a language who, indeed, lack competence in a linguistic system, and forgetters of a language who, depending on the level of attrition, may lose the ability to produce the language on-line but may still maintain the system as such in a better way than the first group. This latter finding also points to various other parallels between studies of L1 attrition and L1 acquisition that merit further exploration.

ACQUISITION OF RUSSIAN IN THE TWENTY FIRST CENTURY: DREAMS AND HYPOTHESES ABOUT FUTURE RESEARCH

Most papers would end at this point, probably with the statement of the following kind: "There are still many unresolved problems and mysteries surrounding Russian acquisition, and those remain for future research." I don't have the luxury of ending on such a non-committal note, so let me conclude with some thoughts of what is needed and what should be done next. Speculating about the future is somewhat akin to talking about the weather—it is always with us, there is not much we can do about it, we are all experts in it, and the use or entertainment we get from it is boundless. I am not blind to the futility of predicting the future and this is why I will

try to state some general desiderata, rather than identify specific problems that may need work and may be en vogue within the next several decades.

An important prerequisite to future research is a rigorous *collection of data*. Most work on Russian acquisition is based on observation and diary data. Without disputing the importance of naturally occurring data, let me compare such data on child language to the naturally occurring data in adult language: if we relied only on naturally occurring data there, we would establish some important tendencies but we would also overlook a large number of facts, especially concerning rare forms or structures (I doubt that subjacency or crossover effects would have ever been discovered) and our understanding of natural language would be much less advanced than it is now. Rigorous, experimentally-informed data collection can form a solid foundation for both bottom-up and top-down studies of child language and it could also provide us with more reliable and more intricate language data than natural observation. In my opinion, child language studies need two types of data collection. First, we need natural observations recorded on a regular basis with the help of modern technology (such projects are currently taking off—for example, MacWhinney's work on child language databases and the mother-child interaction recordings for German and English at the Max-Planck Institute for Evolutionary Anthropology in Leipzig). Second, sophisticated experimental work, especially with children in the first three years of life is badly needed—work of this kind has been appearing for English (Juszyk; Saffran), and this means hope for the otherwise nebulous 'future research'.[19] If anything, the data collection is likely to confirm that although all learners are equal, they have the right to differ. The most obvious difference is between early and late talkers and between noun-oriented and verb-oriented acquisition. As long as our database of Russian acquisition consists of two or three children all of whom seem to have been early talkers, it would be irresponsible to draw long-ranging conclusions about the learning of Russian in general.

Imagine that we have done our wonderful data collection and we now have all kinds of primary linguistic data, experiments, and measures. Now what? As I sat down to write this part of my paper, I actually started thinking of the reasons why we engage in certain linguistic projects and of the forces that shape our thinking about language. Those reasons seem to me

[19] A number of researchers have been raising similar methodological concerns with respect to adult language (see Cowart 1997 for a useful overview), emphasizing that more objective data collection will lead to more fine-grained results and more sound theoretical conclusions.

quite diverse—they range from a general intellectual curiosity to the desire to understand how things work (there's a bit of an engineer in each linguist) to the frustration that we cannot adequately capture something that is obvious to an eight-month-old, to the interest in those things that are cool at any given moment to the desire to conform to what has been done by earlier successful researchers to the need to document some phenomena that are so passing in nature as child language … I tried to be honest with myself and understand what drove me in my own study of incomplete acquisition and realized that it was a combination of a desire to find a system in the madness of the staccato speech of incomplete acquirers, a wish to not follow a beaten path, a hope to find a unifying explanation for several phenomena that have previously been treated as unrelated, and a promise of new theoretical advances. But more than anything it was an interest in studying in-depth a language phenomenon which may offer an unusual insight about natural language in general. This is a clear-cut case of what one could call a *bottom-up approach* to linguistics—study a certain phenomenon within one or few select languages and explore the consequences of the findings derived from it to the range of human language potential and to the linguistic theory that is designed to model and explain it.

The bottom-up approach is usually contrasted with the *top-down approach* under which a certain theoretical premise is examined in great depth from the standpoint of theoretical principles and empirical evidence (including novel evidence) is used to support or refute a respective assumption. This approach is powerful and attractive in providing a coherent explanation for language phenomena and predicting language facts on the basis of theory-internal principles and assumptions. By accounting for language facts within a well-articulated theory with a set of constrained principles this approach both hones those principles and provides us with a better understanding of language facts.

I have done my best in these two paragraphs, to avoid the term 'functional' and 'formal' although my reader may be quick to identify the bottom-up approach with the former and the top-down approach with the latter. I think such identification is wrong—both approaches can be found within functionalism and generativism (see Newmeyer 1998: 96-128 for a useful discussion). Moreover, both approaches are needed and they need to be aware of each other.

My biggest wish for future research in Russian acquisition and acquisition in general is that field could achieve a happy balance of those who find in acquisition something that tells us about human language that we could not find otherwise and those who develop theories. The

theories should ultimately help us find out more about the human language potential and the interaction between language and other cognitive faculties. At this point, I think that the field lacks such a balance. Moreover, it still has to overcome severe deficits on both the bottom-up and top-down sides.

At the risk of sounding controversial, I would like to suggest that bottom-up studies of acquisition are still to come. The reason this may appear polemical is that there is a vast body of literature investigating certain phenomena in child language—after all, didn't I just discuss the relevant research over two dozen pages of this paper? My concern is that often studies of child language fall short of producing a bottom-up account of a certain language phenomenon. Instead, they present sketchy generalizations over several phenomena, loosely connected with one another. This results in lack of cohesion; the interaction between phenomena is either taken for granted or over-interpreted. Finally, the real bottom-up approach should have an explanatory power. Whether the explanation is theory-internal or external, it is crucial to reduce language-particular phenomena to a minimum and to limit the number of possibilities that can be *predicted* within a given phenomenon. All this is still to come in the acquisition literature, and hopefully the introduction of Slavic languages into the research domain which has focused mostly on English, Italian, and to a lesser extent, Dutch and German, will allow us to make new breakthroughs both in our understanding of acquisition and of the corresponding adult grammars.

In the individual sections above, I tried to identify promising areas in the study of phonological acquisition, acquisition of morphology, acquisition of clause structure, and other areas. As I said earlier, the unpacking of the huge notion 'acquisition' into smaller components has been well underway—we can only expect that more subsystems will be added to the picture. For instance, little if anything is known about the acquisition of information structural categories. When and how do children show topic and focus identification? When do they develop topic and focus marking? When is the category 'contrastive' fully identified? All these questions are awaiting answers, both from the top-down and bottom-up researchers.

The acquisition literature is unlikely to resolve the debate between nativists and connectionists any time soon. As this debate continues, it is likely that both sides will try to examine the role of evidence, positive and negative. This will inevitably lead to the examination of parental speech. Such examination has already started for English and the introduction of

other languages will significantly expand the field's knowledge base. As more and more bilingual acquisition is studied and as we learn more and more about incomplete learners, we will be able to answer the perennial question: one system, two systems, one and a half systems?

I would like to conclude with the hope that "perhaps the day will come when the kinds of data that we can now obtain in abundance will be insufficient to resolve deeper questions concerning the structure of language" (Chomsky 1965: 21).

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