The Maturation of Grammatical Principles: Evidence from Russian Unaccusatives

Maria Babyonyshev
Jennifer Ganger
David Pesetsky
Kenneth Wexler

This article tests the hypothesis that young children have a maturational difficulty with A-chain formation that makes them unable to represent unaccusative verbs in an adultlike fashion. We report the results of a test of children's performance on the genitive-of-negation construction in Russian, which, for adults, is an "unaccusativity diagnostic," since genitive case is allowed to appear on the underlying direct object argument of unaccusatives as well as on direct objects of standard transitive verbs within the scope of negation. We show that although Russian children know the properties of the construction, they have notable difficulty using it with unaccusative verbs. Since the input evidence for genitive of negation with unaccusative verbs is quite robust, we interpret our results as support for the hypothesis.

Keywords: language acquisition, chains, genitive, maturation, negation, passive, Russian, specificity, unaccusative

Studies of early language acquisition help us understand the biological roots of language. For example, the growing body of work that reveals extremely *early knowledge* of many properties of language (e.g., Wexler 1996, Crain and Thornton 1998, and references therein) is particularly interesting in light of debates over the "poverty of the stimulus" and the nature of Universal

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1–44

Grammar (UG). As long as one is unable to discover a stage at which a child lacks knowledge of a particular sort, one can entertain the hypothesis that this knowledge arises, not from linguistic experience, but directly from the child's genetically determined nature.

A more complex set of questions arises, however, when research reveals the opposite situation: the *absence* of certain linguistic knowledge in the child at a certain age. We can call this the *problem of late knowledge*. The most fundamental questions raised by such a case are the following: why does the child not know *P* at age *n*, and how does this child come to know *P* at a later age $n + m$? One answer that has been explored is maturation of the human language faculty, which we will call *linguistic maturation* (e.g., Borer and Wexler 1987, 1992, Wexler 1994, Rizzi 1993/1994, Gleitman 1981). Just as apparent deficiencies in children's use of the adult language often conceal substantial early knowledge, which is revealed to investigators only through careful experimentation and analysis, apparently *successful* use of the adult language by children may conceal gaps in the child's linguistic abilities that also become apparent only through careful experimentation and analysis. This article presents a case of just this type, which bears on one of the earliest hypotheses concerning the maturation of syntax: Borer and Wexler's (1987, 1992) argument that young children lack the ability to represent A-chains that link thematic subject and object positions. While their proposal points correctly to a general domain in which children show difficulties, it seems to fly in the face of other observations that suggest that young children are proficient users of constructions that in the adult grammar involve A-chains. That is why much of their discussion was devoted to demonstrations that these observations of proficiency are actually misleading.

In this article we provide another demonstration of this sort, one that we feel is especially strong: a demonstration concerning children's use of unaccusative verbs, which, in the adult language, involve A-chains linking their surface subject to a direct object position. As we show, children do use these verbs freely from an early age. However, new developmental and adult data from Russian demonstrate that children who use unaccusative verbs are assigning them a representation without A-chains. The developmental data concern the children's ability to produce a construction that (we argue) disallows this nonadult representation by its very nature: the so-called genitive of negation with unaccusative verbs. It turns out that this construction poses severe and specific difficulties for the children. Thus, we believe that we have uncovered a new case of late knowledge, one that is particularly interesting because the construction is extremely common in adult speech. Delayed knowledge in the face of rich evidence provides an argument for UG that is the inverse of the more familiar argument from the "poverty of the stimulus." We might call it the argument from the "abundance of the stimulus." This type of argument supports the hypothesis that specific details of linguistic knowledge are biologically determined by offering an explanation, not for the presence of knowledge in the absence of evidence, but for the absence of knowledge in the presence of abundant evidence. The explanation lies in the hypothesis that the biology that supports the relevant knowledge is not available until a comparatively late stage in child development.

1 Alternatives to Maturation as an Explanation

We begin by examining maturational hypotheses in the context of other developmental proposals. Consider some simple observations:

1. Research that reveals extremely early linguistic knowledge, when combined with evidence from linguistic universals and "poverty of the stimulus" arguments, makes it clear that certain properties of language, including children's ability to acquire it, derive from biologically determined (possibly language-specific) properties of the human brain.
2. The human organism changes state as it matures. Maturation is as much a property of the brain as a property of other organs.
3. Consequently, we can be quite sure that the brain structures that instantiate UG are subject to some kind of maturational timetable, if only because they develop from less complex structures during the course of embryogenesis. When this process is complete—how long before or after birth—is an open question.

Suppose we discover differences in language use by children that correlate strongly with differences in age—in particular, late knowledge of some sort. Given the commonsense considerations just discussed, it is reasonable to ask whether these differences might arise from maturation-dependent differences in the brain structures that subserve language. A maturational explanation is not intrinsically more or less informative than any other: maturational and nonmaturational explanations simply differ in the empirical footprint that we expect them to leave.

Besides linguistic maturation, there are two possible types of explanations for late learning: *input-driven explanations* that attribute late knowledge to nurture rather than nature, and *nonlinguistic maturational explanations* that attribute late knowledge to nonlinguistic developmental factors. Each alternative, just like linguistic maturation itself, makes a specific set of empirical predictions. Thus, the choice of explanation for individual cases of late knowledge should be a matter for empirical investigation (see Wexler 1999 for discussion). Let us consider these alternatives somewhat more closely.

1.1 Input-Driven Explanations

The diversity of human languages tells us that the nature of the final state in language acquisition is to some degree *input-driven*. Something in the child's linguistic environment must help her decide whether or not she is speaking a verb-second language, a language with N-to-D movement, and so on. Consequently, one explanation for a child's lack of some kind of linguistic knowledge at a particular age could be insufficient exposure to certain relevant linguistic facts by that age. The general character of this sort of explanation has been discussed by Borer and Wexler (1987), who noted that an input-based explanation must explain why, in many cases, the input data fail to trigger the learning of a construction at one point in time but succeed at a later point. They called this the *triggering problem* (see also Lenneberg 1967).

One might attempt to solve the triggering problem in an input-driven account of late knowl-

edge by positing a frequency threshold of relevant occurrences that must be crossed before the child pays attention to a fact.[1] Thus, age-dependent vocabulary differences are known to be attributable to frequency of occurrence in the corpus of utterances accessible to a child (see Hart and Risley 1995). Solutions to the triggering problem that rest on frequency lead us to expect variability across children correlating with variability in the actual input. This sort of variability, in fact, should function as the hallmark of frequency-driven late knowledge. Interestingly, it is not found in the types of syntactic development that have been studied from this perspective, for example, the growth of finiteness (see Rice, Wexler, and Hershberger 1998). The present article will center around a case of late knowledge for which input frequency is almost certainly not at stake. The key observation at this point is the fact that input-driven learning should present a specific empirical profile.[2] Consequently, it is not a priori an explanation for all imaginable instances of late learning.

1.2 Maturational Explanations: Linguistic and Nonlinguistic

An alternative style of explanation is maturational (i.e., not crucially input-driven)—but *nonlinguistic*. This type of explanation attributes late knowledge to late maturation of mental capacities other than the human language faculty. In this category one might explore limitations of memory capacity, overall processing speed, communicative abilities, and so on. Psychologists have often favored these kinds of nonlinguistic explanations, arguing that one should assume that the cognitive abilities of children are the same as those of adults, but that children have additional restrictions imposed by generally immature brain functions outside the domain of language (e.g., Pinker 1984). Explanations relying on nonlinguistic maturation should display a very specific profile: the immature state of a particular domain (e.g., memory) should show effects in child cognition that go beyond language, and it should be possible to describe the immaturity in terms of a developed theory of that domain for adults. To date we are aware of very few serious explanations of linguistic phenomena that have this character.

In contrast to input-driven late knowledge and late knowledge arising from nonlinguistic maturation, *purely linguistic maturation* is expected to manifest itself only through nonadult performance with abstract structures and categories made available by UG. The hypothesis of purely linguistic maturation is simply a "dynamic" version of the familiar argument for UG from the poverty of the stimulus: given the input, we cannot explain changes in knowledge of specific aspects of grammar *at particular ages* unless we assume innate structures that also change over time. The argument for linguistic maturation (as opposed to input-driven late knowledge) will be strong whenever input can be discounted as a cause of late knowledge, that is, when the triggering

[1] One might also ask whether late knowledge might be due to manipulation of the data available to the child. However, research has shown that parents do not systematically withhold input data, at least with respect to basic constructions (Wexler and Culicover 1980, Newport, Gleitman, and Gleitman 1977).

[2] An anonymous reviewer points out that a similar profile is expected if the phenomenon in question is not itself input-driven, but depends on the input-driven acquisition of some other grammatical or lexical property. For example, some property of unaccusative verbs might arise in the grammar of a given child (as a consequence of UG) only when she has learned a certain number of unaccusative verbs.

problem is evident. The argument for linguistic over nonlinguistic maturation (in a given case) must be a negative one. It rests on whether one can discern a nonlinguistic function for the immature ability or nonlinguistic consequences of it in development.

In this article, we pursue a linguistic maturational account of certain phenomena on the grounds of plausibility and empirical coverage. Until the literature offers serious nonlinguistic accounts of developmental facts for which plausible linguistic hypotheses exist, there is no reason to reject this mode of explanation, whatever the virtues or demerits of our particular proposal. Nonetheless, we leave open the possibility that it may someday be shown that the linguistic differences between child and adult that we have uncovered have their roots in more general cognitive differences.

2 Maturation of A-Chains

2.1 A-Chains

The early discussion of purely linguistic maturation by Borer and Wexler (1987) concerned children's ability to represent A-chains. This work was inspired by several findings concerning the passive construction in the speech of English-speaking children, including impaired comprehension and sparse production of passive constructions (e.g., Horgan 1975, Maratsos et al. 1983, Bever 1970).[3] Borer and Wexler (1987, 1992) proposed that the ability to represent passive constructions in an adultlike manner does not mature until about 4 years of age. They adopted a familiar analysis of passive constructions, based on Chomsky 1981, which we will also assume here. According to this analysis, the subject of a passive sentence initially occupies the object position characteristic of internal arguments (like themes and patients) and comes to occupy the subject position as a consequence of movement. The subject and object positions are linked by membership in an *A-chain*.

(1) was opened the door$_i$ → the door$_i$ was opened t_i [A-chain: (subject, object)]

The association of the surface subject argument with an underlying object position arises as the consequence of the universal association (linking) of particular semantic roles with particular syntactic positions provided by principles like Baker's (1988) *Uniformity of Theta Assignment Hypothesis* (UTAH) and its predecessors in the syntactic literature. We adopt a familiar view that associates semantic role labels with syntactic positions, although other perspectives on the nature of linking associations are equally compatible with our discussion. In the case of (1), universal conventions active in the adult grammar link the role *theme* or *patient* to direct object position, accounting for the underlying form *was opened the door*. If this analysis of passive is correct, passive clauses have two important properties that distinguish them from their transitive active counterparts.

(2) a. *Dethematization:* The external argument is not associated with an NP that ends up in [Spec, IP]. Depending on the exact proposal one adopts, it is either suppressed,

[3] See section 6 for discussion of conflicting views on the status of children's use of the passive.

associated with the passive morpheme (Jaeggli 1986, Baker, Johnson, and Roberts 1989), or associated with a *by*-phrase.

b. *Movement:* The internal argument undergoes movement to the type of position otherwise associated with the external argument. This fact is generally attributed to Case theory or the Extended Projection Principle.

2.2 *A-Chains in Child Grammar*

In principle, one might attribute children's problem with passive to either property (2a) or property (2b). Borer and Wexler (1987) explored the possibility that the problem concerns *movement*, as in (2b). They suggested that children at the relevant ages are unable to represent a passive clause with an A-chain linking object and subject.[4] Thus, in (3) *door* cannot be assigned a θ-role because it is a subject and the canonical position of its θ-role (theme) is object. We can think of this inability as a "star" affixed by the child's linguistic competence to a structure that, in the older speaker's grammar, is unstarred. We will call this proposal the *A-Chain Deficit Hypothesis* (ACDH).

(3) [*]The door$_i$ was opened t_i.

For much of the discussion, the consequences of the ACDH will be indistinguishable from those of another proposal, which localizes the deficit not in the A-chain characteristic of passive constructions, but in the absence of an external argument (the *External Argument Requirement Hypothesis*, or EARH).[5] Of course, given the θ-Criterion, the absence of an external argument is a precondition for the A-chains found in passive clauses. Note that the EARH makes the same predictions about passive sentences as the ACDH does, because an A-chain whose head is in the subject position cannot be constructed unless the subject position is nonthematic (i.e., the external argument is not projected in its canonical position). Thus, the ACDH and the EARH provide two distinct but similar explanations for the fact that (subject, object) A-chains may be absent in early grammars. To distinguish between the predictions of these two hypotheses, one would have to examine children's performance on two types of structures. The first are the structures that contain no external argument and no A-chain. The ACDH predicts these to be unproblematic, and the EARH predicts them to be problematic. One example of such a structure might be finite complements embedded under raising verbs (e.g., *It seems that Mary has left*). To our knowledge, the field has not come to a firm conclusion about whether such structures are delayed. The second are the structures that contain an external argument and an A-chain other than (subject, object). The ACDH predicts these to be problematic, and the EARH predicts them to be unproblematic. An example might be the reflexive clitic construction of Romance languages, which we discuss

[4] More precisely, Borer and Wexler proposed that children cannot associate a θ-role with an overt argument that does not occupy the canonical position in which that θ-role is normally assigned.

[5] One way of implementing the EARH within the minimalist framework is the following. Assume that the external argument is base-generated in [Spec, v], where v is the functional category that selects VP as a complement, and that in unaccusative and passive clauses v is either absent or "deficient" in that it does not assign the external argument θ-role. The EARH states that a clause with a deficient or absent v is starred in the children's grammars.

in section 7. We adopt the ACDH throughout the body of this article, since this is the variant that has been developed in previous literature. However, we return to the EARH in section 7, where recent results raise interesting questions about the choice between the two hypotheses.

One might suppose, all things being equal, that the ACDH predicts a total absence of passive clauses in the speech of children at the relevant ages, as well as total lack of comprehension of such structures. This runs counter to the apparent facts as reported by Maratsos et al. (1983), Pinker, Lebeaux, and Frost (1987), and others. Children's production and comprehension of passive clauses is spotty and defective compared with the adult norm, but children do use and comprehend constructions that sound like adult passives. Borer and Wexler responded to this fact with the conjecture that children's "passive" clauses, despite their superficial resemblance to the normal adult passive, do not contain A-chains. Building on the observation of Maratsos et al. that performance on nonactional passives is worse than performance on actional passives, Borer and Wexler argued that the only passivelike representation available to the child involves *adjectival* (rather than *verbal*) passive. Following Wasow (1977) and Williams (1981), they assumed that adjectival passives also involve no A-chain. In this sense adjectival passives display an otherwise noncanonical direct linking of theme/patient with the external argument position.

(4) The door was [$_A$ opened].

Borer and Wexler proposed that young children allow this noncanonical linking pattern for adjectival passives just as adults do, and further suggested that children—just like adults—know that the verbal passive disallows this noncanonical linking pattern. That is, the linking principles that distinguish verbal from adjectival passives were assumed to apply equally in the child's grammar and in the adult's grammar (as in the theories of Grimshaw (1981), Pinker (1984), and others).[6] The difference between children and adults lies elsewhere: in a tension between children's knowledge of the need for an object trace in verbal passive sentences and their inability to use representations containing this trace. This is the hypothesis that we have called here the ACDH.

3 Unaccusative Verbs and the ACDH

If Borer and Wexler are correct, a child at the relevant age should never produce or understand an utterance whose analysis *requires* an A-chain. Only if an utterance with an A-chain has a "syntactic homophone" (which we will abbreviate *s-homophone*) without that A-chain could such an utterance be produced or understood.[7] Borer and Wexler's argument that adjectival passives are the s-homophones of choice took some of its strength from the fact that, according to some proposals, even adults assign a structure without an A-chain to adjectival passives. An obvious unanswered question concerns the overall availability of s-homophones without A-chains for

[6] Note that we are assuming that at this age children have not yet acquired many of the lexical restrictions on the formation of adjectival passives present in the adult grammar. Thus, they may produce adjectival passives with a wider range of verbs than adults do (see footnote 35 for a related point).

[7] A phrase α is an *s-homophone* of β if α and β have distinct structure but common pronunciation.

constructions that otherwise would contain A-chains. For many such cases, there is little or no support in the literature on adult syntax for homophonous representations that lack A-chains.[8]

Clauses with unaccusative verbs are a particularly important example. For the adult, such clauses, like passives, require an A-chain with a tail in direct object position and a head in subject position (Perlmutter and Postal 1984, Levin and Rappaport Hovav 1995).

(5) a. The door$_i$ opened t_i.
b. The mail$_j$ arrived t_j.

In the case of simple unaccusatives we do not know of any arguments that adult grammars offer an alternative representation that lacks an A-chain. If there are no s-homophones for unaccusative clauses in the adult grammar (i.e., clauses that stand in the same relation to (5a–b) as adjectival passives, on Borer and Wexler's assumptions, stand to verbal passives), one might expect that children who lack A-chains would simply not use unaccusative verbs at all. This prediction is patently false. Verbs like *break* and *fall* are used by (English-speaking) children as early as 18–24 months (e.g., Tomasello 1992). The successful use of unaccusative verbs by children at an age where problems with passive are detected thus poses significant questions for the ACDH (as well as for the EARH alternative).

Borer and Wexler (1992) point out that, if the ACDH is correct, a child who uses unaccusative verbs must be assigning an *unergative* analysis to them—an analysis that produces representations homophonous with the unaccusative analysis. The proposed representations are shown in (6).

[8] Simple active clauses are the most important case here. If the widely assumed (though not uncontroversial; Bobaljik 1995) VP-Internal Subject Hypothesis is correct for the adult grammar (Kitagawa 1986, Kuroda 1988, Koopman and Sportiche 1991), one might wonder if structures with a VP-internal trace might have an s-homophone with PRO.

(i) Mary$_i$ I [$_{VP}$ t_i speaks French].

(ii) Mary$_i$ I [$_{VP}$ PRO$_i$ speaks French].

This hypothesis would explain why fronting the matrix VP in (ii) does not yield the ungrammaticality expected of an unbound trace in the embedded clause (and would explain the absence of reconstruction effects with VP-fronting noted by Barss (1986)).

(iii) John said Mary$_i$ I [$_{XP}$ PRO$_i$ . . . speaks French]—and [$_{XP}$ PRO$_i$ . . . speak French] she$_i$ does t_{XP}.

If children's clauses contain VP-internal PRO rather than trace, Borer and Wexler's hypothesis could be maintained along with the VP-Internal Subject Hypothesis, given the obvious fact that children at all but the youngest ages produce and understand simple clauses. Children's speech would be limited to the PRO s-homophone. A similar analysis might be accorded to constructions that for the adult involve raising, for example, the complement of predicates like *seem* (see Lasnik and Saito 1992 for such an analysis). Note that we assume that the highest verbal element in these control structures (i.e., I or *seem*) assigns a light θ-role to the subject, similar to the role that Diesing (1992) posits for the VP-external subjects of individual-level predicates (with the meaning of 'has the property x', where x is the property expressed by the predicate). Thus, the structures do not violate the θ-Criterion.

Alternatively, one might propose refinements of the ACDH that characterize the types of A-chain that pose difficulty for the child more narrowly than we have done so far, ensuring that they differ from the A-chains created when a VP-internal subject raises to [Spec, TP] in some relevant way. For example, Borer and Wexler proposed that the A-chains of passive and other A-chains ruled out by the ACDH involve more than one "potential θ-position" (a position to which a θ-role can be assigned)—for example, complement of V and [Spec, VP]—while the A-chains of raising to [Spec, TP] do not. It is not clear what form this generalization would take in the current syntactic frameworks. We will leave this topic as a loose end to be tied up in future work.

(6) a. The door opened. [no object trace]
b. The mail arrived. [no object trace]

A simple but crucial question arises. Is this hypothesis correct? Do children provide unergative representations like those in (6a–b) for clauses that in the adult grammar would be unaccusative? A positive answer would strongly support the family of hypotheses that includes the ACDH and EARH. In particular, it would support the notion that children have a general deficit whose character requires reference to a property that crosscuts syntactic constructions. A negative answer would force us to reexamine this approach, calling into question the idea that children's problems with passive form part of a larger, syntactically characterizable picture.

Of course, if it does turn out that children have representations like those in (6), serious syntactic issues remain. In particular, analyses of this sort probably violate UTAH, since a nonagent that would be an object in a transitive clause (*Mary opened the door*) here shows up as an underlying external argument.[9] This issue was discussed in detail by Borer and Wexler (1992) and can be developed in one of two ways. Either (i) or (ii) might be true of child grammar at the relevant stage:

(i) UTAH is fully known to the child, but can be violated when the alternative leaves a verb unparsed in comprehension or unusable in production;[10] or
(ii) UTAH (or a subcase of it) is missing in the child grammar.

Although we argue for linguistic maturation in a specific instance (A-chains), we have not found any evidence for maturation of UTAH itself. Children can be shown to respect this mapping at fairly early ages (Marantz 1982), an ability that is probably important to the acquisition of the verb lexicon (Grimshaw 1981, Pinker 1984). Consequently, we will assume (i)—a conclusion consistent with the results we report below.

In any case, the prediction that children represent unaccusatives differently from adults has

[9] An anonymous reviewer points out that a child might have two ways to avoid an A-chain for a passive construction without violating UTAH. The first way is to introduce an expletive, as in *There was opened a door.* As the reviewer notes, in our framework this strategy cannot be successful because such expletive structures still contain an A-chain, although a covert one. The fact that children *don't* produce such structures can be viewed as support for our analysis. The second way is to use a *get*-passive analysis for the *be*-passive sentence, as in *The door got opened.* If *get*-passives do not contain an A-chain, then they do not violate the ACDH. In fact, young children do produce *get*-passives before they produce *be*-passives (Crain et al. 1987), demonstrating that this strategy *is* used successfully in production—a fact that can be viewed as support for our analysis as well. However, in the context of a comprehension experiment, where children are presented with *be*-passives, the strategy cannot be completely successful: analyzing verbal passives as *get*-passives requires the child to assign the meaning of *get* to *be*—a move that conflicts with the lexical entry of *be.* As a result, children are forced to resort to the UTAH-violating analysis.

[10] Presumably, the violation is "minimal." Suppose, for example, that UTAH includes a principle linking themes to direct object position and a default principle linking other arguments to the external argument position. When the first principle must be violated in order to avoid an A-chain with an unaccusative verb, the second principle comes into play, yielding an unergative structure. Likewise, once A-chains become available to the child, so that violations of UTAH can be avoided altogether, the older child's representations reflect this. Note also that the violability of UTAH (if true) argues against theories in the spirit of Hale and Keyser (1993), for whom the semantic differences among thematic roles are an automatic consequence of the syntactic configurations in which nominal arguments occur. We are grateful to an anonymous reviewer for helping us to clarify these points.

not been tested. In order to probe children's representation of unaccusatives, we must find a situation where the difference between unergative and unaccusative representations has clear grammatical consequences, and where no unergative s-homophone is available. In such a situation we predict that the unaccusative verb will cause observable problems for the child.

English is not the easiest language in which to study these matters, since evidence for unaccusativity in English is subtle. Russian, on the other hand, provides a robust test for unaccusativity with the so-called genitive-of-negation construction. When used with the genitive of negation, unaccusatives lack an unergative s-homophone. In the next section we present an argument that the genitive-of-negation construction involves (in some configurations) a covert A-chain, as does the similar English *there*-construction, which we also discuss briefly.

Covert movement is of interest to us because of its interaction with the ACDH. The ACDH (as we have formulated it) does not distinguish between overt A-movement and covert A-movement. It predicts that both should be equally difficult for young children. Crucially, however, the strategy that children use to work around their A-chain deficit in the case of overt A-movement should be unavailable in the case of covert A-movement. Let us see why this is so. Consider overt movement first. When a child needs to assign a representation to a sentence that, for an adult, must contain an unpronounced trace, the child can posit a traceless s-homophone—precisely because the adult's trace was unpronounced. As we have just noted, this requires the child to tolerate violations of UTAH to a limited degree. Now consider covert movement. When a child needs to assign a representation to a sentence that, for an adult, contains a *pronounced* trace, the child cannot posit a traceless s-homophone—precisely because the trace, in this type of movement, is pronounced.[11]

In addition to containing covert A-movement, the genitive-of-negation construction has another property that makes it particularly useful to us: the nominals that undergo covert A-movement (i.e., the arguments of unaccusative verbs) are morphologically distinct from the nominals that do not undergo such movement (i.e., the arguments of unergative verbs). In other words, when an unaccusative verb is provided with an unergative analysis, the morphological form of the nominal reflects this fact. Thus, the Russian genitive-of-negation construction provides exactly the condition we need to test the hypothesis that children in early stages of language acquisition avoid A-chains.

To perform this test, we utilize an experimental paradigm that forces children to use the genitive of negation with unaccusative verbs to determine whether A-chains are available to them. The results of the experiment confirm the ACDH rather strikingly. Before describing the experiment, we review the genitive-of-negation construction in section 4 and argue that it is ideally suited to test the ACDH. Then, in section 5 we describe the experiment and its results.

[11] In principle, the child might escape from the problem of processing covert A-movement in a different way: by positing a representation in which the phrase that is a pronounced trace for the adult is not a trace at all—that is, by positing a homophonous representation without covert A-movement. However, if children are identical to adults in knowing the principles that make A-movement obligatory in particular constructions, they should have no escape from the need to posit covert A-movement in those configurations where the grammar requires it. We assume that this is the case, so that there is no s-homophone consistent with the children's grammar that might allow them to avoid positing an A-chain.

In section 6 we return to passive constructions. Finally, in section 7 we review other recent empirical evidence for and against the ACDH.

4 Russian Genitive of Negation: Covert A-Chains

4.1 The Genitive of Negation

In Russian certain nominal arguments may appear in the genitive case in a negative sentence—the so-called genitive-of-negation construction. Pesetsky (1982) offered the following generalization about the syntactic position in which such genitive phrases occur:

(7) The genitive of negation is restricted to underlying direct objects.

Example (8) illustrates the pattern for transitive verbs: (8a) contains a "normal" accusative direct object, while (8b) contains a genitive direct object. Assignment of genitive case here is traditionally described as optional. This is not completely accurate: the nominals appearing with the genitive of negation have a distinct interpretation.

(8) a. Ja ne polučil *pis'ma.*
I not received letter-ACC.PL
'I didn't receive the/some letters.'
b. Ja ne polučil (*nikakix*) *pisem.*
I not received (NEG-kind-GEN.PL) letter-GEN.PL
'I didn't receive any letters.'
c. Ja polučil *pis'ma*/**pisem.*
I received letter-ACC.PL/*letter-GEN.PL
'I received the/some letters.'

As the examples in (8) show, genitive case marking on the direct object is limited to negative sentences in which the direct object is nonspecific and indefinite, with scope narrower than negation. If the object is specific or definite, or if negation is missing, only accusative is possible.[12] In (8c) both a specific and a nonspecific interpretation are available for the accusative nominal argument. Thus, it would be more accurate to describe the genitive of negation as greatly preferred (almost obligatory) on a nonspecific object within the scope of negation.

As (7) states, the genitive of negation is not found on nominals base-generated in the subject position—even in negative sentences—regardless of interpretation. Examples (9a–b) show this for subjects of transitive verbs; examples (9c–d) show this for subjects of unergative verbs.

(9) a. *Nikakie mal'čiki* ne polučali pis'ma iz doma.
NEG-kind-NOM.PL boy-NOM.PL not received letter-ACC.PL from home-GEN.SG
'No boys/None of the boys received-PL letters from home.'

[12] We omit from discussion objects that are required by a "quirky case" verb to bear dative or instrumental case. An oblique object of such a verb may not be replaced by the genitive in negative sentences and is ambiguous with respect to specificity and scope. In Russian, unlike Icelandic (Andrews 1982), verbs with oblique objects do not have passive or unaccusative counterparts.

b. **Nikakix mal'čikov* ne polučalo pis'ma iz doma.
NEG-kind-GEN.PL boy-GEN.PL not received-NEU.SG letter-ACC.PL from home-GEN.SG
'No boys received letters from home.'

c. *Nikakie devočki* ne tancevali.
NEG-kind-NOM.PL girl-NOM.PL not danced-PL
'No girls/None of the girls danced.'

d. **Nikakix devoček* ne tancevalo.
NEG-kind-GEN.PL girl-GEN.PL not danced-NEU.SG
'No girls danced.'

Crucially, the genitive of negation *is* found on base-generated direct objects that under other circumstances would move to a subject position ([Spec, IP] or [Spec, TP]). For example, the genitive of negation is found on the theme or patient argument of unaccusative and passive verbs. Examples (10a–b) demonstrate this for the internal argument of a passive verb; examples (10c–d) demonstrate this for the internal argument of an unaccusative verb.

(10) a. (Vragom) ne bylo vzjato *ni odnogo goroda.*
(enemy-INSTR.SG) not was-NEU.SG taken-NEU.SG NEG single-GEN.SG town-GEN.SG
'Not a single town was taken (by the enemy).'

b. (Vragom) ne byl vzjat *gorod.*
(enemy-INSTR.SG) not was-MASC.SG taken-MASC.SG town-NOM.SG
'The town was not taken (by the enemy).'

c. Ne rasstajalo *ni odnoj snežinki.*
not melted-NEU.SG NEG single-GEN.SG snowflake-GEN.SG
'Not a single snowflake melted.'

d. Ne rasstajala *snežinka.*
not melted-FEM.SG snowflake-NOM.SG
'The snowflake didn't melt.'

We must obviously ask what position the genitive phrases in (10) actually occupy—or, more accurately, what position they are pronounced in. Tests discussed by Pesetsky (1982:142), partly based on Babby 1980, make it clear that the italicized genitive NPs in (10) are pronounced in their base-generated object position. First, their unmarked position is postverbal.[13] Second, the genitive arguments cannot successfully serve as antecedents for reflexive pronouns, nor can they control the subject of nonfinite adjunct adverbials. These are both subjecthood tests (Neidle 1988: 71–72).[14]

[13] To the extent that the genitive may occur preverbally, we will assume that this word order is a result of scrambling, a process more generally available in Russian. Note also that genitive NPs do not trigger verbal agreement, so that the predicate surfaces with default agreement (3rd person, singular, neuter).

[14] It is hard to construct a watertight argument against an alternative: that what are represented in the text as phenomena singling out subjects are actually phenomena singling out nominative NPs. This alternative would provide a different reason for the stars in (11) and (12). Unfortunately, Russian lacks quirky genitive subjects with which one might want

(11) a. Ni odin mal'čik$_i$ ne byl ubit u sebja$_i$ doma.
NEG single-NOM.SG boy-NOM.SG not was-MASC.SG killed-MASC.SG at self at-home
'Not a single boy was killed in his own house.'

b. *Ne bylo ubito ni odnogo mal'čika$_i$ u sebja$_i$ doma.
not was-NEU.SG killed-NEU.SG NEG single-GEN.SG boy-GEN.SG at self at-home

(12) a. [PRO$_i$ vozvraščajas' domoj]. ni odin mal'čik$_i$ ne byl
returning home NEG single-NOM.SG boy-NOM.SG not was
ubit.
killed-MASC.SG
'Not a single boy was killed while returning home.'

b. *[PRO$_i$ vozvraščajas' domoj]. ne bylo ubito ni odnogo
returning home not was-NEU.SG killed-NEU.SG NEG single-GEN.SG
mal'čika$_i$.
boy-GEN.SG

Having established that the genitive arguments of unaccusative and passive verbs are pronounced in object position in the genitive-of-negation construction, we must also ask whether they are associated with the subject position in any way. In particular, do they undergo any sort of *covert* movement to subject position? We will argue that they do. Although the genitive NP fails standard tests for subjecthood, there is nonetheless evidence (presented in the next section) that it moves covertly to subject position.

First, however, we want to call attention to a special instance of genitive of negation with unaccusative verbs. In (10a–d) the presence of genitive case indicated nonspecificity. A small class of "bleached" verbs (Szabolcsi 1986), including existential 'be', actually *require* genitive case when negated, regardless of the specificity of their argument.

(13) a. V gorode ne bylo vrača.
in town not was-NEU.SG doctor-GEN.SG
'There was no doctor in town./The doctor was not in town.'

b. *V gorode ne byl vrač.
in town not was-MASC.SG doctor-NOM.SG

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to contrast the genitive of negation. On the other hand (as an anonymous reviewer reminds us), Russian does have a dative subject construction in which the dative subject appears to function acceptably as the antecedent of a reflexive.

(i) Ivanu bylo žal' sebja i svoju sobaku.
Ivan-DAT was-NEU.SG sorry-for self-ACC and self's-ACC.SG dog-ACC
'Ivan was sorry for himself and for his dog.'
(Chvany 1975:67)

Furthermore, the genitive of negation itself furnishes a useful argument in favor of our approach. While the genitive of negation as the subject of a small clause is somewhat marginal (Ravič 1971), it has no special problem functioning as the antecedent of a reflexive.

(ii) Ja lično ne sčital ni odnoj devočki v klasse sliškom dovol'noj soboj.
I personally not considered NEG single-GEN.SG girl-GEN.SG in class too satisfied self-INSTR
'I personally didn't consider a single girl in the class too satisfied with herself.'

(14) a. Ol'gi Borisovny net.
Olga Borisovna-GEN isn't
'Olga Borisovna isn't here.'
b. *Ol'ga Borisovna net.
Olga Borisovna-NOM isn't

The verbs in this class are few in number, but extremely common in Russian speech.[15] They form a coherent semantic class (Babby 1980, Chvany 1975); they are verbs that assert existence, nonexistence, or presence at a location. They will play an important role in the experiment described in section 5.

4.2 Covert A-Movement of Genitive Phrases with Unaccusatives

In this section we consider the genitive of negation with passives and unaccusatives in greater detail. We will argue that although the genitive argument is pronounced in the direct object position of passives and unaccusatives, it undergoes covert movement to subject position (perhaps adjoining to or replacing an expletive occupying that position). Thus, genitive of negation represents a configuration that children whose grammar lacks A-chains should have difficulty with—an important test of our hypotheses.

The idea that an NP may undergo A-movement to subject position at LF has its origins in Chomsky's (1986, 1993) proposals concerning English expletive constructions. Chomsky (1986) suggested that the NP *a boy* in a sentence such as (15a) must move to the position of *there* at LF; otherwise, the representation at LF will contain an uninterpretable element (the expletive). The moving NP is known as the *associate* of the expletive.

(15) a. There is a boy in the house.
b. There is a strange man in the garden.
c. *There seems to a strange man that it is raining outside.

One argument for this analysis from Chomsky 1993 is the contrast in (15b–c): in both cases *there* must be replaced by an associate, but only (15b) has a noun phrase (*a strange man*) whose Case properties motivate movement to the nominative-marked subject position. That is, only in (15b) does the phrase *a strange man* have "Case needs" (the need to receive Case in government-binding theories, the need to "check" Case in minimalist proposals). In (15c) the Case needs of *a strange man* are taken care of by the preposition *to*. Consequently, it cannot move to subject position, replacing *there*. The result is a structure with an uninterpretable element—the expletive *there*. Other proposals (e.g., Chomsky 1995) motivate this type of movement in a different way, but the overall architecture of the explanation remains the same.

In Russian somewhat different evidence argues for covert movement in the genitive-of-negation construction with unaccusative and passive verbs. To the best of our knowledge, this

[15] In this article, we will not attempt to explain why the class of bleached verbs behaves in this way. See Babyonyshev 1996 for a proposal.

evidence has not been previously noted. The argument concerns a locality condition on negative concord. As was evident in several preceding examples, Russian is a negative concord language. Negative phrases must be licensed by clausal negation, and the licensing is governed by a locality condition: a negative element is acceptable only if it is m-commanded by clausal negation. (We assume that negation in Russian, a clitic on the verb, occupies T or I.) We will show that for a genitive argument of an unaccusative verb, the position that must be m-commanded by negation is not the position in which the genitive argument is pronounced, but the position that it would move to if it needed to undergo overt A-movement to the subject position. The demonstration is straightforward. When clausal negation and the relevant negative phrase are clausemates, the result is acceptable, as (16a) and (16b) show. (Note that Russian negative phrases can occur in both the object and the subject positions of a negated clause.)

(16) a. Ja ne ljublju [nikakie sladosti] / [nikakix sladostej].
I not love NEG-kind-ACC.PL sweet-ACC.PL / NEG-kind-GEN.PL sweet-GEN.PL
'I don't like any kind of sweets.'

b. Nikakie mal'čiki ne ljubjat sladostej.
NEG-kind-NOM.PL boy-NOM.PL not love sweet-GEN.PL
'No boys like sweets.'

Negation may also license a negative phrase in an embedded infinitival clause that it commands.

(17) a. *Object of transitive—negation in higher clause*
Ja ne dolžna [čitat' nikakix statej / nikakie
I not must read-INF NEG-kind-GEN.PL article-GEN.PL / NEG-kind-ACC.PL
stat'i].
article-ACC.PL
'I don't have to read any kind of articles.'

b. *Object of transitive—negation in lower clause*
Ja dolžna [ne čitat' nikakix statej / nikakie
I must not read-INF NEG-kind-GEN.PL article-GEN.PL / NEG-kind-ACC.PL
stat'i].
article-ACC.PL
'I must not read any articles.'

Clausal negation does not license negative elements that it does not m-command.

(18) a. *Negation m-commands negative element*
Nikto ne xočet [PRO čitat' *Vojnu i Mir*].
NEG-one not wants read-INF *War and Peace*
'No one wants to read *War and Peace*.'

b. *Negation does not m-command negative element*
*Nikto xočet [PRO ne čitat' *Vojnu i Mir*].
NEG-one wants not read-INF *War and Peace*
'No one wants to read *War and Peace*.'

A negative subject that has raised from a lower infinitival clause behaves just like the matrix subjects in (18): it may not be licensed by negation in the lower clause. This shows that when a negative element heads an A-chain, m-command by negation of the head of the chain is necessary.

(19) a. *Raised subject—negation in higher clause*
Nikto$_i$ ne dolžen [t_i čitat' èti stat'i].
NEG-one-NOM not must-MASC.SG read-INF this-ACC.PL article-ACC.PL
'Nobody must read these articles.'

b. *Raised subject—negation in lower clause*
*Nikto$_i$ dolžen [t_i ne čitat' èti stat'i].
NEG-one-NOM must-MASC.SG not read-INF this-ACC.PL article-ACC.PL

Consider now the licensing conditions for a negative genitive argument of an unaccusative infinitival verb in a clause embedded under a raising predicate. Since the genitive argument is pronounced in the direct object position of the embedded unaccusative verb, we might expect negation in both matrix and embedded clauses to license such a phrase. That is, we might expect such phrases to reproduce the paradigm of (17). However, this is not what we find. Only negation in the matrix clause can license such a phrase. Instead of displaying the paradigm typical of embedded objects (shown in (17)), the embedded genitive object displays the paradigm typical of raised nominative subjects (shown in (19)). This is true even though the genitive, by other tests discussed above, behaves like an object.[16]

(20) a. *Genitive argument of embedded unaccusative—negation in higher clause*
Ne dolžno [pojavit'sja nikakix mal'čikov v klasse].
not must-NEU.SG appear NEG-kind-GEN.PL boy-GEN.PL in class
'There don't have to appear any boys in class.'

b. *Genitive argument of embedded unaccusative—negation in lower clause*
*Dolžno [ne pojavit'sja nikakix mal'čikov v klasse].
must-NEU.SG not appear NEG-kind-GEN.PL boy-GEN.PL in class
'There must not appear any boys in class.'

[16] A further argument for the fact that the genitive phrase raises to the subject position of a finite clause is provided by sentences that contain two levels of embedding.

(i) Ne dolžno moč' pojavit'sja nikakix mal'čikov v klasse.
not necessary able-INF appear-INF NEG-kind-GEN.PL boy-GEN.PL in class
'There don't have to appear any boys in class.'

(ii) ?*Dolžno ne moč' pojavit'sja nikakix mal'čikov v klasse.
necessary not able-INF appear-INF NEG-kind-GEN.PL boy-GEN.PL in class
'There must not be able to appear any boys in class.'

The contrast in acceptability between (i) and (ii) demonstrates that the argument of the infinitival verb raises to the subject position of the matrix (finite) clause, rather than to some intermediate position in the embedded (infinitival) clauses. The contrast also demonstrates that the negation must m-command the head of the chain containing the negative phrase, as is the case in (i), rather than the trace position of the negative phrase, as is the case in (ii). We thank an anonymous reviewer for pointing out the importance of these examples.

We take this fact to show that genitive-of-negation arguments of unaccusative verbs—although they are pronounced in object position—move covertly to subject position.[17]

(21) After covert A-movement:

a. *Genitive argument of embedded unaccusative—negation in higher clause*
nikakix mal'čikov$_i$ ne I dolžno [pojavit'sja t_i v klasse]

b. *Genitive argument of embedded unaccusative—negation in lower clause*
**nikakix mal'čikov*$_i$ I dolžno [ne pojavit'sja t_i v klasse]

The m-command condition on the licensing of negative phrases by *ne* applies to these genitive phrases in their final position. It is violated in (21b) and satisfied in (21a). That is why these genitive phrases behave like nominative subjects, not like normal direct objects, with respect to the positioning of the negation that licenses them. In this respect, then, the genitive phrases in unaccusative clauses behave much like the associates of *there* in Chomsky's analysis discussed at the beginning of this section.

We leave open the question of what motivates this movement. Perhaps the movement is Case-related, with the genitive phrase checking its Case features against finite T in a manner akin to overt movement of nominative NPs. Alternatively, the motivation might be expletive replacement, if these constructions involve a null expletive in subject position.[18] Whatever the

[17] Strictly speaking, though the covert movement discovered here has properties compatible with A-movement (e.g., its finite I-seeking property), we have not shown that it *must* be viewed as A-movement, rather than movement of some previously undiscovered sort. We adhere to the simplest assumption in the text and feel that the results of our acquisition experiment validate this assumption.

[18] Some open questions and problems remain. First, although the genitive in these constructions behaves like a raised subject with respect to negative concord, it behaves like an embedded object with respect to verbal agreement and with respect to subjecthood tests that check its ability to antecede reflexives and PRO. In the latter respect, the genitive is like the associate of English *there*.

(i) There seemed (*to himself) to have arrived a linguist from China.

The fact has a natural explanation if covert movement applies later in the derivation than binding theory, as in the government-binding theories of Chomsky 1981 and related work. For example, if binding theory is an S-Structure phenomenon, negative concord an LF effect, and covert movement part of the mapping from S-Structure to LF, the facts fall properly into place. If binding theory is also an LF phenomenon, as suggested in minimalist work (e.g., Chomsky 1993), or if covert movement does not follow overt movement in the derivation (Pesetsky 1998), then these facts are more problematic, although various technical solutions could still be devised. One difference between Russian and English raises a worrisome question in this context. The licensing of a negative polarity item as the associate of English *there* is not sensitive to LF raising of the associate.

(ii) There seemed [not to be any solution to the problem].

In Chomsky 1995 this provides one of the central arguments in favor of feature movement, as opposed to category movement, in English *there*-sentences. There would have to be some crucial difference between negative polarity licensing in English and negative concord in Russian that allows feature movement to affect the latter but not the former. The justification for describing the Russian phenomenon as "negative concord" rather than as negative polarity includes the fact that the "negative words" of Russian have negative meaning out of context, unlike English *any*.

(iii) a. Who came? *Anyone.
b. Kto prišël? Nikto.
'Who came? No one.'
(cf. Nikto *(ne) prišël?)
no one not came

motivation for covert movement, we take these data to argue that the genitive phrase with unaccusatives does move.[19]

4.3 Predictions of the ACDH Grammar

We are now in a position to discuss the specific prediction of this analysis (when coupled with the ACDH) regarding children's use of the genitive of negation in Russian. The genitive of negation forces the object of an unaccusative to raise covertly to subject position—forming an A-chain, as outlined in the last section. If children have ACDH grammars, the genitive of negation with unaccusative verbs should pose problems for them, for all the reasons discussed above.

If children at the ACDH stage have adultlike knowledge of the genitive-of-negation construction, but have specific difficulties using A-chains, we make certain quite precise predictions about their performance on tasks that tap knowledge of the genitive-of-negation construction. Specifically, such children should behave like adults in the following cases:

1. They should allow genitive case on the direct object of a negated transitive verb, where semantically appropriate.
2. They should disallow genitive case on the subject of an unergative verb, regardless of semantic context.

They should, however, behave *unlike* adults in the following cases:

3. They should disallow genitive case on the sole argument of a negated unaccusative verb where an adult would allow genitive case in appropriate semantic contexts.
4. They should even disallow genitive case on the sole argument of a negated unaccusative verb from the class of bleached verbs where an adult would require genitive case.

We tested these predictions with Russian-speaking children in Moscow (Russia) using a sentence completion paradigm. Situations were created in which the genitive of negation was either required or disallowed by the context. The experimenter created these situations by manipulating toy characters and telling brief stories that were constructed so that one key character or object would naturally be referred to with a specific or nonspecific NP. The verb used with this NP was either transitive, unaccusative, or unergative. Thus, we could manipulate both the type of verb and the semantic/pragmatic context provided by the story. For example, a transitive verb with a nonspecific object would be set up by the experimenter in the following way:

(22) *Example: Nonspecific direct object of a transitive verb with negation*
Experimenter: [using a toy cat and paper with drawings of houses and bicycles on it] (English translation) This is a story about a cat. The cat decides that he wants to paint. So he paints one house—oh, it's difficult! And then he paints another house—it's difficult! He says, "Now, I'm tired. I can't paint any more," and he goes home.

[19] Passive sentences behave like unaccusatives with respect to the constructions discussed in this section. Thus, replacing *pojavit'sja* 'to appear' with *byt' nakazanymi* 'to be punished' does not change the pattern.

Next, the experimenter, using a puppet, would give a brief synopsis of the story (1–2 sentences), leaving the NP of interest (whether the object or the subject) out of the sentence so that the child could be prompted to complete the sentence with this NP. The example in (22) would continue as in (23). The dependent measure is the case of the NP provided by the child.

(23) a. *Puppet (Russian)*
Ja znaju čto slučilos'. Kot pokrasil dva doma i
I know what happened cat-NOM.SG painted-MASC.SG two-ACC house-GEN.SG and
ne pokrasil ni . . .
not painted-MASC.SG NEG . . .
'I know what happened. The cat painted two houses and didn't paint . . .'

b. *Predicted child response*
odnogo velosipeda.
single-GEN.SG bicycle-GEN.SG
'a single bicycle.'

As noted above, if children can use the genitive of negation with transitive verbs and show adultlike knowledge of the fact that the genitive is impossible with the sole argument of unergative verbs, the ACDH makes an explicit prediction about performance with unaccusative verbs. Children with ACDH grammars, when placed in a situation where the production of a genitive-of-negation construction would entail a representation with an A-chain, should offer a response in which the verb that would be unaccusative for the adult is treated as an unergative. If the child offers an unergative response, we should find nominative case instead of the expected genitive of negation. The fact that the nominative would have to follow the verb offered by the puppet character is not a problem, since Russian, like many pro-drop and scrambling languages, allows nominative subjects to appear postverbally, as shown in (24). Postverbal nominative subjects are as available for unergatives as they are for any other class of verb.[20]

(24) V zale tanceval Vanja.
in hall danced-MASC.SG Vanya-NOM
'It was Vanya that danced in the hall.'

More generally, then, we make the following prediction:

(25) *Prediction of the ACDH*
Children will give fewer genitive responses to unaccusative verbs in genitive-of-negation contexts than to transitive verbs in the same contexts. Instead of genitive responses, they may offer nominative responses.

[20] For the sake of concreteness, we assume that the postverbal nominative arguments in (24) are right-adjoined to VP in the manner suggested by Rizzi (1982), perhaps including the unaccusative (24c) (but see Babyonyshev 1996 for discussion of alternatives). This right-adjoined position does not license the genitive of negation with unergatives or transitives (Pesetsky 1982) and the right-adjoined subjects do *not* behave like objects with respect to the tests exemplified by examples (11)–(12). Thus, the postverbal nominatives produced by the children have a syntax distinct from the syntax accorded by adults to postverbal genitives in the genitive-of-negation construction with unaccusative verbs.

If this prediction is true, it is an unexpected result for input-driven theories, since children have plenty of opportunities to hear the genitive of negation with unaccusative verbs. The bleached verbs that require genitive in all contexts are a particularly common class. If children simply imitate what they hear, they should perform like adults on our task. The maturation-of-A-chains theory thus predicts a surprising outcome: that children will ignore the input, relying on their own grammatical resources instead. We will return to this triggering problem again after discussing the experimental results.[21]

As we have already noted, the data from our study are of interest only if we can show that the children we tested have essentially adultlike knowledge of the semantic and syntactic requirements of the genitive of negation (i.e., that it applies to an object argument in the scope of negation), apart from those factors affected by the predictions of the ACDH. This question has not, to our knowledge, been tested before. We first discuss how we addressed it, before moving on to unaccusatives.

5 The Genitive-of-Negation Experiment

5.1 Subjects, Method, and Stimuli

The participants in this experiment were 38 Russian-speaking children ranging in age from 3;0 to 6;6. They were tested in Moscow during September, 1994, by one of the authors (MB), a native speaker of Russian. Before testing began, a brief, informal pretest was conducted with all the children to make sure that they knew the forms of the nonnominative cases involved (accusative and genitive) and that they could cooperate with the experimenter and understand the task. Eight children failed the latter two criteria and therefore did not pass this pretest, leaving 30 children for the analysis. All the children knew the forms of the cases, a finding consistent with work reported in Babyonyshev 1993, which showed that even very young children have mastered the Russian case system.

Before the experiment began, the children were trained to help the puppet finish its sentences. The experimenter's text was prepared in advance so as to avoid using any of the words we were trying to elicit from the children. Each child was tested with three transitive verbs with nonspecific object contexts, three transitive verbs with specific object contexts, three unergative verbs, three regular unaccusative verbs, and three bleached unaccusative verbs. Thus, there were five different verb types in this experiment, each with three trials using different examples of the category. Each subject was tested with all of the trials whenever possible (see section 5.2). The verbs used as stimuli are listed in appendix B. Examples of the stories used to create the contexts are shown in appendix A. As mentioned previously, a postverbal subject (used in the intransitive examples in appendix A) is quite natural in Russian.

[21] Note that the EARH, introduced in section 2, makes identical predictions under the syntactic analysis of genitive of negation we have developed in section 4.2.

The intransitive stimuli had to be constructed so as to meet two logistical requirements. First, the past tense ending on the verb could not betray the case of the noun. In Russian the past tense ending of a verb agrees in number and gender (for singular nouns) with its nominative subject. However, as mentioned in section 3, when the subject switches to genitive, the verb bears neuter agreement, betraying that the subject, if nonneuter, is not nominative. The neuter agreement could potentially give the children a clue that they should not respond with a nominative noun. Thus, we could not use masculine nouns with intransitive verbs. However, we were able to use neuter and feminine nouns, since the past tense ending on the verb is pronounced /a/ in both of these cases despite their morphological difference. In addition, sometimes the verb had to be camouflaged, as in example 4 in appendix A, so that the experimenter did not say the ending. The second requirement was that we needed to be able to detect the difference in the child's response between genitive and nominative case. Since this distinction is lost in pronouncing neuter nouns with nonfinal stress, all neuter nouns had to be end-stressed. Therefore, owing to both of these requirements, we were restricted to feminine and neuter end-stressed subjects for intransitive verbs. (See appendix B for the nouns we chose.)

The verbs were presented in preselected pseudorandom orders, with the constraints that the same verb not be used twice in a row and that the same condition not be used twice in a row. As described above, the design of the experiment was within-subjects or repeated-measures. The 15 stories were broken into two sessions, which were held at different times on the same day. For each verb, a child's response was coded with a 1 if the noun phrase the child provided was marked with genitive case and 0 if it was marked with nominative or accusative. Within each verb type, the responses to the three verb tokens were averaged to obtain a score ranging from 0 to 1. These average scores were used as the dependent measure in our analyses of the data. Of the 450 (30 subjects $\times$ 5 conditions $\times$ 3 items per condition) possible responses, we actually obtained 395 codable responses. Six of the subjects refused to participate in the second session, thus eliminating 30 possible responses. Of the remaining 25 missing responses, 8 involved failure to provide the construction that we were eliciting (5 unergatives, 3 unaccusatives), 3 involved failure to record a response because of mechanical problems, and 14 were instances in which the case ending was uninterpretable, either because the child used a nominal with an unstressed case marker (usually, the diminutive form of the target noun) or because the child's pronunciation of the crucial noun phrase was indecipherable. About half the time a child responded not with the noun we were trying to elicit but with another noun from the story or *ničego* ('nothing-GEN'). If this noun was unambiguously case-marked, we included it in the analysis as a correct or incorrect response (i.e., it was mixed in with the other responses).

Children occasionally repeated their response one or more times. Also, the case of the noun was occasionally not the same in all the responses (i.e., children corrected themselves or changed their minds). When this happened, only the first response was used in the analysis reported here. We also performed an analysis using the average case provided (if more than one response was given) as the dependent measure, and an analysis taking any correct (i.e., adultlike) response as the dependent measure, even if an incorrect response was also given. We do not report the results of these separate analyses, since the results were very similar to those reported here.

5.2 *Main Results and Discussion*

An ANOVA was performed to compare the rate of genitive response among all five verb types for all children. In order to do this analysis and the other statistical analyses discussed below, the missing data had to be imputed so that every cell was filled. If a child responded to two out of three verbs within a condition, the average was used to fill in the third response. If a child responded to one of the three verbs, that response was used to estimate the missing responses.[22] The result of the omnibus ANOVA was highly significant ($F(4, 116) = 51.8$, $p < .0001$), which means that the different verb classes produced significantly different numbers of genitive responses. But this result did not tell us about the specific differences between the conditions that we were interested in. In order to obtain this information, we used a series of contrasts. The first contrast concerned transitive and unergative verbs, testing whether the children's responses in these conditions of the experiment are adultlike. Specifically, we wanted to test whether they gave genitive responses (coded as 1) for the transitive nonspecific condition, and nongenitive responses (coded as 0) for the transitive specific and unergative conditions. If their responses conform to this pattern, we may assume that children are familiar with the genitive-of-negation construction and that they know the semantic and syntactic restrictions on its use. Results from these three conditions (the two transitive conditions and the unergative condition) are shown in table 1, collapsing across all 30 children and all trials.

Children used the genitive of negation with nonspecific transitive objects, as required by the adult grammar, 73% of the time, but they used it with specific transitive objects only 4% of the time.[23] In all other transitive specific situations they used accusative case. The mean for the unergative condition was 0; the children always responded with nominative case when the verbs were unergative. It should be noted that two of the three unergative verb trials used nonspecific

Table 1
Responses in the two transitive and one unergative conditions, collapsed over all children and all trials

Condition	Number of genitive responses out of total responses	Average frequency of genitive responses (*SD*)
Transitive with nonspecific object	63/84	.73 (.33)
Transitive with specific object	4/83	.04 (.14)
Unergative	0/72	0 (0)

[22] This process changed the means and standard deviations only slightly from the original data. Tables 1 and 2 show the imputed data, while the original values were .75 (*M*) and .44 (*SD*) for transitives with nonspecific object contexts; .05 and .20 for transitives with specific object contexts; 0 and 0 for unergatives; .47 and .50 for regular unaccusatives; and .48 and .50 for bleached unaccusatives.

[23] Actually, as we noted in section 4.1, the use of genitive with nonspecific objects is "almost obligatory," but not actually required in the adult grammar. Some part of the difference between the 73% genitive nonspecific direct objects offered by the children in our study and the "predicted" 100% might be due to this factor. We are grateful to an anonymous reviewer for this point.

Table 2
Responses in the two unaccusative conditions, collapsed over all children and all trials

Condition	Number of genitive responses out of total responses	Average frequency of genitive responses (*SD*)
Regular unaccusative	38/81	.45 (.32)
Bleached unaccusative	36/75	.47 (.34)

rather than specific subjects in order to make sure that children didn't use nominative only because the genitive of negation is not allowed with specific subjects.[24] A contrast test of the mean for the transitive nonspecific condition versus the means for the two other conditions together (transitive specific and unergative) revealed a significant difference ($t(29) = 12$, $p < .001$).

Though testing knowledge of the genitive of negation was not our primary goal, the results are interesting in their own right. Russian-speaking children as young as 3 years old understand the use of the genitive of negation. They can use a subtle semantic distinction (wide vs. narrow scope of negation, or a nonspecific vs. a specific object) to determine grammatical case reliably. To the best of our knowledge, this has never been demonstrated before.[25]

We can now assess children's use of covert A-chains (as described in section 4.2) by examining whether children fail to use the genitive of negation with unaccusatives, as the ACDH predicts. Table 2 shows the results for the two unaccusative conditions. They are clearly in accordance with the predictions of the ACDH. The mean number of genitive responses for "regular" unaccusatives (those that require the genitive depending on context) was 45%, and the mean for "bleached" unaccusatives (those that always require genitive subjects with negation) was 47%. Both of these means are much lower than the mean number of genitives recorded in the transitive nonspecific condition (73%).[26] To test the statistical significance of this difference, another contrast was performed, this time for the two unaccusative verb conditions versus the transitive nonspecific condition. The difference was highly significant ($t(29) = 4.92$, $p < .001$). Thus, it

[24] One of the nonspecific subjects was an unidentified member of a set of objects introduced within the story. The other was an object that had not been introduced in the story.

[25] Moreover, it is easy to understand why children gave only 73% genitive responses (as opposed to 100%) in the transitive nonspecific condition. It is known that children often use specific forms in nonspecific contexts—for instance, definite determiners and nominals in indefinite environments (Karmiloff-Smith 1979). The opposite error occurs less often. It is usually assumed that children make the pragmatic error of treating new information as old information known to the listener (Avrutin and Wexler 1992). Notice that children's mechanisms of case assignment are correct; it is only the interpretation they assign to nominals that is faulty.

[26] An anonymous reviewer suggests that the difference between genitive responses in the unaccusative and transitive conditions might be due to the pragmatic factor mentioned in footnote 25. That is, perhaps the scenarios we used to elicit the responses for the unaccusative verbs were more conducive to an inappropriate "specific" reading of the elicited NP than were the scenarios for the transitive verbs, although we attempted to make the nonspecific reading highly salient in both situations. Although the reviewer's suggestion is plausible in theory, it is implausible given the scenarios and verbs actually used. If anything, in our judgment it would be easier to construe some of the transitive scenarios as specific than the unaccusative scenarios (e.g., a transitive case like *The boy didn't see any pencils* vs. an unaccusative case like *There aren't any windows in the house*).

appears that children's knowledge diverges from that of adults at this point. Like adults, children know the semantic and syntactic circumstances under which the genitive of negation is licensed. Their performance differs only in the conditions that require the use of an A-chain.

As we have already pointed out, bleached unaccusative verbs are not subject to semantic conditions in adult grammars, appearing with the genitive under negation regardless of interpretation. Thus, if children do not have difficulties with A-chains and know the bleached property of these verbs, they should give 100% genitive responses in the bleached-verb conditions no matter how they interpret them. Instead, the children we tested gave only 47% genitive responses—a strikingly low proportion, especially given the 100% genitive rate for these verbs in the input.[27]

We thus have experimental evidence that children have trouble with unaccusatives. We predicted that this trouble would arise because of the interaction of the special properties of unaccusative verbs with the special properties of the genitive-of-negation construction, which requires that an underlying genitive object of an unaccusative verb raise covertly to subject position at LF. The result is evidently troublesome or ungrammatical for children under approximately 4 years of age. This causes the children to produce a nominative argument when the adult language would favor or even require the genitive. We propose (following Borer and Wexler 1992) that children represent unaccusative verbs in this construction as unergatives—in violation of UTAH—in order to avoid the ACDH (or EARH) violation incurred by the genitive of negation.

5.3 Effects of Age

The results we have discussed so far clearly show a deficit with unaccusatives when our child subjects' responses are collapsed. We have already discussed some of the implications of this finding. However, the unaccusative condition means do not look like the unergative condition means, as the ACDH would predict. In fact, the difference between the unaccusative conditions and the unergative one is also quite large ($t(29) = 9.12$, $p < .001$). The fact that both contrasts turn out to be significant on the aggregated data may be partly explained by the wide age range of our subjects (3;0 to 6;6).

Since the ACDH was originally formulated for children approximately 4 years old or younger, we might expect that the younger children in this group, on average, treat unaccusatives more like unergatives on our genitive-of-negation test, while older children treat them like unaccusatives. To test this prediction, the children were divided into two groups by age (the 15 youngest vs. the 15 oldest), resulting in a younger group mean age of 4;0 and an older group mean age of 5;4. Table 3 shows the average frequency of genitive responses for each condition for each age group.[28]

[27] As a reviewer points out, it is not clear that the children know the bleached property, given that overall they provide almost the same number of genitives in the bleached unaccusative condition as in the regular unaccusative condition. In our view, the bleached property of these verbs is not accidental, but follows from the syntactic structure of this verb class interacting with the genitive-of-negation construction. Thus, if children have these correct representations, the bleached property will follow automatically. We believe that the lack of difference for the two types of unaccusative verbs is due to problems the younger children have with the analysis of genitive of negation (i.e., A-chains).

[28] As with the previous statistical analyses, the means are slightly altered owing to the imputation of missing data, described in footnote 22.

Table 3
Average frequency of genitive responses in each condition for each age group (*SD* in parentheses)

	Transitive nonspecific	Transitive specific	Unergative	Regular unaccusative	Bleached unaccusative
Younger (n = 15) (mean = 4;0)	.73 (.31)	.04 (.17)	0 (0)	.40 (.33)	.31 (.32)
Older (n = 15) (mean = 5;4)	.73 (.36)	.04 (.11)	0 (0)	.50 (.30)	.62 (.30)

Notice that while the means in the transitive and unergative conditions are the same for both groups of children, the means in the two unaccusative conditions are higher for the older group. This indicates that the older the child, the more likely he or she was to use the genitive of negation with an unaccusative (but see the caveats at the end of the next section).

The difference between the regular unaccusative means for the two age groups is .1 or 10% in the predicted direction, but the difference is not significant ($t(28) = 1.04$, $p < .1$, one-tailed). However, the difference between the bleached unaccusative means for the two age groups is .31 in the predicted direction and highly significant ($t(28) = 3.21$, $p < .001$, one-tailed). The second result is perhaps more telling. The case marking of the nominal in bleached unaccusatives represents the cleanest test of the ACDH, since it is not affected by semantic factors that children may have difficulty with (see footnote 25). The fact that children's performance in the unaccusative conditions improves with increasing age is consistent with the maturational hypothesis. However, more insight into the aggregate results may be gained by looking at the response patterns of individual subjects.

5.4 Analysis of Individual Subjects

Another source of the significant differences in our aggregate results between unaccusatives and unergatives as well as between unaccusatives and transitives may be individual differences in the performance of the children. For example, there may have been a few children who did not control the genitive-of-negation construction at all. To study these patterns, we considered the responses that each child gave to the four relevant kinds of constructions: transitive nonspecific, transitive specific, regular unaccusative, and bleached unaccusative. Unergatives were not considered, since all children gave 0 genitive responses in this condition. Recall that in the adult grammar the second category (transitive verbs with a specific object) demands an accusative case marker, whereas the other three demand genitive.

The goal of this analysis is to classify individual children in terms of their response patterns in all conditions. For each cell in table 4, the response is listed as a particular case if at least two of the three responses in that condition were of that case. A few children gave only two responses in some categories (see cells marked *). In those cases *gen* signifies that both of the responses were genitive, and *nom* or *acc* signifies that either one or none of the responses was genitive. A

Table 4
Genitive-of-negation classification by case in each verb category for subjects who provided at least two out of three verbs in each

Subject (sex)	Age	Transitive nonspecific	Transitive specific	Regular unaccusative	Bleached unaccusative	Response classification
01 (F)	3;8	gen	acc*	nom	nom**	a
02 (M)	3;9	gen*	acc*	nom*	nom*	a
03 (F)	4;0	gen	acc	nom	nom	a
04 (F)	4;1	gen	acc	nom	nom	a
05 (F)	4;3	gen	acc	nom	nom	a
06 (M)	4;10	gen	acc	nom	nom	a
07 (F)	5;9	gen	acc	nom	nom*	a
08 (F)	4;1	gen	acc	gen	nom*	b
09 (M)	4;4	gen	acc*	gen	nom	b
10 (M)	5;2	gen	acc	gen	nom	b
11 (F)	4;3	gen	acc	nom	gen	c
12 (M)	4;9	gen	acc	nom	gen	c
13 (F)	5;0	gen	acc	nom	gen	c
14 (F)	5;0	gen	acc	nom	gen	c
15 (M)	5;5	gen	acc	nom	gen	c
16 (F)	5;11	gen	acc	nom	gen	c
17 (F)	6;3	gen	acc*	nom*	gen	c
18 (F)	6;6	gen	acc	nom	gen	c
19 (M)	4;6	gen*	acc	gen	gen**	d
20 (M)	4;7	gen	acc	gen	gen	d
21 (F)	4;7	gen	acc	gen	gen	d
22 (F)	4;8	gen	acc	gen	gen	d
23 (F)	3;0	acc*	acc	nom**	nom**	e
24 (F)	3;6	acc	acc	nom	nom*	e
25 (M)	3;8	acc*	acc*	nom*	nom*	e
26 (F)	4;2	acc*	acc*	nom**	nom*	e
27 (F)	5;0	acc	acc	nom	nom	e
28 (F)	6;2	acc	acc	nom	nom	e
29 (F)	4;2	gen	gen	gen	nom	f
30 (M)	4;8	acc*	acc*	gen**	nom*	g

gen, acc, nom = genitive, accusative, or nominative case was provided on at least two out of three trials in a given category.
* = one out of three data points missing
** = two out of three data points missing

few additional children gave only one response in some categories (see cells marked **), in which case this response was used to estimate the average.

The table of individual responses provides powerful evidence for the ACDH. Although a large range of response patterns is possible in principle, only those predicted by the ACDH were attested. The ACDH predicts that even if children can use the genitive of negation with transitives,

they will not be able to use it with unaccusatives unless they are able to represent A-chains. But the ACDH makes an even stronger prediction: the contrapositive. If children can use the genitive of negation properly with unaccusatives, they should also be able to use it with the other verb types. Thus, only the following three types of response patterns are predicted:

1. The pattern produced by those children who cannot use the genitive of negation at all (types e, f, and g, or the last 8 children listed in the table). These children do not show adultlike performance on transitives. This demonstrates that they do not know core aspects of the syntax of the genitive-of-negation construction. A fortiori, they also fail to show adultlike knowledge of the genitive-of-negation construction with unaccusatives. This is consistent with the ACDH, but does not provide special support for it.
2. The pattern produced by those children who are adultlike in that they use the genitive of negation properly with all verb types (type d in the table). These children have matured beyond the ACDH grammar.
3. The pattern produced by those children who have an ACDH grammar (types a, b, and c in the table). These children know how to use the genitive of negation, as shown by their performance in the transitive and unergative conditions. They simply failed to use it consistently with one or both unaccusative conditions. The majority of our child subjects, 18 of them, fell into this third category.

These are, in fact, the only response patterns attested.

The 11 children who used nominative with unaccusatives in some but not all trials (categories b and c) require special discussion. There are several possible explanations for these response patterns. A reasonable explanation for the category c children (those who used the genitive of negation only with bleached unaccusatives) is that the ACDH property of their grammar is not strong enough to shut out overwhelming positive evidence. Bleached unaccusatives are used with the genitive of negation very frequently (see section 5.5), especially the bleached verb 'be', which was included in our experiment. Consequently, some children may learn to use the genitive of negation with bleached unaccusatives by rote, while the regular unaccusatives provide a glimpse into the true state of their grammar. If this explanation is on target, then only the responses of category b subjects remain marginally unpredicted. One possibility is that these children have either ACDH or adult grammars, but, because of random noise and performance factors, they fail to treat unaccusatives consistently. Another possibility is that these children are in flux. Their grammars may be developing away from the ACDH state; their responses might reflect this transition. Still another possibility is that these children still have ACDH grammars but operate under a system of competing or ranked constraints in which the ACDH and UTAH are pitted against one another, with a constraint like "Obey UTAH" sometimes outranking the ACDH in some children's grammars.[29]

[29] For example, one might embed this view within Optimality Theory (Prince and Smolensky 1993), with the ACDH and UTAH as competing constraints (the ACDH being a constraint specific to immature grammars). We have assumed UTAH is violable so that children can avoid A-chains by using an unergative analysis of unaccusatives (this corresponds to the grammar in which the ACDH is ranked higher than UTAH). However, if UTAH is inviolable, children will be

One further note is necessary. We have included table 4 to illustrate the attested (and unattested) patterns of acquisition of the genitive of negation. However, because the number of children who demonstrated each pattern is quite small, it is not possible to reach conclusions about the typical time course of development using these data. For example, in table 4 the mean age of adultlike children (4;7 – group d) is *lower* than the mean age of children whose grammar is still in flux (5;5 – group c), though this would probably not have been the case if our sample had been larger. It would surely not have been the case if our study had included substantial numbers of older children (not to mention adults!), since this population surely would fall almost entirely in group d. The quirk of ages discussed here is thus an artifact of small sample size and the cutoff age for children in our study. Since table 3 makes a more coarse-grained distinction (with more children in each cell), it is of greater value as an informal demonstration of improvement over time. But the real points important to our study—namely, the consequences of the ACDH for individual grammars—are revealed principally by table 4.

5.5 *Triggering, Maturation, and Unaccusative Verbs*

In section 1 we suggested that the hallmark of maturation-controlled (vs. input-driven) development is the existence of a triggering problem. The triggering problem arises in a situation in which children lack a component of grammatical knowledge despite having been exposed to relevant input or triggers. If this knowledge is acquired late despite the early and frequent presence of relevant data, we might suspect that maturation is preventing the child from acquiring this knowledge.

Bleached unaccusative verbs provide an especially clear example of the triggering problem. Recall that (for adults) these verbs require genitive case under negation, no matter what the context. The children we tested used nominative case on average about half the time, even though they could never have heard such forms (except, perhaps, from other children). More striking, though, and more relevant to the triggering problem, is that these constructions are extraordinarily common, especially the use of genitive with the negated existential verb (*net*). *Net* is used to convey that someone or something is not present, does not exist, or is not in someone's possession. It is the verb a Russian speaker uses when an item in a store is out of stock, when a person is not home to take a phone call, and whenever an English speaker would say "There isn't any . . ." or "We don't have any . . .". While we have not uncovered any hard statistics on usage, there can be no doubt that the construction as used by adults is heard by Russian-speaking children many times each day.

Since the most likely "trigger" for the genitive of negation with unaccusatives—the construction itself—is probably heard by children very often, the fact that the trigger has little effect

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forced to use A-chains to represent unaccusatives, violating the ACDH (this corresponds to the grammar in which UTAH is ranked higher than the ACDH). This outcome would be realized in this experiment in the form of adultlike performance. If the constraints are equally ranked, children should violate one or the other randomly, producing genitive of negation (with unaccusatives) some of the time.

suggests that something is holding them back. We are forced to conclude that the late use of the genitive of negation with unaccusatives is due not to factors in the input but to factors internal to the child. We have proposed that when children produce unaccusative verbs, they do so by representing them as unergatives to avoid an A-chain. In our experiment we were able to tap into children's representation of unaccusatives by placing children in a situation where they were forced to use an A-chain with an unaccusative if they had a true unaccusative representation. When pressed in this way, the children we tested failed to use an A-chain about half the time.

One might ask whether our experimental findings correspond with what is known about natural speech production by children. In this connection it is interesting to note that our experimental results were anticipated by the anecdotal observations of Gvozdev (1961:345–346), the author of a classic volume documenting how his son acquired Russian.[30] The volume also contains numerous keenly observant remarks about the acquisition of Russian by children in general. He notes (translation ours):

> [I]n negative sentences with *net*, the nominative is at the very beginning used in place of the genitive case: *net pinók* [not-is stump-NOM.SG; i.e., 'There is no stump (here)'] 2;9,17; *u nás nét dén'gi* [at us not-is money-NOM.SG; i.e., 'We don't have any money'] 2;8,16; *u bábuški Máni nét svin'ja* [at Grandma Manya not-is pig-NOM; i.e., 'Grandma Manya doesn't have a pig'] 2;9,17; *niktó nétu* [nobody-NOM.SG not-is; i.e., 'There is nobody here'] 2;9,25. This structure for negative expressions (*net* + nominative case) is made possible by the corresponding affirmative expressions like *vot penëk* [here (is) stump-NOM.SG; i.e., 'There is a stump here']; *u násést' dén'gi* [at us is money-NOM.PL; i.e., 'We have money']. (p. 146)

Gvozdev provides many additional examples, describing them as "expressions [which] are characteristically found in many children."[31] Gvozdev's observations suggest that children's verbal productions contain the same deviations from adult norms found in our elicited production experiment.

6 More Evidence from Passives

Let us review the logic of our investigation. The ACDH predicts that children do not maintain adultlike representations of passive or unaccusative clauses containing an object trace and an A-chain. Since children do use passive and unaccusative verbs, either the ACDH is incorrect, or the children are representing these constructions without the object trace. This might be possible if the relevant constructions have appropriate traceless s-homophones. As we have indicated, they do: passives can be doubled by traceless, unergative s-homophones, and unaccusatives can also be represented as unergatives. Recent work by Fox and Grodzinsky on the English passive (1998; also Fox, Grodzinsky, and Crain 1995) provides, in our view, an instructive example of the child's use of unergative s-homophones. Interestingly, the authors take their results as a *disconfirmation*

[30] We are grateful to Sergey Avrutin for bringing Gvozdev's observations to our attention.

[31] Gvozdev goes on to note that children also use the nominative in sentences whose main predicate is a weak quantifier, where adults use the genitive. For example, where adults would say *Vody mnogo* (lit. 'water-GEN much'; i.e., 'There is a lot of water') young children (under 4 years of age) frequently use the nominative. We suspect that these are also unaccusative sentences (Crockett 1976, Pesetsky 1982, Babyonyshev 1996) and that the phenomena are related.

of the ACDH—in particular, as a disconfirmation of Borer and Wexler's (1987) claim that the acquisition of English passive supports the ACDH. We will argue that their data not only are consistent with the ACDH, but actually support it, when taken together with results like those presented here.

The children in Fox and Grodzinsky's study were asked to make truth-value judgments of passive sentences uttered by a puppet describing a story (a methodology developed by Crain and McKee (1985)). The point of interest was the difference between passives with an overt *by*-phrase ("nontruncated passives") and passives without an overt *by*-phrase ("truncated passives"). Children gave judgments on the following five types of sentences:

(26) *Nontruncated actional* be-*passives*
The rock star is being chased by the koala bear.

(27) *Nontruncated actional* get-*passives*[32]
The boy is getting touched by the magician.

(28) *Nontruncated nonactional* be-*passives*
The boy is seen by the horse.

(29) *Truncated nonactional* be-*passives*
The bear is seen.

(30) *Active voice controls*
a. The mouse is touching the little girl.
b. The pizza baker sees the buffalo.

Fox and Grodzinsky tested 13 children who ranged in age from 3;6 to 5;5 with a mean of 4.68 years. The majority of their subjects (their "group 2") showed perfect comprehension on four out of the five sentence types.[33] The one exception was (28): the nontruncated nonactional *be*-passives. For these passives, responses were only 40.6% correct—that is, at chance. For Fox and Grodzinsky, the most illuminating result is the contrast between nontruncated and truncated nonactional passives. On the basis of this observation, they argue that the locus of children's deficit lies not in the presence or absence of an A-chain, but in the presence or absence of a *by*-phrase that realizes the external argument role. On this view, children's problems with passive sentences are limited to the relationship between passive morphology and the *by*-phrase.

This view, of course, requires some special explanation for the children's perfect performance on nontruncated *actional* passives. Fox and Grodzinsky adopt the idea of Rappaport (1983), Jaeggli (1986), and Grimshaw (1990) that the *by*-phrase in English has two distinct but easily confusable syntactic functions. In some environments a *by*-phrase can denote the creator, or the

[32] *Get*-passives are not important to our discussion, but were studied by Fox and Grodzinsky because they are produced by young children and are not adjectival.

[33] Group 1 contained 2 children who performed like adults. Group 2, the group discussed here, contained 8 children. Group 3 contained 3 children who performed badly on both long and short nonactional passives. Fox and Grodzinsky speculate that the performance of group 3 may have been due to flawed experimental design, since the nonactional verbs involved perception, which is hard to demonstrate unambiguously in a puppet task.

agent ("Affector") responsible for an event or object, as in the NP *a book by Mary* (Fiengo 1974). This Affector use of the *by*-phrase arises from one of the meanings of the preposition *by* and does not depend on the presence or absence of any particular morphology in the sentence. Fox and Grodzinsky surmise that the *by*-phrases on which the majority of their child subjects performed perfectly are Affector *by*-phrases. But the *by*-phrase can also play a strictly grammatical role, acting as the realization of the external argument of a passive verb (Lasnik 1988) as a result of "θ-transmission." Fox and Grodzinsky hypothesize that it is θ-transmission that poses problems for the group 2 children in their study. When these children are presented with nontruncated passives of nonactional verbs, they can interpret the *by*-phrase as a bearer of the external argument role only if they posit θ-transmission—the grammatical property that presents difficulties for them. By contrast, when these children are presented with nontruncated passives of *actional* verbs, they may interpret the object of *by* as an Affector. No role is played by θ-transmission in the parsing or comprehension of sentences with an Affector *by*-phrase.[34]

Because children's performance correlates with the presence of a *by*-phrase that realizes the external argument role, Fox and Grodzinsky concluded that the presence or absence of an A-chain was irrelevant to the matter. This conclusion was, in our opinion, too hasty. Fox and Grodzinsky's results might instead be interpreted as evidence that the locus of the deficit actually lies in some property that is entailed by θ-transmission. We think that the presence of an A-chain is just such an entailment and thus conclude that Fox and Grodzinsky's experimental results not only fail to argue against the ACDH, but can be explained by the ACDH. To do this, we adopt Fox and Grodzinsky's analysis of *by*-phrases in its entirety. We agree that a *by*-phrase with an actional passive does not have to realize the external argument role, and we agree that a *by*-phrase with a nonactional passive does have to realize the external argument role. We believe, however, that these factors have immediate consequences for the availability of traceless s-homophones for passive clauses.

The demonstration is simple. Suppose a child must seek an "s-homophone" that lacks an A-chain for a structure that an adult would analyze with an A-chain. We may assume, with Borer and Wexler (1987), that this s-homophone is in fact an adjectival passive—that is, a structure in which the θ-role normally assigned to object position is instead assigned to subject.[35] An adjectival s-homophone of this sort will be available only if the subject of the structure is free to be interpreted as the external argument. Suppose the structure contains a *by*-phrase. Now consider two cases:

> *Case 1:* The *by*-phrase can be interpreted as a free-floating Affector (with a verb like *kick*). The subject of the sentence can be understood as the external argument. This is the analysis of nontruncated actional passives, on which Fox and Grodzinsky's child subjects performed well.

[34] Fox and Grodzinsky's explanation for their findings presumably falls under the rubric of "purely linguistic maturation" just like ours, since the deficit posited in their article selectively affects θ-transmission (though they do speculate on a possible explanation for this effect in terms of "parsing load"). Thus, the question under discussion concerns the correctness of the ACDH as an instance of maturation, not the existence of maturation itself.

[35] Crucially, we must not adopt Borer and Wexler's claim that only actional verbs yield adjectival passives.

Case 2: The *by*-phrase cannot be interpreted as a free-floating Affector (with a verb like *see*). Thus, it must be interpreted as a realization of the external argument. The subject cannot also be understood as the external argument, and must therefore head an A-chain whose tail occupies some other θ-position. This is the analysis of nontruncated nonactional passives on which Fox and Grodzinsky's child subjects performed at chance.

We thus predict precisely Fox and Grodzinsky's results. Among the sentence types studied, only nontruncated nonactional passives run afoul of the ACDH. These are the only structures with which Fox and Grodzinsky's child subjects had problems. If we consider Fox and Grodzinsky's results in isolation, we are free to maintain either the ACDH or their hypothesis that θ-transmission is the source of their child subjects' difficulties. Only the ACDH, however, accounts simultaneously for our results with unaccusatives and Fox and Grodzinsky's results with passive sentences.

Across languages, passive structures that include an oblique phrase that can only be understood as the external argument should constitute configurations without an unergative s-homophone, if the ACDH is correct. In essence, this situation, along with the situation tested with the Russian genitive of negation, provide the two types of arguments that can support the ACDH. In the genitive of negation with unaccusatives, we know that the construction involves an object trace because the trace is pronounced. In certain types of passive, we know that the construction involves an object trace because a phrase other than the nominative subject provides the underlying external argument.

One further example of the latter type is provided by Sugisaki's (1997) study of adversity ("indirect") versus simple ("direct") passives in Japanese. As the examples in (31) show, the adversity passive construction makes use of normal passive morphology and may be formed from intransitive or transitive verbs. Furthermore, the adversity passive retains the ability to assign accusative case to its direct object. In addition, the subject of the sentence is interpreted as being adversely affected by the event described by the verb. The adversity passive contrasts with the simple passive, whose syntax and semantics approximate those of its English counterpart.

(31) a. *Simple passive*
Kuruma-ga seito-ni ker-are-ta.
car-NOM student-DAT kick-PASS-PAST
'The car was kicked by the student.'

b. *Adversity passive*
Sensei-ga seito-ni kuruma-o ker-are-ta.
teacher-NOM student-DAT car-ACC kick-PASS-PAST
'The teacher had his car kicked by the students.'

Arguments by Miyagawa (1989), Kubo (1990), and others support the idea that the simple passive involves an A-chain linking subject and object positions, but the adversity passive does not. Suppose the Japanese *by*-phrase makes impossible the existence of an unergative s-homophone for

the simple passive.[36] Then the ACDH makes a clear prediction: the adversity passives should be understood earlier than the direct passives, even though adversity passives are semantically and pragmatically more complex. Sugisaki (1997) confirmed this prediction. In an experiment with 17 children, he found that 6 of them knew both constructions, 6 knew neither construction, and 4 failed with the direct passive but not the adversity passive. Only 1 child of the 17 tested failed on the adversity passive but not on the direct passive. Sugisaki interprets these data to mean that Japanese children learn the adversity passive, which does not require an A-chain, earlier than the regular passive, which does.[37]

As an anonymous reviewer points out, the very early acquisition of passive in Inuktitut may constitute evidence against the ACDH, as argued in Allen and Crago 1996 and Allen 1996. It is problematic for the ACDH, however, only if the passive construction in Inuktitut involves an A-chain linking the subject and object positions. While Allen and Crago assume that this is the case (i.e., that the Inuktitut passive construction is identical to the English verbal passive in this respect), they provide no evidence for this view. This move appears precipitous to us: according to an alternative analysis, the passive construction in Inuktitut does not contain a (subject, object) A-chain. Thus, Johns (1992) offers a good deal of morphological and syntactic evidence for the conclusion that the "verbal" passive in Inuktitut is formed by a process of nominalization and predication.[38] More specifically, Johns argues that the passive construction is formed in two steps: (a) the passive participle morpheme is attached to the stem of a transitive verb in the lexicon, forming a passive nominal (e.g., *kapi-jaq* 'the stabbed one' formed from *kapi* 'stab') that refers to the internal argument of the verbal stem, just like the English nominals formed with the suffix *-ee* (e.g., *employ-ee* formed from *employ*); (b) the passive nominal is combined with a copula morpheme *-u* (e.g., *kapi-ja(q)-u* 'is the stabbed one'), which turns the nominal into a one-place predicate capable of combining with a subject (e.g., *nanuq kapi-ja-u-juq* 'the bear is the stabbed one'). Crucially, the passive does not have an internal argument at any point in the syntactic derivation. If the arguments provided by Johns are correct, then the Inuktitut passive construction,

[36] Grimshaw (1990) argues that some languages, including Spanish, lack the Affector role for the *by*-phrase. An important diagnostic of an Affector *by*-phrase is its ability to occur within NPs that lack argument structure, for example, *a book by John*. The fact that *by*-phrases headed by *ni* cannot occur within such NPs in Japanese argues that *ni* is not an Affector in that language (**John-ni hon* 'John-DAT book').

[37] Sugisaki's results may help us interpret the results of Demuth (1989), often described as a serious problem for the ACDH. Demuth reported that children acquiring Sesotho (a Bantu language) produce passives much more frequently and much earlier than children acquiring English. Could these early passives be adversity passives? This suggestion acquires some plausibility in light of Suzman's (1990) careful study of children acquiring passives in Zulu, another Bantu language:

> The negativity seen in some adult input was characteristic of child speech. In children's utterances. . ., someone was the worse off for having had something happen to him. Someone or something was 'broken', 'stolen', 'tied up' and 'hit'. This was also found in Sotho [i.e., Sesotho] where Demuth's (1989) children used verbs with negative expression, 'get pinched', 'choked', 'lashed' (hit), 'twisted', 'pushed', 'thrown away', 'punctured', 'tied up'. It suggested that the semantics of the passive for the child learning Zulu are not neutral but are implicitly or perhaps even prototypically negative. . . (p. 146)

Obviously, we cannot draw firm conclusions without a careful study of the syntax of adversity readings in Sesotho. These observations do, however, suggest a program of research.

[38] We are grateful to Alana Johns for discussing her analysis and its implications with us.

which lacks a (subject, object) A-chain,[39] is expected to be as unproblematic for child grammars as the adjectival or the adversity passive construction. Thus, the precocious development of the passive in Inuktitut does not conflict with the predictions of the ACDH. In fact, to the extent that the acquisition pattern seen in Inuktitut is consistent with the general acquisition pattern that the ACDH leads us to expect, it provides additional support for the ACDH. In languages with passive constructions that involve a (subject, object) A-chain, passives are acquired late, while in languages with passive constructions that do not involve a (subject, object) A-chain, passives are acquired early. Of course, given the very different nature of Inuktitut and English, care must be taken to ensure that additional factors are not responsible for the different courses of development in the two languages.

7 Does Auxiliary Selection Provide Further Tests of the ACDH?

In this section we briefly discuss the implications of two recent studies of related topics that may help us test and refine our proposals. Both concern the phenomenon of auxiliary selection. Auxiliary selection in compound past or perfect tenses has often been argued to be an indicator of unaccusativity in some Romance and Germanic languages. For example, in Italian, *essere* 'be' appears as an auxiliary verb in the compound past tense of unaccusative verbs. *Avere* 'have' appears with transitive and unergative verbs. As Borer and Wexler (1992) point out, a child who represents unaccusative verbs as unergatives might show nonadult auxiliary selection patterns—in particular, substitution of 'have' for adult 'be' (also see Mills 1985, for German).

Of course, correct auxiliary selection might also be compatible with our assumptions about young children. As Pesetsky (1982) notes (also Borer and Wexler 1992), children might learn auxiliary selection on a case-by-case basis, instead of computing the appropriate auxiliary on the basis of verb type (syntactic or semantic). Sensitivity to cooccurrences of this sort might guide the child ultimately toward a correct semantic analysis of verbs, along the lines proposed by Gleitman's (1990) "syntactic bootstrapping" hypothesis. However, the possibility of memorization can be avoided by testing auxiliary selection with novel (nonce) or infrequent verbs. If such verbs are analyzed as unaccusatives by adults, data from children would be highly relevant to the hypothesis of this article.

Randall, van Hout, and Weissenborn (1994) tested auxiliary selection in Dutch and German in the simple past with novel or nonce verbs, thus precluding the possibility that experience with the verb might influence the child's auxiliary selection.[40] We describe only part of their findings here. Children aged 4–5 and 7–8, as well as an adult group, were given a task that elicited a description of a scene using a nonce verb in a compound past tense. The strongest deviation of the youngest group from the adult norm came in a condition in which German-speaking adults

[39] Of course, the construction might contain other types of A-chains, for example, the chain formed when the subject raises from its base-generated position to the specifier position of a higher functional projection. For the ACDH, this type of A-chain is analogous to the A-chains formed when a VP-internal subject raises to [Spec, IP] in simple active clauses. For a discussion of these constructions (and their representation in child grammars), see footnote 8.

[40] We are grateful to Janet Randall, who discussed the data from this experiment as well as its interpretation with us in a series of lengthy and useful meetings.

produced the auxiliary 'be' 100% of the time with nonce verbs similar in meaning to unaccusatives, while the children produced 'be' only 73% of the time.[41] This shift toward 'have' on the part of the children could be seen as support for the ACDH, since it might indicate some pull toward an unergative representation for these verbs. However, the results of the experiment were complex, so that no firm conclusions concerning the ACDH can be drawn.

Snyder, Hyams, and Crisma (1995) avoided the possibility of verb-by-verb memorization in a different manner. Instead of examining typical intransitive verbs whose auxiliary selection could be memorized on a case-by-case basis, they looked at verbs with a reflexive clitic pronoun. In French and Italian, when a reflexive clitic is used, the auxiliary 'be' is always required. The very same verb takes the auxiliary 'be' when used with a reflexive clitic and 'have' when used with a nonreflexive clitic (or any other sort of object); see the French examples in (32)–(33). The effects of this rule are probably not memorized on a verb-by-verb basis, since the relevant factor is not the form of a particular verb, but the relationship between the subject and the clitic.

(32) a. Le chien s'*est* mordu.
the dog itself is bit
'The dog bit itself.'
b. *Le chien s'*a* mordu.
the dog itself has bit

(33) a. *Le chien m'*est* mordu.
the dog me is bit
b. Le chien m'*a* mordu.
the dog me has bit
'The dog bit me.'

This rule is relevant to the ACDH if the choice of 'be' in reflexive clitic constructions arises from some property that reflexive and unaccusative clauses have in common. If, for example, reflexive clitic constructions in the adult grammar involve an A-chain linking subject with object, then the ACDH straightforwardly predicts that children should be unable to represent such clauses in an adultlike manner. For example, French-speaking (and Italian-speaking) children younger than 4 should use 'have' instead of 'be' in reflexive clitic constructions. One family of analyses for reflexive clitic constructions has exactly this property (Marantz 1984, Bouchard 1983:67–69; also see Pesetsky 1995, which relies on unpublished work by Richard Kayne). These analyses posit that the reflexive clitic is an underlying *subject* clitic—not an object clitic as its position might suggest. One version of this hypothesis might view the reflexive clitic as generated in [Spec, VP] and moved to clitic position by the normal rule for nonnominative cliticization. The NP that surfaces in subject position, marked with nominative case, is (on this analysis) an underlying object, which occupies the subject position as a consequence of A-movement.

[41] In contrast, in one typical condition containing a lexically atelic verb, adults supplied 'have' 93% of the time and children supplied 'have' 81% of the time (19% 'be'). This discrepancy from adult performance (12%) is much smaller than the corresponding discrepancy in the use of 'be' described in the text (27%).

Table 5
Use of auxiliary verbs by Philippe (data from Snyder, Hyams, and Crisma 1995)

	'be'	'have'
Reflexive	27	2
Nonreflexive	0	104

(34) le chien$_j$ s$_i$' est [t_i mordu t_j]

If children younger than 4 lack A-chains (in accordance with the ACDH), they should either lack reflexive clitic constructions or represent them in some way that does not involve the A-chains that trigger selection of 'be'.

To test this prediction, Snyder, Hyams, and Crisma (1995) carried out a corpus study of reflexive clitic constructions in early French and Italian, using transcripts of children's speech from the CHILDES database (MacWhinney and Snow 1985). They asked (a) whether reflexive clitic constructions are used in tenses that require an auxiliary verb, and (b) if so, whether or not 'be' is consistently used as the auxiliary by young children. They found that French- and Italian-speaking children as young as 2;3 use reflexive clitics in compound tenses and consistently select 'be', just as adults do. If reflexive clitics are correctly analyzed as in (34), these results are not consistent with our proposals. For example, the speech of a French child, Philippe, between the ages of 2;1 and 3;3 (Suppes, Smith, and Leveille 1973), showed the distribution of auxiliaries given in table 5. Corpora from three Italian children displayed a similar pattern. Out of 50 occurrences of reflexive verbs in the compound past tense, only 2 were used with 'have'; the rest were used with 'be'. No unergatives were used with 'be'.

There are only two ways to resolve the contradiction between Snyder, Hyams, and Crisma's results and ours. Either their unaccusative analysis of reflexive clitic constructions is wrong, or the ACDH (and our interpretation of the Russian results) is wrong. The analysis of reflexive clitics assumed by Snyder, Hyams, and Crisma presupposes a number of specific assumptions about case, movement, and the lexical properties of reflexives that have not yet been thoroughly explored in the literature. Consequently, it is possible that their syntactic assumptions are indeed incorrect. If so, we might allow reflexive constructions with auxiliary 'be' to have an unergative representation and explain the choice of auxiliary in some other way. However, we will not pursue this issue here. Instead, we will briefly sketch what alternative explanation we might substitute for the ACDH if Snyder, Hyams, and Crisma's syntactic assumptions were to prove correct.

The alternative that we have in mind is a variant of the ACDH: the External Argument Requirement Hypothesis (EARH), described in section 2.2. As we noted, this hypothesis attributes children's difficulty with A-chains not to the A-chains themselves, but to a precursor: the absence of the external argument role. (Recall that it is the absence of this role that makes a (subject, object) A-chain possible.) Indeed, one salient difference between reflexive clitic constructions and standard unaccusative clauses lies in the presence of an external argument. In fact, the reflexive construction in languages like French and Italian does not lack an external argument under any

theory. (The controversy concerns only whether the reflexive clitic or the full NP is that external argument.)[42] Because the reflexive construction in French and Italian contains an external argument, the EARH predicts that it should be unproblematic for young children. Such constructions should contrast with unaccusatives, which not only involve an A-chain, but also lack an external argument. Consequently, if we were convinced of the need to substitute the EARH for the ACDH, the overall interpretation of our Russian findings would remain untouched. The availability of unergative and adjectival s-homophones for unaccusative constructions would still be crucial as an explanation for why children produce and understand a range of passive and unaccusative constructions.

Thus, even if Snyder, Hyams, and Crisma are correct about the syntax of reflexive clitic constructions, their results do not contradict the broad points of our study. Children show difficulty with the acquisition of constructions that lack external arguments and display A-chains (passives and unaccusatives). In the case of unaccusatives—as tested by the genitive of negation in Russian—children continue to have trouble despite the frequent presence of a trigger (the negative existential construction), making a striking argument for purely linguistic maturation: the phenomenon we set out to investigate.

8 Conclusion

An important methodological point emerges from our discussion. It has often been assumed in studies of first language acquisition that if a child uses a particular form, this form *must* have the adult analysis. However, we believe this assumption is too strong. In studying adult syntax, one always investigates the analysis of a construction; the analysis is not "written on its sleeve." In our opinion, the same is true of child syntax. The major example considered here is the unaccusative construction (although exactly the same point holds for verbal passives). We know that children *use* unaccusative verbs at a young age. It is wrong, however, to conclude from this observation that children analyze these verbs exactly as adults do. Instead, one must perform linguistic tests to determine what their analysis is. When this is done, it may turn out that the adult and child analyses of a construction are quite different.

In this article we have used the kinds of distributional tests that are used in nondevelopmental studies to establish that young Russian-speaking children employ unergative s-homophones for structures that in the adult grammar would be unaccusative. We have argued that this result is expected under the hypothesis that young children have difficulties with A-chains. Furthermore, we have argued that the delay of A-chains is due to maturational factors, because the evidence that would teach the child the correct form is abundant in the input. We thus provide a demonstration that there are properties of grammar that mature.

[42] That is, the reflexive construction has a full, nondeficient v, with either the reflexive clitic or the nominative NP generated in [Spec, v]. For a current analysis of the Romance reflexive construction that generates the reflexive clitic in [Spec, v], see McGinnis 1998. In terms of the implementation of the EARH suggested in footnote 5, then, such constructions would not be problematic for the child.

Appendix A: Example Story for Each Type of Verb Used in Experiment

Example 1

Nonspecific direct object of a transitive verb with negation

Experimenter [using a toy cat and paper with drawings of houses and bicycles on it]
This is a story about a cat. The cat decides that he wants to paint. So he paints one house—oh, it's difficult! And then he paints another house—it's difficult! He says, "Now, I'm tired. I can't paint any more," and he goes home.

Puppet
Ja znaju čto slučilos'. Kot pokrasil dva doma i ne pokrasil ni . . .
I know what happened cat painted two houses and not painted NEG

Adult and child
Odnogo velosipeda.
single-GEN.SG bicycle-GEN.SG

Example 2

Specific direct object of a transitive verb with negation

Experimenter [using two characters and a pencil]
This is a story about a little boy and a big boy, and this pencil that's lying on the floor. The little boy wants to roll away the pencil, but he can't. It's too heavy. So the little boy starts to cry. Then the big boy comes over, and he's stronger, so he pushes the pencil. It's easy for him.

Puppet
Ja znaju čto slučilos'. Bol'šoj mal'čik otkatil karandaš, a malen'kij mal'čik
I know what happened big boy rolled-away pencil-ACC but little boy
slabyj; on ne smog. On ne otkatil . . .
[is] weak he NEG could he not rolled-away

Adult and child
Karandaš.
pencil-ACC.SG

Example 3

Nonspecific subject of unaccusative verb

Experimenter [using a toy duck, a toy frog, and a drawing of two houses]
This is a story about a duck, a frog, and two houses. The duck says, "My house is better." Then the frog says, "No, you're wrong, my house is better." The duck says, "No, my house is better." And the frog says, "No, *my* house is better." So they start fighting.

Puppet
Ja znaju počemu ljaguške bol'še nravilsja etot dom. V etom dome bylo okno,
I know why frog more liked this house in this house was-NEU window-NEU,
a v tom dome ne bylo . . .
but in that house not was-NEU

Adult
Okna.
window-GEN.SG

Child
Okno.
window-NOM.SG

Example 4
Nonspecific subject of unergative verb

Experimenter [using a toy child, a toy tree, and three toy gnomes]
A boy (or a girl) is walking through a forest. He is very scared of monsters, which he heard live there. Suddenly, he hears someone singing from behind a tree, and becomes really terrified, because now he is sure that it's the monsters singing. He creeps up to the tree and looks around it. He sees that there are three little gnomes singing there, and stops being afraid.

Puppet
Mal'čik perestal bojatsja, potomu čto uvidel čto za derevom ne pe . . .
boy-NOM stopped-MASC.SG fear because saw-MASC.SG that behind tree not s . . .

Adult and child
. . . li čudovišča.
. . . ang-PL monster-NOM.PL

Appendix B: Actual Verbs and Subjects or Objects Used in Experiment

Transitive, nonspecific object

uvidet' čudovišče
see monster

pokrasit' velosiped
paint bicycle

podnjat' karandaš
lift pencil

Transitive, specific object

uvidet' babu-jagu
see witch

otkatit' karandaš
roll pencil

podnjat' karandaš
lift pencil

Bleached unaccusative

byt' okno
be (exist) window

okazat'sja pis'mo
turn-out-to-be letter

byvat' čudovišče
be (habitual) monster

Unaccusative

dostat'sja pis'mo
come-into-one's-possession letter

pojavit'sja čudovišče
appear monster

rastajat' snežinka
melt snowflake

Unergative

tancevat' pis'mo
dance letter

pet' čudovišče
sing monster

pogovorit' kot
speak cat

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(Babyonyshev)
Department of Linguistics
Yale University, 322 HGS
New Haven, Connecticut 06520-8236

maria.babyonyshev@yale.edu

(Ganger)
Department of Psychology
University of Pittsburgh
405 Langley Hall
Pittsburgh, Pennsylvania 15260

jganger@pop.pitt.edu

(Pesetsky)
Department of Linguistics and Philosophy
E39-237
MIT
Cambridge, Massachusetts 02139

pesetsk@mit.edu

(Wexler)
Department of Brain and Cognitive Sciences
and Department of Linguistics and Philosophy
NE20-409
MIT
Cambridge, Massachusetts 02139

wexler@psyche.mit.edu