# Children's Knowledge of *again* with English Goal-PPs: Testing the Semantic Subset Principle

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## 1. Introduction

The Semantic Subset Principle (SSP) proposed by Crain et al. (1994) concerns what the learner needs to do when UG allows more than one reading for a sentence in the input, and one reading entails the other. It is intended to avoid problems when the learners' language includes only the "strong" (entailing) reading but not the "weak" (entailed) reading: Learners initially adopt a setting for a parameter that allows only the strong reading, and may later change it upon hearing direct evidence that both readings are allowed. Yet, the motivation for this learning strategy has recently been challenged (Musolino 2006, Gualmini & Schwarz 2009). So far, the empirical evidence and counterevidence for the SSP has come from children's truth-value judgments for VP-associated *only* or quantifier scope. In this study, however, we investigate children's judgment of a more subtle semantic contrast: the presuppositions of repetitive and restitutive *again* in English goal-PPs (e.g. *walk to the village again*). This is a case where the SSP can apply, yet I argue that children do not always employ it. They succeed even when the SSP predicts failure. I further propose that children use more general evidence about the syntax of English (e.g. verb-particle combinations), together with knowledge of the basic meaning of *again*, to derive the restitutive *again* with goal-PPs.

## 2. Background

It is well known that a sentence with an accomplishment predicate modified by *again* is ambiguous between a repetitive reading and a restitutive reading. The former presupposes that the agent has performed the action before; the latter presupposes only that the result has held before. Consider the following example in which *again* modifies a goal-PP construction, which consists of a manner of motion verb (*walk*) and a PP indicating path (*to the store*):

(1)     John walked to the village again.
    a.   Repetitive: John had walked to the village before.
    b.   Restitutive: John had been at the village before.

Example (1) is ambiguous between a repetitive and a restitutive reading. The former presupposes that John had walked to the village before (1a) and the latter simply presupposes that John had been at the village before, without necessarily having walked there (1b). For instance, a context in which John was born in the village, left, and returned to the village, would render (1) true.

Interestingly, languages vary in the availability of (1b). For instance, the French and Spanish counterparts of *walk to the summit/village again* given in (2) and (3) allow only the repetitive reading (see Beck & Snyder 2001 and Beck 2005 for details).

| (2) | Jean | a | marché | de nouveau | | au | sommet. |
|-----|------|---|--------|-----------|---|-----|---------|
| | Jean | has | walked | again | | to-the | summit |

| (3) | Suresh | anduvo | | hasta | la | aldea | otra vez. |
|-----|--------|--------|---|-------|-----|--------|-----------|
| | Suresh | walked | | until | the | village | again |

This cross-linguistic variation raises an interesting developmental question, which, as far as I am aware, has not been addressed in previous studies: How do children decide whether the target language permits the restitutive reading? In this study I look at English in particular, investigating how English children acquire restitutive *again* with goal-PPs.

## 3. Prediction of the SSP

One possibility is that children are guided by the Semantic Subset Principle (SSP), proposed by Crain et al. (1994). The SSP deals with cases where the interpretive component of UG makes two interpretations available for a sentence, and these two interpretations fall under an entailment relation (i.e. contexts that make one reading true are a subset of those that make the other reading true). Some languages, moreover, only allow the "strong" (entailing) reading. This is presented graphically in (4): Consider a sentence S with two possible readings R1 and R2 allowed by UG, where R1 entails R2. S is ambiguous in some languages (e.g. language A in (4)), but only has R1 in some other languages (e.g. language B in (4)). To tackle the question of how learners figure out what readings are available in their target language, Crain et al. (1994) propose that the learners will choose the parametric option that makes the sentence have the most restrictive reading, and later change it if they encounter evidence that their target language allows both readings. This is called the SSP.

(4)    Language A                                      Language B
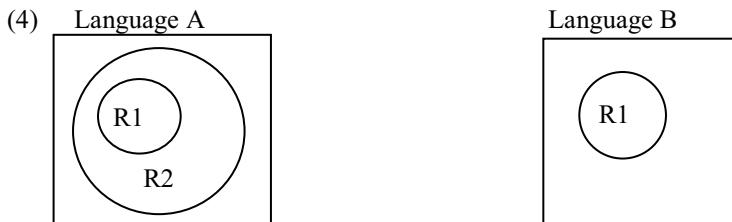


The logic behind the SSP is as follow: Without such a principle, some learners may form an initial hypothesis that only the weak reading (R2) is available. If the target grammar permits only the strong reading, it is hard to see how a learner can unlearn the weak reading, because situations that make the strong reading true also render the weak reading true, and positive evidence about the strong reading (usage of the sentence in contexts that render S1 true) is compatible with the learner's initial hypothesis. In addition, negative evidence about what a sentence cannot mean is assumed not to be reliably available in the input. On the other hand, this learnability problem can be solved under the SSP. Learners initially choose the parametric option that allows the language to have only the strong reading, and may later change it if they encounter evidence that both readings are permitted in their target grammar.

The SSP could apply to the case of *again*, since the repetitive reading asymmetrically entails the restitutive reading. In other words, contexts compatible with repetitive *again* are a proper subset of those compatible with restitutive *again*.[1] And in some languages only the repetitive reading is available. Yet, Crain et al.'s motivation for the SSP has recently been challenged (see Musolino 2006, Gualmini & Schwarz 2009). Here I will examine children's acquisition of restitutive *again* in hopes of shedding some light on this debate.

According to the SSP, some English-speaking children should go through a period in which their grammar only allows the repetitive reading (the strong reading) of a goal-PP sentence with *again*, and

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[1] However, the interpretation may be different if *again* is stressed (see Beck 2006 for an explanation). Here I will set aside stressed *again*.

not its restitutive reading (the weak reading). In time, according to the SSP, they will receive direct evidence indicating that their target language also allows the restitutive reading. But is direct evidence actually available to them in this case? How often?

To address these questions, I examined the parental input to four English-learning children for whom high-quality longitudinal corpora are available in the CHILDES database (MacWhinney 2000). Table 1 summarizes the corpora analyzed.

Table 1. English corpora analyzed

| Child | Corpus | # of child utterances | Age span | # of transcripts |
|-------|--------|----------------------|----------|------------------|
| Naima | Providence | 43,542 | 0;11,28–3;10,10 | 83 |
| Lily | Providence | 39,852 | 1;01,02-4;00,02 | 80 |
| Violet | Providence | 17,274 | 1;02,00-3;11,24 | 54 |
| Mat | Weist | 10,157 | 2;03,10-5;00,05 | 56 |

(Total # of child utterances: 110,825)

All the adult speech was searched for utterances containing a potential goal preposition (one of the following: *to, into, onto, under, down, up, in, across, around*) together with *again*. I applied the following criteria to code restitutive and repetitive *again*: (i) If in the preceding context, the agent has performed the action represented by the predicate, the utterance is coded as repetitive. (ii) If there is no mention in the preceding context of the same event being carried out by the same agent, it is coded as potentially restitutive. (iii) Among the utterances that were coded as potentially restitutive in (ii), if the combination of the predicate with (purely) <u>restitutive</u> *again* would have been pragmatically odd, it was re-coded as repetitive.[2]

The results are summarized in Table 2. In this case what children really need are examples of *again* modifying a goal-PP where the restitutive reading is unambiguously intended. In fact, such examples are extremely rare (<u>0 out of 175,201</u> utterances across our samples of child-directed speech).

Table 2. Goal-PP utterances with *again* in child-directed speech

| Corpus | Total adult utterances | potentially restitutive *again* | potentially restitutive *again* per 1000 utterances | unambiguously restitutive *again* |
|--------|------------------------|--------------------------------|------------------------------------------------------|-----------------------------------|
| Naima | 61794 | 2 | 0.0324 | 0 |
| Lily | 67238 | 7 | 0.1041 | 0 |
| Violet | 25999 | 1 | 0.0385 | 0 |
| Mat | 20170 | 2 | 0.0992 | 0 |

To account for reliable success (i.e. the stable availability of restitutive readings across generations of English speakers), the SSP-based strategy will require each child to collect multiple clear examples, ideally from multiple speakers, before drawing any conclusion. Given the extreme scarcity of clear examples, the SSP predicts that most children will still be non-adult-like at ages four and five. We examine this prediction in a comprehension study.

## 4. Comprehension Study
### 4.1. Participants, methodology, materials and procedure

We tested 31 English-learning children (mean age 4;09, range 3;10–5;07) and 12 adult controls on repetitive and restitutive *again* with goal-PPs. I used a slightly modified version of the Truth Value Judgment Task (TVJT, Crain & Thornton 1998). The format was similar to the traditional TVJT: The experimenter told stories through cartoon pictures presented in PowerPoint on a laptop computer. At the end of each story, a puppet on the computer screen, Parrot, said the test sentence, and the participant was asked whether the puppet "got it right." If a child participant rejected the test sentence, s/he was asked a follow-up question like, "How do you know"?

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[2] For example, the restitutive reading of *go to the library again* requires that the subject has been to the library but has never gone to the library before, therefore s/he must have been born in the library. This is pragmatically odd.

Crucially, I introduced a modified version of the TVJT. *Again* triggers a presupposition that a salient event with the same property as the asserted event has occurred before. As we will see in detail in the next section, the meaning contribution of *again* to its host sentence is strictly presuppositional. For example, *John danced again* presupposes that John had danced before, and has the same asserted content as *John danced*. What the participants evaluate in our experiment is whether the test sentences' presuppositions have been met, rather than whether the test sentence is true. Thus, the traditional TVJT would not have been appropriate, for the following reasons: First, the participants may give answers based on the assertion, and thus downgrade the relevance of the presupposition. Second, since a presupposition failure often gives rise to a "squeamish" feeling rather than a plain sense of falseness, participants may be unable to decide whether the puppet's sentence with *again* is correct. For these reasons I introduced a modified version of the TVJT, in which I included a "contrastive" character in the stories for the *again*-conditions. In other words, the stories for both interpretations of *again* (repetitive and restitutive) involved two characters, where exactly one of the two satisfied the presupposition of *again*. The presence of a contrasting character, who did not meet the presupposition of *again*, highlighted the relevance of the presupposition.

To illustrate this point, consider a sample story (5) for restitutive *again*. In the story, the puppy meets the presupposition of restitutive *again* (i.e. the puppy was in the doghouse before) by being born in the dog house. The other character, the bunny, did not meet the presupposition. Two possible test sentences are included in the sample: a match sentence (5a) and a mismatch sentence (5b). In the experiment, the participant heard only one test sentence per story.

(5)    *Experimenter*: Look, here's a puppy dog! He was born in a doghouse. He's never left his doghouse, because he's still too young. But now he's getting bigger, and today is his very first day to go outside. He is really excited! He walks out to a tree, where he meets a bunny rabbit. The two of them have lots of fun talking to each other. But then the puppy starts to get worried, because he knows his family is waiting for him. Still, he doesn't want to say goodbye to his new friend... So, he decides to invite the bunny to go home with him. The bunny has never been to a doghouse before. He's very excited. The two of them walk back happily, and they have a great dinner with the puppy's family!

    a.  *Puppet*: I know what the puppy did after he met the bunny at the tree. The puppy walked to the doghouse again.

    b.  *Puppet*: I know what the bunny did after he met the puppy at the tree. The bunny walked to the doghouse again.[3]

Ideally we would have liked to have the test trials in two conditions: repetitive and restitutive, with each condition having match and mismatch items. However, because repetitive *again* asymmetrically entails restitutive *again*, the test trials with *again* fell under three conditions, as summarized in Table 3. The first condition included true repetitive items. These trials were also true under the restitutive reading, because of the entailment relation. Each participant received two trials in this condition. The second condition included true restitutive sentences which failed to meet the presupposition of repetitive *again* (5a). Each adult participant was asked to judge two items in this condition, and each child participant was asked to judge these two and two more, for reasons to be discussed later in this paragraph. The third condition, called 'mismatch items', failed to meet the presupposition of repetitive or restitutive *again* (5). Each participant received four items of this category. Logically, there exists a fourth condition: sentences that are true under repetitive *again* yet fail to meet the presupposition of restitutive *again*. However, such sentences do not exist, because repetitive *again* entails restitutive *again*. Among the three conditions, the true restitutive condition was the only condition that was informative about children's knowledge of restitutive *again*. Ideally, we would like mismatch restitutive items to be informative as well. However, because the repetitive reading asymmetrically entailed the restitutive reading, the mismatch items that failed to meet the presupposition of restitutive *again* also failed to meet that of repetitive *again*. If children only had

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[3] Ideally one would place focal stress on *puppy*/*bunny* in the lead-in, and thereby turn them into a "contrastive topic"; this could highlight the issue of whether it's the puppy or the bunny who better meets the description. This was not done in the present experiment, but it would be a possible improvement in future studies.

knowledge of the repetitive reading, they would reject these items anyway. Consequently, we included two more <u>true</u> restitutive trials for the child participants than adults, with the hope of better tapping into their knowledge of restitutive *again*. The true repetitive items served as a control. The mismatch items were included to make sure that children were not simply ignoring the adverb in their interpretation. If they were doing so, they would accept the mismatch items.

Table 3. Conditions for test trials with *again*

| Conditions | Repetitive reading | Restitutive reading | Number of items | Example |
|---|---|---|---|---|
| True repetitive items | True | True | N=2 | Elmo swam to the boat again. |
| True restitutive items | Presupposition failure | True | children: N=4 adults: N=2 | The puppy walked to the doghouse again. |
| Mismatch items | Presupposition failure | Presupposition failure | N=4 | The bunny walked to the doghouse again. |
| N/A | True | Presupposition failure | | |

In addition to stories for repetitive and restitutive *again*, adult and child participants also received a pre-test that included four goal-PP trials without *again*. The purpose of the pre-test was twofold: to prepare the participants for the test stage and to make sure that the subjects could understand goal-PP sentences in the first place. Only children who got at least three out of four trials correct were included in the analysis.

*4.2. Results*

The adults' and children's accuracy on each type of test sentence is presented in Figure 1.[4] The results indicate that children's accuracy on true repetitive items (82.3%) and on true restitutive items (83.9%) are similar. However, their accuracy on mismatch items (i.e. where there was a presupposition failure) is much lower than adults'. This is because a number of children seemingly ignored *again* and accepted all the *again*-sentences, which will be elaborated later.

Figure 1. Adults' (N=12) and children's (N=31) accuracy (percentage correct) of each condition
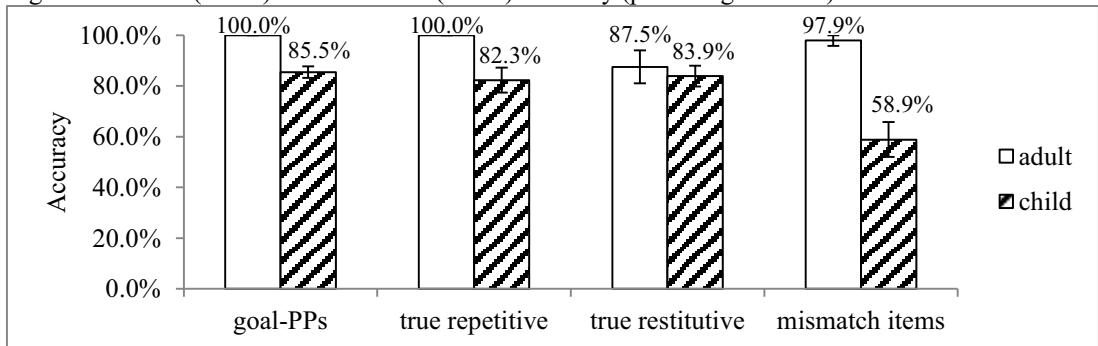


Wilcoxon Signed-Ranks tests were used to assess whether a given subject group was reliably making the expected distinctions between item types. Results indicated that both adults and children are sensitive to the distinction between match and mismatch *again* items for both repetitive *again* (adults: $z=3.04$, two-tailed $p=.002$; children: $z=3.92$, two-tailed $p<.001$) and restitutive *again* (adults:

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[4] Figure 1 indicates a drop in adults' accuracy on true restitutive items compared with true repetitive items. Three out of twelve adults made a mistake on true restitutive items each, leading to an accuracy of 87.5%. I speculate that the drop may stem from a processing bias, given that the repetitive reading is more accessible than the restitutive reading. On the other hand, given that there were only two items in each condition, it is hard to make any conclusion based on the results here. Adding more items per condition could be another improvement of the experiment.

$z$=3.04, two-tailed $p$=.002; children: $z$=4.12, two-tailed $p$<.001). We can infer from these results that many of the children in the experiment are sensitive to the same distinction as adults: they accept true repetitive and true restitutive *again* items and reject mismatch items.

Children's justifications of their answers, with a few listed in (6), were as expected.

(6)   *Puppet*: I know what the bunny did after he met the puppy at the tree. The bunny walked to the doghouse again.
        *Child #2 (5;0,15)*: "The bunny didn't walk there for two times."
        *Child #5 (4;10,01)*"That's not right. Because it's supposed to be the dog."

Now let us examine the performance of each individual child participant in terms of the response patterns summarized in Table 4.

Table 4. Possible response patterns

| Repetitive reading | Restitutive reading | Sentence type | Adult-like | *Again* dropper | Rep-only knower |
|---|---|---|---|---|---|
| True | True | True repetitive item (N=2) | Yes | Yes | Yes |
| Presupposition failure | True | True restitutive item (N=4) | Yes | Yes | No |
| Presupposition failure | Presupposition failure | Mismatch item (N=4) | No | Yes | No |

First, if a child was adult-like (categorized as 'adult-like' in Table 4), s/he accepted (said 'yes' to) the true repetitive and restitutive items, but rejected (said 'no' to) the mismatch items, which failed to meet the presupposition of *again*. Second, if a child seemingly ignored *again* (and is therefore categorized as an '*again* dropper' in Table 4), s/he accepted all the *again* items. Third, if a child only knew repetitive *again* (categorized as a 'rep-only knower' in Table 4) and believed that *again* always scopes over the entire vP, s/he accepted the true repetitive items, yet rejected the true restitutive items and mismatch items. Children who did not fall under any of the response patterns above are simply categorized as 'others'.

The following criteria were used when classifying the children: (i) 'Adult-like' children had to get at least three out of four true restitutive items correct and three out of four mismatch items correct. In addition, they had to get at least nine out of ten *again* items correct. In other words, they were allowed to make at most one mistake on a true repetitive item, and this only, if they made no mistakes on other *again* items. (ii) An '*again* dropper', who was expected to say 'yes' across the board, had to say 'yes' on at least nine out of ten *again*-items. (iii) A rep-only knower had to say 'no' on at least three out of four true restitutive items and on at least three out of four mismatch items. Meanwhile s/he had to say 'yes' to at least one of two true repetitive items.[5]

Analysis of individual subject data indicates that nine out of 31 children (29.0%) were fully adult-like, while another nine out of 31 children (29.0%) systematically responded as if they were ignoring *again*, by accepting all the *again*-sentences regardless of whether the presupposition was met. This is what led to the children's low overall accuracy on the presupposition-failure items (Figure 1). Of the remaining 13 children, only two had difficulties specifically with restitutive *again*.[6]

Children who simply ignored *again*, and responded according to the truth/falsity of the assertion, may have been downgrading the relevance of the presupposition for purposes of the task (see Berger &

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[5] It is difficult to set the standard for the true repetitive condition, because there were only two items in this category. For rep-only knowers, we tried to stack the cards against ourselves by deciding that the child knows repetitive *again* if s/he gets at least one out of two true repetitive items correct. I think that this should not be too problematic, since the mismatch items also help to distinguish rep-only knowers and *again* droppers.
[6] For the remaining eleven child participants categorized as 'others', their patterns were hard to identify because of the following reasons: first, the number of true restitutive items were too small. Second, the task involved judgment on pragmatic felicity (whether the presupposition was met), which was subtle and complex, and thus contained some noisy data. Third, some standards of categorization may be too strict, given the complexity of the task. For instance, the standard that a child needed to get at least nine out of ten *again*-items correct to be counted as adult-like may exclude three children who got eight out of ten items correct and could be potentially adult-like.

Höhle 2012) or simply do not understand the adverb. As indicated in Figure 2, the remaining 22 children, who were clearly sensitive to the presupposition of *again*, showed very similar performance in the three conditions of *again*.

Figure 2. Adults' (N=12) and children's (N=22) accuracy on each condition
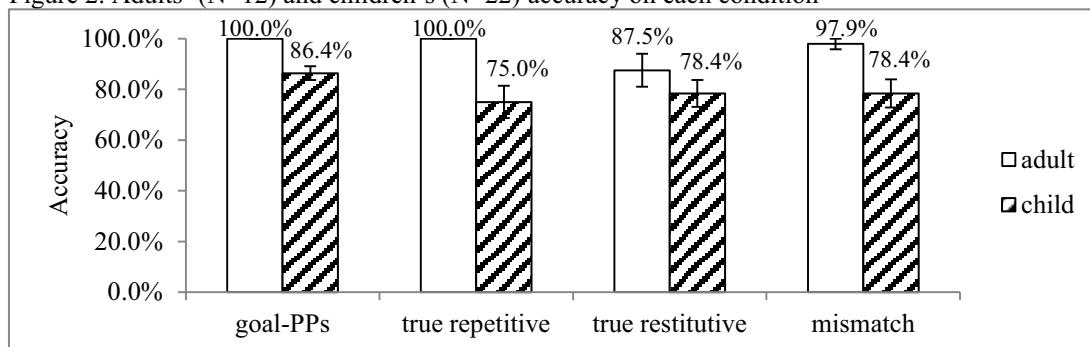


I applied Wilcoxon Signed-Ranks tests, which indicated that these children's sensitivity to the distinction between true and false *again* items was statistically reliable for both repetitive *again* ($z$=3.61, two-tailed $p$<.001) and restitutive *again* ($z$=3.81, two-tailed $p$<.001).

Overall, the results of the experiment indicated that three- to five-year-olds achieved a surprising degree of facility with both repetitive and restitutive *again* modifying goal-PP constructions. Participants showed very similar performance in the true repetitive and the restitutive conditions. In addition, they were sensitive to the distinction between true and false items for both repetitive *again* and restitutive *again*. These results are inconsistent with the prediction of the SSP.

## 5. An alternative possibility

To account for the children's considerable success, we propose that they are benefiting from more general evidence about the syntax/semantics of English goal-PPs. To lay out the details, let us first see how the ambiguity of *again* is derived and how the cross-linguistic variation of *again* with goal-PPs is accounted for.

Many researchers (Stechow 1996, and Beck & Johnson 2004, among others) argue that the ambiguity of 'again' (in German and English) is structural: a single *again*, denoting repetition, can adjoin to different syntactic projections within a complex VP. The semantics of *again* is presented in (7), according to which *again* adjoins to a proposition and triggers a presupposition that an eventuality with the same properties has occurred previously.[7] The presupposition of *again* is determined by its sister. Thus different readings of *again* come from where it adjoins in syntax. Take (8a) as an example: *walk to the village* denotes a complex event with walking as its development and being at the village as its culmination. When *again* modifies the whole complex event (8b), the repetitive reading is derived. When it modifies the resultative state (8c), the restitutive reading is derived (8c), under the assumption that *to* can mean *at* (8d) (see Beck 2005).[8]

(7)    Let P be a property of eventualities and let e be an eventuality.
       $[[again]](P)(e)$ is defined only if $\exists e'[P(e')=1 \& e'<e]$.
       Where defined, $[[again]](P)(e)=1$ iff $P(e)=1$.                (adapted from Stechow 1996)

(8)    a.    John walked to the village again.
       b.    [ [ John 1[ $t_1$ [ walked [ PRO$_1$ to the village]]]] again]                Repetitive
       c.    [ John 1[ $t_1$ [ walked [ [ PRO$_1$ to the village] again] ]]]                Restitutive
       d.    $[[PRO_1$ to the village$]]^g=\lambda e.at_e(the\_village)(g(1))$        (see Beck 2005)

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[7] Following Bach (1986), I use eventuality as a cover term for activities, accomplishments, achievements, and states.

[8] Without the assumption that *to* can mean *at* in English, the actual restitutive reading that people get for (8a) would be unavailable. The semantics in (8d) is adapted from Cresswell's (1978) semantics for *to*; see Beck (2005) for details.

However, we have seen in Section 2 that such a reading is not permitted in all languages. How is this cross-linguistic variation accounted for? Beck and Snyder (2001) and Beck (2005) propose that the syntax of goal-PPs varies across languages. A proposition denoting just the result, as needed for the restitutive reading of *again*, is present only if the language provides a special semantic composition rule. This semantic composition rule can interpret the combination of an activity-of-motion verb (e.g. *walk*) and a prepositional phrase indicating location or path (e.g. *to the store*) as an accomplishment predicate. The content of the special semantic composition rule has evolved over the years. Here, I illustrate the idea with Snyder's most recent (2012) proposal, which he calls Generalized Modification (9).

(9)    Generalized Modification (GM)
       "If α and β are syntactic sisters under the node γ, where α is the head of γ, and if α denotes a kind, then interpret γ semantically as a subtype of α's kind that stands in a pragmatically suitable relation to the denotation of β."

Furthermore, Snyder (2012) proposes that whether GM is available is a point of cross-linguistic variation, which he calls the Compounding parameter (TCP) (10).

(10)   The Compounding Parameter (TCP):
       The language (does / does not) permit <u>Generalized Modification</u>.

Let us first examine how a goal-PP construction is interpreted in [+TCP] languages (e.g. English), where GM is available. Take *walked to the village* as an example. In the assumed structure in (11a), PP is a small clause with a PRO subject. Extending Chierchia's (1998) concept of 'kind', Snyder (2012) proposes that for a property of events, there corresponds an eventuality-kind. The motion verb *walk* denotes a kind of activity, i.e. the walking-kind, and the locative phrase "at the village" denotes a kind of state. Under the assumption that *to* can be interpreted as 'at' (11b), GM can combine the two constituents and give rise to the interpretation in (11c). Snyder (2012) assumes that the "pragmatically suitable relation" between eventuality kinds is limited and that the main relation between an activity kind and a state kind is as follows: the former serves as development of an accomplishment event and the latter serves as its culmination.[9] Thus (11c) can be translated into (11d).

(11)   a.   [John 1 [t1 [walked [$_{PP}$ PRO to the village]]]]
       b.   $[[PRO_1 \text{ to the village}]]^g = \lambda e.at_e(\text{the\_village})(g(1))$          (see Beck 2005)
       c.   a subtype of the "walking" event-kind, which stands in a pragmatically suitable relation to the state of "John being at the village."
       d.   an accomplishment event-kind with "walking" as its development and "John being at the village" as its culmination.

In contrast to [+TCP] languages, GM is not available in [-TCP] languages. The lack of this special semantic composition rule makes certain types of goal-PP constructions harder to construct. But even in [-TCP] languages, the apparent counterparts to some English goal-PP constructions are perfectly grammatical, such as the Spanish and French examples (2)(3) with 'again' removed. Beck (2005) proposes tentatively that the "goal" PP in a sentence like (3) may actually be serving as an event modifier (i.e. an adjunct without a PRO), which renders such sentences grammatical. An alternative account for grammatical goal-PP constructions in a [-TCP] language is that the manner of motion verb has become semantically "bleached" to the extent that it is no longer a true manner-of-motion verb, but rather has become a change-of-location verb and can select a goal as its argument (William Snyder,

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[9] Snyder (2012) assumes that "standing in a pragmatically suitable relation to…" has to be interpreted by the conceptual system, outside of linguistic semantics. He proposes that the human conceptual system provides only a tiny repertoire of possible relations between eventualities (and eventuality-kinds). The one that is relevant here is the relationship between the development (activity) and culmination (state) of a larger accomplishment event. Crucially, GM does not give rise to a "locative" interpretation in the sense that the walking event occurs at the village. Interpretation of the locative type is done differently (see Beck 2005 for a discussion).

pc). For instance, the PP "to the summit" in (2) may simply be serving as an argument of the motion verb *marcher* "to walk" in French. Whatever the differences, these proposals agree that PPs in such examples are not propositions, hence not an appropriate adjunction site for the adverb *again*, which takes a proposition as its argument.

An important note about TCP, as Snyder has proposed in a series of works (1995, 2001, and 2012, among others), is that the parameter connects a number of constructions, including endocentric root compounds (e.g. *banana box*), verb particle constructions (e.g. *lift the book up*), adjectival resultatives (e.g *hammer the metal flat*), and goal-PP constructions.

Based on this background, what an English child really needs to learn about restitutive *again* with goal-PPs includes two components: a) the syntax of English goal-PP constructions, and b) the meaning of *again* in its simple, repetitive use. To acquire the former, children need to figure out that English is [+TCP] and therefore permits the special composition rule of GM, and thus that a manner of motion verb and a small clause with PP can be combined together to form an accomplishment event. Exposure to structures that require the composition rule (e.g. verb-particle combinations, or adjectival resultatives) will guide children to set the value of TCP to '+'. Previous research shows that this is achieved pretty early, since productive uses of English verb-particle combinations, which should suffice to indicate that the special composition rule is available in the child's grammar, are normally in place before the age of three years (Snyder & Stromswold 1997).

Another component the child needs to learn is the basic meaning of *again*. I speculate that children can learn the lexical meaning of this adverb from its parental uses in child-directed speech. These uses include the combination of *again* with a variety of predicates, whether or not their combination gives rise to a repetitive versus restitutive ambiguity. Checking the speech of the adults when addressing the same four English-speaking children whose information was summarized in Table 1, I searched for all utterances containing *again* with the CLAN program Combo. The results, presented in Table 4, indicate that there were a considerable number of *again* uses in the child-directed speech, which can help children acquire its basic meaning as presented in (7).

Checking the spontaneous speech of the same four English-speaking children, I extracted all child utterances containing *again* with the CLAN program Combo. Results were checked against the original transcripts to exclude imitations, repetitions, and formulaic routines. Fragments (e.g. *again*?) were also excluded. The results are summarized in Table 6. Here I adopted the measure of FRU, a first use soon followed by regular use with different lexical items (see Snyder & Stromswold 1997, among others), to estimate the time in which children acquire *again*. In particular, the examples reported in Table 6 were pragmatically felicitous in the sense that the eventualities represented by the predicates had occurred in the preceding context, hence the presupposition was satisfied. The results suggest that children's productive and felicitous use of *again* was also in place fairly early, before two and a half years. If this is the case, then the 'again-droppers' in the experiment may probably know the word and simply be downgrading the relevance of the presupposition (see Berger & Höhle 2012 for a similar account for children's comprehension of 'also').

Table 5. *Again* in child-directed speech

|  | Uses of *again* | Total adult utterances | Frequency of *again* per 1000 utterances |
|---|---|---|---|
| Naima | 270 | 61794 | 4.3694 |
| Lily | 199 | 67238 | 2.9596 |
| Violet | 126 | 25999 | 4.8463 |
| Mat | 141 | 20170 | 6.9906 |

Table 6. Children's FRU of *again*

| Child | Age of FRU | File number | FRU | |
|---|---|---|---|---|
| Naima | 1;05.26 | nai17, line 695 | *CHI: | yyy moose xxx read the book again Mommy. |
| Lily | 1;11.28 | lil24, line 1227 | *CHI: | yyy wet again. |
| Violet | 1;10.29 | vio18, line 869 | *CHI: | xxx read it again. |
| Mat | 2;05.10 | mat08, line 114 | *CHI: | I saw another two honkers again. |

In sum, I propose that a child will permit restitutive readings as soon as s/he has acquired the syntax of English goal-PPs and the basic meaning of *again*. In other words, while the child does not

reliably get direct evidence for restitutive *again* with goal-PP constructions, s/he could deduce this possibility from evidence concerning the basic meaning of *again*, and from evidence that other structures (e.g. verb-particle combinations) requiring the composition rule GM are well-attested in English.

Given that both prerequisites for restitutive *again* are in place around age three, this proposal makes a prediction that children as young as four years old should be able to interpret restitutive *again* with English goal-PPs. If many or all children are using this type of strategy, instead of the SSP, it is entirely expected that most four- and five-year-olds will be successful.

## 6. Conclusion

In this study I examined how English-learning children acquire restitutive *again* modifying goal-PP constructions, given the cross-linguistic variation. This question can shed some light on the debate about whether the SSP is motivated. Despite the scarcity of direct evidence in child-directed speech, 4- and 5-year-olds have considerable success in understanding restitutive *again* with English goal-PPs. The results are not compatible with an SSP-based approach. I propose that in this case children rely on more general evidence about the syntax of English, together with knowledge of the basic meaning of *again*, to derive the restitutive reading of *again* in goal-PP constructions.

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