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**A Salish Stage in the Acquisition of English Determiners: Unfamiliar 'Definites'**  
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While the adult English determiner system encodes a definiteness distinction, many languages do not do so. This cross-linguistic variation raises the question of how the acquisition of determiner systems proceeds. In this paper we report on an experiment which tested English-acquiring children's comprehension of definite and indefinite articles. On the basis of the results from this experiment, we propose that children acquiring English go through a stage during which their determiner system parallels that of Salish languages, rather than adult English, in the distinctions it encodes. We then speculate about the possible consequences of this analysis for the theory of language acquisition.

**1. Introduction**

In adult English, the determiner system encodes whether or not discourse referents are already established in the discourse. It does this by means of the contrast between *the* and *a*, as illustrated in (1). While (1a) is felicitous in an out-of-the-blue context, (1b) is not; (1b) requires that all interlocutors share knowledge of a previously-introduced girl.<sup>1</sup>

- (1) a. A girl sang.
- b. The girl sang.

However, there are languages which do not make this distinction in their determiner system. One such language is St'át'imcets (Lillooet Salish). In St'át'imcets, determiners encode whether or not the speaker is able to make an existential assertion about an individual (Matthewson 1998). Thus, the distinction between (1a) and (1b) is absent. If the speaker knows that a girl existed, and that she sang, (2) is the appropriate utterance. It is irrelevant whether or not the hearer shares knowledge of this girl (see section 2 below for further details).

- (2) ft'-em [ti smém'lhats-a]  
 sing-INTR [DET girl-DET]  
 'The/a girl sang.'

This cross-linguistic variation raises an interesting question for acquisition, especially when combined with the observation that there is some delay in the acquisition of the semantics of the English definite article (see e.g. Maratsos 1974, Schaeffer 1999, Matthewson and Schaeffer

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 † We are assuming Heim's (1982) 'familiarity' theory of the definite / indefinite contrast, and we are simplifying for the purposes of exposition. See section 6 below for discussion of some uses of the definite article which are not straightforwardly captured by the 'familiarity' theory.

2000, Schafer and de Villiers 2000, among many others). The possibility arises that children who are acquiring English pass through a stage when they display a St'át'imcets-like determiner system. The current paper reports on an experiment designed to test this hypothesis. We will argue that children do indeed pass through such a stage.

The structure of the paper is as follows. In section 2, we introduce the St'át'imcets determiner system, and outline our hypothesis about a 'Salish stage' in the acquisition of the English determiner system. Section 3 describes the experiment, and section 4 presents the results. We will show that a subset of the English-speaking children had productions which mirrored the predicted responses of adult Salish speakers. Section 5 discusses and analyses the results. In section 6, we speculate about the consequences of our findings for the theory of language acquisition. We suggest that a 'Salish stage' in the acquisition of English determiners is not an accident, but could be an inevitable step on the path from those grammars that lack determiners altogether to those which encode definiteness in the English way.

**2. Salish determiners**

St'át'imcets (also known as Lillooet) is a Northern Interior Salish language spoken in the southwest interior of British Columbia, Canada. The language is endangered; almost all fluent speakers are over the age of 60. Example sentences come from fieldwork unless otherwise noted, and are presented in the practical orthography of the language created by Jan van Eijk.

In St'át'imcets, the basic division within the determiner system is between those determiners which result in an existential assertion, and those which do not. (The system also makes plurality and deictic distinctions which are not relevant here; see Matthewson 1998 for detailed discussion.) The distinction corresponds roughly to the difference between a widest-scope existential quantifier, and a narrow-scope existential quantifier. Some examples are given in (3) and (4) of an existence-asserting determiner and a non-existence-asserting determiner respectively.

- (3) a. ft'-em [ti smólhats-a]  
 sing-INTR [DET woman-DET]  
 'The/a woman sang.'
- Ex [woman (x) & sing (x)]
- b. cw7a0z kw-s ft'-em [ti smólhats-a]  
 NEG DET-NOM sing-INTR [DET woman-DET]  
 'The/a woman didn't sing.'
- Ex [woman (x) & ¬ [sing (x)]]
- c. cuz' tsa7cw s-Mary lh-t'iq-as [ti qelhmémen'-a]  
 going.to happy NOM-Mary HYP-arrive-3CONJ [DET old.person(DIMIN)-DET]  
 'If the/an elder comes, Mary will be happy.'
- Ex [elder (x) & [come (x) → happy (m)]]
- (4) a. cw7a0z kw-s ft'-em [ku smólhats]  
 NEG DET-NOM sing-INTR [DET woman]  
 'No women sang.'
- ¬ Ex [woman (x) & sing (x)]

- b. cuz' tsə7cw s-Mary lh-t' (q-as) [ku qelhménen']  
going to happy NOM-Mary HYP-arrive-3CONJ [DET old.person(DIMN)]  
'if an elder comes, Mary will be happy.'  
[Eh (elder (x) & come (x))] → happy (m)
- Crucially, familiarity is irrelevant to determiner choice in this language. This is illustrated in (5) and (6). (5a,b) contain discourse-initial utterances; the referent of the noun phrase is unfamiliar to the listener in each case. The determiner used is *hi...*<sup>a</sup>.
- (5) a. áts' x-en-lhkan [tí wa72 qweisp píktsə] i gáp-as  
see-TR-1SG.SUBJ [DET PROG move picture] when.PAST evening-3CONJ  
'I saw a movie last night.'
- b. huy'-lhkan piakwlh, piákwlh-min lís7a [tí smém'lhats-a]  
going to-1SG.SUBJ tell.story tell.story-APPL DEIC [DET woman(DIMN)-DET]  
'I am going to tell a legend, a legend about a girl.'
- In (6), the second sentence in each case involves coreference with a discourse referent which is familiar to the listener, by virtue of having been overtly introduced. The determiner used is still *hi...*<sup>a</sup>.
- (6) a. huy'-lhkan piakwlh, piákwlh-min lís7a [tí smém'lhats-a]  
going to-1SG.SUBJ tell.story tell.story-APPL DEIC [DET woman(DIMN)-DET]  
'I am going to tell a legend, a legend about a girlj ...'  
wa7 kw7 flal láti7 [tí smém'lhats-a]  
PROG QUOT cry DEIC [DET woman(DIMN)-DET]  
'... The girlj was crying there.'  
(van Eijk and Williams 1981:19)
- b. lís7a [tí lí'tm-a smúlhats] papt káti7 wa7 t'ak száčen tí ts'k7-a ...  
here [DET old-DET woman] always DEIC PROG go carry DET basket-DET  
'There was this old womanj who was always carrying a basket ...'  
cw7aoz kw-a-s ka qwál'-a [tí smúlhats-a]  
NEG DET-PROG-NOM OOC speak-OOC [DET woman-DET]  
'... The womanj didn't say anything.'  
(van Eijk and Williams 1981:80)

This situation contrasts with English, where familiarity or otherwise of a discourse referent is obligatorily marked, as illustrated in (7).

- (7) a. I'm going to tell a legend about a girlj ... The / #a girlj was crying.

Summarizing so far, we have seen that in adult English, the distinction between familiar and novel discourse referents is overtly encoded: a definite DP cannot be used to introduce a new discourse referent. In St'át'imcets, on the other hand, the distinction between familiar and new discourse referents is not overtly encoded. The same determiner (*hi...*<sup>a</sup>) can be used both to access a familiar discourse referent and to introduce a new one. This feature of lacking a familiarity-based definite/indefinite contrast is shared by all Salish languages for which adequate data exist (see Matthewson 1998 for an overview).

<sup>2</sup> The enclitic portion of the article *hi...*<sup>a</sup> is deleted after the progressive auxiliary *wa7*.

As mentioned above, many researchers have observed that children learning English go through a stage where they have not mastered the adult determiner system. The usual claim is that children during this stage 'overuse' the definite article; they produce definite DPs when the corresponding discourse referents are not yet familiar to all discourse participants. As already observed by Matthewson and Schaeffer (2000), there is a distinct similarity between the productions of English-speaking children who overuse the definite article and the adult St'át'imcets system. This leads us to propose the hypothesis in (8).

(8) *Hypothesis*

English-acquiring children go through a 'Salish period' in their determiner system. These children do not yet know that *the* forces the accessing of a familiar discourse referent.<sup>3</sup>

This hypothesis makes the following prediction about English-acquiring children in the Salish stage. These children should accept sentences containing *the* even when a familiar discourse referent is not picked out. This amounts to treating English *the* similarly to St'át'imcets *hi...*<sup>a</sup>.

3. The experiment

According to Heim's (1982) 'familiarity' theory of definiteness, which was introduced very briefly above, the English definite article is *presuppositional*: it is felicitous only in discourse contexts where the presupposition of familiarity is met. On the other hand, in St'át'imcets (and in Salish more generally), no determiners introduce presuppositions of this kind. This is the fundamental distinction between the two adult systems.

Based on this idea, we designed an experiment to test whether English-acquiring children are aware that the definite article is presuppositional. The experiment tested comprehension rather than production. The crucial cases involved uses of the definite article which should lead either to a presupposition failure, or to a 'no' answer, for English-speaking adults, but which would lead to a 'yes' answer for Salish-speaking adults.

The child participants for the study were 25 English-speaking children (who happened to be African American) from the Northeast region of the United States. The children ranged in age from 3 years, 5 months to 7 years, 9 months with the mean age being 5 years, 4 months. The adult participants were 25 University of Massachusetts undergraduates from an introductory Linguistics class.

The experiment contained four types of test question, with a total of eighteen test questions altogether. Three of the question types involved the acting out of scripted stories using actual objects (puppets and toys). Participants watched the acted-out scenarios, and after each scenario they were asked a *yes-no* question. The first of the question types contains noun phrases of the form *a NP*, and is illustrated in (9).

- (9) *a NP*  
[Mary rides a scooter]  
'Look, Mary rode a scooter.'

<sup>3</sup> Although the similarity between the English-acquiring children and the St'át'imcets adults was already noticed by Matthewson and Schaeffer (2000), a different theory was proposed there to account for the English children's system.

The *it* questions are predicted to give rise to 'no' answers, both for adult English and for Salish-stage speakers, since in both English and Salish, the pronoun *it* should pick out the already-introduced cup which Bert drank from.

(14) *it* predictions:

- Adult English predicted answer: NO.
- Salish-stage predicted answer: NO.

These *it* questions were included as a control set, to test whether the children understand familiarity, independently of their article systems. If there is a difference between the children's responses to the *it* questions and their answers to the *the NP* questions, we will have strong supporting evidence for the claim that their 'problem' has to do with the determiner system, rather than with presuppositional items in general.

The final type of questions contained out-of-the-blue *the*, and were of the form illustrated in (15). These questions all involved clear presupposition failures induced by the definite article.

(15) "Did you get the elephant out of your hair?"

What is crucial about these questions is that the presupposition induced by *the* cannot plausibly be accommodated. For example, it seems impossible for someone hearing the question in (15) to accommodate the presupposition by adding a discourse referent for an elephant into the common ground, since it is clear that there were no elephants in the listener's hair.<sup>5</sup> Given that presupposition accommodation is impossible, the prediction for an English adult speaker who hears (15) is that the presupposition failure should be challenged. For example, an expected response might be 'What elephant?'. Thus, this group of questions should allow us to probe more closely into whether the children know that the definite article introduces a presupposition in English.

Unlike an adult English speaker, an adult Salish speaker should be able to answer such out-of-the-blue questions with a simple 'no', since the Salish article does not induce any presupposition. However, there is a slight complicating factor, which is that when such a strange question is asked, a speaker might still challenge the existential assertion (since the question means something like 'there was an elephant, did you get it out of your hair?'). Therefore, the predicted differences between the two grammars are not as clear as we would have liked for this set of questions. See section 5.3 below for discussion of a follow-up pilot experiment on presuppositional items.

(16) out-of-the-blue *the NP* predictions:

- Adult English predicted answer: challenge (WHAT ELEPHANT, etc.)
- Salish-stage predicted answer: NO or challenge (WHAT ELEPHANT, etc.)

See the Appendix for a complete list of the experiment questions. The questions were given in a mixed order (i.e., not all questions of one type were grouped together).

<sup>5</sup> In pilot versions of the experiment, we used questions which were less 'outlandish', such as "Did you see the girl in the bathroom?" or "Does the key fit the lock?". Children consistently answered with simple 'yes' or 'no' answers to these questions, never challenging the presupposition failure of the definite article. Since one possible explanation for their failure to challenge the presupposition was that they were accommodating the presupposition, we revised the questions to be 'non-accommodatable'.

[Barbie rides a different scooter!]  
"Did Barbie ride a scooter?"

The *yes-no* question in (9) contains an indefinite noun phrase (*a scooter*) which corresponds to a novel discourse referent, since Barbie's scooter has not been overtly introduced and crucially differs from the overtly-introduced scooter that Mary rode.<sup>4</sup> Therefore, the question is felicitous in adult English, and requires a 'yes' answer. The prediction for a Salish stage is also for a 'yes' answer, since in adult Salish the corresponding question means 'is it the case that there is a scooter that Barbie rode?' These predictions are summarized in (10).

(10) *a NP* predictions:

- Adult English predicted answer: YES.
- Salish-stage predicted answer: YES.

The next group of questions also contained a noun phrase corresponding to a novel discourse referent, but in this case, the noun phrase was definite rather than indefinite. An example is given in (11).

(11) *the NP*  
[Try to put a necklace on Bert, but it falls off]  
"Every time Bert puts his necklace on the necklace falls off. The necklace is broken."

[Put a different necklace on Ernie]  
"Look at Ernie. Did Ernie wear the necklace?"

The predictions for these questions crucially differ between adult English and adult Salish. An adult English speaker is not predicted to answer 'yes' to this question, since *the necklace* should pick out the already-introduced necklace that Bert tried to wear, and not the necklace that Ernie ends up wearing. We predict that an adult English speaker will answer either with 'no', or with an overt challenge to the presupposition failure which is induced (i.e., the adult might challenge the experimenter on their use of *the necklace* when referring to a necklace other than Bert's). For Salish, on the other hand, we predict a 'yes' answer. This is because familiarity is irrelevant for Salish article use, and the corresponding Salish question means something like 'there is a necklace, did Ernie wear it?'

(12) *the NP* predictions:

- Adult English predicted answer: NO (or challenge).
- Salish-stage predicted answer: YES.

The remaining two groups of questions were controls. The first of these contains *it* questions, and is illustrated in (13).

(13) *it*  
[Bert drinks from a cup]  
"Look, Bert drank from a cup."

[Ernie drinks from a different cup]  
"Did Ernie drink from it?"

<sup>4</sup> In all cases, the second object introduced differed visually from the first, e.g. it was a different color and/or size.

4. Results

Table 1 displays the predicted adult English and Salish responses, along with the percentages of 'yes' responses given by each group of participants in the study. The column labeled 'Child Results (All)' contains the results from all 25 child participants, whereas the 'Salish-Stage Group' column represents a subgroup of the child participants (six children in all) who answered in large part according to the Salish-stage predictions. For the out-of-the-blue *the* questions, the percentages in the table refer to the number of challenge responses given.

Table 1

Experimental Question Type	Adult English Prediction	Salish Stage Prediction	Adult English Results	Child Results (All)	Salish-Stage Group
Did Barbie ride a scooter?	yes	yes	98/100 (98%)	69/84 (82%)	18/22 (81%)
Did Ernie wear the necklace?	no	yes	24/148 (16%)	108/150 (72%)	29/36 (80%)
Did Ernie drink from it?	no	no	18/100 (18%)	43/75 (57%)	1/17 (5%)
Did you get the elephant out...?	what	no/what	*62/100 (62%)	*8/100 (8%)	*1/23 (4%)

\* represent % 'challenge' responses

Table 2 gives the raw data for the Salish-Stage Group of children. The questions are divided into the four groups discussed above; those involving *a NP*, those involving *the NP*, those involving *it*, and the out-of-the-blue *the* cases.

Table 2

Salish-Stage Prediction	Child 1	Child 2	Child 3	Child 4	Child 5	Child 6
<i>a NP</i> 1	yes	no	yes	no	no	yes
<i>a NP</i> 2	yes	yes	yes	yes	no	yes
<i>a NP</i> 3	yes	yes	yes	yes	yes	-
<i>a NP</i> 4	yes	yes	yes	yes	yes	-
<i>the NP</i> 1	yes	yes	yes	yes	yes	yes
<i>the NP</i> 2	yes	no	yes	no	no	yes
<i>the NP</i> 3	yes	yes	yes	no	no	yes
<i>the NP</i> 4	yes	yes	no	yes	yes	yes
<i>the NP</i> 5	yes	yes	yes	yes	yes	yes
<i>the NP</i> 6	yes	yes	yes	yes	yes	no
<i>it</i> 1	no	no	no	no	no	no
<i>it</i> 2	no	no	no	no	no	no
<i>it</i> 3	no	no	yes	no	no	-
out-of-blue 1	no/what	no	what	no	no	no
out-of-blue 2	no/what	no	yes	no	no	yes
out-of-blue 3	no/what	no	yes	no	no	yes
out-of-blue 4	no/what	no	yes	no	no	yes

5. Discussion

The first striking thing to note about Table 1 is the difference between the adult responses to the *the NP* questions (16% 'yes' answers) and the children's responses to these questions (72% 'yes' answers, across all the children). Considering that the Salish-stage prediction for these questions is a 'yes' answer, this strongly supports our hypothesis that English-learning children go through a Salish-like stage.

The second important result is that we were able to isolate a group of six children whose productions closely mirrored the predicted responses of the adult Salish speakers. The mean age for this group was 6 years 3 months. As can be seen from Table 1 and Table 2, this group of children not only answered with 'yes' to the *the NP* questions, as a Salish speaker would, 80% of the time, they also very consistently failed to answer 'yes' to the *it* questions. This indicates that while these children are aware of notions of familiarity and presupposition, they are not using these notions in their article systems. Again, the existence of this group of children supports our original hypothesis that there is a Salish stage in the acquisition of the English determiner system.<sup>6</sup>

In the remainder of this section we discuss the results in more detail, highlighting also some questions for further research.

5.1. Adult responses

The adult responses provided good support for our base-line assumption that the scenarios tested require an indefinite article in adult English. When a definite article was used (as in e.g. 'The car is broken. Did Bert drive the car?'), adults gave 'no' responses 84% of the time. The adults' clarifications of their replies were especially revealing; some examples are provided in (17).

- (17) a. "Not THE hat, A hat."
- b. "No, he drove a different bike."
- c. "Bert wears his hat, not Ernie's."
- d. "Bert is wearing a hat, but not Ernie's hat."
- e. "No, Mary took A scooter not THE scooter."
- f. "Mary took HER scooter."

The responses in (17) overtly challenge the incorrect use of the definite article in cases where a novel individual is being referred to.

The question might be raised as to why there were still 16% 'yes' answers by adults to the *the NP* cases. It is not the purpose of the current paper to investigate this issue, especially since there was still a very marked difference between adults and children with respect to precisely this point (16% 'yes' answers vs. 72% 'yes' answers). However, we would nevertheless like to

<sup>6</sup> The Salish-stage group consistently failed to answer with 'what?' responses to the out-of-the-blue *the* cases, which is consistent with the idea that in Salish, the corresponding determiner does not induce a presupposition. However, we noted above that the contrast between the English and Salish adult grammars is not as clear as we would have liked for this test, since an adult Salish speaker could challenge the assertion of existence of e.g. an elephant. It would be interesting to contrast the percentage of challenge responses given by the Salish-stage children to out-of-the-blue *the* with their percentage of challenge responses to presupposition-inducing items *not* involving determiners (see section 5.3 below for discussion of such an experiment).

5.2. Children's responses

As mentioned above, the children generally offered many more 'yes' responses to the *the NP* cases than adults did, a result which supports our hypothesis of a Salish stage in the acquisition of English determiners. However, the most important result concerns the sub-group of children (six in total) whose productions closely mirrored the predicted responses of an adult Salish speaker. The results for this group of children are repeated in (20).

(20) Results for Salish-stage group (mean age 6 years 3 months)

<i>aNP</i>	18/22 (81%)
<i>the NP</i>	29/36 (80%)
<i>it</i>	1/17 (5%)
out-of-the-blue <i>the</i>	1/23 (4%)

It is clear that this group of children has mastered the use of definite *it*, but accepts *the* in the majority of cases, even though the discourse conditions for the definite were not met, according to adult English requirements. In this, their responses are similar to what an adult Salish speaker would answer in a corresponding experiment.

The responses for the rest of the children (the non-Salish-stage children) fell neither straightforwardly into a Salish pattern, nor into an adult English pattern. Indeed, it was striking that there was no child or group of children whose productions patterned according to the adult English predictions. This is an interesting result, given that upper age range was 7 years old. The fact that no child exhibited a pattern like an adult reveals both the intricacy of this domain and the subtlety of the experiment. It is plausible that children are working out details here until a very late stage. In addition, a subtle experiment offers more possibility for distraction. Therefore we find it particularly noteworthy that a clear set of individuals patterned exactly as Salish adults.<sup>7</sup>

5.3. A pilot experiment on presuppositional items

As discussed in section 3 above, the questions containing out-of-the-blue definites were designed to determine whether the children would challenge a presupposition failure induced by the definite article. As can be seen from Table 1 above, only 8% of the children's answers to these questions were challenges. This result is compatible with a Salish stage in acquisition, since the corresponding Salish article does not induce a presupposition. However, as also discussed in section 3, the distinction between the adult English and the adult Salish predictions for these

<sup>7</sup> The way a child understands and constructs discourse is a particularly complex issue which is just now coming into focus. Asplin et al. (in prep.) show that 3-year-old children manipulate pronominal reference with ease. On the other hand, there are cases where children seem to fail to construct a discourse properly, for example with *wh*-words that are D-linked. ("Here is a group of boys. Which ones are wearing hats?" Pointing to girls with hats in the picture is incorrect for adults (see Crain et al. 1995 for discussion).) Similarly, Schafer and Roeper (2000) have argued that locative *there* is learned later than expletive *there*. ("Put a cat on the corner of the roof of the big house - and put a dog there too.") (see also Kamiloff-Smith 1979 and Ayrutin 1999). Making one discourse link is certainly linked to how one makes others, but an intricate array of decisions must occur before the whole system is mastered. Its natural order is not clear even within linguistic theory. Therefore it is not so surprising that children's responses are not yet adult-like and show some inconsistencies. There may be many other subhypotheses being explored by children that we have not yet grasped.

propose the following hypothesis about what could be going on with the 16% 'yes' answers by adults to the *the NP* questions.

Firstly, note that the familiarity theory of definiteness which we are adopting requires defining the sub-part of the entire world within which there must be a unique familiar discourse referent. For example, the mere fact that the listener has encountered a situation at some stage in their life which contains a unique elephant is not enough to license the use of a definite description *the elephant*. The elephant must be familiar within some current discourse situation. Secondly, it is known that the mere presence of an individual in the interlocutors' visual fields can sometimes be sufficient to license the use of a definite description, even if that individual has not been overtly referred to (see for example Heim's 1982 discussion of this issue, and see also Hawkins 1978).

Putting these two facts together, it seems that it could be marginally possible for the adults to view the second sub-part of each scenario as a new discourse situation, within which there is a unique e.g. bike or car which has been visually introduced. This would license the use of *the*, and account for the possibility of a 'yes' answer (thanks to J. Michael Terry and Jill de Villiers for discussion of this idea).

This idea is supported by a group of adult English speakers (18/148 responses, 12%) who gave answers consisting of 'yes' plus a clarification. We interpret this type of response, which is illustrated in (18), as meaning that these adults were being 'charitable' in allowing the use of the definite, but clarifying that it was a new discourse referent rather than the previously-established one which is being picked out.

- (18) a. "Yes - HIS car."
- b. "Yes, but it is not the same as Bert's."
- c. "Yes, but a different scooter than Barbie's."

The explanation just outlined can also directly account for the 18% 'yes' answers by adults to the *it* questions.

It is worth mentioning that there is an interesting alternative hypothesis which could account for the adult 'yes' answers to the definite cases. This is that there may be a residue of the Salish option even in adult English. See section 6 below, where we briefly discuss an experiment by Shafer and de Villiers (2000) which provides initial evidence that this might be the case.

Returning to our experiment, one result which might initially appear surprising is the fact that a proportion of adults did not respond with challenges to the out-of-the-blue *the* cases; only 62% of these questions elicited a 'challenge' response. However, this is only an apparent problem. Investigation of the actual responses reveals that almost none of the non-challenge answers consisted of a simple 'yes' or 'no'; almost all of these answers were jokes. Some examples are given in (19).

- (19) a. "Yeah, I sold her to the zoo to pay off tuition."
- b. "Before or after it crippled me?"

In summary, then, the adult data supports our base-line assumption that the scenarios tested require an indefinite noun phrase in adult English. We now turn to discussion of the children's results.

questions was not as clear as we might have liked. Moreover, we do not have independent evidence that children would challenge a presupposition failure made on the part of an experimenter, even if the children had the presupposition firmly in their grammar (thanks to Barbara Parise and other participants at SULA for discussion of this point). Therefore, we designed and ran a small pilot experiment to test whether children are willing and able to challenge presupposition failures in an experimental setting.

This pilot experiment tested eight children from the same geographical region as for our main experiment. The children were asked questions containing presupposition failures of various kinds. Some examples of questions asked are given in (21).

- (21) a. "Look, do you like my skirt?" (said by experimenter who is not wearing a skirt)  
 b. "Do you want more soup?" (asked at time when children have not eaten soup)  
 c. "Do you want to read the newspaper again?"  
 d. "Do you want to jump over my car again?"

While not all children responded with challenges to these presupposition failures, there were a number of clear challenge responses, examples of which are given in (22).

- (22) a. "I didn't eat no soup."  
 b. "I didn't drink no soup."  
 c. "I didn't do that."  
 d. "I can't read no newspapers."  
 e. "I didn't have no coffee."  
 f. "I didn't go up on no roof."

These preliminary results suggest that children are in principle capable of challenging presupposition failures by adult experimenters. If this is correct, then it provides more support for our claim that the tendency for children to answer 'yes' to incorrect uses of the definite article relates to the developmental stage of their determiner systems, rather than to some more general 'problem' related to presuppositional items in general.<sup>8</sup>

#### 6. The Determiner Path in Acquisition Theory

In this section we provide some discussion of the implications of our results for the theory of language acquisition. We shall outline the theoretical challenge, discuss the acquisition logic, and attempt to integrate the data which supports our perspective. Our claims throughout are more or less tentative, since these are large questions which are in many cases only just beginning to be researched.

Let us assume firstly that semantic distinctions are often reflected in syntactic trees. Therefore, semantic distinctions are a natural part of the triggering information that the child uses. This assumption, far from necessary, reflects an emerging consensus. We assume that a child requires a "triggering experience" (Chomsky 1976), which entails simultaneous and coincident information from syntax, semantics, and the pragmatics of situations in order to justify a change in the grammar.

Secondly, let us assume that UG has a set of universal syntactic options, in a fixed hierarchical order, from which the child must select those appropriate to his or her grammar. While

<sup>8</sup> In this respect, the Salish-stage children directly parallel adult Salish speakers, since the adult Salish grammar contains many presuppositional items, but lacks presuppositional determiners.

fundamental relations of dominance appear to be universal, the range of possible syntactic nodes is now extensive. The work of Pollock indicates that the substructure within the IP complex is intricate and subject to cross-linguistic variation. Parallel arguments for CP, for adverbs, and finally the intricate variety of properties of N/NP and DP suggest that each grammar selects a subset of possible nodes, or of distinguishable Feature Bundles for particular nodes (and/or particular options for semantic composition).<sup>9</sup>

The upshot for acquisition is that the child must select which semantic options, and hence which nodes, are in his grammar.

How does the child go about determining which options are part of the target grammar? It is well-known that what the child hears contains many contradictory clues (see for example Weissenborn and Roeper 1991). The surface of language provides information that will support almost any grammar - in a word, data are available which could lead to opposite settings of various parameters. For instance, the presence of missing subjects in English ("seems nice") could lead to a mis-setting of the pro-drop parameter. Therefore, the child's grammar may (a) undergo rapid reversals, or (b) maintain partially incompatible grammars for different lexical domains (much as we maintain different affixation rules for Anglo-Saxon and Latinate vocabulary).

The child, then, should systematically consider and reject inappropriate grammars. Rejection of grammars requires crucial counter-evidence. Williams (1981) has argued, in this vein, that UG is organized to maximize falsifiability.

Turning to our particular concern, namely the acquisition of article systems, note that the child would encounter evidence that falsifies a Salish determiner in the following context:

- (23) Adult: "I got a book for Christmas, but I am not reading the book now." (said while reading another book).

This sentence can be construed as true only under the non-Salish English assumption that *the* induces reference to a unique familiar entity in the discourse. If the child assumes the correctness of the adult grammar, then this sequence forces rejection of the Salish grammar. This kind of information should shift the grammar to the unique referent criterion which fits English. More refined contexts might allow a reflection of the Salish option to continue in the adult grammar (see below).

Where does the acquisition process start? Although the hyper-abbreviated grammar of children was initially seen as a reflection of performance, it has been argued since the early 1970s (see e.g. Roeper 1973, 1981) that all of a child's output should be seen in grammatical terms.<sup>10</sup> This leads immediately to the natural acquisition assumption of a minimal (economic) grammar as the Initial State which is expanded in response to evidence, a perspective which has emerged independently from intuitional studies.

A plausible hypothesis is that the initial state grammar contains no determiners at all, since grammars exist without them, such as Chinese. This claim is easily supported: children begin

<sup>9</sup> Cinque (1999), for instance, argues that there are 62 distinguishable adverb nodes, while Rizzi (1997) argues for a five-way split in the CP. While one may assume that there is a universal syntactic hierarchy, it apparently allows for refinements which reflect particular grammars.

<sup>10</sup> This approach has come to be widely accepted, but the issue has been heatedly debated for many years. Arguments are still given for disregarding the relevance of acquisition data for the formulation of UG (see for instance Crain and Thornton 1998).

2000). We are, of course, far from a full theory of how all these distinctions should be represented, much less acquired. Therefore our proposal should be seen as an acquisition sketch.

Under the perspective just proposed, there would be a progression from N to NP to DP, with each of these forms containing further distinctions, or perhaps having slightly different node definitions (as proposed in Categorical Grammar and also under Bare Phrase Structure). In schematic form we have:

- (25) N = Kind/generic  
 NP+ non-specific member of a set => a  
 NP+ familiar or non-familiar member of a set => ti...a (Salish)  
 NP+ specific member of a set => a  
 NP+ contrast two introduced sets => the (English dialect)  
 NP+ expletive => the  
 DP+ part/whole marker => the  
 DP+ familiar/unique => the (English)

Now, parallel to many other arguments in acquisition, we can advance the hypothesis that the child looks progressively for distinctions that expand the syntactic / semantic tree toward more "specificity", with familiarity / uniqueness marking the "most specific" option.

Under this perspective, as the child moves down this list (which is like "moving up the tree"), he or she should acquire more distinctions. The basic hypothesis is that children move from N, to NP, to DP. Within the NP category we have listed different sub-categories, which could differ from each other, but which also share syntactic properties (for example, not functioning as syntactic barriers to movement).<sup>13</sup> The order we offer here for the different sub-types of NP is merely a conjecture, since we really do not know yet when the finer distinctions appear.

In effect, higher nodes in the tree are where most, if not all, language particular decisions are reflected. This has the following consequence:

- (26) In the acquisition of a determiner system, the child must pass through a Salish stage.  
 There is a strong hypothesis that follows from this Determiner Acquisition Path:  
 (27) Salish speakers should never go through an English stage in acquisition.  
 The same claim holds for Chinese speakers. Therefore the acquisition logic reflects a profound asymmetry in UG.<sup>14</sup>

(ii) Here is a house. The roof is nice.  
<sup>13</sup> See Pérez-Leroux and Roeper (1999) for discussion of syntactic differences between N, NP and DP.  
<sup>14</sup> It is worth noting that the traditional assumption in cognitive psychology is that children only understand unique reference, since all forms of generalization come later. We are arguing that grammar imposes the opposite assumption.

with bare nouns (e.g. "I want cookie.").  
 Now let us consider the range of distinctions which, minimally, the child must consider or reject from UG (and this is probably an incomplete list):

- (24) Forms of "non-specific" reference:  
 a. Generic or kind:  
 "cookie-cutter"  
 "want cookie" (child)  
 b. Any member of a set:  
 "want a cookie"

- Forms of "specific" reference:  
 c. Specific indefinite:  
 "I am looking for a book." (particular)  
 d. Unique familiar object: (English)  
 "John has a cookie. Bill ate the cookie." (= John's)  
 e. Salish:  
 "John has a cookie. Bill ate the cookie." (can be Bill's)  
 f. Member of one of two introduced sets (English dialect):  
 "Here's two cats and three dogs. One fell over, which one?"  
 "The dog." (Schafer and de Villiers 2000)  
 g. Cultural familiarity / Easy accommodation:  
 "Where's the bathroom?"  
 "Oh, I left my book on the counter at the store."  
 h. Expletive *the*:  
 "He has the ability / audacity / acumen /... to sing." (de Villiers and Roeper 1995, Baauw 2000)  
 i. Part-whole connection:  
 "I have a toy airplane, but the wing is broken."  
 j. Contrastive:  
 "Did you bring THE hat?" (special shared knowledge)<sup>11</sup>

These contrasts, though not all common in linguistic discussion, are common in the daily life of a child. The full story of their acquisition is quite incomplete. There is evidence that children grasp part / whole relations before unique reference (Schafer and de Villiers 2000, Avrutin 1999),<sup>12</sup> and that they overuse expletive determiners (de Villiers and Roeper 1995, Baauw 1999).<sup>12</sup>  
<sup>11</sup> Imagine that a man says to his wife after a bike trip, "I put all the bikes in the garage," to which she replies, "but you didn't put THE bike in the garage did you?" The stress would lead the hearer to search for a specially designated object, like the hidden birthday present bike.  
<sup>12</sup> (i) seems to be more difficult for a child than (ii):  
 (i) Here is a hat. The hat is big.  
 (ii) Here is a hat. The hat is big.



Some supporting evidence for the idea that English speakers pass through a Salish stage comes from work by Schafer and de Villiers (2000). They conducted a wide range of experiments on *the* with adult controls. In the following environment they found that 30% of a group of Smith College students volunteered a definite article:

- (28) Experimenter: "Two cats and three dogs were on a fence.  
 Response: "One fell off. Which one?"  
 "the dog"

Given two contrastive sets, 30% of respondents could refer back to one member of a set with definite. Note that as expected, if one refers to the whole set, then a definite is required:

- (29) Experimenter: "Two cats and three dogs were on a fence.  
 Response: "One bunch fell off. Which?"  
 "the dogs"

Thus, in a sense, the Salish grammar reappears when referring to a unique set with a non-unique member inside it for some speakers.

We argued above that in order for a child to acquire either English or Salish as different grammars, there must be evidence that forces the acceptance of one and the rejection of the other. We provided an example where one interpretation excludes the other. Where grammars are not such that one excludes the other, or in cases where the crucial evidence is rare, then we would expect them to co-exist. The refined environment in which Smith students provided a 'Salish' answer should come as no surprise. In effect, an individual does not have a pure grammar, but has pieces of Multiple Grammars (Roeper (1999), Yang (2000), Chomsky (2001) which have slightly inconsistent parts leading to subtle dialects and idiosyncrasies. The fact that a child passes through a Salish grammar means that it is closer to a default assumption, and therefore we might expect it to reappear in unusual contexts for adults.<sup>15</sup> Under the logic proposed, we would not expect a Salish speaker to 'revert' to a 'unique reference' assumption.

## 7. Conclusion

We have pursued a classic logic in this paper. Given the fact that UG allows for determiner systems which do not encode definiteness in the English sense, and in particular that it allows for the Salish determiner system, we have argued that this Salish system must be an option for every child. Therefore we sought evidence that children utilize the Salish option while they are acquiring English. Some evidence for this conclusion already exists with production data (Matthewson and Schaeffer 2000); we sought to replicate the results with a comprehension experiment.

In order to provide a full array of contrasts, we performed a counter-balanced test in which *a/ the / it* were systematically examined. The evidence showed a clear group of Salish-type English speakers, who treated *the* as a non-presuppositional determiner parallel to the St'at'imcets determiner *ti...a*. Crucially, while the Salish-stage group of children did not treat *the* as inducing a familiarity effect, they did know that it induces a familiarity effect. This supports our claim that the children's 'problem' lies not with presupposition in general, but rather with the semantics of

<sup>15</sup> This reader may note that this resembles "the emergence of the unmarked" in Optimality Theory, and has also been discussed as a "subparameter" in acquisition (Weissenborn and Roeper 1991).

their determiners. Furthermore, we showed in a follow-up pilot experiment that children of this age are in principle capable of overtly challenging presupposition failures on the part of adult experimenters. Therefore, the failure of the Salish-stage group of children to do so with *the* again strongly suggests that they are assigning a semantics to the definite article which differs from that of the adult grammar.

In the final and more speculative section of the paper, we sought to envision a larger theory of acquisition in which such a stage is not an accident, but an inevitable hypothesis on the path from those grammars that lack determiners altogether to those which encode distinctions such as definiteness.

## Appendix: Experiment questions

- (1) [MARY RIDES THE FIRST SCOOTER]  
 Look, Mary rode a scooter.  
 [BRING OUT BARBIE AND SECOND SCOOTER AND MAKE HER RIDE IT]  
 Did Barbie ride a scooter?
- (2) When Bert tries to drive his car it never starts. Look, Bert wants to go to the store.  
 [BERT TRIES TO DRIVE THE BROKEN CAR]  
 He tries to start the car but it won't start. The car is broken.  
 [BRING OUT ERNIE AND MAKE HIM DRIVE THE OTHER CAR]  
 Ernie is driving to the store. Did Ernie drive the car?
- (3) [ERNIE WITH THE RED HAT]  
 Ernie is walking down the street and his hat gets blown off his head.  
 The hat gets run over by a car and is gone. Here comes Bert.  
 [BERT WEARING THE BLACK HAT]  
 Did Bert wear the hat?
- (4) Look, Ernie rode a bike. Bert seems tired.  
 Did Bert ride it?
- (5) Did you get the elephant out of your hair?
- (6) Look, Ernie used a tool. Bert wants to work.  
 Did Bert use it?
- (7) Ernie has a horn that is broken. Every time Ernie tries to blow it, he gets no sound. The horn is broken. Look, Bert is playing his horn.  
 Did Bert use the horn?
- (8) Look, Bert drove a car. Ernie looks busy.  
 Did Ernie drive a car?

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- (9) Did you get the giraffe off the table?
- (10) Look, Bert has a cup. Ernie looks thirsty.  
Does Ernie have a cup?
- (11) Look, Bert wants to ride his bike home from school, but his tire is flat. The bike is broken. Ernie is riding home.  
Did Ernie ride the bike?
- (12) Every time Bert puts his necklace on the necklace falls off. The necklace is broken. Look at Ernie.  
Did Ernie wear the necklace?
- (13) Did you get the airplane off my knee?
- (14) Barbie wants to go to the movies. The scooter that Barbie likes to ride is broken. Look, Mary is riding to the movies.  
Did Mary take the scooter?
- (15) Look, Ernie has a hat. Bert looks hot.  
Does Bert have a hat?
- (16) Look, Bert drank from a cup.  
Did Ernie drink from it?
- (17) Did you like the food?
- (18) Look, Bert threw a phone. Look, Ernie is in a bad mood.  
Did Ernie throw it?

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