Noun Raising in Child English

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1. Introduction

Although adjectives in English normally precede nouns, as in (1), they must follow so-called indefinite pronouns (henceforth, InPros) like *something*, *someone*, and *everything*, as in (2).

(1) a. an interesting book b. * a book interesting

(2) a. something interesting b. * interesting something

This paper argues that English-speaking children aged three to four already have adult-like knowledge of this subtle point of grammar, based on the observation that they do not over-generalize the 'Adj Noun' order to InPros, but instead use the 'InPro Adj' order that is required in the adult language. This suggests that children do not expand their hypotheses by means of general learning mechanisms such as analogy (e.g., Tomasello, 2003). Instead, their grammatical hypotheses concerning adjective placement are constrained by UG from very early ages, in conformity with Wexler's (1998) Very Early Parameter Setting and Snyder's (2007) claim of Grammatical Conservatism.

2. Syntactic Background

Kishimoto (2000) argues that the contrast between (1) and (2) found in adjective placement is to be explained on analogy with the contrast found in the domain of verb movement. In English, thematic verbs and semantically light verbs such as *be* and *have* behave differently in terms of verb placement.

(3) a. John rarely visited Bill.
b. *John visited rarely Bill.
c. *John rarely was at home.
d. John was rarely at home.

In (3a) the verb *visited* follows the VP adverb *rarely*. If the verb precedes the VP adverb, as in (3b), the sentence is ungrammatical. The semantically light verb *be* is the reverse, as shown by the contrast between (3c) and (3d). To explain this fact, Chomsky (1993) focuses on the semantic properties of these verbs. Specifically, he proposes that, since such verbs as *be* and *have* are semantically vacuous, they are not visible to LF operations, hence must raise in the overt syntax.

Kishimoto (2000) proposes that InPros consist of a determiner and a semantically light noun such as *thing* or *one*, and that the light noun undergoes overt Noun-to-Number raising, much like *be* and *have*. The derivations of (1a) and (2a) are given in (4) and (5), respectively.

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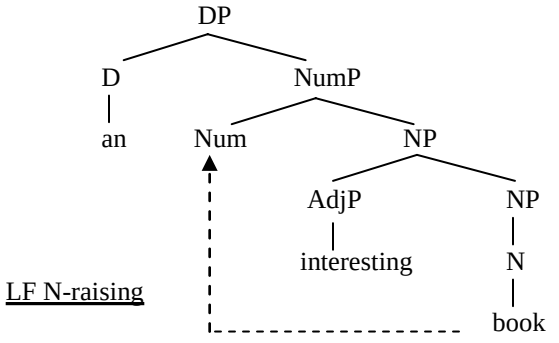
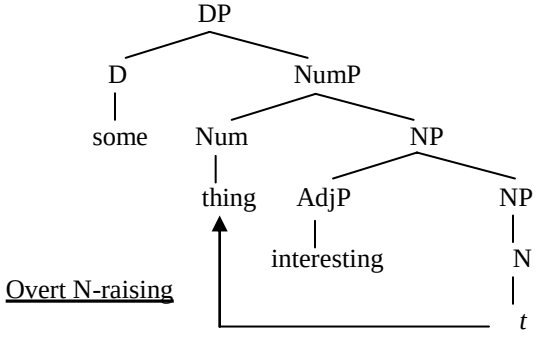
(4) an interesting book in (1a)



(5) something interesting in (2a)



In (4) the noun *book* stays *in situ*, because of the assumption that (contentful) English nouns bear weak features: Since weak features can be tolerated at PF, checking of these features is postponed until LF (due to Procrastinate[1]). In contrast, the semantically light noun *thing* in (5) undergoes overt N-to-Num movement, because it is not visible to LF operations. The determiner *some* and the raised noun *thing* are then combined into a single word in the morphological component.

There are two pieces of evidence for the syntactic independence of the quantifier in an InPro. First, Kishimoto (2000) observes that InPros can be modified by an adverb, as in (6), even though adverbs cannot modify nouns or pronouns, as in (7).

(6) almost/virtually/nearly everyone (Kishimoto, 2000, p. 561)

(7) a. *almost/virtually/nearly people
b. *almost/virtually/nearly them (Kishimoto, 2000, p. 561)

One might say that the adverbs in (6) just modify a subpart of the InPro, that is, the quantifier *every*. However, it has been argued that word boundaries serve as a barrier against adverbial modification. As seen from the examples in (8), the initial subpart of a lexicalized compound such as *small talk* and *hot dog* cannot be modified by an adverb like *very*. This suggests that adverbial modification cannot occur across word boundaries.[2]

(8) a. *some very [small talk]
b. *a very [hot dog] (Kishimoto, 2000, p. 561)

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[1] Procrastinate (taken from Lasnik, 1995, p. 257; cf. Chomsky, 1993, p. 30):
Delay an operation until LF whenever possible, that is, whenever delaying would not cause the derivation to crash.

[2] Note that Kishimoto's (2000) examples are somewhat problematic, because it is not clear what exactly 'a very hotdog' would mean, even if the grammar did allow such modification. A better example might be something like 'a very blackbird', which is still ungrammatical.

The fact that the quantifier in the InPro in (6) can be modified by the adverbs suggests that the quantifier is not part of a lexical noun, but is a syntactically independent element. Thus, InPros pattern with unambiguously phrasal DPs in terms of adverbial modification, as shown below.

(9) almost/virtually/nearly all (the) students (Kishimoto, 2000, p. 561)

Based on these observations, Kishimoto (2000) concludes that syntactically, InPros consist of a quantifier and a semantically light noun.

The second piece of evidence comes from Sato's (2010) discussion of amount relatives (e.g., Carlson, 1977). Consider the sentence in (10).

(10) **Everyone there was** on US Airways Flight 1549 was saved thanks to Chelsey Sullenberger. (Sato, 2010, p. 13)

In this example the InPro *everyone* serves as the relative pronoun modified by the following existential clause. Sato (2010) points out that it is not clear why the sentence in (10) is grammatical under the Raising analysis of relative clauses (e.g., Vergnaud, 1974; Kayne, 1994), which assumes the following derivation for (10).

(11) $[_{CP}$ everyone$_i$ $[_{C'}$ C $[_{TP}$ there was t_i on US Airways …]]]

In (11) the InPro *everyone* is base-generated in the post-verbal position and undergoes movement to the Spec of CP. One piece of evidence for the Raising analysis comes from the fact that the sentence in (12) is ambiguous, as observed by Kayne (1994).

(12) John bought the picture of himself that Bill saw. (Kayne, 1994, p. 87)

The sentence in (12) can either mean that John bought the picture of John that Bill saw, or that John bought the picture of Bill that Bill saw. This fact receives a direct explanation if we adopt the Raising analysis, which assumes the derivation in (13), and Chomsky's (1993) approach to reconstruction.

(13) the [picture of himself [that [Bill saw *t*]]]

More specifically, the ambiguity in (12) can be accounted for on a par with the ambiguity observed in the (embedded) interrogative sentences in (14).

(14) John wondered [which picture of himself] [Bill saw *t*] (Chomsky, 1995, p. 205)

The sentence in (10), however, poses a problem for the Raising analysis. It is well-known that existential constructions in English exhibit the definiteness effect (cf. Milsark 1974). Contrary to the prediction of the Raising analysis, the sentence in (15), which has an expression triggering the definiteness effect in the post-verbal position, is ungrammatical.

(15) *There was everyone on the US Airways Flight 1549 saved thanks to Chelsey Sullenberger. (Sato, 2010, p. 14)

To solve the problem, Sato (2010) proposes the derivation for (10) in (16), in which *every* and *one* are generated separately in the syntax, and the light noun *one* undergoes movement to the Spec of CP, maintaining the Raising analysis.

(16) $[_{DP}$ Every $[_{CP}$ one$_i$ $[_{C'}$ C $[_{TP}$ there was t_i on US Airways …]]]]

Summing up this section, the facts from adverbial modification and amount relatives provide support for Kishimoto's (2000) proposal that InPros consist of syntactically independent elements, Determiner and (semantically light) Noun, and surface order is obtained by movement of the light noun.[3]

3. Predictions for Acquisition

It has been observed that English-speaking children acquire correct verb placement very early (e.g., Stromswold, 1990; Wexler, 1998; among many others). If we assume that all feature values on functional categories are set from early on (as in Wexler's 1998 Very Early Parameter Setting), it is expected that English-speaking children will show adult-like performance on adjective placement with InPros from the early stages. Also, Snyder (2007) argues that children are 'grammatically conservative' in that at least in their natural, spontaneous speech, they do not begin using a new construction until they have both determined that the construction is permitted in the adult language, and identified the adults' grammatical basis for it. Under Grammatical Conservatism, it is predicted that English-speaking children will not produce co-mission[4] errors of the form 'Adj InPro' at any stage.

The Usage-Based approach to language acquisition, on the other hand, makes a different prediction. Proponents of the usage-based approach argue that children learn 'constructions' by means of their input and general learning mechanisms such as analogy (e.g., Tomasello, 2003). Actually, the Usage-Based approach also predicts conservative learning, in the sense that children's language learning initially proceeds 'item by item'. If children hear InPros only in contexts such as 'something funny' and 'everything strong', these are the only forms the Usage-Based approach predicts in early child speech. Therefore this approach might also predict an absence of over-generalization errors.

However, the Usage-Based approach invokes item-by-item learning only in the very early stages of language acquisition. Tomasello (2006, p. 276) asserts that 'it is not the case that children are totally conservative throughout development'. In their later development, beginning around three years of age, children start to create abstract linguistic representations (Tomasello, 2003, 2006). They include abstract grammatical categories such as nouns and verbs, as well as grammatical constructions. For example, it is argued that children at this stage will group together the so-called 'verb island' constructions for *give*, *tell*, *show*, and *send*, which share the concept of 'transfer', and infer a more general construction of the form 'NP1 + V + NP2 + NP3'. In this construction, NP1 is the giver, NP2 is the receiver, and NP3 the gift. Importantly, over-generalization errors are predicted in this particular stage even under the Usage-Based approach, due to the abstract construction induced by analogy.

In the case at hand, children will presumably postulate the construction 'Adj + Noun', which represents the abstract relation of noun modification. At the same time, given that InPros have essentially the same distribution as ordinary (pro)nouns, children should include them in this general schema. If so, the Usage-Based approach predicts that children will begin to make over-generalization errors like 'interesting something' and 'good everything', sometime after the third birthday.

To test this prediction I analyzed spontaneous speech data from four English-speaking children in the CHILDES database (MacWhinney, 2000), the results of which are reported in the next section.

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[3] For challenges to Kishimoto (2000), see Larson and Marušič (2004) and Marušič and Žaucer (2009), who specifically argue against the Noun Raising analysis of InPros (although they do not seem to question the idea that the quantifier and the light noun are syntactically independent). In my view their arguments against Noun Raising are inconclusive. For example, Roehrs (2008) points out that some of the arguments do not hold in other Germanic languages such as German and Dutch. For purposes of this paper, I will assume without further discussion that the Noun Raising analysis of InPros is correct.

[4] Following recent literature on Grammatical Conservatism (e.g., Snyder, 2011), I use the spelling 'co-mission', not 'commission', in this paper.

4. Data from Spontaneous Speech

The corpora I analyzed are summarized in Table 1.

Table 1
Corpora analyzed of four English-speaking children

Child	Collected by	Age span	# of child utterances
Abe	Kuczaj (1976)	2;04-5;00	22,633
Adam	Brown (1973)	2;03-4;10	45,555
Naomi	Sachs (1983)	1;02-4;09	15,960
Sarah	Brown (1973)	2;03-5;01	37,012

To check how these children used adjectives with InPros, the CLAN program Combo was used to locate all of the child utterances containing the following InPros: *something*, *someone*, *everything*, *everyone*, and *nothing*. The output was then searched by hand to locate all of the child utterances containing the sequence of either 'Adj InPro' or 'InPro Adj'. Also, Combo was used to locate every child utterance containing at least one occurrence of the determiners *some*, *every*, and *no*, and then the output was searched by hand to locate all of the child utterances containing a sequence of either 'Det Adj Noun' or 'Det Noun Adj'. Imitations, repetitions, and formulaic routines were excluded.[5,6]

Overall, the children used the correct 'InPro Adj' order 96.6% of the time (29/30), and they used the correct 'Det Adj Noun' order 100% of the time (46/46) with ordinary nouns. The results from each child are presented in (17) to (20).

(17) Abe

InPro + Adj	12/12	Det + Adj + Noun	20/20
Adj + InPro	0/13		

First use (3;01)
abe071.cha: line 660.
*FAT: it could be the number one if you have two of them next to each other (.) it could be the number eleven .
*CHI: eleven you're right hey let's make a guitar (.) Dad let's make a guitar.
*FAT: a guitar ?
*CHI: uhhuh .
*FAT: how are we going to make a guitar ?
*CHI: you have ta get one of these and one of these (.) no no let's make (1)something different .
*FAT: like what ?
*FAT: if you're done with your train (.) you have to pick it up are you done with it ?
*CHI: yeah .

[5] Specifically, the following expressions were excluded from the data analysis.
(i) a. 'InPro + else' and 'InPro + more', because the syntactic status of the word *else/more* is unclear,
b. 'InPro + past participle' (e.g., *something fixed*), because such expressions are ambiguous between post-nominal adjectival modification and reduced relatives, and,
c. 'a little something', because it is a formulaic expression in adult English.

[6] In this study, I do not discuss constructions like 'she has a certain something', because *something* in this example is more like an ordinary noun, rather than an InPro, as indicated by the presence of the article. (InPros never appear with an article.)

(18) Adam

InPro + Adj	7/7	Det + Adj + Noun	20/20
Adj + InPro	0/8		

First use (2;09)
adam13.cha: line 2192.
*CHI: cow .
*URS: cow ?
*CHI: cow (.) on the hay .
*URS: under the hay ?
*CHI: yeah .
*CHI: show (1)something funny .
*URS: oh yes .
*URS: once I saw something funny +...
*CHI: yeah .

(19) Naomi

InPro + Adj	2/2	Det + Adj + Noun	1/1
Adj + InPro	0/2		

First use (4;07)
n91.cha: line 1073.
*CHI: so <hop (.) hop> [/] (.) hop .
*CHI: so <hop (.) hop> [/] (.) hop .
*CHI: back to doing his work .
*CHI: he was doing something else (.) not doing that .
*CHI: he didn't want any .
*CHI: he wanted to do (1)something special (.) like going to the play+ground or doing +...
*CHI: hey (.) is that how far it goes ?
*FAT: mhm .
*CHI: he hop hop hop .

(20) Sarah

InPro + Adj	8/9	Det + Adj + Noun	5/5
Adj + InPro	1/9[7]		

First use (4;05)
sarah111.cha: line 234.
*MOT: what are ya doin(g) ?
*MOT: sit there and take your boots off on the chair .
*CHI: buhbuhboo@b (.) booboobuhl@b .
*CHI: I will show you what I got for Christmas .
*CHI: cries .

[7] There was only one instance of a co-mission error (out of 37), which was produced by Sarah.
(i) sarah117.cha: line 1772. (4;07)
*GAI: you have beautiful legs .
*CHI: no xxx my legs xxx at Ann_Marie's .
*GAI: what ?
*CHI: birthday that makes your legs beautiful (1)somethin(g) .
*GAI: you had Ann_Marie's what ?
*CHI: things .

*CHI: not really cries but (.) (1)something cute .
*CHI: I want you to see .
*MEL: what's this ?
*CHI: a Susie_Cue .

It is unlikely that they had simply leaned the 'InPro Adj' order as a formulaic expression, because they changed the order to 'Det Adj *things*/*ones*' when the nouns were semantically contentful (as evidenced by their plural form), as shown in (21) to (24).[8]

(21) Abe
abe033.cha: line 126. (2;08)
*FAT: oh (.) what are you putting in there now ?
*CHI: huh ?
*FAT: what are you putting in your truck now ?
*CHI: just (1)some round (1)things .
*FAT: what for ?
*CHI: in the truck .
*FAT: in the truck ?

(22) Adam
adam42.cha": line 1377. (4;00)
*MOT: he came in through the open door .
*MOT: Rinny (.) no (.) no .
*CHI: keep my racing car .
*CHI: you see (1)some little tiny (1)things ?
*URS: no (.) I see some big ropes .
*CHI: le(t) me see .
*CHI: some little ropes .

(23) Naomi
n77.cha": line 1015. (2;11)
*CHI: get the phone .
*CHI: get the phone .
*CHI: oh (.) pretty lookit .
*CHI: can I draw (1)some pretty (1)things (.) too ?
*CHI: lookit that xxx drawing +...
*CHI: <at the drawing> [/] (.) at the drawing .
*CHI: look at the drawing .

(24) Sarah
sarah055.cha": line 2078. (3;03)
*CHI: in a puzzle .
*CHI: in +...
*CHI: you know &uh the puzzle (.) three ?
*CHI: you [/] you gonna buy me (1)some new (1)ones .
*MOT: Santa_Claus gonna buy her new ones .
*GRA: but she [//] <did she> [//] is that the one she got last Christmas?

As illustrated in Table 2, one child (Adam) produced a sufficient number of examples to permit statistical testing, and indeed there was a significant contingency between word order and the number-marking on the noun.[9]

[8] In this paper, I assume two *thing* Ns, one light N that raises, and one that is contentful and bears weak features. Only the latter can appear with plural morphology.

Table 2
Adam's word order and number-marking

	N=singular (*thing/one*)	N=plural (*things/ones*)	
Det>N>Adj	7	0	
Det>Adj>N	0	5	(Fisher Exact Test: Two-tailed *p=.001*)

5. Conclusion

An empirical contribution of this paper is that English-speaking children rarely over-generalize the 'Adj Noun' order to InPros at any point in their development (at least through the age of five). Also, I have reported that children change the position of adjectives according to the semantic heaviness of the associated nouns. Based on these observations, following Kishimoto's (2000) analysis of InPros, I have argued that parameters related to Noun raising are set very early, just like Verb movement parameters, lending support to Wexler's (1998) Very Early Parameter Setting. Also, these findings are consistent with Snyder's (2007) Grammatical Conservatism, which predicts very few co-mission errors in children's spontaneous speech. On the other hand, it is not clear how the Usage-Based approach accounts for the lack of over-generalization errors, especially in the later stages of language acquisition. Given the distributional commonalities between (pro)nouns and InPros, and the abundance of the 'Adj Noun' orders in child-directed speech, it seems highly probable that children would hypothesize the construction 'Adj Noun' and extend it to InPros. The absence of such over-generalization errors suggests that children do not construct abstract constructions by means of analogy, which would allow them to expand their grammar in an unconstrained way. Rather, I claim that the possibility of adjective placement is constrained in a principled way, as Kishimoto (2000) argues, and English-speaking children obey the constraints throughout language acquisition.

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[9] Actually, the order 'Det>Adj>N' is possible with a singular noun, but only in a very limited context where the noun denotes a semantic entity (e.g., some new thing). This use was not attested in Adam's speech at all, and therefore did not have any effect on the numbers in Table 2.

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