

Subject Case Licensing and English Root Infinitives

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1. Introduction

A large amount of recent research has shown that two-year-olds know much of the syntax of their language, particularly the system of inflection and verb movement. To the extent that they produce non-adult forms, it has been argued that these are generated by the child's grammar, which differs in some minimal, circumscribed way from the adult grammar, e.g., in the use of infinitives in root clauses: these generally have the properties of adult infinitives. From this perspective, it is notable that English children produce a significant number of non-NOM subjects (1), as has long been observed (Rispoli 1994, Valian 1991, Powers 1994, Vainikka 1994, etc.).

- (1) a. Him fall down. (Nina, 2;3.14, File 17)
- b. Her have a big mouth. (Nina, 2;2.6, File 13)

Rispoli's figures, based on 12 children studied over 2 years, indicate that this is not a negligible phenomenon: in the extreme, over 30% of the feminine singular subjects in his transcripts were *her* instead of *she*. Can such subjects be analyzed as also consistent with the child's grammar, or do they constitute evidence that the case system is one grammatical module that two-year-olds do not yet know?

We argue from new data that 1) children clearly know the case system of English very early—in particular, they know that the presence of agreement in INFL requires that NOM case be assigned to the subject; 2) their apparent case errors have a highly systematic distribution; 3) the existence and distribution of these errors follow from a particular theory of optional infinitives (OIs) (cf. Wexler 1992, 1994, 1995; Hyams, to appear; Rizzi 1994; Poeppel & Wexler 1993) that we will spell out, i.e., they are part of the same phenomenon. Our theory restricts the child grammar to options consistent with what is attested in adult languages, and also explains why most other languages for which case acquisition has been carefully studied do not exhibit anywhere near the proportion of non-NOM subjects as English does.

Let us expand briefly on the last point. Among other languages for which substantial quantitative data on case acquisition are available, in Russian, Dutch, German and Faroese it is consistently reported that the rate of non-NOM subjects in children around age two is essentially zero. For Russian, Babyonyshev (1993) reports that two children ages 1;6–2;0 and 2;1–2;7 had subject NOM case marking perfect (210/210 uses in obligatory contexts); for Dutch, Powers (1995) reports only 3 errors out of 2,700 first person singular NOM pronoun subject uses, an error rate of 0.1% (5 children, age ranges 1;9–3;10); for German, Schütze (1995) found that Andreas (2;1) has 189/190 subjects correctly marked NOM; for Faroese, Jonas (1995) reports no subject case errors. Importantly,

non-NOM subject, the copula was always omitted (4/4 instances, listed in (5)), whereas with a NOM subject the copula could be present or absent.

- (5) a. him bear c. them eyes
 b. him bad dog d. me no bear

We show that this generalization continues to hold for larger samples, and thus argues against the point of view expressed by Radford (1990: 177), under which in the OI stage children have no knowledge of the case system: “The central claim made here is that children at [the lexical] stage *have not acquired the morphosyntax of nominatives* (i.e. they do not ‘know’ that nominative case is assigned to a DP which functions as the specifier of an agreement-marked I).” We demonstrate that there is no evidence for a stage at which this description holds, but rather, from their earliest uses of non-NOM subjects, children know exactly the property that Radford mentions. To show this, we will numerically substantiate the claim in (6).

- (6) English children’s subject case marking in clauses with a fully-specified INFL is essentially perfect—all non-NOM subjects occur with OIs.

As far as we know, only one quantitative assessment of this claim on an utterance-by-utterance basis is in the literature (but see Vainikka 1994 for some relevant data). Loeb and Leonard (1991) studied 8 children, ages 2;11–3;4, looking at third person singular subject pronouns and verbs that could take *-s* (including *is*). They found the pattern shown in Table 1, where we have pooled figures across the children. As is clear from the tables, the distribution of ACC subjects is massively different from that of NOM subjects: when agreement is present, ACC marking is much rarer. Furthermore, the bottom left cell in Table 1 turns out to get 22 of its 26 instances from a single child; among the remaining children, the proportion of agreeing verbs with ACC subjects is less than 1%. We set out to replicate this basic pattern, and also to extend the range of pronoun forms considered, to include GEN subjects, to expand the range of verb types, and to examine younger children. What we discover from a more detailed analysis is that the simple theory, under which subjects of OIs get default case while subjects of inflected clauses get NOM case, is on the right track, but needs substantial refinement in order to account for all the data.

Table 1
 Finiteness versus case for Loeb & Leonard’s (1991) normal children

Subject	All 8 children		7 children	
	Verb form		Verb form	
	Finite	Nonfinite	Finite	Nonfinite
<i>he + she</i>	503	95	436	75
<i>him + her</i>	26	58	4	28
% non-NOM	5%	38%	0.9%	27%

2. Data

All our data are taken from CHILDES (MacWhinney & Snow 1985). For each child, we counted subject forms from at least the earliest non-NOM subject to the point at which such subjects had virtually disappeared. Only subjects occurring with an unambiguously finite or unambiguously nonfinite INFL are tabulated here; thus, we ignore utterances like *I go* and *me go*; following Vainikka (1994), we assume that modals, auxiliaries, and copular *be* are INFL elements. We exclude from the counts full or partial imitations or self-repetitions, clearly rote or formulaic expressions, and instances where the utterance plus the situation did not make it clear what the intended subject was.

2.1 Nina (Suppes 1973)

First, we report data from Nina's files 01–31, when she was 1;11.16–2;5.28 (cf. Vainikka 1994). We begin with important background on Nina's knowledge of case forms during this period. In these files, there is evidence that Nina knows that *me*, *him* and *her* are the default case forms: they occur in 3, 8, and 6 default case contexts, respectively (i.e., predicate nominal, elliptical answer to *wh*-question, VP-ellipsis), as in (7). There are no instances of *I*, *my*, *he*, or *she* in such environments.

- (7) a. Mother: Who's going to eat with a big spoon?
Nina: Me. (File 31)
b. Mother: Who's wearing the red dress? c. Nina: That's him. (File 14)
Nina: Her. (File 27)

Also, aside from the masculine possessive form, there are no pronoun errors outside subject position: *my* is used correctly as the only 1sg possessive form by file 01; *him* as direct object by file 04; *her* as direct object by file 05; *he* as subject by file 07; *her* as possessive by file 12; and *his* as possessor by file 13 (*him* is used prior to that). Thus, Nina knows the relevant pronoun paradigms.

The sentences in (8) exemplify Nina's use of first person subjects. This is summarized in Table 3, and broken down by the form of the verb and the pronoun in Table 4.

Table 3
Finiteness versus case (Nina, 1sg)

Subject	Verb form	
	Finite	-Finite
<i>I</i>	40	45
<i>me + my</i>	2	13
% non-NOM	5%	22%

$$\chi^2 = 4.65, p = .03$$

Table 4
Distribution by verb type (Nina, 1sg)

Verb form	Subject form		
	<i>I</i>	<i>me</i>	<i>my</i>
Auxiliary	0	0	0
Modal	28	0	0
Copula	0	0	0
Past Tense	12	0	2
Null Auxiliary	36	0	8
Null Copula	9	2	3

- (8) a. I will get it # Mom. (File 16) c. My going in. (File 16)
 b. I tired of clay. (File 11) d. My ate outside. (File 10)

These data conform to the generalization in (6): virtually all non-NOM subjects occur with nonfinite verbs, significantly different from NOM subjects. (We follow Wexler 1994 in treating omitted forms of *be* as OIs.) In Table 4, note two additional facts to which we return below: 1) both counterexamples to (6) occurred with past tense verb forms; and 2) most of Nina's 1sg non-NOM subjects were GEN, i.e., *not* the default case form.

Turning to third person subjects, examples are found in (9) and the counts are given in Tables 5 and 6.

- (9) a. He has six. (File 13) d. He bite me. (File 13)
 b. No # she's not up there. (File 23) e. He home. (File 13)
 c. She drink apple juice. (File 19) f. Her sick. (File 13)

Table 5
Finiteness versus case (Nina, 3sg)

Subject	Verb form	
	Finite	-Finite
<i>he + she</i>	255	139
<i>him + her</i>	14	120
% non-NOM	5%	46%

$$\chi^2 = 115.7, p < .000001$$

Table 6
Distribution by verb type (Nina, 3sg)

Verb form	Subject form			
	<i>he</i>	<i>him</i>	<i>she</i>	<i>her</i>
Main V with -s	9	0	1	0
Aux with -s	120	1	5	0
Modal	9	0	0	3
Copula with -s	90	2	5	2
Past Tense	15	0	1	6
Main V without -s	85	9	5	51
Aux without -s	19	0	1	11
Null Auxiliary	17	1	0	24
Null Copula	12	0	0	24

The same asymmetry is found here as with first person subjects: non-NOM subjects occur in almost half the OI clauses, but in only 5% of the finite clauses. Of these latter counterexamples to (6), almost half are once again past tense clauses. Notice that the basic pattern holds even if only main verbs are considered. Note additionally from both Tables 1 and 3 that NOM subjects in nonfinite clauses are not rare: for the subset of utterances tabulated here (which excludes those of indeterminate finiteness) they are in the majority overall. In the remainder of this section we seek corroboration for the patterns in Nina's behavior from other children's transcripts.

2.2 Peter (Bloom 1970)

Peter's files 05–13 (1;11.21–2;5.0) provide additional first-person singular data. As with Nina, there is evidence of Peter's knowledge of the default case form: in these files there are 11 instances of *me* in default case environments (VP-ellipsis or bare NP answers to *wh*-questions), but no instances of *my* or *I* in

these environments (10). In the preceding files (01–04, starting at age 1;9.7) we found correct instances of *I*, *me*, and *my* as subject, object, and possessor, respectively, and no substitution of any of these into the wrong environments.

- (10) a. Patsy: I'll sit down. Patsy sit. b. Patsy: Who wants a piece of paper?
Peter: Me too. (File 06) Peter: Me. (File 10)

Peter's first person subjects from files 05–13 are exemplified in (11) and summarized in Tables 7 and 8. Once again, generalization (6) is upheld, with 3 counterexamples occurring in past tense clauses. An additional important observation (Pensalfini 1995) is that both ACC *me* and GEN *my* subjects are used in the same range of syntactic environments and at the same age (cf. Budwig 1989)—see Table 9 for the latter point.

- (11) a. I'm doing that. (File 12)
b. I can't do it. (File 9)
c. I writing. (File 8)
d. Me workin(g) a railroad. (File 11)
e. My had a tape recorder. (File 13)

Table 7
Finiteness versus case (Peter, 1sg)

Subject	Verb form	
	Finite	-Finite
<i>I</i>	243	29
<i>me + my</i>	3	8
% non-NOM	1.2%	22%

Table 8
Distribution by verb type (Peter, 1sg)

Verb form	Subject form		
	<i>I</i>	<i>me</i>	<i>my</i>
Auxiliary	110	0	0
Modal	54	0	0
Copula	10	0	0
Past Tense	69	2	1
Null Auxiliary	29	4	2
Null Copula	0	1	1

Table 9
Frequency of Peter's subjects by file (incl. verbs of indeterminate finiteness)

Subject	File									
	05	06	07	08	09	10	11	12	13	Total
<i>me</i>	0	1	3	12	3	2	10	3	0	34
<i>my</i>	1	2	20	0	2	3	3	4	1	36

2.3 Sarah (Brown 1973)

Sarah's files 26–46 (2;8.25–3;1.24) provide additional third person feminine singular data. Unlike the other two children, there are very few default case environments in her transcripts: the one such utterance with a third person feminine pronoun subject is *that's her* in file 46. Thus, there is at least no evidence against the assumption that Sarah is like the other, younger children in knowing that ACC is the default case. Also, in files 26–46 she displays numerous correct uses of *her* for objects and possessors, and no instances of *she* in such environ-

for a given child at a given stage, even if the child had the wrong default case. It seems implausible to try to overcome this problem by claiming that the child is simply confused between the ACC and GEN forms, since these are generally not erroneously interchanged in nonsubjects environments (cf. Vainikka 1994). In the face of such challenges, one might retreat to a weaker theory in which children, while knowing the default case of their language, are not bound by their grammars to use it as the subject of an OI clause, but instead can choose among any pronoun form. But if this were true, we would expect to find that German, Faroese, Dutch and Russian children also produce a number of different subject forms with OIs. However, as noted in section 1, their subjects are always NOM. Thus, we argue for a more intricate picture of the child grammar.

3.2 A finer-grained account: Independent Tense and Agr

Let us begin by laying out our crucial theoretical assumptions. First, we assume the separation of T(ense) and Agr(eement), as developed by Chomsky (1993). Hereafter, “Agr” refers to AgrS (subject agreement) unless otherwise noted. Second, we assume a strong separation between morphological case marking and structural licensing (cf. Marantz 1991, Schütze 1993, Harley 1995, Jonas 1995, etc.), under which whatever allows overt NPs to surface in particular positions is formally independent of whatever assigns morphological case features to NPs. We make no claims here about the licensing properties of OIs (but see Wexler 1995 and Bromberg & Wexler 1995 for discussion), beyond noting that overt NP subjects of OIs are abundant in English and hence, we assume, are allowed by the child’s grammar. Third, we assume that Agr, not T, assigns/checks NOM case (Chomsky 1981: 52; Pesetsky 1982: 202; Schütze 1993; Radford 1990, 1994). Let us mention three kinds of data supporting the latter assumption. 1) Portuguese inflected infinitives lack tense marking, but show agreement and take NOM subjects (13). 2) Subjunctives in many languages have the same property. 3) Icelandic finite verbs agree with NOM arguments (14a) but show no agreement when all arguments are non-NOM, though they continue to show tense marking (14b).

- (13) O Joao lamenta eles ter-em gastado esse dinheiro para nada.
the J deploras [they(NOM) have.inf-3pl spent this money for nothing]
 ‘Joao deploras the fact that they have spent this money for nothing.’
 (Rouveret 1980: 76) [Portuguese]

- (14) a. Við vitjuðum skúklinganna. [Icelandic]
we(NOM-IPL) visited(IPL) the-patients(GEN-MASC-PL)
- b. Sjúklinganna var vitjað.
the-patients(GEN-MASC-PL) was(DFLT) visited(SUPINE)

Given these assumptions, we follow a research program under which child OI clauses represent universally possible adult clause types, which leads us to expect that T and AgrS can be independently un(der)specified in children’s root

clauses (cf. Roeper & Rohrbacher 1994, Jonas 1995), yielding the possible INFL feature combinations and utterance types in (15), assuming the lexical entries in (16).

(15)	INFL	description	examples
a.	[+tns, +agr]	NOM assigned	<i>he cries</i>
b.	[+tns, -agr]	NOM unassignable, default ACC surfaces	<i>him cry, him cried</i>
c.	[-tns, +agr]	NOM assigned, agreement invisible	<i>he cry</i>

(16) a.	[+tns=present, +agr=3sg]	→ -s
b.	[+tns=past]	→ -ed
c.	[tns, agr]	→ ∅

Thus, under our analysis, the OI stage is characterized by a grammar under which either Tense or Agr may be independently missing (or have a negative value) in finite environments.

Notice now that there are two INFL feature combinations that yield the same phonological verb form in English, namely [+Agr, -Tense] and [-Agr, +Tense=present] (15c and b), neither of which has an -s suffix by the rules in (16). But we claim that [+Agr] necessarily assigns NOM case, and [-Agr] cannot assign NOM case. Thus, [+Agr, -Tense] must occur with a NOM subject, while [-Agr, +Tense] cannot assign NOM, and we claim that the default case then surfaces. Thus, we explain why both NOM and non-NOM subjects occur in OI clauses even when the child knows that the pronoun forms are distinct and only ACC is the default: NOM is syntactically assigned by one kind of OI, whereas another kind of OI assigns no case feature, allowing default ACC to be spelled out. In contrast, Radford (1994) claims that Agr can assign any of the three cases in English and the choice is independent of the value of Tense; under such an account, we would expect main verbs with -s to take ACC or GEN subjects in child English, but they do not. Note also that our account does not rely on any kind of random choice of case from the lexicon.

Notice the crucial absence from (15) of a combination that would generate the unattested *him cries*. In contrast, *him cried* is generable (unlike in the simpler account discussed in §3.1). This follows because the present tense -s suffix unambiguously signals the presence of both tense and agreement, as shown in (16a): it never surfaces with values of AgrS other than third person singular or values of tense other than present. If agreement via AgrS implies NOM assignment in the grammar of English (and perhaps universally), then a verb such as *cries* could only occur with a NOM subject. On the other hand, the past tense suffix -ed is not associated with any particular person/number features (16b), and thus under the separation of Tense and Agr that we assume, the mere presence of a past tense feature does not imply the presence of Agr features unless some independent principle requires them. Thus, a form like *cried* could lack agreement for the child and hence not require assignment of NOM case to the subject. The existence of non-NOM subjects with past tense forms supports the theoretical claim that Agr, not Tense, assigns NOM case.

3.3 Consequences

Let us briefly mention three interesting consequences of this approach. First, what about the fourth logical combination of feature specifications, [-Tense, -Agr]? If we ask ourselves which case an NP subject gets when there are no Tense or Agr INFL features present, the adult grammar yields one clear case of this, namely gerunds, which cannot be marked for tense or agreement: they can have GEN subjects. We suggest that this feature matrix is responsible for GEN subjects of OIs, as shown in (15d). (See Vainikka 1994 for a related idea.)

(15)

d. [-tns, -agr] NOM unassignable, GEN assigned *my cry, my crying*

This additional postulate might explain why researchers (e.g., Rispoli 1994) consistently find proportionately more *her* than *him* subjects among English children. If we assume, following Vainikka (1994), that *his* subjects might well be being produced but mistranscribed as *he's*, then *her go* instantiates either [+Tns/-Agr] or [-Tns/-Agr] (ACC or GEN), but *him go* can only instantiate [+Tns/-Agr], so there should be fewer instances of the latter. This account relies on the syncretism of feminine ACC and GEN pronouns, but does not need to appeal to the morpho-phonological shape of the words, as Rispoli does. But if (15d) is a possibility, why do we find no GEN subject errors in other languages? Our speculative answer is that languages with NOM default case could still show GEN errors *if* they allowed a *verbal* projection with a GEN subject in the adult grammar. English does (cf. *my liking him*, in contrast to the nominal *my liking of him*), but Dutch and German at least do not.

Second, if it is true that children, unlike adults, can have root-clause Agr nodes without features, then when AgrO (*object agreement*) lacks features in a transitive clause, the object will get default case for German and Russian children, which is what we find—NOM errors. No object errors are visible in English because ACC *is* the default case. The verb form associated with a negative value for AgrO might look like an OI *or* like a finite form, since AgrO has no overt morphology in the languages under discussion, and Agr and Tense can be underspecified independently.

Third, we predict that a language that marks tense and agreement with separate morphemes could show independent omission of each of them in an early stage of acquisition; then non-NOM subjects should be limited to [-Agr] clauses and excluded from pure [-Tns, +Agr] clauses as well as from [+Tns, +Agr] clauses.

4. Conclusions

Our data provide further confirmation that present versus absent INFL is a *syntactic* contrast for children at the OI stage. OIs are not just forms in which *-s* has been dropped in the phonetics; if that were true, there would not be such an overwhelming difference between the subject case forms with agreeing versus

nonagreeing verbs. Thus, despite superficial errors, we find strong evidence for young children's knowledge of syntactic case mechanisms. The children studied, young enough to omit INFL, know that when the verb takes agreement, the case on the subject must be NOM. Our account makes sense of the flip between English and other languages on where case errors show up and makes clear predictions for new languages based on their case and agreement properties.

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