

# Testing a Hypothesis that Case in Early Child Language is Lexical Case

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## **1 Introduction**

The purpose of this essay is to address the following hypothesis, which considers child language within a generative framework:

- (1) Case in the earliest stages of child language is exclusively lexical Case.

Section 2 provides theoretical background, on Case/case and on motivations for the hypothesis. Section 3 lists some predictions made by the hypothesis. The subsequent sections test these, first on the basis of existing studies on a range of languages (section 4) and then through an original case study of a child learning English (section 5). Section 6 concludes.

## 2 Theoretical background

### 2.1 Case

Generative grammar typically distinguishes different types of (abstract) Case (capitalised so as to distinguish it from morphological case, uncapitalised); here, I will broadly follow Woolford (2006) in making a three-way distinction between the following:

- *Structural* Case licensed by functional heads independently of thematic roles;
- *Inherent* Case licensed by functional heads in association with thematic role positions;
- *Lexical* Case licensed by lexical items, e.g. by particular verbs.

Unlike Woolford, however, I assume that lexical Case can be assigned to external arguments, at least in child language.

This essay will focus on the ‘core cases’ *nominative*, *accusative*, *ergative* and *absolutive*. If we distinguish the transitive subject ‘A’, the transitive object ‘P’ and the intransitive argument ‘A’, then:

- nominative marks both S and A;
- absolutive marks both S and P;
- ergative marks only A<sup>1</sup>;

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<sup>1</sup>In Basque and Georgian, considered below, the ‘ergative’ case may also occur with some S arguments (Aldai 2009:785-6, Harris 1981:46-7).

- accusative marks only P. (Payne 1997:133)

I follow Woolford (2006), Aldridge (2004) and others in considering that, in adult language, nominative, accusative and absolutive are structural Cases and ergative is an inherent Case. By hypothesis, however, the same morphological forms are instantiations of lexical Cases at the earliest stages of child language, and are licensed by the verbs with which they co-occur.

## 2.2 Motivations for the hypothesis

Two main existing approaches to child language acquisition can be seen as motivating the hypothesis given in (1). The first is the approach taken by Tomasello (1992, 2000, 2003). This is a functionalist approach in which it is assumed that syntactic constructions (including case-marking of arguments: Tomasello 2003:119) are acquired initially on a verb-by-verb basis: the Verb Island Hypothesis. Thus, instead of generalising case-marking patterns across all clauses of a similar type from the earliest stage, children initially connect case-marked forms only with specific verbs: for example, nominative is not initially associated with all finite verbs but only with particular verbs that the child has learned it can co-occur with.

The hypothesis given in (1) is an attempt to capture this claim regarding case-marking in generative terms. It takes the same position as Tomasello's functionalist approach - that case at the earliest stages is determined on a verb-by-verb basis - but expresses it in formal terms: the child's marking of case is restricted to constructions with certain verbs because it always

instantiates lexical Case assigned by those verbs on the basis of an idiosyncratic property of each verb's lexical entry.

A second motivation comes from the claim that child language in its earliest stages lacks functional projections (Radford 1990, Guilfoyle & Noonan 1992, Tsimpli 1996). If this is true, we would not expect any evidence of structural or inherent Cases (i.e. those licensed by functional heads) in language at these stages. This is contrary to Radford's (1990:171-197) claim that child English initially lacks any marking of case in contexts where it would be expected in adult speech: thus a child aged 1;7 produces sentences like *me talk* and *me look* (p. 175). However, as subsequent sections will show, there is in fact evidence for case distinctions from very early on in linguistic development, across a range of languages including English. Assuming the broader claim concerning the lack of functional projections to be true<sup>2</sup>, these distinctions must come from somewhere other than Case licensing by functional heads, and lexical Case licensing by verbs presents itself as one possibility.

### 3 Predictions

The hypothesis that Case in early child language is exclusively lexical Case makes a number of empirical predictions. This section will present these, and sections 4 and 5 will test them in various ways.

One prediction is that acquisition of case will be largely free from errors<sup>3</sup>,

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<sup>2</sup>Note, however, that this claim is often rejected, e.g. by Hyams (1996) and many others.

<sup>3</sup>I use this term as shorthand for 'non-adultlike productions'.

at least initially. In particular, overgeneralisations of case usages will be rare and a language's case alignment will be acquired without error. This is because Case licensing proceeds initially on the basis of individual lexical entries for verbs, which are posited on the basis of direct evidence from the input. The child does not initially assume a given verb can license a given Case unless they have encountered evidence for this, and so does not generally associate any verb with cases which it cannot assign in the adult language.

This is not obviously the prediction made if we assume that the child employs the same mechanisms of Case licensing as adults from the start. In this instance, it might be expected that children might sometimes make erroneous assumptions about the Case licensing properties of functional heads on the basis of limited analysis of the input. For example, the child on observing that transitive subjects occur with ergative Case might overgeneralise the rule to intransitive subjects as well, essentially analysing the ergative as nominative.

Another prediction made by the hypothesis is that Case-marked arguments will only be able to occur with a subset of verbs at the earliest stages, namely those which have Case-licensing properties associated with them. This again is not the prediction made if it is assumed children have adult-like Case-licensing, namely that once Case is acquired it should be available with all verbs.

A third prediction is that there will be a point at which the child adopts the adult system of Case licensing by functional heads and abandons, or begins to abandon, lexical licensing of the core cases. Plausibly overgener-

alisation errors might occur at this point, although not necessarily, as the child may by this stage have a fairly good knowledge of the patterns of case-marking in the language being acquired and be less likely to make incorrect assumptions about which functional heads license which Cases. In any instance, it is predicted that at this point the number of verbs which the child uses with case-marked forms is likely to increase rapidly, as Case is no longer restricted to particular lexical entries but can notionally occur with any verb that may co-occur with the Case licensing functional heads. It can also be predicted that this increase will occur at about the same time as, or shortly after, other evidence for these heads becomes substantial.

## **4 The hypothesis and existing research**

This section will test some of the predictions made above by comparing them to claims made in the existing literature about the nature of the acquisition of case. Note, however, that these studies deal with morphological case, and that plausibly underlying Case distinctions need not be acquired at the same time as the morphology. Nevertheless, morphology is the best indicator of underlying distinctions.

Several authors have remarked that the acquisition of case is ‘relatively error-free’ in various languages (Krajewski et al. 2012:12). Kovačević et al. (2009:174) find only 20 inflectional errors in 1780 noun tokens in a child learning Croatian between the ages of 1;3 and 2;8. Hyams (1992:373) reports that nominative and accusative are marked appropriately in Italian from as early as 1;8; Weist & Witkowska-Stadnik (1986:366) report produc-

tive control of all seven Polish cases by children aged 1;9. These studies are particularly relevant to the current hypothesis as they suggest correct use of case forms before the age which Radford (1990:48) assigns to the emergence of (Case-licensing) functional categories occurs, namely 24 months ( $\pm 20\%$ ). If this is so, and Radford's claims about the emergence of functional categories is correct, Case must come from elsewhere at this early stage.

Specifically regarding overgeneralisation errors, Krajewski et al. (2012) report that only 0.64% of noun tokens in the child they are studying (who is aged 2;0-2;1 and acquiring Polish) give evidence of overgeneralisation. Likewise, Stephany & Christofidou (2009:246) find no stage of overgeneralisation in five children acquiring Greek. This suggests overgeneralisation may not be very frequent in the acquisition of case, as predicted.

Concerning alignment, several authors report an absence of errors with ergative case. Once (monolingual) Georgian children start using the 'ergative' case at about 2;0, they employ it largely without errors: not making errors in the use of the core cases with regard to the aspect-based alignment split in the language, and recognising accurately in which contexts it may occur with intransitives (Imedadze & Tuite 1992:88-93). Fortescue & Lemmert-Olsen (1992:216) find that three West Greenlandic-speaking children aged 2;2-3;4 never overextend ergative case to intransitives. Bavin (1992:353) finds no examples of Warlpiri children using ergative with intransitive subjects or those transitive subjects which require absolutive marking, although it must be stressed that core arguments are 'only sporadically' overt in the speech of children younger than 3;0 (Bavin 1992:330, 334). Ezeizabarrena (2012:315) reports that there is no reported overextension of the Basque

ergative in the literature. These observations suggest that children tend to analyse a language's alignment pattern correctly from early on, not making the kind of incorrect hypotheses that might be expected if they were connecting Case licensing to functional heads from the earliest stage. To be clearer on this point, however, it would be useful to have more data on children younger than about 2;0.

Some other studies, however, have found considerable degrees of deviation from adult language in children's use of case. Korecky-Kröll & Dressler (2009) remark on several errors made by children acquiring German. Note, however, that marking of case in German is quite limited, particularly with regard to the core cases; apart from a small number of nouns that take an accusative ending directly, nominative and accusative are distinguished only by pronouns and by adjectives and determiners modifying masculine singular nouns. It does not seem surprising in these circumstances that children may be slow and unusually inaccurate in acquiring case-marking, particularly as to acquire case-marked articles (possibly the most salient instantiation of the case system) presupposes the acquisition of the functional projection DP. The German case is not particularly strong evidence against the hypothesis, therefore.

Numerous studies of the acquisition of Basque (see references in Ezeizabarrena 2012:308) suggest that children go through a stage where they lack marking of the ergative case in contexts where it is expected in adult language, using the same zero marking as the absolutive. For instance, one child studied by Barreña and Zubiri (2000) was observed to correctly use the ergative in 0/8 possible contexts before 2;0, 3/9 at 2;0 and 36/36 at 2;6. An-

other child studied by Barreña et al. (2008) did not use the ergative in 80% or more of required contexts until 2;6, despite first producing the inflection at 2;0 (p. 95). However, two other children studied by Barreña et al. used the ergative correctly in 80% of required contexts from 2;2 and 1;10 (p. 95), and one of the children studied by Barreña and Zubiri (2000) omitted the inflection in less than half of expected contexts before age 2;0. Whilst those children who do not seem to acquire the ergative until later are more problematic, this does suggest that at least some may be able to use the ergative prior to acquiring functional categories, though we cannot be certain on this point based on the data provided. Additionally, in many languages ergative marking is optional (McGregor & Verstraete 2010), and plausibly children may not be sensitive to whether they are acquiring a language of this type or not. (Note that many children acquire Basque simultaneously with Spanish, though here only monolingual children are referenced.)

Concerning another prediction made above, Krajewski et al. (2012:24-9) find that the Polish-speaking child under investigation uses case inflections in a much more limited range of contexts than her mother; specifically, the child's use of inflections allows better predictions about the immediate context than the mother's. Whilst this study does not specifically consider whether nominative or accusative inflections are limited to the arguments of certain verbs, this is certainly one plausible explanation for the observed pattern.

Babyonshev (1993:27) and Eisenbeiss et al. (2006) find in Russian and German respectively that children often overgeneralise structural Cases to (adult) non-structural Case contexts. This may suggest, contrary to the

hypothesis, that the youngest children are unable to use lexical Case. Alternatively, however, it may be that adult non-structural Cases are not acquired at the earliest stages due to their relative rarity.

In summary, these studies provide some support for the hypothesis, although this is not without complications.

## 5 Case study

### 5.1 Introduction

This section will consider in detail evidence from one child, Ella, acquiring English. The data employed are the transcripts of Ella's speech in conversation with her family members from the age of 1;7 (when she first starts to employ forms marked for case) to the age of 2;6, taken from Forrester's corpus in the CHILDES database (Forrester 2002, MacWhinney 2000).

It might be objected that English, which only makes a morphological case distinction on (a subset of) pronouns, is not the ideal language for this sort of study. However, English does nevertheless make a case distinction which must be acquired by children, so the acquisition of Case/case is still a phenomenon which exists to be studied, even if the evidence is more scanty than in other languages. It should be noted, however, that the way case is acquired in a language like English may not be indicative of the way in which it is acquired in languages with a greater degree of case-marking (where, for example, case might be acquired faster due to being more salient).

A number of observations can be made from these data. The following subsections will consider several of these in turn.

## 5.2 Case errors

Firstly, as predicted by the hypothesis, Ella makes very few case errors. There are approximately 215 instances of those pronouns which make a nominative-accusative distinction in the data, not counting the possessive forms of these pronouns. The only instances where case forms are used incorrectly are the following:

- (2) *a me want* (2;0)
- (3) *my do it*(2;0)
- (4) *my finished* (2;0)
- (5) *him didn't know* (2;2)
- (6) *meem my like* (2;6)
- (7) *oh him got my trousers* (2;6)

These errors account for only about 2% of the uses of case-marked forms. Note particularly the rarity of the use of the accusative forms for subjects reported by Radford (1990:175-8) and others (see Schütze & Wexler 1996:670), seen here only three times. Tomasello (2003:134) claims - without giving further support - that errors of this type occur in about 50% of English-speaking children; the remaining 50%, presumably, do not make them. Valian (1991:52) suggests that such errors are in fact rare in English, occurring in not more than 2% of possible instances. Ella in fact only rarely uses accusative forms as arguments of verbs in the data - there are at most eight occurrences of accusative objects, some dubious - though she does use *me* in isolation from at least 1;7.

### 5.3 Percentage of verbs with case-marked forms

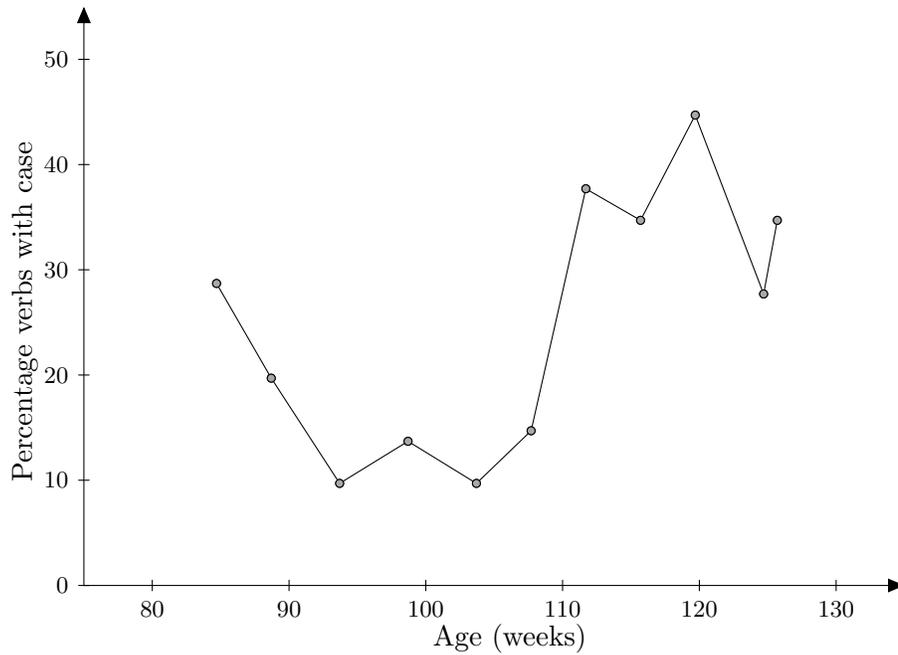
We may now turn to the other predictions made: that case-marked arguments will initially only be able to occur with a subset of verbs at any given stage, and that subsequently there will be a point at which licensing of Case by functional heads becomes a possibility and a much wider range of verbs come to be observed to occur with case-marked forms. One possible test of this is to consider each transcript separately, taking into account (i) the type frequency of verbs observed to occur with unambiguously case-marked arguments and (ii) the total number of distinct verb lexemes produced, and relating the two as a proportion. (It must be stressed, however, that the absence of overt case-marking does not necessarily imply that a form lacks underlying Case, and the results must thereby be treated with caution.)

The results of this analysis are shown in table 1 and graph 1. Note that verbs are only included in the statistics when it is deemed reasonably certain that they ought to be, as in several instances the status of a given portion of an utterance is unclear. Occasionally forms are only attested in songs sung by the child, which can be assumed to be learned in such a way that they may not reflect underlying grammatical competence; these forms have not been counted.

There does appear to be a marked increase in the percentage of verbs which occur with case-marked arguments, between the ages of 2;1 and 2;2. This might suggest that the child starts to employ structural Cases marked by functional heads in place of lexical Cases at about this time, in line with the hypothesis. It will also be observed that a relatively high percentage of

Age (years;months)	Age (weeks)	Total verbs	Verbs with case	Percentage with case
1;7	85	7	2	29%
1;9	89	10	2	20%
1;10	94	10	1	10%
1;11	99	7	1	14%
2;0	104	29	3	10%
2;1	108	33	5	15%
2;3	112	16	6	38%
2;4	116	17	6	35%
2;5	120	29	13	45%
2;6	125	18	5	28%
2;6	126	23	8	35%

Table 1



Graph 1: Variation of percentage of case-marking verbs with age

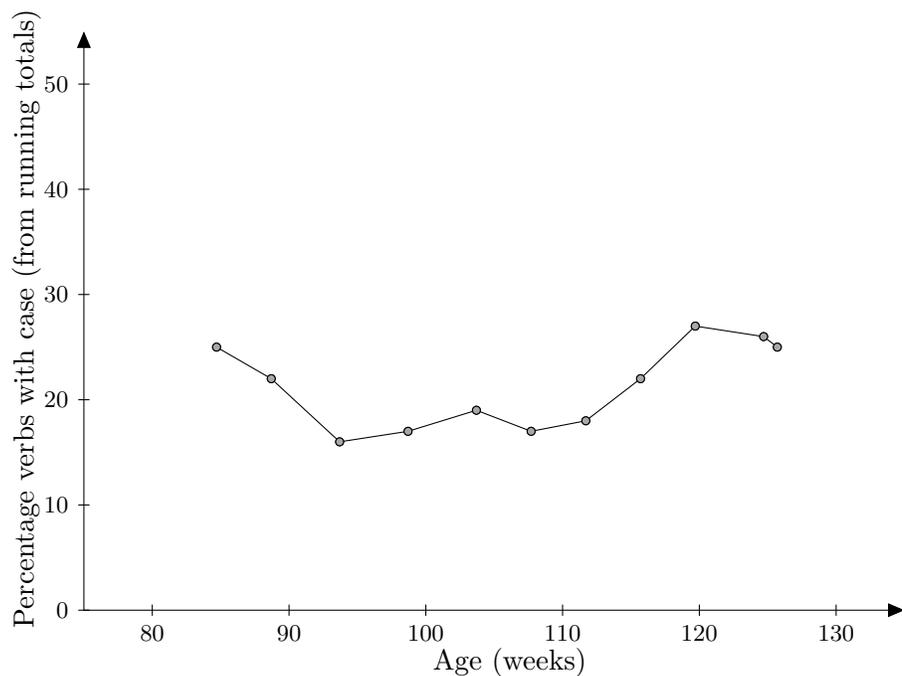
verbs seem to occur with case-marked forms in the earliest period; however, as only small numbers of verbs are recorded in this period this may not be significant.

The data might also be analysed by relating the type frequencies of verbs with case-marked arguments and total verbs as the proportion of the running total of each that have been observed to date at the time of each transcription (table 2, graph 2). This is not unproblematic, for various reasons. The data represent only a small sample of the child's output, and so the first occurrence of a form in the transcriptions may not represent her earliest use of it, and many forms which she does use may never be recorded. Further, such analysis is largely based on single instances of given verb forms or particular case-marking constructions with particular verbs, which may not reliably indicate true 'acquisition' of the forms or constructions in question. However, in the absence of a larger data set there is no more reliable measure of acquisition available. Despite these problems, the analysis in question may still be broadly indicative of underlying phenomena, though it must be approached with caution.

Ignoring the earliest period, where (as above) the low frequency of verb usage may have skewed the percentages, there does appear to be an increase in the percentage of verbs used with case-marked forms between 2;2 and 2;5, whereas before and after these ages the percentages are fairly stable. However, the increase is perhaps not as rapid as might be predicted if the child had adopted a system of structural Case assignment by functional heads which had not previously existed, nor does it coincide with the increase mentioned above (between the ages of 2;1 and 2;2) which was thought to

Age (years;months)	Age (weeks)	Total verbs (running total)	Verbs with case (running total)	Percentage with case
1;7	85	8	2	25%
1;9	89	18	4	22%
1;10	94	25	4	16%
1;11	99	29	5	17%
2;0	104	42	8	19%
2;1	108	58	10	17%
2;3	112	62	11	18%
2;4	116	68	15	22%
2;5	120	78	21	27%
2;6	125	82	21	26%
2;6	126	87	22	25%

Table 2



Graph 2: Variation of percentage of case-marking verbs with age (based on running totals)

possibly be indicative of this. The data are not entirely clear, therefore.

A further complication is that, in the latter stages, the child begins to use more multi-verb constructions, reducing the likelihood that a given verb will appear in a context where it might be expected to assign case. There is not space to analyse the possible effect of this here, however.

#### 5.4 Functional categories

With regard to Radford's (1990:48) claim that the emergence of functional categories occurs at about 24 months ( $\pm 20\%$ ), note that Ella's rapid increase in the number of verbs occurring with case-marked forms takes place at about this point. De Villiers (1992:441) places the end of the pre-functional category stage at mean length of utterance (MLU) 1.9, a point which Ella attains at about 2;0-2;1 (see table 3), slightly before the onset of the sharper rate of increase. This is evidence in support of the claim that this sharper rate is due to the acquisition of functional categories for the first time.

Age	MLU
1;10	1.48
1;11	1.85
2;0	1.87
2;1	2.30
2;3	2.15

Table 3

It is also possible to test the claim that the rapid increase is linked to the emergence of functional heads by looking for the emergence of other indicators of these heads in the data itself. Evidence for the functional

category T, which licenses nominative Case in adult language, may come from auxiliary and copula *be*, auxiliary *have* and *do*, modal verbs, infinitival *to*, the third-person singular *-s* inflection and morphological marking of the simple past (Radford 1990:138-57). Table 4 and graph 3 give the token frequency of these forms in Ella's speech from 1;10 to 2;6, from a sample of 80-100 utterances at each age.<sup>4</sup>

Apart from the markedly low figure at 2;4<sup>5</sup>, there is a clear increase in the frequency of these morphemes as the child grows older. However, it is less apparent that there is a period during which a markedly greater rate of increase might point to a relatively abrupt acquisition of the T category; accordingly it is not possible to connect such a greater rate of increase to the period in which the child seems to begin to use case with more verbs. (Note that the presence of a small number of these forms at an early stage does not necessarily disprove the claim that the child lacks functional categories at this stage. Adult functional categories may be initially analysed as lexical categories by the child.)

It would also be possible to calculate with what frequency these forms appear in contexts where they would be obligatory in adult language, although in many instances this is difficult to judge.

## 5.5 Verb types

It is interesting to note the particular types of verbs that occur with case-marked pronouns at the earliest stage (2;1 and earlier), before the rapid

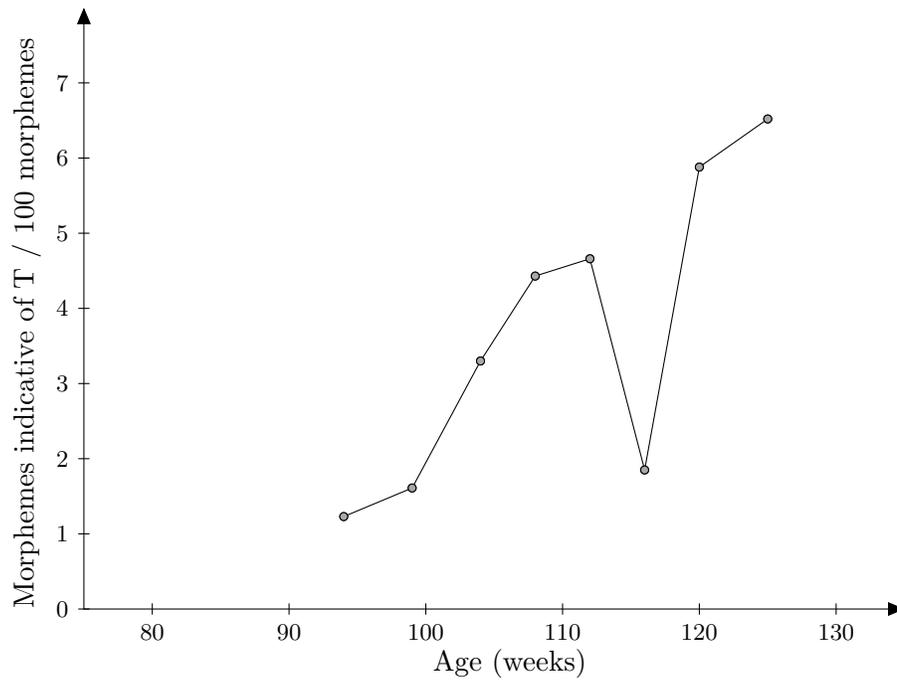
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<sup>4</sup>At 2;1 only 1 of 8 utterances of 'don't like salami' or similar counted.

<sup>5</sup>This anomaly is less apparent when evidence for other functional categories, such as articles and prepositions, is also included in the data.

Age (years;months)	Age (weeks)	Frequency of morphemes indicating T per 100 morphemes
1;10	94	1.23
1;11	99	1.61
2;0	104	3.30
2;1	108	4.43
2;3	112	4.66
2;4	116	1.85
2;5	120	5.88
2;6	125	6.52

Table 4



Graph 3: Degree of evidence for T at different ages

increase in the proportion of overtly case-marking verbs is observed. Those attested with certainty are *get, show, like, want, will, be, can* and *do*. As auxiliaries, the latter four are associated with T position in adult language, and the equivalent to *want* also has auxiliary properties in many languages (*get* may also have an auxiliary function, namely in the so-called *get* passive, but that is not how it is used here). The only new verbs attested with case-marked pronouns by 2;3 (about the time when the proportion of verbs attested with case-marked forms increases rapidly) are *go* and *have*, the latter again used in auxiliary function. Most of the new verbs with case-marked pronouns at the later stages (2;4 and onwards), however, are main verbs: *eat, fall, bring, talk* etc.

One possible interpretation of this is that many instances of nominative case in the early stages are in fact structural Case licensed by T, namely the overt instantiations of T as auxiliary verbs, as in adult language, and not lexical Case at all. If this is accepted, however, it is necessary to provide some explanation for the case-marking of forms with other verbs: potentially by a covert T head, the existence of which would be contrary to Radford's position (although this raises the question of why only a few verbs seem to occur with this head at the early stage), or else through lexical Case licensing. If the assumption that auxiliaries are overt manifestations of T and can license structural Case is upheld, however, the latter position is weakened by the fact that so few non-auxiliary verbs are attested with case-marked forms at the early stage. Another possibility is that the auxiliaries are analysed as main verbs licensing lexical Case at the earliest stage.

## 5.6 Summary

In summary, these data do provide some support for the hypothesis, though the evidence is not as clear-cut as might be desired.

## 6 Conclusion

This essay considered the hypothesis that Case in the earliest stages of child language is exclusively lexical Case. Consideration of existing studies and a case study of a child learning English found a good deal of support for this hypothesis, although some findings were also problematic. Further research might shed more light on the hypothesis's validity; in particular a case study similar to that undertaken in section 5 above with a language with considerably more morphological case-marking than English is desirable.

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