The optional subject phenomenon in young children's English: a case study*

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(Received 26 January 1989. Revised 2 March 1991)

ABSTRACT

Recent treatments of the optionality of sentence subjects in young children's English have sought to link this phenomenon, and its eventual demise, to the development of the child's verb-infection system or to a parameter-resetting within the INFL ('inflection') constituent of the child's grammar. It is claimed that subject optionality disappears when these developments occur. The case-study reported here investigated the productive language of an English child between 2;5 and 3;0. It found that subjects were no longer optional at a stage when none of the reflexes of INFL claimed in the literature to be associated with the disappearance of subject optionality had yet been acquired. The possibility that subjects were present only when communicatively required was rejected. The frequency of subject realization of a Japanese child aged 3;0 was used to provide a measure of expected realization when subjects are not grammatically required. It is concluded that subject obligatoriness in English may be acquired as a characteristic of the language sui generis, independently of developments elsewhere in the child's emerging grammar.

INTRODUCTION

The optional subject phenomenon (henceforth the OSP) in young children's English has received attention in a number of recent studies. It appears to be an area in which theoretical perspectives can usefully be brought to bear on developmental data and vice versa. This paper considers three theoretical accounts of the OSP that draw support from developmental data: Hyams (1986), Radford (1986) and O'Grady, Peters & Masterson (1989). In all of

[*] The author wishes to thank Paul Fletcher for making available the data used in the main study, and also Fusaie Nagasawa and Kazumi Tanahata for their help with the transcription and interpretation of the Japanese data. The helpful comments received from two anonymous reviewers are gratefully acknowledged. Thanks are offered to Mr and Mrs Kanazawa for their kind cooperation. Address for correspondence: Richard Ingham, Department of Linguistic Science, University of Reading, Whiteknights, P.O. Box 218, Reading, RG6 2AA, UK.
these, the transition from optional to obligatory subjects is linked with developments in the INFL ('inflection') node of the child's grammatical system. The case-study reported here attempted to establish whether evidence for this linkage could be found in a rather more detailed longitudinal analysis than those carried out by the authors cited.

Descriptively speaking, the OSP is fairly well documented. Many sources call attention to the frequent occurrence of subjectless sentences in the early stages of multi-word combinations. Bloom, Miller & Hood (1975) present data collected from four children aged 1;10-2;4, showing that subjectless subjects were often lacking, across a range of utterance-types. With Agent-Verb-Object sentences, by far the largest category in their analysis, subjects were still being omitted 30-50% of the time at the point of the last samples, and other categories showed a similar pattern. M.L.U(m) values were by then in the range 2.3-2.8, i.e. well beyond the two-word stage, so the omission of subjects cannot plausibly be accounted for simply in terms of production constraints on the length of young-children's sentences. The authors also show that direct objects of transitive verbs were far more rarely omitted – the comparable figures were between 5% and 12%. This is an indication that a satisfactory account of the OSP may need to take sentence structure into consideration, so let us now review the three studies mentioned earlier which offer grammar-based explanations for the OSP and its eventual demise.

The null-subject parameter: Hyams (1989)

In many languages the subjects of main-clause sentences may be phonologically unrealized (null). Such languages exhibit an interesting cluster of syntactic properties: in addition to the possibility of null subjects, they lack a class of auxiliary verbs syntactically distinct from main verbs, and they also lack expletive subjects. English, by contrast, has obligatory phonologically overt subjects in main clauses (other than imperatives), has auxiliaries which, unlike other verbs, invert with the subject to form questions, and also has expletive subjects: it, as in it's my turn, and there, as in there's a new teacher at school. The null-subject parameter of Government-Binding theory (Rizzi, 1982; Jaeggli & Saffir, 1989) accounts for these differences in terms of a single property of the grammars of these languages. In Hyams's analysis (based on Rizzi, 1982), the INFL node in null-subject languages contains the abstract element PRO, which licenses null subjects. PRO may not be governed, however, and lexical material in INFL, such as modal auxiliaries, would govern PRO. Hence, in such languages there are no modal auxiliaries of the English type. In English, on the other hand, because auxiliaries need to be generated under INFL, it is the element PRO which is disallowed in INFL. As a result, null subjects are not permitted. And since English disallows null subjects, subjects without referential content cannot be left phonologically null, but must be realized as expletive it or there.

Hyams equates the grammar of English-speaking-children's early sentence combinations with that of null-subject languages. In both, we find optional subjects, no modal auxiliaries, and no expletive subjects. A further consequence of the null-subject parameter-setting in children's early English is that contractible be (copula and auxiliary) is absent. This follows from a strict locality condition on contraction which can be met only if be is in INFL, adjacent to the subject. But again, lexical material in INFL would govern the subject position, so contractible be is incompatible with a null-subject grammar.

The OSP, then, is seen by Hyams as part of a cluster of properties of children's early grammars which all derive from a single factor – the initial setting of the null-subject parameter. According to Hyams, children's early grammars are set to the null-subject value. For languages such as Italian, they stay that way; for English, they are reset to disallow null subjects. This resetting is prompted, Hyams claims, by two triggers: the availability in the input of expletive subjects, which make no semantic contribution to the interpretation of the sentence, and the fact that subjects are overt in English even when their referent can be recovered from context, so again their presence is evidence that they are required for structural reasons.

Hyams (1987:1) sees her work as providing 'an elaboration of the relationship between the parameters of Universal Grammar, and actual grammatical developments'. She finds that developmental data presented in Bellugi (1967) and Bloom, Lightbown & Hood (1975) support her argument for a link between the OSP and the other grammatical phenomena she discusses. Expletives appear in the data at the moment of restructuring (1987:16), while modal auxiliaries and contractible be 'emerge shortly after the point at which the child begins using lexical subjects consistently' (1987:11). From a developmental point of view, then, the attractiveness of the analysis that Hyams presents is that she appears able to offer a unitary amount of why certain not obviously related phenomena seem to be roughly contemporaneous in the child's developmental course.

Missing INFL: Radford (1986)

Like Hyams, Radford (1986:22) connects the OSP with developments that can be analyzed in terms of the INFL node of children's developing grammars. Unlike Hyams, Radford takes the view that INFL is simply absent from young-children's sentence structure at the time of the OSP. If

[1] Radford (1988) covers largely the same material, except that the section on 'subjectless propositions' referred to here does not appear. However, the position taken by Radford (1988:22), that obligatoriness of sentence subjects in English is imposed by the presence of a finite INFL, and that before children have acquired INFL, they may thus omit subjects, is in no way disputed by Radford (1988).
it is absent, PRO subjects cannot be excluded from main clauses, since there will be no tense INFL to rule them out by governing the subject position. Radford's analysis therefore correctly predicts the optionality of main-clause subjects in children's early English. It accounts for a number of other features, including, in addition to those discussed by Hyams, the absence of inflections for tense and agreement, and the use of accusative pronoun forms in nominative contexts (e.g. *me want that*). The first of these features is obviously expected if INFL (inflation) is lacking; the second is related to the absence of INFL in a slightly more indirect fashion. In adult English, nominative pronouns are found only with subjects of clauses containing a tensed INFL, thus *they* in (1a); but subjects of untensed clauses are accusative in form, hence *them* in (1b):

(1a) I believe they are innocent
(1b) I believe them to be innocent

But if INFL is lacking, Radford argues, this case-marking distinction cannot be made, so that subjects in children's early English may be realized with accusative pronouns.

Radford supports his claims with a number of examples selected from a corpus of the spontaneous speech of children aged between 1;5 and 2;1. No indication is given, unfortunately, of how these children's language developed subsequently. However, it would accord with Radford's proposals to find subjectless sentences dropping out of children's production by the time we observe the regular appearance of verb inflections and correctly case-marked pronouns. At this later stage, INFL will in some sense have 'matured', and will, when tensed, block null subjects, so the OSP will disappear.

The OSP and tensed VP's: O’Grady, Peters & Masterson (1989)
The most recent treatment of the OSP to be reviewed here is presented in O’Grady et al. (1989). In these authors' analysis, the disappearance of the OSP is related to the availability in the child's grammar of the distinction between tensed and untensed verb forms. In English declarative sentences, tensed verbs and modal auxiliaries take overt subjects obligatorily, while with untensed verbs, clauses are grammatical without them, e.g.:

(2a) I expect they are busy.
(2b) *I expect ___ are busy.
(2c) I expect I will hear soon.
(2d) *I expect ___ will hear soon.
(2e) I expect ___ to hear soon.

As regards young children acquiring English, the authors state (1989: 317):

Because they initially do not have inflectional and modality contrasts that signal the distinction between tensed and untensed VPs, children will see only a single class of VPs whose members sometimes take subjects and sometimes do not.

This being so, learners will assume that within this undifferentiated class of VPs, subjects are simply optional. O’Grady et al.'s claim is thus that children acquire subject obligatoriness when the tensed/untensed distinction is acquired. However, this distinction need not be acquired in one fell swoop for all types of VP. For O’Grady et al. there is nothing to prevent children discovering VPs containing modals before they discover that such phrases are obligatorily subject-taking (ibid: 318). Thus their analysis is compatible with developmental data showing a dissociation between the two phenomena, unlike Hyams, for whom the appearance of true modals cannot co-exist with the OSP. O’Grady et al. maintain that children may establish subject-taking properties for each subclass of verbs on an individual basis - modal auxiliary, other auxiliary, semi-auxiliary, copula, and inflected main verb. They present data in support of their claim that the OSP disappears not across the board, but selectively, with subject realization reaching a 90% criterion level in different subclasses at different times.

Rationale for a case-study
All the theories reviewed above involve a developmental sequence in the acquisition of English that, essentially, distinguishes an earlier from a later stage. At the earlier stage, subjects are optional, and the various reflexes of INFL have not yet been acquired. At the later stage subjects are obligatorily, and the various reflexes of INFL have been acquired. This two-stage model is clearly an idealization: anyone dealing with developmental data is aware of how gradual and piecemeal the process of change can be. In fact, O’Grady et al.’s approach turns this piecemeal development to advantage, arguing against a sharp, across-the-board demarcation between the earlier and later stages. Nevertheless, there is in their work a clear empirical prediction regarding stages of development: we do not expect to find obligatory subjects with ordinary lexical verbs before tensed inflections on these verbs have been acquired. As for Hyams and Radford, their accounts lead us to expect that phenomena explained by a single reconstruction of the grammar should be roughly contemporaneous, an outcome that Hyams indeed reports that she found in the data she used. Unfortunately, these are not presented systematically, so it is difficult to evaluate her conclusions. And Radford (1986) does not, as was remarked above, give evidence of how the demise of the OSP interacts developmentally with the various reflexes of INFL that he discusses.

It was therefore thought worth while to conduct a case-study investigation of the relation between the acquisition of obligatory subjects and the acquisition of the properties of INFL in English. What seemed to be needed was a study combining the attention to developmental detail of O’Grady et al. (1989) with the wider scope of Hyams (1986) and Radford (1986). If an association was found between the disappearance of the OSP and the
appearance of various manifestations of INFL, this would provide support for the arguments presented in the literature we have examined: these, we may note, claim not just that there is theoretical motivation for associating the various grammatical elements in question, but that they are temporally related in children’s language development as well.

There are two ways in which the latter claim might fail to be supported. One would be if we found, for example, virtually error-free performance with verb inflections and modals at a stage when subjects were still optional. The other would be if we found that subject obligatoriness had been acquired well before the various reflexes of INFL were productive. Either way, the link alleged to exist between the OSP and INFL would appear to be absent, at least in the developmental profile of the child under consideration.

The Study

Subject

The child selected for this study, the third daughter of a monolingual English family, was named Sophie; her general language development is described in Fletcher (1985). The data used for the present analysis formed part of a corpus recorded in domestic settings, and was transcribed by the child’s mother, who was present at virtually every recording session. Samples were obtained every few days, starting at 2;4.28. The main period chosen for analysis covered the four months between 2;5 and 2;8. Data from a later month were examined for purposes of comparison. The number of utterances of all types produced by Sophie in these samples is shown in Table 1. MLU(m) figures, calculated on the basis of three 50-utterance samples taken at well-spaced intervals during each month, are also shown.

| Table 1. Sample size and MLU(m) |
|------------------|------------------|------------------|------------------|------------------|
| Age   | 2;5 | 2;6 | 2;7 | 2;8 | 3;0 |
| Sample size (utterances) | 830 | 950 | 1540 | 1370 | 590 |
| MLU(m) | 145 | 150 | 2400 | -42 | 250 |

Analysis

The features of Sophie’s grammatical development that were studied were: subject obligatoriness, tense endings, modal auxiliaries, contractible copula and auxiliary be, pronoun case, and expletive subjects. These were the grammatical elements whose acquisition was linked in the literature reviewed above. The results of the analyses undertaken will be presented individually.

Tense inflections

The participial inflections -ing and -ed are, as noted by Radford, aspectual rather than denoting tense, so this analysis concerned only the third person -s and past tense -ed inflections. The first of these is easily dealt with: it was totally absent in the 2;5–2;8 period, while at 3;0 it appeared in the form does and occasionally elsewhere. The -ed inflection is rather less tractable. Most of the occurrences of verb forms ending in -ed during the 2;5–2;8 period are tokens of called (as in e.g. What that called:), which hardly count as evidence for regular past tense. There are also a few items such as broken and failed which clearly do show productivity of the -ed inflection. What is not clear, however, is whether it is the past tense ending, or its homophone, the past participle -ed inflection, which is being overgeneralized (the have auxiliary is as yet absent).

Fortunately, the child’s mother provided time reference points for events denoted by Sophie’s past-referring verb forms, and these allow the data to be analysed into immediate past-referring contexts, which would most naturally display the have + past participle form in adult British English, and non-immediate past-referring contexts, where the simple past form would be the adult norm. The great majority of the latter contexts, unsurprisingly, were realized by high-frequency irregular verbs, but, taking those instances where Sophie used a regular verb in a non-immediate past-referring context, it is possible to get a reasonably unambiguous measure of the development of Sophie’s regular past -ed inflection (Table 2).

| Table 2. Past tense -ed realization |
|------------------|------------------|------------------|------------------|------------------|
| Age   | 2;5 | 2;6 | 2;8 | 3;0 |
| Non-immediate past-referring contexts | 6 | 2 | 0 | 3 |
| Last tense -ed (N) | 0 | 1 | 0 | 3 |

Though the number of possible contexts was rather low, what indications there are show that around the middle of her third year Sophie was not reliably producing the regular past tense -ed inflection. This suggests that the overgeneralized uses of -ed noted above were aspectual rather than indicating productivity of the regular past-tense inflection. As such, they would not be

[Note 2: Note the rather high MLU(m) values (cf. Miller & Chapman, 1981) which seem to be partly due to the quality of the interactional style – the mother produced few utterances eliciting a one-word response. The prevalence of overt sentence subjects probably also contributed to these quite high values.]
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generated under INFL, according to Radford (1986). Hence, with both present- and past-tense inflections, we have failed to find support for attributing an INFL node to Sophie's grammar at this time.

Modal auxiliaries

Important evidence regarding the status of INFL in Sophie's grammatical system is provided by the development of modal auxiliaries, such as can or will. When these first appear in declarative sentences, they lack the formal characteristics that distinguish them from ordinary verbs. However, when they start to display the possibility of inverting round the subject to form interrogatives, it is no longer feasible to analyse them as ordinary verbs, and they need to be generated under INFL. Thus the appearance of true modal auxiliaries is predicted to occur at the later rather than the earlier stage of grammatical development postulated in the literature. The frequencies of Sophie's modal auxiliaries, divided into inverted and non-inverted forms (the latter almost all in declaratives), are shown in Table 3. At 2;6 inverted forms were limited to tokens of can (can me..., can you...), which, it could be argued reflected the acquisition of unanalysed routines rather than an enrichment of Sophie's grammatical system. During 2;7-3;8, however, inverted shall, will and could emerged, of which shall and could thus appeared for some time only in the non-inverted form (in declaratives) before inversions occurred. It would be plausible, therefore, to see the child as having acquired a group of verbs behaving as true modal auxiliaries by, say, 2;8.

Contrastible be

Initial uses of the contrastible copula be have to be interpreted with circumspection. When they appear in the form where's, that's, etc., they are likely to have been acquired as unanalysed chunks, as recognized by Radford (1986:12). Therefore, in studying Sophie's realization of the contrastible copula, contexts where items of this routine-like nature were available (specifically where's, what's, who's, that's, there's, here's, and it's) were excluded, so as to focus on contexts where productivity, or the lack of it, would be apparent, as in:

(3.8) Potty up my room 2;5,10
(3.9) Ham very nice 2;7,23
(3.12) Her real name is Rosie 3;10,3

The frequency of realization of any form of the verb be in such contexts was tabulated, and is shown in Table 4. It should be noted that, although these were contractible contexts, in practice the copula was only contrasted once, at 3;10.

<table>
<thead>
<tr>
<th>TABLE 4. Copula be realization in contractible contexts</th>
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<tbody>
<tr>
<td>Total contexts</td>
</tr>
<tr>
<td>+be</td>
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<tr>
<td>-be</td>
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</table>

It can be seen that, when the possibility of new-learned chunks is excluded, be in contractible position was virtually absent before 2;8. The development of the contrastible auxiliary be showed a very similar picture (Table 5). It would therefore seem that, in Ilyama's terms, contractible be was to all intents and purposes filtered out of Sophie's syntax in the 2;5-2;8 period. This, of course, characterizes Ilyama's pre-structuring stage, when a null-subject grammar is supposed to block contractible be.

Pronoun case

It will be recalled that, for Radford (1986), if INFL is absent from the child's grammar, we do not expect to see nominative case-marked pronouns used in systematic contrast with accusative case-marked pronouns. Nominative and accusative contexts were distinguished in accordance with Radford (1986), and the pronoun forms used in these contexts were tabulated. First-person singular forms were so numerous that a 250 utterance sample taken in the middle of each month was deemed to be adequate; for the other persons, samples from the whole month were searched for tokens. The results are shown in Tables 6 and 7.

<table>
<thead>
<tr>
<th>TABLE 5. Auxilary be realization in contractible contexts</th>
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<tbody>
<tr>
<td>Total contexts</td>
</tr>
<tr>
<td>+be</td>
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<tr>
<td>-be</td>
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</tbody>
</table>
TABLE 6. Occurrence of first-person singular pronoun forms (2:5-utterance per-month sample only)

<table>
<thead>
<tr>
<th></th>
<th>2:5</th>
<th>2:6</th>
<th>2:7</th>
<th>2:8</th>
<th>3:0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom. contexts</td>
<td>I</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Acc. contexts</td>
<td>me</td>
<td>45</td>
<td>80</td>
<td>114</td>
<td>79</td>
</tr>
</tbody>
</table>

TABLE 7. Occurrences of other case-marked pronoun forms (whole-month samples)

<table>
<thead>
<tr>
<th></th>
<th>2:5</th>
<th>2:6</th>
<th>2:7</th>
<th>2:8</th>
<th>3:0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom. contexts</td>
<td>he</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>she</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>they</td>
<td></td>
<td>5</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>we</td>
<td></td>
<td>7</td>
<td>18</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>he's</td>
<td></td>
<td>5</td>
<td>48</td>
<td>68</td>
<td>49</td>
</tr>
<tr>
<td>her's</td>
<td></td>
<td>5</td>
<td>48</td>
<td>68</td>
<td>49</td>
</tr>
<tr>
<td>Acc. contexts</td>
<td>he</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>her</td>
<td></td>
<td>1</td>
<td>7</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>them</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>us</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

* Used between 2:5 and 2:8 for both male and female referents.

** Used as first-person plural pronoun, as in our got on each (2:5:24).

The most striking finding here is that the accusative forms me and her are still highly productive in nominative contexts even at 3:0. There is sporadic evidence of a case-marking contrast in the earlier period, however, perhaps beginning as early as 2:7. What cannot be said, however, is that a wholesale reorganization of pronoun case-marking took place in the 2:5-2:8 period, such that accusative forms were restricted to accusative contexts. In terms of Radford (1986), then, Sophie appears to have been still in the pre-INFL stage as far as case-marking was concerned. Indeed nominative I was actually eliminated from her pronoun repertoire midway through 2:6 (curiously, within a few days of the first appearance of inverted modals).

Expletive subjects

The data were searched for instances of expletive subjects, which in Hyams's analysis provide a clear indication that the optional subject stage has been superseded. Possible contexts were rare; those that were identified were realized as shown in (4) and (5). A couple of examples found at the beginning of 2:9 have been included for good measure. Expletive if contexts are shown in (4), and expletive there contexts are shown in (5).

(4a) That my turn (2:6:20)
(4b) When that five o'clock...when daddy come home (2:7:21)
(4c) That not dark (2:8:8)
(4d) That my turn (2:8:28)
(4e) When me running in the street, when that dark, me gone bump (2:9:1)
(4f) That quite hard ride mon (= on) bikes (2:9:4)
(4g) It dark (3:0:30)
(5a) Not any more on plate (2:7:21)
(5b) Not any more bread on there (2:8:1)
(5c) Not any room [a] bike [a] me (2:8:22)
(5d) Not any more babies in cases (2:8:22)
(5e) There's one more like that, daddy...it is one more like that (spoken upstairs referring to biscuit downstairs) (3:0:30)

(5e) is particularly striking, showing the child struggling to find the right exponent for the expletive subject she now appears to know is required. (5a)-(d) show that in earlier examples she not only left out the expletive altogether. Contexts in (4) are filled with that, a realization which, for Hyams, characterizes the pre-parameter-shift stage. Thus it would appear that true expletive subjects were absent from the child's grammatical system at least up to the beginning of 2:6.

Subject realization

We now come to the central question in this study, the OSP itself. We have seen little evidence in the 2:5-2:8 period for the development of the various elements that have been linked with INFL, so we might not expect to find subject obligatoriness yet in that period. The sort of outcome that might be predicted is one where subjects were missing around 30-50% of the time, as in Bloom et al.'s (1975) data, but where they approached obligatoriness at 3:0, by which time, as we saw, INFL appeared to be playing an adult-like part in the child's grammatical system.

Frequencies of subject realization were calculated in main clauses containing a transitive verb (that is, a verb classed as transitive in adult English; cf. Ingham (1989)). However, a few verbs such as give and put, which normally require an oblique complement to be overt, were excluded. This was so as to avoid the possibility that any subject omission here might result from the extra processing load of a sentence with three obligatory constituents plus the main verb. By proceeding in this way, a fairly close comparison
could be made with Bloom et al.’s Agent–Verb–Object category. Utterances that were clear imperatives were excluded. The results of this analysis are shown in Table 8.

| Table 8: Subject realization in transitive clauses |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 2:5  | 2:6  | 2:7  | 2:8  | 3:0  |
| N %  | N %  | N %  | N %  | N %  | N %  |
| Overt subj. | 203  | 242  | 268  | 905  | 281  | 902  | 205  | 907  | 133  | 869  |
| Null subj.   | 17   | 76   | 28   | 96   | 30   | 97   | 21   | 94   | 15   | 101  |

On this analysis, it can be seen that Sophie at 2:5 had already reached a 90% level of subject realization, which remained remarkably constant for each subsequent month of the study. Taking a 90% level of realization in obligatory contexts as indicating acquisition, this would seem to show that the CSP had disappeared from Sophie’s grammar by 2:5, contrary to the outcomes predicted by our analysis of the reflexes of INFL, as described above. At 2:5 none of the other elements we have investigated had made their appearance. So her sentence subjects were, in itself, no longer optional at a stage when there was no evidence that a parameter with INFL had been reset (Hyams), or that INFL has emerged (Radford), or that the tense/untensed VP distinction had been acquired (O’Grady et al.). At 3:0, on the other hand, there was, as we saw, good reason for claiming Sophie to be in the later rather than the earlier stage of grammatical development argued for in the literature, but Sophie’s subject-realization was actually (though non-significantly) lower than at 2:5.

Because of the importance of the 2:5 data in assessing the relationship between subject-obligatoriness and the other grammatical elements, it was deemed advisable to guard against the possibility that the transitive clause sample somehow misrepresented the frequency of subject-realization overall. Accordingly, a further analysis of the 2:5 data was conducted, this time using all non-imperative main clauses. A total of 456 sentences was obtained, of which 416, or 92.2%, had overt subjects. It would therefore seem that the transitive clause sample was representative of Sophie’s subject-realization.

Discussion

Summarizing the various analyses presented above, it can be said that Sophie had obligatory subjects at 2:5, but that the developments whose appearance has been linked in the literature with the end of the OSP revealed themselves well after that point—invited modal at 2:6–2:7, tense inflections, contractible be and expletive subjects after 2:8, and the exclusion of accusative pronouns from nominative contexts after 3:0. Thus Sophie’s development does not support the position that the grammatical elements which have been linked on theoretical grounds will cluster together in real-time acquisition. It suggests an alternative account: subject obligatoriness may be acquired as a phenomenon in its own right, and specifically, independently of the acquisition of INFL and its associated properties.

If one wishes to resist this position, there are a number of options available which might allow the theorist to reject the loose of data such as those presented here. Before contemplating a reassessment of the OSP which would take into account the developmental evidence we have found here, let us consider these options in turn.

Were Sophie’s subjects obligatory at 90%?

The most obvious counter-argument would be to say that 90% subject-realization was still not 100%, and that Sophie was still at the optional subject stage throughout the period investigated. If Sophie’s subject-realization later rose to 100%, at some point after 2:5, it could be claimed that the demise of the OSP occurred at this stage, and not before the developments associated with INFL. This line of argument is not very promising, however. In naturally occurring adult English, after all, subject ellipsis is quite common. And in children’s English, Schelkens (1989) found that, in play settings, five-year-old children, who presumably had long since passed the OSP stage, omitted subjects around 10% of the time. So it would appear that one should not expect later samples from Sophie to display a rate of subject-realization much higher than 90%.

A rather more subtle counter-argument would be to say that, logically speaking, 90% realization is still compatible with optionality. Perhaps subjects were still grammatically optional for Sophie, but she happened to realize them 90% of the time. Such a suggestion, however, leaves us with a problem: why should Sophie have been so consistently prone to producing sentences with subjects, if she was still at the null-subject stage and her grammar did not impose overt subjects?

One answer could be that Sophie’s overt subjects, though not grammatically required, were there for pragmatic reasons. At first sight, this does not seem too promising either: Hyams stresses that many subjects of English sentences are communicatively redundant—and indeed it is part of her argument that this very redundancy acts as a trigger impelling the child away from the null-subject grammar. For this counter-argument to work, therefore, Sophie’s subjects would have to be viewed as having been communicatively non-redundant 90% of the time. How plausible is this? Without firm criteria for what counts as communicative redundancy, it is not easy to pursue this question, but for some indication we might look at the frequency of subject-realization in null-subject languages; here, generally speaking, subjects are not expressed when they are communicatively redundant. If we consider data
from children acquiring a null-subject language, we get a very rough indication of how frequent one can plausibly expect subject-realization to be if the grammar of the language does not require overt subjects.

Japanese is a language in which subjects may be null. Here, to the extent that subjects are realized, one may say that they are communicatively non-redundant in some sense. Shibamoto (1985), quoted in Rispoli (1988), found that, in adult data, subjects of transitive verbs were omitted 69% of the time, and subjects of intransitive verbs 66% of the time. Rispoli (1988) observed almost the same frequencies in child-directed adult Japanese. Published references to the quantitative frequency of subjects in children's Japanese, however, could not be obtained, so far the purpose of this study it was decided to collect samples of child Japanese.\(^3\)

The Japanese study

Samples were obtained during three play sessions, in which the child, a Japanese girl called Yuko, was interacting with her parents, both of whom were Japanese. Although living in the UK at the time of the recording, Yuko spoke and understood virtually no English, and should be considered as a Japanese monolingual child. The samples were collected in the week following her third birthday. Two linguistically trained Japanese native speakers were asked to transcribe and translate the data. MLU(\(m\)) for a 100-utterance sample was 4.75.

The sentences used for scoring subject optionality were, as with the Sophie data, those that included a transitive verb.\(^4\) Subjects were taken to be NPs marked with the subject particle \(ga\), or those marked with the topic particle \(wa\), on condition that this particle could be replaced by the subject particle \(ga\) without changing the propositional content of the sentence on the most natural interpretation. NPs without a particle at all were scored as subjects if the same condition could be met. It can be seen that, to the extent that there was any scoring bias in the procedure adopted, it was in the direction of overstating the frequency of subject-realization.

Scored in this fashion, subjects were found to occur overtly in only 19 out of 82 scorable utterances produced by Yuko, i.e. 23% of the time. Twelve of these were marked by the subject particle \(ga\), two by the topic particle \(wa\), and five had no particle, but were most naturally interpreted as sentence subjects. The difference between the frequencies of subject realization - Sophie's 50\% and Yuko's 23\% - was plainly overwhelming.

Granted the obvious limitations of comparing individual children across different languages, these figures do nevertheless give some indication of the level of subject-realization to expect when subjects are expressed only when communicatively non-redundant. Samples were collected in similar settings, and conversations normally involved referents that were immediately available in the context. Whatever one's preferred definition of communicative non-redundancy, it is scarcely credible that Sophie's subjects, realized over 90% of the time, were all there for communicative reasons, while Yuko's subjects were absent 77% of the time, also for communicative reasons. In short, the possibility that communicative non-redundancy might account for Sophie's high level of subject-realization, at a time when her subjects were still grammatically optional, cannot be seriously entertained.

Alternative analyses of Sophie's subjects

A third counter-argument would be to say that what we have up to now been calling 'subjects' of the sentences analyzed were not really subjects at all. Bowerman (1973, 1977) found that the structural phenomenon which requires the concept of subject in adult speech [non-nominative pronouns distinct from accusative pronouns, subject-verb agreement, and deletion under coordination - R.] are evidently missing in early child speech. Since these properties were indeed lacking in the sentences that Sophie was uttering at 2;5, and for some months thereafter, one might argue that to speak of Sophie having acquired subject obligatoriness at 2;6 is simply anachronistic; her developing grammar did not as yet make provision for subjects, properly so-called.

The problem that this raises is: if Sophie's apparent subjects were not really subjects, what were they? What element was it in this child's emerging language system that was realized consistently 50% of the time in the months we have analysed? Gruber (1967) proposed that children's early 'subjects' should be considered instead to be Topics. This analysis was put forward to account for data with two characteristic properties: first, reversal of subject-verb order, as in *Give wheel* [interpreted as *The wheels have gone away*] and secondly, frequent subject-omission. With Sophie, however, no such postponed Topics were found among the thousands of sentences in the data, and subject-omission, as we have seen, was not characteristic of Sophie's sentences. In fact, an explanation of Sophie's sentence structure using the notion 'Topic would not be at all appropriate, since it is a feature of Topics that they are not grammatically obligatory. Topic-prominent languages, such as Chinese, may have 'zero topics' (see L. & Thompson, 1976; Huang, 1984), that is, null elements which are understood as referring to the discourse topic mentioned in a preceding utterance. Such null
elements were plentiful in the sentences produced by the Japanese child Yuko, but not in those produced by Sophie. We can therefore say that there is little to recommend the use of the notion ‘Topic’ to reanalyse Sophie’s apparent subjects.

Nor can Sophie’s apparent subjects be accounted for in terms of thematic roles, by reanalysing them as Agents. It was not only verbs with an Agent role that had obligatory subjects: the three non-agentive transitive verbs used at 2;5—have, want and need—also had subjects most of the time, as did like and see, used at 2;8. Obligatory realization was thus not a property of just a subset of thematic roles used in subject position.

In short, alternatives to the notion ‘subject’ do not seem to be successful as a way of accounting for the sentences Sophie was uttering from 2;5 onwards. And although it is true that some of the properties of subjecthood were as yet absent, three of them were nevertheless in evidence. First, the NP corresponding to the adult subject was, in declarative sentences, realized in preverbal position. Secondly, it was obligatory in main clauses. Thirdly, from 2;6–2;7 onwards, it was found, in interrogative clauses, to invert with modal auxiliaries. To speak of subjects in Sophie’s grammar therefore seems tolerably well justified.

**Conclusions**

The purpose of this study was to see whether a detailed longitudinal investigation would support claims that the acquisition of subject obligatoriness and the acquisition of certain other properties associated with INFL were developmentally linked. Little evidence was found for such claims. What was found was that subjects appeared to be obligatory at the start of the age-range studied, but that there was no discernible clustering of subject obligatoriness and the acquisition of the reflexes of INFL. In the 2;5–2;8 period, contractible be, tense inflections, expletive subjects and the nominative/accusative case contrast in pronouns were almost completely unproductive. Only inverted modals showed anything like a developmental association with subject obligatoriness, and even then, only on the assumption that Sophie’s subjects became obligatory round about the time they were first collected, rather than some months before. The implication is, therefore, that the acquisition of subject-obligatoriness, in the case of this child’s developing grammar, was not brought about by changes elsewhere in the system, for example by a parameter-resetting in INFL; such changes appear to have not yet taken place.

To the extent that Sophie is representative of children’s real-time acquisition of the grammar of English, these findings require a rather different account of how subject-obligatoriness is acquired from the ones posited in the theoretical literature. It seems appropriate to suggest that the disappearance of the OSP may not necessarily be prompted by changes occurring elsewhere in children’s developing grammars, but that children may attend to the obligatoriness of subjects in English as an independent grammatical property acquired in its own right. We shall conclude with some suggestions as to how such acquisition could take place.

To avoid misunderstanding, it should be noted that the claim being made here is not that the demise of the OSP must be an independent development, but rather that, in some children’s real-time course of acquisition, it may be. With other children, the demise of the OSP may indeed be prompted by grammatical factors. It is conceivable that, in cases where the obligatoriness of subjects has not already been acquired per se, a null-subject parameter-resetting, perhaps following upon the emergence of an innately programmed INFL element, may accomplish the same result as a default.

So how could the obligatoriness of subjects be acquired independently, as appears to have happened in the case of Sophie? Let us first bear in mind a logical problem in language-acquisition theory which Hyams’s parameter-resetting-by-triggering account was designed to overcome: obligatoriness cannot be acquired simply by text presentation, therefore the acquisition device’s initial assumption must be obligatoriness, relaxed if data attesting optionality are witnessed. But children acquiring English appear to go from optionality to obligatoriness where sentence subjects are concerned — hence the need for the acquisition device to be provided with key triggering evidence of a qualitative rather than a quantitative nature, so that a move from optionality to obligatoriness can be made.

We can recall one of the triggers proposed by Hyams: the recognition by English learners that subjects occur in the input even when they are communicatively redundant. Hyams treats this as triggering information leading to a reassessment of the status of subjects in the grammar. But suppose we view it as itself forming the knowledge that the acquisition device needs (for a language such as English). That is, children learning a language such as English have to acquire the knowledge that communicative redundancy is not a reason for leaving subjects unoccluded, as their grammars had initially permitted. When this recognition occurs, the OSP will drop out of the child’s sentence production, whatever may or may not be happening elsewhere in the developing grammar. Subject obligatoriness could thus be acquired in a way that is independent of the current status of INFL in the child’s grammar development, a desirable outcome in view of the data from Sophie we have analysed.

The question then becomes one of why children do not attend to evidence for the obligatoriness of communicatively redundant subjects from the outset. Although Hyams does not offer an explanation of this, one may surmise that it has to do with the child’s developing control over pragmatic aspects of language: indeed the notion of communicative redundancy would presumably be inept unless placed within such a framework. If that is
so, then the delay in what for Hyams is triggering evidence may account for
the delay in what we are now claiming, is the acquisition of subject
obligatoriness itself. Whether this route to acquiring subject-obligatoriness is
reconcilable with the parameter-setting paradigm (and how it might apply to
the obligatoriness of direct objects) are questions which will be left open for
further research.

Finally, the issue of individual differences between children is clearly one
that needs to be addressed when acquisition models make contact with
developmental data. Suppose we concur with Hyams that the developmental
associations she found were not merely fortuitous, and that the parameter-
setting theory is supported by, and may serve to account for, some children's
real-time course of acquisition. Suppose further that the developmental
course of some of the children whose utterances are reported in Radford
(1986) would, if longitudinal studies were presented, show an interesting
cluster of properties associated with INFL. That is, suppose that a number of
developmental studies were available, but split between those (such as the
present work) that support an account where subject-obligatoriness is
acquired independently of the various reflexes of INFL, and those where its
acquisition is linked with that of the various reflexes of INFL. This would
not necessarily be a paradoxical and unsatisfying outcome; it could simply
indicate that the parameter-setting theory of acquisition needs to be supple-
mented by an awareness of alternative routes to acquisition, assuming, of
course, that the acquisition theorist wished to make convincing use of
developmental data. With further research, including a number of detailed
longitudinal studies of the grammatical areas considered here, we may
achieve a better understanding of how differing developmental routes could
comport with proposed universal principles of language acquisition.

REFERENCES
University.
in language development. In A. Perl (ed.), Minnesota Symposium on Child Psychology 9,
1-55.
523-74.
— (1987). Parameters and syntactic development. In T. Kroep & E. Williams (eds),
Parameter setting. Dordrecht: Reidel.
University of Reading.

OPTIMAL SUBJECTS
Thompson (eds), Subject and topic. New York: Academic Press.
Miller, J. & Chapman, R. (1981). The relation between sex and mean length of utterance in
O'Grady, W., Peters, A. & Masterson, D. (1986). The transition from optional to required
Paper given at University of Reading linguistics seminar, November 1985.