

The acquisition of Irish: a study of word order development*

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ABSTRACT

This study examines the development of word order patterns in Irish, a strict VSO language. It was found that the three children studied used subject-initial utterances considerably more frequently than adults in input, and that in both adult and child the elision of the verb 'to be' played a significant role. Another significant factor was found to be the different restrictions on main verbs and verbal nouns with regard to the subject: in neutral sentences the main verb always precedes the subject, while the verbal noun always follows it. The Bates & MacWhinney (1979) hypothesis that early verb initialization results from a tendency to place new information before given information was also investigated.

INTRODUCTION

It has long been argued (see Jespersen, 1922) that the tendency found in many and diverse languages to place the subject before the verb is founded in the very nature of human thought. Slobin (1982) notes that there are at least three major approaches to the word-order argument which make predictions both about word order in early speech and the relative ease of acquisition of different types of language. Bruner's (1975: 17) argument is that the concept of agent-action-object-recipient helps the child to grasp the 'linguistic meaning of appropriately ordered sentences', and that SVO languages are consequently easier to acquire since they adhere to this pre-linguistic ordering. Osgood & Tanz (1977) claimed that simple cognitions have an SVO structure, and cite as support for this the predominance of SVO

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languages. McNeill (1975), arguing from a model of sensorimotor cognition, claimed that 'actor' precedes 'action' because the speaker experiences his or her intention to act before carrying out the action, and predicted that SOV and SVO languages would be acquired earlier than non-subject-initial languages.

It has, in fact, been shown that the claims of the 'naturalness argument', and the predictions based upon it, are extremely Anglocentric. Studies of the acquisition of other languages (e.g. Turkish, studied by Aksu-Koc & Slobin, 1985; and Polish, by Weist, 1986) show no such 'natural' principle operating, in that children acquiring languages with orders other than SVO, or with variable ordering, do not appear to be at any disadvantage. Bates & MacWhinney (1979) noted that several researchers have reported a phase of verb initialization in the first two-word combinations of children. These include studies of SVO languages such as: German (Park, 1970); Serbo-Croatian (Radulovic, 1975); Italian (Bates, 1976; Fava & Tirondola, 1977); Dutch (Snow, 1978); and even English (Braine, 1963; Fletcher & Garman, 1987); as well as studies of SOV languages such as Hungarian (MacWhinney, 1974) and Garo (Burling, 1959). As Brown (1973) notes, there is such extreme variation in cross-linguistic data on word order as to undermine any universalist theory. He summarizes these results saying:

It is evidently not the case... that human children everywhere find some single order sensible for cognitive reasons having to do with the order in which attention might be captured by an agent, an action and an object.

(Brown 1973: 157)

It is equally clear from Park's (1970) German data and Gvozdev's Russian data (see Slobin, 1966) that not all children limit themselves to the dominant word order of their parents' speech, or probability-match the orders they hear. However, Bowerman (1973) did note some regularities: for example, the Finnish children in her study produced certain word orders with a frequency very close to their mothers'; and Brown, Cazden & Bellugi (1969) found close matching between the frequencies of their American children's construction patterns and their mothers' use of those patterns. Bates & MacWhinney (1979) suggest that this conflict in the data may be evidence of two functionally based word-order tendencies: (a) an ordering in terms of agent-action, and (b) an early tendency to order new information before old information, regardless of either semantic role or form class. Bates (1976) suggests that children extend their one-word strategy of blurting out the interesting information first (the 'figure', while leaving the 'ground' implicit to the situation) to the early two-word stage, when they encode the comment (or new information) first, 'in isomorphic relation to its attention value' (p. 175). Thus, the reports of verb-initialization in the studies listed above are

interpreted by MacWhinney & Bates (1978: 546) as showing a preference for the ordering of predicate first, 'insofar as the predicate of a sentence typically carries new information'. They suggest that the child's later strategy involves suppressing attention priorities and encoding the given information or topic first, to prepare the listener for the new information or comment.

An earlier experimental study by MacWhinney & Bates (1978) on the interaction of age and initialization had hypothesized that, when describing simple pictures, young children would initialize elements more often when they were new, while older children and adults would initialize elements more when they were given. However, in their study the younger children were three years old (the method having been found to be too difficult for 2-year-olds). There were conflicting results, and MacWhinney & Bates suggested two possible explanations: one was that, by the age of three years, a crucial period for observing the influence of pragmatic factors on word-order rules may have passed; the other explanation was based on MacWhinney's (1977) proposal that initialization of major sentence constituents may be determined by a range of factors, both at the intersentential and intrasentential levels.

This study attempts to determine whether either of the functionally based word-order tendencies hypothesized by Bates and MacWhinney can be seen in the early acquisition of Irish, a strict VSO language. However, before the issue can be addressed, the dichotomies introduced above (subject/predicate, topic/comment) and their applicability to Irish need to be examined more closely. The topic-comment distinction was originated by Hockett (1958) in an attempt to abandon the intricate concepts of subject and predicate (the partitioning of traditional grammars), and replace them with operational definitions of the functional divisions within the sentence. Hockett's 'topic' is the part of the sentence denoting the person or thing about which something is said. The 'comment' is the part of the sentence which makes a statement about that person or thing. According to Hockett, the topic is always the first part of the sentence, and the comment is always the rest.

Another approach to the issue of the ordering of elements stems from Mathesius (1929), founder of the 'Prague School'. According to the 'functional sentence perspective' the sentence is divided into two parts, the 'theme' and the 'rheme'. The 'theme' conveys information given in the verbal or situational context, whereas the 'rheme' conveys new information. Mathesius held that the starting point of the sentence is that element which is known or at least obvious in a situation. The theme-rheme distinction is very similar to the given-new distinction. Both in turn are closely related to the topic-comment partition, in that the topic, the element about which something is said, tends to be given information, while the comment is generally new information. Nevertheless, as Ertel (1977) points out, there are

differences between these dichotomies, in that the first element (topic) may actually be new information (rheme). Ertel's (1977: 144) example is:

- (1) Unexpectedly, a young lady entered the room.

Ertel ignores the status of *unexpectedly* and describes *a young lady* as being in first position (topic); however, he notes that it is also new information (rheme), signalled by the indefinite article, while *the room* is in a succeeding position (part of the comment), but is contextually given (theme). Chafe (1976) discussed the confusion of the subject or topic with given information, and pointed out that there is no necessary correlation of subject status with givenness or, for that matter, of non-subject status with newness. Nevertheless, as Ertel also pointed out, the theme and topic are both statistically related to the grammatical subject. MacWhinney & Bates (1978) suggest (apparently on the basis of this relationship) that the evidence of verb-initialization in the acquisition of diverse languages points to a preference for the ordering of predicates (new information) before subjects (given information) in early syntax. Predicates, they state, are more salient to the child because they represent the changing aspects of a situation. In the following section Irish word order is examined to see whether these dichotomies can also be applied to this language. From there, we will go on to examine the word-order patterns used in the acquisition of Irish as first language by the three children studied.

Irish word order

McCloskey (1983) states that Irish is a VSO language *par excellence*. All except one of Greenberg's (1966) universals concerning VSO languages are supported. The following summarizes those universals.

Universal 2. In languages with prepositions, the genitive almost always follows the governing noun...

Universal 3. Languages with dominant VSO order are always prepositional.

Universal 6. All languages with dominant VSO order have SVO as an alternative or as the only alternative basic order.

Universal 9. With well more than chance frequency, when question particles or affixes are specified in position by reference to the sentence as a whole, if initial, such elements are found in prepositional languages...

Universal 10. Question particles or affixes, when specified in position by reference to a particular word in the sentence...do not occur in languages with dominant order VSO.

Universal 12. If a language has dominant order VSO in declarative sentences, it always puts interrogative words or phrases first in interrogative word questions...

Universal 16. In languages with dominant word order VSO, an inflected auxiliary always precedes the main verb...

Universal 17. With overwhelmingly more than chance frequency, languages with dominant order VSO have the adjective after the noun.

Universal 6, which claims that all languages with dominant VSO order have SVO as an alternative basic order, is untrue of Irish. Subjects can precede the verb in clefted sentences, but as Stenson (1981) argues, this could not be considered an alternative BASIC order.

The unmarked order of elements in simple sentences is VSOX, where X includes adverbials of different kinds, prepositional phrases, etc. For example:

- (2) Chonaic mé spideog ar maidin
(Saw I a-robin on morning)
'I saw a robin this morning'

The subject is positionally less free than the object, almost always occurring immediately to the right of the main verb. No clause constituent may intervene between verb and subject. This is highlighted by the fact that, for some tenses and persons, the subject may be marked by a person suffix on the verb, in a synthetic form. The analytical form is sometimes optional in these instances. In fact the standardized language tends more towards analytical than synthetic forms, whereas the dialect being acquired by these children (the Munster dialect) is highly synthetic. The synthetic and analytical forms are illustrated in the following examples:

- (3) Thiteas inné (fell-I yesterday) 'I fell yesterday'
(4) Thit mé inné (fell I yesterday) 'I fell yesterday'

In Irish, aspect is marked either by the inflectional system (i.e. the habitual tenses) or by the combination of the verb 'to be' and verbal noun with its particle. The order of a progressive sentence (that is, one containing a verbal noun) is VSVnX, as in:

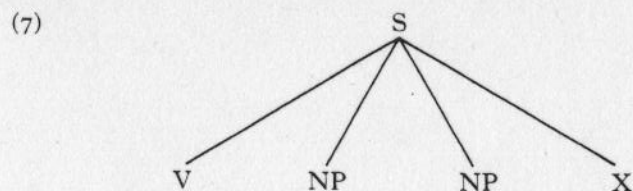
- (5) Tá mé ag ithe mo dhinnéir
(be I eat-Vn my dinner)
'I am eating my dinner'

It should be noted here that while Stenson (1981) glosses *ag* as 'at', McCloskey (1983) and others have argued strongly against the identification of the progressive particle *ag* with the preposition *ag* ('at'). McCloskey does not gloss the progressive particle separately, and this convention is adopted here.

The ordering of the past participle (verbal adjective) is VSVAdjX, for example:

- (6) Tá mo dhinnéar ite agam
(be my dinner eat-VAdj at-me)
'I have eaten my dinner'

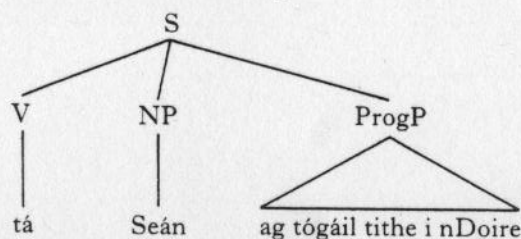
There is some controversy about the implications of VSO order, but Stenson (1981) suggests a linear phrase structure for simple sentences, as follows:



Stenson argues that there are, in fact, no formal criteria for distinguishing subjects and predicates in Irish such as those used in languages where immediate dominance by S defines subjects. Instead, both subject and direct object in Irish are immediately dominated by S.

It is interesting to note here that McCloskey (1983) argues that Irish does in fact have surface VPs, in that the progressive construction is most plausibly analysed as such, with the following structure for the example he gives:

- (8) Tá Seán ag tógáil tithe i nDoire
(is Seán build (PROG) houses in Derry)
'Seán is building houses in Derry'



However, while there are arguments for the existence of a surface VP in Irish progressive sentences, there is no claim that a surface VP exists for simple sentences. This leaves us with the problem of applying the subject-predicate, topic-comment distinction to the language. Ertel (1977) points out that Hockett clearly identified the topic as the initial part of the sentence and, as we saw already, the topic of the sentence is usually identified with the sentence subject, the comment with the predicate. Because Irish is

a strong VSO language, the subject is not clause-initial. Thus it is a moot point whether the neutral, simple sentence in Irish can be said to have a topic-comment order, if these definitions of topic and comment are used. Instead, it appears that the topic (statistically related to the grammatical subject in English) in fact splits the comment in Irish.

Because of the difficulties of importing these concepts into Irish, it was decided to use one of the other dichotomies mentioned by MacWhinney & Bates (1978); that is, the given-new distinction, which underlies the theme-rheme dichotomy. Clark (1973) has pointed out that when speaker-hearers engage in talk, they abide by a 'given-new' contract; that is, the speaker is responsible for marking as 'given' that information which he or she thinks the listener already knows, and marking as 'new' the information which the listener is thought not to know. In the following discussion, the terms given/new and subject/verb-initial will be used. Verb is chosen (rather than predicate) because we are most interested in the children's relative ordering of the subject and verb, and in order to acknowledge the fact that, if there is a predicate in Irish, it is split by the subject, which follows the verb. Thus we will examine the order of these two elements in early acquisition and the possible relation between that order and the given/new dichotomy.

METHOD

It was decided to investigate word-order patterns in the data from the three children in this study for evidence of either of Bates & MacWhinney's strategies; that is, an ordering in terms of agent-action or new-given. The children were taped for one to two hours every three weeks over the course of about nine months. The youngest, Eibhlís /aɪli:f/, a girl, was taped between the ages of 1;4 and 2;1; Eoin /o:'n/, a boy, was 1;6 at a pilot session and was taped between 1;10 and 2;6; Cian /ki:ən/, another boy, was 1;10 at a pilot session and was taped between 2;4 and 3;0. The household language of all of the children was Irish, though there was also some exposure to English from television and, intermittently, from paying houseguests and visitors. Eibhlís had several English words such as *now* and *dirty*, used alone, but Irish was her first and dominant language. Cian was exposed to most English, since he joined a playgroup with several monolingual English children. By session 5 he had several English formulas, but Irish was his dominant language, and his acquisition of English appeared to remain restricted to a small number of words and phrases during this time.

The children's utterances were analysed according to whether they were verb- or subject-initial and whether the first element was new or given (see MacWhinney & Bates (1978) for a detailed discussion of these categories). The new/given categorization was determined by preceding context and discourse, so this measure is very much discourse-based, while the verb-/

subject-initial analysis is obviously more utterance-based. The newness/givenness of an initial element was in most cases easily ascertained. The following are examples of such categorizations.

Given-new:

- (9) M: Cé a bhris é? (who that broke it) 'Who broke it?'
 Cian: Bris mamaí (break mammy) 'Mammy break'

New-given:

- (10) M: Cad tá sé a dhéanamh amuigh? 'What is it doing outside?'
 Eoin: Báisteach amuigh 'Rain outside'

New-new and given-given patterns were not included in this analysis since they made up only a small proportion of utterances; questions and imperatives were also excluded. It should be noted here that there is no 'yes' or 'no' equivalent in Irish: instead the verb of the question is repeated or negated. However, as Ó Siadhail (1973) points out, 'neó' (the spelling he adopts to illustrate the Irish pronunciation of 'no') is now used frequently in the language, although in adults it is generally followed by the Irish negation of the verb. The children were found to use 'neó' alone as an early negative, and later in combinations, before they used the more complex Irish negatives, e.g.:

- (11) M: An mbeidh braoinín caife agat? (Q will a-little coffee at-you)
 'Will you have some coffee?'
 Eoin: Neó braoinín caife 'No some coffee'

RESULTS

The results of the new/given analysis are given in Table 1.

Sign-rank tests were carried out on the children's data, comparing the frequency of the categories at each sample point for each child. The sign-rank test on Eibhlís's results indicated that there was no significant difference in the frequency of either pattern. For Eoin's data this test revealed that new-given utterances were significantly more frequent ($p < 0.01$) than given-new utterances. However, the results from Cian's data showed the opposite trend, since given-new patterns were significantly more frequent ($p < 0.05$).

The results of the verb-/subject-initial analysis are given in Table 2. This analysis excluded *seo/sin X* 'this[s]/that[s] an-X' utterances on the grounds that with these demonstratives the copula is understood (Ó Dónaill, 1977). It therefore does not seem justifiable to treat them as either verb- or subject-initial, since they are a special case.

A sign-rank test on Eibhlís's data showed that verb-initial utterances were significantly more frequent than subject-initial utterances ($p < 0.05$). How-

TABLE 1. *New-given/given-new analysis*

Sample	Eibhlís (1;4-2;1)		Eoin (1;6, 1;10-2;6)		Cian (1;11, 2;4-3;0)	
	NG	GN	NG	GN	NG	GN
1	1	2	0	0	18	23
2	4	8	1	9	21	64
3	6	13	5	9	11	41
4	5	3	17	9	21	83
5	3	2	16	4	22	26
6	0	4	24	5	25	37
7	9	17	37	16	25	51
8	4	9	36	19	28	37
9	25	18	65	17	42	50
10	19	23	28	10	23	29
11	28	24	35	30	43	40
12	62	74	62	31	107	94
13	NA	NA	103	81	86	75

TABLE 2. *Verb/subject-initial analysis*

Sample	Eibhlís		Eoin		Cian	
	V-init	S-init	V-init	S-init	V-init	S-init
1	5	1	0	0	35	9
2	15	3	1	1	49	14
3	13	3	7	4	46	25
4	6	2	24	5	20	60
5	5	0	15	5	13	32
6	6	1	11	3	20	53
7	8	24	5	30	30	39
8	10	5	12	60	54	42
9	22	26	18	24	62	27
10	20	19	19	17	30	32
11	42	35	19	51	40	30
12	98	44	63	63	118	73
13	NA	NA	82	95	108	48

ever, no significant difference between the frequency of verb- or subject-initial utterances was found in Eoin's or Cian's data. These results from the new/given and verb-/subject-initial analyses seem paradoxical. Table 3 summarizes them.

It seems clear that there is no strong relationship between new-given and verb-initial utterances, nor between given-new and subject-initial utterances. Thus this is contrary to what would have been predicted on the basis of the theory about topic-comment, which claims that the topic is usually the

TABLE 3. Summary of NG/GN and V/S-initial analyses

	NG/GN analysis	V/S-initial analysis
Eibhlís	No significant difference	V-initial significantly higher
Eoin	New-given significantly higher	No significant difference
Cian	Given-new significantly higher	No significant difference

subject and given information, while the comment is usually the predicate and new information. Examination of the data gives one clue to this low correlation between subject and given information, and between verb and new information: these data do not consist of strings of 'neutral' utterances. Instead, a high proportion of input consisted of questions. Obviously, it is possible that the questioned element may be a verb, and therefore the new information will be the verb, e.g.:

- (12) Q: Cad a dhein sé? (what that did he) 'What did he do?'
 A: Thit sé (fell he) 'He fell'

It is equally possible that the question would elicit new information about the subject. This point about the possibility of the subject being the new information has been illustrated already by Ertel's (1977) example showing the topic to be the rheme (new information). But apart from this, the children in this study also frequently produced subject-initial new-given utterances by eliding the verb 'to be', usually in its present tense form *tá*, e.g.:

- (13) T: Cé tá ag teacht? 'Who is coming?'
 Eoin: Mamaí teacht 'Mammy coming'
 = tá Mamaí ag teacht (be Mammy come-Vn) 'Mammy is coming'

They also produced verb-initial given-new patterns by INCLUDING the verb *tá* in initial position, e.g.:

- (14) M: Cé tá i dteannta Gaga? 'Who is with Grandad?'
 Eibhlís: Tá Aoife (is Aoife) 'Aoife is'

Thus, the same question could elicit a new-given or a given-new order depending on the child's omission or inclusion of the questioned verb. Nevertheless, input to the children was examined to see if there were any differences between them which could account for the results of the new/given and verb-/subject-initial analyses. Fig. 1 gives a breakdown of the types of input which preceded combinations in the children's data.

It shows that the differences in input to the children were slight, and this was confirmed by sign-rank tests. Therefore, they could not account for the differences in word order in the children's language. It appears that we need

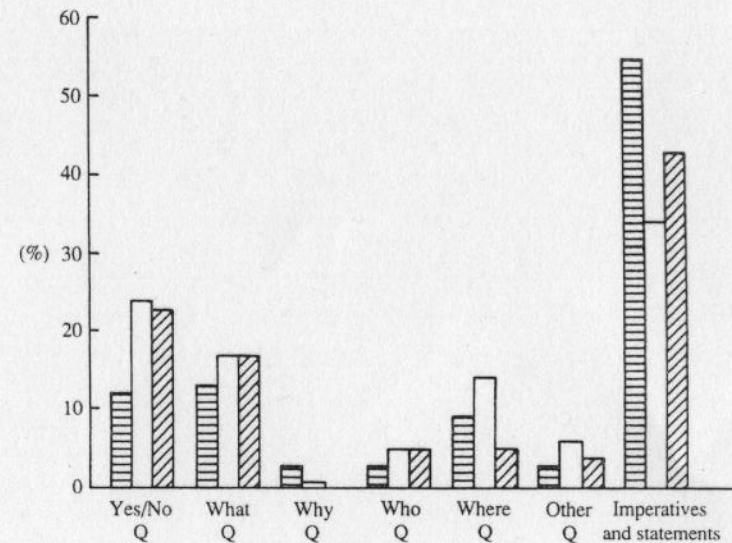


Fig. 1. Types of input preceding combinations. ▨, Eibhlís; □, Eoin; ▩, Cian.

to 'get closer' to the data in order to investigate any differences in strategy or stage of development.

The children's placement of verb elements

Examination of the children's data showed that their subject-initial utterances were not in fact due to a misplacement of main verbs with regard to the subject. Overall, the three children placed main verbs (labelled V), verbal nouns (Vn) and verbal adjectives (VAdj) in correct and incorrect orders relative to the subject with the frequencies shown in Table 4 (expressed as the percentages of total combinations containing each verb type, with * used to label the incorrect order).

Clearly the children's word-order patterns are more sensitive to the positional restrictions on their verb elements than to an overriding 'subject first' strategy. Bearing in mind the fact that Eibhlís is the youngest child in the study, the possibility was considered that her word ordering was not productive. Braine (1976) argued that:

The first productive structures are formulae of limited scope for realizing specific kinds of meaning. They define how a meaning is to be expressed by specifying where in the utterance the words expressing the meaning should be placed.

(Braine, 1976: 4)

TABLE 4. *The children's verb positions (%)*

	Main verbs		Verbal nouns		Verbal adjectives	
	VS	*SV	*VnS	SVn	*VAdjS	SVAdj
Eibhlís	99	1	0	100	0	100
Eoin	86	14	3	97	4	96
Cian	89	11	4	96	8	92

* Indicates the incorrect order.

Braine analysed word-order patterns into three basic patterns of early construction: groping patterns, which show great variability as the child is engaged in hypothesis testing on the different possible orders, e.g. allgone car, car allgone; positional associative patterns, in which elements are ordered only by association with specific lexical items and are not therefore productive; and positional productive patterns, in which elements are fixed according to a rule, rather than the association of particular lexemes. Braine's main analysis used semantic categories such as 'agent+action' and 'location'. This was not the analysis used in this study, as the aim here and in the broader study (Hickey, 1987) was to examine grammatical development. In fact, it was found that Braine's type of analysis did not easily fit the Irish data. A principal category, 'actor+action', is realized in Irish by the following patterns:

Main verb-Subject and BE-Subject-Verbal noun

It was found that the verb 'to be' was frequently omitted in the children's data (more frequently than in adult input), and the result was that in actor+action utterances containing a verbal noun or verbal adjective, the subject frequently preceded the verb element, e.g.:

- (15) Cian: moncaí ag ithe (= tá moncaí ag ithe)
 (monkey eat-Vn) (be monkey eat-Vn)
 'monkey eating' 'the monkey is eating'

It became clear that these factors have an effect on the acquisition of Irish word order which merits specific investigation.

Braine (1976) also analysed the development of constituent order in the data of one of Bowerman's subjects acquiring Finnish, in order to examine more closely his word-order patterns. An analysis modelled on this was the first word-order analysis carried out on the data from Eibhlís, using the categories:

Subject, Verb	Subject, Verb, X	Other
Subject first	Subject first	Noun-Prolocative
Subject last	Subject not first	Prolocative-Noun
		Verb-Prolocative

The application of these categories revealed that up to age 1;9, Eibhlís appeared to be using a positional pattern of 'Subject not first' in her two- and three-term strings in structures involving main verbs, but that she began to use the non-dominant 'Subject first' pattern later, in a groping pattern. But what these categories did not show is the distinction between the positions of main verbs and verbal nouns/adjectives. This analysis did not reflect the high degree of positional accuracy which was found in Eibhlís's data, as shown in Table 4. It became clear that the real key to the understanding of these three children's word-order patterns lies in the observation that subject-verb misplacement was not common, and that subject-initial utterances were not due to an SVO strategy operating on the positioning of main verbs. Instead, the high proportion of subject-initial utterances shown in Table 4 was found to be due mainly to the omission of the verb 'to be', whether as main verb or as auxiliary. It is this phenomenon which will now be examined.

Omission of the verb 'to be'

Stenson (1981) points out that, in Irish, the subject invariably intervenes between the inflected auxiliary and what would be the main verb. Chomsky's (1965) Aux+V analysis is entirely based on an SVO language like English, where the auxiliary and main verb are contiguous. We have already seen that McCloskey's (1983) proposal of a surface VP (ProgP) in Irish is still of the order: V NP ProgP, each directly dominated by \bar{S} . The subject-/verb-initial analysis of the children's data showed a high proportion of subject-initial utterances, but a fairly low level of verb/subject misplacement. Examination of the omission of the verb 'to be', generally in its present tense form *tá*, showed that this was high in all three children. The data were analysed for obligatory contexts for this verb, and the types of utterances from which it was omitted. Examples of such contexts for *tá* are:

- | | | |
|------------------------|---------------------|-----------------------|
| (16) | (17) | (18) |
| <i>tá as Main Verb</i> | <i>tá before Vn</i> | <i>tá before VAdj</i> |
| tá mé fuar | tá Bríd ag gol | tá Piaras imithe |
| (be I cold) | (be Bríd cry-Vn) | (be Piaras go-VAdj) |
| 'I am cold' | 'Brid is crying' | 'Piaras is gone' |

Thus the verb 'to be' occurs in progressive and non-progressive sentences. As an auxiliary its own tense can usually be understood in the context, and therefore it is often given information. Omission of *tá* is not confined to children, since it also occurs in adult speech, so input to the children was also analysed for *tá* omission.

It should be noted here that Irish has two forms of the verb 'to be'. *Is*, known as the copula, is used to express a permanent or inherent link between a subject and a noun or pronoun complement, as in:

- (19) *Is múinteoir Áine*
 (COP a-teacher Ann)
 'Ann is a teacher'

The substantive or stative verb *tá* links the subject with adjective, adverb, preposition or progressive phrase complements as in:

- | | |
|--|---|
| (20) Tá an lá fliuch
(Be the day wet)
'The day is wet' | (21) Tá an ghaoth ag séideadh
(Be the wind blow-Vn)
'The wind is blowing' |
|--|---|

There were some overextensions in the children's data of *tá* to the copula, as in *tá daidí* 'be daddy' instead of *is é daidí é* (COP co-referring-pronoun daddy him) 'it is daddy' or *sin é daidí* 'that's daddy' (with implicit copula). There was also a tendency to use *tá* as a general positive response form, rather than repeating the verb of the question.

In the following sections, each child's data are examined for omission of the verb 'to be' (usually as *tá*) and the results of the earlier verb-/subject-initial and new/given analysis are discussed in that light.

Eibhlís: use and omission of the verb 'to be'

Fig. 2 illustrates the percentage of *tá* omitted from its obligatory contexts both in Eibhlís's output and in input to her in each sample.

The rise in Eibhlís's percentage of *tá* omission is due to the fact that the number of obligatory contexts for *tá* increased when the use of verbal nouns and verbal adjectives became frequent from Sample 7 (1;9).

However, the omission of *tá* was not confined to its use as auxiliary. Its omission as main verb also rose after the introduction of verbal nouns and verbal adjectives. There is a pattern apparent from the analysis of *tá* preceding verbal nouns and verbal adjectives: *tá* was three times more likely to be omitted before a verbal noun or verbal adjective in Eibhlís's data than to be included. In Eibhlís's case, it is possible that, when verbal nouns and verbal adjectives began to be used in combinations frequently from Session 7 (age 1;9), this caused the focus of attention to shift to the end of the utterance. Simultaneously, a sensitivity to the given/new distinction would have revealed that *tá* could at times be omitted as given in the context. It appears that for Eibhlís, the role of *tá* was gradually being defined.

Eibhlís's data split naturally into two halves, which we shall call Time I (age 1;4-1;8) and Time II (age 1;9-2;1). Verbal nouns and verbal adjectives appeared to become established about 1;9 and Table 5 shows the changes that occurred in the use of *tá*.

At Time I, *tá* was mainly used (incorrectly) with a naming function (instead of the copula or *sin/seo* demonstratives with implicit copula), as a general verb of agreement in *tá* + Subject utterances, or as a request (part of *tá X uaim* (be X from me) 'I want X'). By Time II, *tá* was spread evenly between these uses and its (correct) use as main verb and auxiliary. *Tá* + X may represent an intermediate stage in its development, where X could be a

WORD ORDER DEVELOPMENT IN IRISH

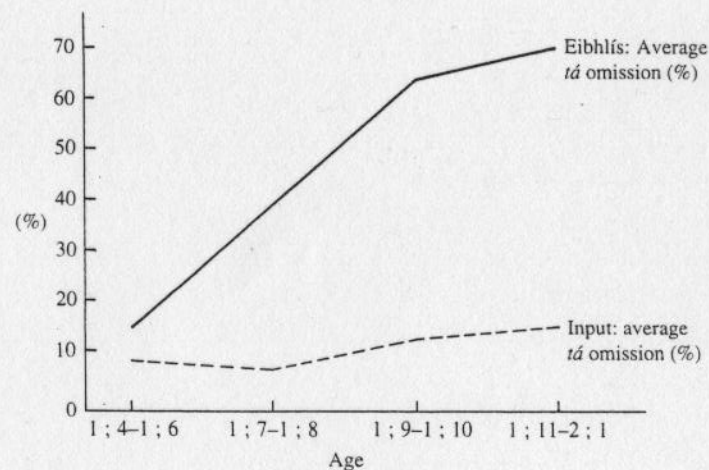


Fig. 2. Eibhlís: *tá* omission.

verbal noun or adverbial phrase e.g. *tá siúl* (be walk-VN), *tá uaim* (be from-me) 'I want'.

It appears that *tá* was in flux, and while its roles were being analysed, other less general verb types were being added to Eibhlís's vocabulary. They, and *tá* used both correctly and incorrectly (i.e. instead of the copula or demonstrative), account for the predominance of verb-initial utterances in Eibhlís's data. The distinction between verbs and verbal nouns is of great importance: ALL instances of 'subject last/not first' are correctly ordered main verb + subject combinations, while almost all 'subject first' utterances contain verbal nouns or omit the main verb *tá*.

Thus the real key to the discovery of Eibhlís's word-order strategy lies in the fact that main verbs were only incorrectly placed after the subject in 1% of her combinations, while verbal nouns and verbal adjectives were never misplaced before the subject, so that subject-initial utterances arose mainly as a result of the omission of *tá*. This omission may indicate some matching with input, although not proportional matching. The new/given results showed that Eibhlís was not using either a given-new or a new-given word-order strategy. The subject-/verb-initial analysis showed that verb-initial utterances were significantly more frequent in her data than subject-initial utterances. This examination of the omission of the verb 'to be' shows that Eibhlís was not using an SVO ordering in her subject-initial utterances, but was instead using a []SX order, where the omitted element was always the verb 'to be' and where X included Vn, VAdj, Object, Complement or Adverbial. It would appear that she was more aware of the positional restrictions on her verb elements than of any need to order her utterances on a scale of givenness or newness.

TABLE 5. *Eibhlís*: *tá* at Times I and II

Age	I (1;4-1;8)	II (1;9-2;1)
<i>tá</i> present in obligatory contexts (%)	79	38
Combinations (%) of:		
<i>tá</i> +Subject	81	33
<i>tá</i> +X (no Subject)	6	23
<i>tá</i> +Subject+X (+Y) (X includes Vn, VAdj, A, C and O)	13	43

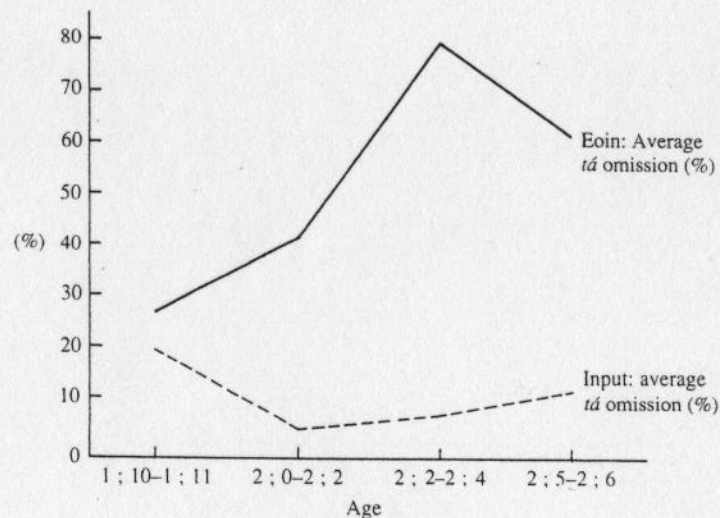
Eoin's word-order strategy

Eoin's results indicate that, unlike Eibhlís, he was ordering words according to the newness of their information, since the new-given order was significantly more frequent than the given-new. Utterances of the *neó* X type were frequent in the new-given set, e.g.:

- (22) M: Bhfuil sé fuar? 'Is it cold?'
E: Neó fuar 'No cold'

However, the new-given order was still significantly more frequent even when these utterances were excluded. There was no significant difference between the frequency of either verb- or subject-initial utterances in Eoin's data. Close analysis of his verb use showed that he misplaced main verbs with regard to the subject in 14% of those combinations, verbal nouns in 3%, and verbal adjectives in 4%. We note that in Eoin's data, the mis-ordering of main verbs and subjects occurred more frequently than in Eibhlís's data. Regarding *tá* omissions, the same situation prevailed in both children's data, in that such omissions rose dramatically with the frequent use of verbal nouns and verbal adjectives in Eoin's data from about age 2;2. This of course also meant an increase in subject-initial utterances (see Fig. 3).

The overall rate of *tá* omission in input to Eoin was 11%, identical to that in Eibhlís's input. Eoin's own rate of 62% overall was also similar to Eibhlís's overall 54%. But *tá* omission was not restricted to verbal noun or verbal adjective utterances: it was equally common in Subject-Locative, and SC utterances. The omission of *tá* as main verb rose with its omission as auxiliary verb before verbal nouns and adjectives, possibly indicating a tendency to omit it when it was given information. Within the category of verbal nouns and verbal adjectives, the pattern of *tá* and subject omissions was also very similar to Eibhlís's: *tá* was omitted before Vns and VAdjs almost four times more often than it was included; and verbal adjectives rarely occurred without a subject, while almost 40% of verbal nouns did.

Fig. 3. Eoin: *tá* omission.TABLE 6. *Eoin*: *tá* at Times I and II

Age	I (1;6, 1;10-2;1)	II (2;2-2;6)
<i>tá</i> present in obligatory contexts (%)	72	28
Combinations (%) of:		
<i>tá</i> +Subject	67	48
<i>tá</i> +X (no Subject)	10	9
<i>tá</i> +Subject+X (+Y) (X includes Vn, VAdj, A, C and O)	23	43

Just as in Eibhlís's data, there is a 'break' discernible in Eoin's data around session 7, when verbal nouns and verbal adjectives first became frequent. Table 6 presents the data on his use of *tá* in two halves, Time I (session 1-6) and Time II (session 7-12).

The most noticeable change in Table 6 is the strong change-over in the presence and absence of *tá* after the establishment of verbal nouns and adjectives. At Time I, *tá* is mainly used (incorrectly, instead of the copula or demonstrative with implicit copula) to identify or indicate in *tá*+Subject utterances (just as Eibhlís used it at this time) or as a general verb of agreement. But by Time II these functions were almost equalled by fuller *tá*+Subject+X+(Y) utterances, where X and Y could be locatives, adjectives, verbal nouns or verbal adjectives. It is noteworthy that Eoin's

production of *tá*+*X* (i.e. subject-less utterances) remained low, and did not appear to be an important intermediate stage in the complete analysis of *tá*, as it was in Eibhlís's case.

Eoin's omission of *tá* undoubtedly contributed to his significant new-given score. However, closer examination of the data reveals that Eoin also used *tá* contrastively in utterances such as:

- (23) T: Níl sé briste (not-is it broken) 'It's not broken'
 Eoin: Tá briste 'Is broken'

Thus Eoin's strategy was not simply the result of treating *tá* as given, since he could also include *tá* to contradict statements, just as he used an emphatic 'no' to negate earlier statements. Instead, he omitted it when it was given, but included it when it was new information in the context, or the focus of contrast.

Cian's word-order strategy

Cian's results were unlike Eoin's or Eibhlís's in that he displayed the given-new pattern significantly more often than new-given, but produced verb- and subject-initial utterances about equally often. A breakdown of his verb-subject patterns showed that he misplaced main verbs with regard to the subject in 11% of such combinations, verbal nouns in 4% and verbal adjectives in 8%. Thus, his level of main verb misplacement relative to the subject is similar to Eoin's. Verbal nouns and verbal adjectives were present in Cian's data from session 2, when he was 2;4, so his data differ from Eoin's and Eibhlís's in having Vns and VAdjs almost throughout.

The overall input level of *tá* elision to Cian was 11%, exactly the same as that in input to the other children. Cian's overall level was 60%, very similar to Eibhlís's level of 54% and Eoin's of 62%. Cian's subject and *tá* omission patterns before verbal nouns and verbal adjectives were also very similar to the other children's, in that *tá* was omitted almost three times more often than it was included before verbal nouns or verbal adjectives.

As in the case of the other children, *tá* omission was not restricted to Vn or VAdj utterances. However, Cian's omission of *tá* as main verb declined markedly from session 7 (age 2;7), and seemed to be concentrated mainly on Vn utterances. This may indicate a differentiation between the use of *tá* as main verb and as auxiliary, where the degree of 'givenness' was considered to be higher for the auxiliary, since another verb was present to supply the principal verb information. MacWhinney & Bates (1978), Greenfield & Zukow (1978) and Rodgon (1976) observed that ellipsis declines with age, and this may underlie Cian's reduction in *tá* omission in his later sessions.

TABLE 7. Percentages of elements preceding Vn/VAdj

	Vn		VAdj		Vn		VAdj	
	+ <i>tá</i>	- <i>tá</i>	+ <i>tá</i>	- <i>tá</i>	+Sub	-Sub	+Sub	-Sub
Eibhlís	26	74	20	80	67	33	100	0
Eoin	21	79	23	77	61	39	92	8
Cian	28	72	22	78	73	26	89	11
Average	26	74	22	78	70	30	91	9

Summary of results

The results of the three children were remarkably similar on the percentages of *tá* and subject omissions before Vn and VAdj, as can be seen in Table 7 (where -*tá* and -Sub indicate omission).

It appears that the children's full analysis of *tá* must await a fuller acquisition of verbal nouns and verbal adjectives than even Cian had reached. The trend in Cian, the oldest child, seems to be towards the reduction of the omission of *tá* when it was the main verb. However, while the child is focusing on the verb elements which occur at the end of sentences, it may be that production constraints and usage in input, and possibly also the strategy of omitting redundant elements, contribute to the omission of *tá* before Vns and VAdjs. Eibhlís was more likely to omit *tá* as main verb than as auxiliary, and this remained constant (at about 62%) over the collection period. However, the figures for the first half of her data are based on only 8 *tá* omissions, all others occurring after the introduction of Vns and VAdjs in combinations. We must bear in mind that Eibhlís used Vns and VAdjs very infrequently compared to the other two children, and thus she had a far lower number of obligatory contexts for *tá*. Eoin's omission of *tá* was also very low in the first half of his data (only 12 omissions in all), but was fairly evenly distributed between main verb and auxiliary omission once he began to use Vns and VAdjs. Cian, who used Vns and VAdjs from session 2 onwards, showed a balance between the omission of *tá* as main verb and as auxiliary early on, but its omission as main verb dropped dramatically later in his data, while increasing as auxiliary.

Only Eibhlís had significantly more verb-initial utterances than subject-initial. The explanation for this may lie in the relatively lower frequency of verbal nouns and verbal adjectives in her data compared to Eoin's and Cian's, as can be seen in Table 8.

Eibhlís has about as many TYPES of Vn and VAdj as Eoin, but Eoin had a far higher token count. Eibhlís's result of significantly more verb-initial than subject-initial utterances is probably due to the much lower proportion of verbal nouns and verbal adjectives in her samples (18%), which meant that

TABLE 8. *Tokens of verb categories*

	Main verb	Vn	VAdj
Eibhlís	300 (81 %)	53 (14 %)	15 (4 %)
Eoin	287 (57 %)	107 (22 %)	100 (20 %)
Cian	754 (58 %)	365 (28 %)	184 (14 %)

the possibilities for subject-initial (*tá* omitted) Vn and VAdj utterances were halved compared to Eoin and Cian. Their lack of a significant difference between subject- and verb-initial utterances was probably due to the fact that Vn and VAdj utterances made up 42% of their total verb use. This is, of course, based on the observation above that most Vn and VAdj utterances were subject-initial.

DISCUSSION

It appears that these children were not starting out with an SVO strategy, contrary to the naturalness argument. Instead they began with verb-initialization, as found in studies of languages other than VSO languages, and from there they acquired verb elements whose position is post-subject. Thus, the children were, in fact, observing the positional restrictions on their verbs, but these restrictions concerning placement relative to the subject were in opposition for main verbs and verbal nouns or adjectives. Eibhlís had a near-perfect record on subject and verb placement. This could be explained as the result of her lower use of verbal nouns/adjectives and the consequent lack of interference from the conflicting positions, or as evidence of positional associative patterns. The latter hypothesis is supported by comparison with the two older children, both of whom misplaced some verbs, to a similar extent, with this very misplacement indicating productivity, rather than what Braine (1976) called positional associative patterns. It appears that when verbal nouns and verbal adjectives together approach 50% of all verb elements used, their placement becomes productive, but not without a degree of what Braine called 'groping' first. Eoin's data show that main verbs were only placed after the subject (incorrectly, as in *SV) AFTER he had begun using Vns and VAdjs frequently, and it is also true that *SV only appeared in Cian's data when he had used about seven verbal noun types, and four verbal adjective types.

Other data on the acquisition of Irish show similar results. Mac Mathúna (1979: 85) noted a randomness in the inclusion or omission of *tá* in his subject Máirtín at 2;9. McKenna & Wall (1986) reported word ordering in their two subjects which was very similar to that found in this study. There were no cases reported of *SV, *VnS or *VAdjS, but about half of their

subjects' combinations containing verbs were subject-initial due to the omission of *tá*. McKenna & Wall suggested that, in Irish, the child first adduces an SVO clause rule, and later a VSO rule for non-progressive sentences. Since this would be a more circuitous route to adult language, they proposed that Irish would, therefore, be acquired more slowly than SVO languages. However, their data were not longitudinal, and they recognized the need to examine the development of word order in Irish acquisition with longitudinal data. Their comment that their two subjects appeared to imitate word order supports the observation of this study that the children generally placed main verbs, verbal nouns and verbal adjectives in the correct position relative to the subject, and that they tended to follow (although at a higher frequency) the trend in their input of omitting the verb 'to be'.

In this study it was found that the children's subject-initial utterances were not the result of changing the relative ordering of subject and verb dominant in the language, but of the omission of the verb 'to be' which generally carried given information. In a study of the acquisition of Japanese, Clancy (1985) points out that the adult language presents children with a model which supports their early tendency to omit given information, but that they only gradually acquire the limits on the use of ellipsis. The children in this study were not using a strategy of initializing the subject since they also produced VS utterances with low error rates (including *tá*+S utterances), and errors only occurred after they had begun using Vn and VAdj utterances with conflicting positional restrictions. They were not using subject-initial utterances because that is the most natural order, most recently suggested by McKenna & Wall, or because that fitted with the order of their experiences or perceptions, in Bruner's (1975) or Osgood's terms (Osgood & Tanz, 1977). An Irish version of LARSP (Crystal, Fletcher & Garman, 1982) was developed and there was no evidence from these ILARSP profiles (see Hickey, 1987) that their language acquisition was delayed compared to children acquiring an SVO language like English (as suggested by Bruner (1975) and McNeill (1975)), simply because they were 'burdened' with the task of acquiring a VSO language. It is possible that their subject-initial Vn utterances might be evidence in support of McNeill's claim that the actor comes first because the intention to act precedes the action; however, if that were the case, it is difficult to see why the child would perceive the action element in a verbal adjective utterance to be more salient than that in a main verb utterance.

The children's word-order strategy appeared to be very sensitive to the order of elements in their input. The verb *tá* might seem to be an exception here, in that its omission in their data was about five times higher than its omission in their input. However, the verb 'to be' is a special case, since it is more often redundant than other verbs, and also because it is pluri-functional. The functions of *tá* were apparently incompletely analysed by

Eibhlís and Eoin especially, but it was used correctly more often by Cian as he began to 'fill out' the analysis of its functions. It is important to note that *tá* was rarely misplaced after the subject: never by Eibhlís, in only 4% of main verb combinations by Eoin, and in less than 2% by Cian. Instead, it was, with great frequency, omitted entirely from utterances which were generally comprehensible and unambiguous without it.

If these children acquiring Irish were not constrained by a 'natural' word order, were they instead following strategies based on the type of information conveyed? As we saw in our earlier discussion, there are many difficulties with the new-given and topic-comment approaches. They are applied inconsistently by different researchers even to English, so that there are obvious difficulties in applying such analyses to a VSO language. However, Eoin's data certainly indicate that he was pursuing a strategy based on placing new information first, while Cian produced significantly more given-new utterances than new-given ones. Eoin's data support the Bates & MacWhinney (1979) hypothesis that young children encode the new information first. Cian, on the other hand, may have been using the more mature strategy which Bates characterized as: 'Suppress the attention priorities and encode the topic first, to prepare the listener for the comment' (1976: 175).

This interpretation might be questioned on the grounds that Cian's given-new strategy was most strongly evinced in the first nine sessions of his data, while his last three sessions were, in fact, predominantly new-given in order. If this represents a change or reversion to a new-given strategy, the argument for a simple progression from a new-given to a given-new pattern is not supported. It may be that the shift away from the given-new order towards the end of Cian's data was not a significant one, and that the data do, in fact, point to a developmental progression between Eoin and Cian on the new-given analysis, bearing in mind the six month gap between them. Given the far lower number of verbal nouns/adjectives used by Eibhlís, and the hypothesis that a proportion of her utterances were formulas, then it is reasonable to expect that this would have given her less 'room to manoeuvre' and alter the order of her utterances according to the kind of information conveyed. Eoin, with the freedom of somewhat greater productivity, may have adopted the strategy suggested by Bates (1976: 174) of 'blurting out...the novel information first'. Cian, being older, more socially adept and linguistically more advanced than Eoin, may have moved to the more adult given-new pattern soon after taping began.

However, it might also be the case that new-given or given-new orders are purely individual strategies and not developmentally related as MacWhinney & Bates (1978) suggested. Their own results showed some conflicting results on initialization, which they concluded could not be interpreted simply as a developmental shift. They suggested that the absence of a strong relationship

between word order and givenness or newness in their results supported MacWhinney's (1977) proposal that initialization of major sentence elements results from a range of factors, on at least three different levels. At the highest level, the intersentential or discourse level, initialization can be determined by topicality or contrastivity. At the second, or propositional level, it can be determined by agentiality or relational markedness. The lowest level is the item-based level, where initialization can be determined by the degree of attentional focus or perspective commanded by that item. Thus, according to MacWhinney (1977), initialization may be the result of intersentential or intrasentential factors. It is possible that the children acquiring Irish were either at different stages of development in their awareness of the many different factors which influence initialization, or had adopted different strategies which were individually determined. Nevertheless, each showed much the same degree of sensitivity to word order in input and the same freedom from the putative 'natural order' they might have been supposed to be acquiring.

CONCLUSION

This study investigated the development of word-order patterns in the acquisition of Irish, a strict VSO language. It was found that the three children used subject-initial utterances significantly more frequently than did adults in input to them. However, the hypothesis that it is most natural for children to place the subject first, even when acquiring a verb-initial language, was not supported. Instead, it was found that the elision of the verb 'to be' both as main verb and as auxiliary was the main cause of subject-initial utterances. The children's placement of progressive and non-progressive verbs relative to the subject was generally compatible with the different positional restrictions on these elements.

This study of word order also looked at the possibility that the children were ordering elements according to their givenness or newness. There was some evidence of a developmental progression from a strategy of placing new information first, to a later strategy of fronting given information, but this was not conclusive, since the youngest child did not use either order significantly more frequently, and because the oldest child's ordering pattern changed in his later sessions. It is probably the case that initialization is determined by a range of factors, as MacWhinney (1977) suggested. Further studies of longitudinal development would be necessary to investigate this, as well as experimental studies (with children in early multi-word speech if possible), which attempted to control the other factors which influence initialization.

Overall, the verb-/subject-initial analysis was more clear-cut. The children's subject-initial utterances, which were mainly due to the omission of

the initial verb 'to be', reflect some of the impact on order of an element which is usually given. This also links into the observation by Clancy (1985) of the ellipsis of elements in Japanese, and an investigation by Fletcher & Garman (1987), which noted the tendency in English acquisition to omit the subject, the initial element of the sentence. On this point, it is interesting to note that there has been no hypothesis that the dropping of the subject reflects a natural, universal tendency to front action elements, which places children learning an SVO language at a disadvantage; this nicely illustrates the danger in language acquisition research of attempting to establish universals on too little evidence from disparate languages.

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