

There is a dummy ‘is’ in early first language acquisition

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1. Introduction

The purpose of this article is to give an explanation for the observation that children acquiring Dutch as their mother tongue (L1) often produce sentences that do not occur in adult Dutch language, as in the examples in (1), in which the auxiliary verb *zijn* (‘be’) is followed by a nonfinite lexical verb (infinitive).

- (1) a. *Is(e) mak-en.*
be.3SG.PRES make-INF
‘Makes.’ or ‘Is making.’ (Laura 2;2, Van Kampen corpus)¹
- b. *Haas is zitt-en.*
Hare be.3SG.PRES sit-INF
‘Hare sits.’ or ‘Hare is sitting.’ (Josse 2;2, Groningen corpus)

The equivalent adult constructions are given in (2a), (2b) and (2c). The adult form in (2a) *Hij maakt* (‘he makes’) expresses ongoingness but is unmarked for that aspect. The construction in (2b) *Hij is aan het maken* (‘he is making’ i.e. ‘He is in the process of making’) foregrounds the ongoingness of the event. However, in Dutch this marked form is restricted to some verb types. State verbs like *weten* (‘know’) or *zitten* (‘sit’) as in (2c) cannot be used in the progressive construction, and therefore a sentence like *De haas is aan het zitten* would be ungrammatical (see Table 2).

- (2) a. *Hij maak-t.*
he make-3SG.PRES
- b. *Hij is aan het mak-en.*
he be.3SG.PRES on the make-INF
- c. *Haas zit.*
Hare sit.3SG.PRES

A few researchers of L1 Dutch (Blom 2003; Dimroth and Jordens 2006; Van Kampen 1997; Van Kampen and Wijnen 2000) have given examples of the construction *is*+infinitive (henceforth *is*+INF) like the ones in (1a) and (1b), though without further exploring this particular nontargetlike construction. Nonetheless, these studies do indicate that *is*+INF seems to occur early in L1 language development, alongside with similar constructions which are permitted in Dutch. The appearance of these constructions occurs before or at the same time that finite lexical verbs start to be used productively. In (3), examples are given of the modal verb *willen* ('want') and the verb *gaan* ('go') followed by an infinitive.

- (3) a. *Ik wil slap-en.*
 I want.1SG.PRESsleep-INF
 'I want to sleep.' (Sarah 2;1, Van Kampen corpus)
- b. *Ernie gaa-t spel-en.*
 Ernie go-3SG.PRES play-INF
 'Ernie is playing.'
 Target²: Ernie speelt. (Iris 2;5, Groningen corpus)

Both utterances in (3) are grammatically correct, but (3b) is semantically incorrect as the auxiliary verb *gaan* ('go') expresses near future or inchoative aspect in adult Dutch, and not an ongoing event. In the above utterance, however, Iris describes an action which is taking place at the moment of speaking. Another auxiliary plus infinitive construction is *doen* ('do') as in (4). Constructions as in (4) occur in spontaneous adult speech, but they are considered ungrammatical in standard Dutch. *Doen* ('do') may occur as an auxiliary verb in standard Dutch but only when it is used as topicalization of the V(erb) P(hrase) as for instance in *Bouwen doe ik ook* ('building, I do that too'). For a detailed discussion of this use of *doen* in Dutch we refer to Reuland (1983). Non-standard auxiliary *doen* constructions occur frequently in several Dutch dialects (Giesbers 1983-1984; see also Barbiers, this volume). Both these dummy auxiliaries are found in child-directed speech as well (Jordens 1990; Klein 1974; Lalleman 1986). However, the construction with *zijn/is* is not reported in child-directed use.

- (4) *Ik doe bouw-en ook.*
 I do.1SG.PRES build-INF too
 'I also build.'
 Target: Ik bouw ook. (Laura 2;3, Van Kampen)

In (1a), (1b), (3b) and (4), the verb forms *gaat* ('goes'), *doe* ('do') and *is* ('is') are examples of what are termed 'dummy auxiliaries' (see Blom and De Korte 2011; Van de Craats 2009) or 'placeholders' (Garcia Mayo, Ibarrola and Licerias 2005; Tracy 2002). In the above examples, the verbs *gaan* ('go'), *doen* ('do') and *zijn* ('be') lack meaning, as expressed by the term 'dummy'. They can be seen as verbal elements that express the grammatical features of the verb complex, the infinitive expressing the lexical features. Children's preference for the auxiliary/modal+INF construction at early stages of their language development has been noticed and reported by several researchers of L1 acquisition of Dutch (Blom 2003; De Haan 1996; De Jong et al. this volume; Jordens 1990; Jordens and Dimroth 2006; Schaerlaekens 2000; Schlichting 1996; Van Kampen 1997; Wijnen 2000; Zuckerman 2001, also this volume).

Nearly all previous research on L1 Dutch has focused on *gaan* and *doen* as dummy auxiliaries and hardly anything is known about *zijn*. The possibility of *zijn* (more particularly the form *is*) being used as a dummy auxiliary in Dutch L1 is mentioned in Blom (2003), but there it is not investigated in full detail. This stands in contrast to L2 Dutch, where various studies have pointed to the importance of *is* as a dummy auxiliary (Blom and De Korte 2008, 2011; Van de Craats 2009; Van de Craats and Van Hout 2010; Verhagen 2009, this volume). Therefore, in the present study the role of dummy auxiliary *is* in L1 Dutch is investigated.

The idea we want to investigate in this study is that monolingual Dutch speaking children use dummy *is* for the same reason as adult learners of Dutch as L2 do, that is, as a predecessor of movement of the lexical verb (Van de Craats 2009; Verhagen this volume). We are trying to find an answer to the question whether, and if so, why children produce periphrastic constructions like (1a), (1b) (3b) and (4) instead of synthetic constructions as in (2).

To this end, longitudinal spontaneous speech data from five monolingual Dutch children between the ages of 1;6 and 3;6 years was analysed. The use of the verbs *zijn*, *gaan*, *doen* has been examined in detail because in the literature they are mentioned to occur as dummy auxiliaries. In addition, *hebben* 'have' was included in the analysis, because it also occurs in combination with a nonfinite lexical verb (i.e., a past participle) in the target language and therefore might be a potential candidate for dummy use.

The structure of the paper is as follows. In Section 2, the relevant morphosyntactic characteristics of Dutch are presented and a description is provided of the stages that children go through when acquiring finiteness in

Dutch. Next, recent accounts for the use of dummy auxiliaries in L1 development of Dutch are discussed. We end this section by formulating three research questions, all related to our main hypothesis. In Section 3 the method of analysis will be explained. In Section 4, results of the corpus analyses are presented regarding the occurrence and role of the different auxiliary verbs in the acquisition of finiteness. Finally, Section 5 ends with a discussion and conclusion based on the results of the present analysis, supporting our proposal that the verb *zijn* plays an important role in the L1 acquisition of the position and the form of the verb in Dutch.

2. Finiteness in Dutch

2.1. Morphosyntactic characteristics

Finiteness is a functional property of Germanic languages. The notion of finiteness refers to the property of the verb to express time, number and mood. Finiteness is thus linked to morphosyntactic properties of agreement and tense-aspect marking which are carried by auxiliaries and lexical verbs. In all Germanic languages, with the exception of English, all main clauses have a special property, namely Verb Second (V2), which means that the finite verb occupies the second position in the main clause, irrespective of which constituent occupies the first position. In the standard generative analysis (for Dutch: Den Besten 1989), the V2 order is derived from an underlying structure in which the verb is in head-final position within the VP. Through head-to-head movement from V to Tense and AGR(ement), the finite verb ends up in C(omplementizer) position, and remains in situ when C is occupied by a complementizer.

Table 1. Dutch inflectional paradigm for regular verbs in the present tense

Person and number	-suffix	Example: <i>pakken</i> ‘to take’	
1SG	-∅	<i>Ik pak</i>	‘I take’
2SG	-t / -∅	<i>Jij pakt</i> , but: <i>Pak jij/je</i>	‘You take’
3SG	-t	<i>Hij pakt</i>	‘He takes’
1,2,3 PLUR	-e(n)	<i>Wij/jullie/zij pakken</i>	‘We/you/they take’
INFINITIVE	-e(n)	<i>Pakken</i>	‘to take’

In Dutch, verbal suffixes mark tense and agreement: The marker of the first person singular is a null suffix. This form cannot be distinguished from the verb stem. The second and third person are marked by /t/ (except when the 2SG subject follows the verb; in these situations, a null suffix is used), and the plural marker is /en/. These plural forms cannot be distinguished from the infinitive (see Table 1).

2.2. Constructions with *is*, auxiliaries and verb types

Is occurs most frequently as the third person singular form of the copula *zijn*, as in (5a), in which *is* links the subject and an adjectival predicate. *Is* also occurs in combination with a prepositional infinitival complement as in (5b), when progressive aspect is emphasized. The construction *zijn* +INF without the preposition is used in spoken standard Dutch to give information on the whereabouts of an absent person as in (5c) (see Haeseryn et al. 1997:18-5-4-15-1). At last, when *is* is an auxiliary, as in (5d), it is linked to a past participle expressing perfective aspect.

- (5) a. *De vrouw is oud.*
the woman is old
'The woman is old.'
- b. *Vader is aan het lezen*
father is on the reading
'Father is (in the process of) reading.'
- c. *Vader is viss-en.*
father is fish-INF
'Father went fishing.'
- d. *De vrouw is ge-komen.*
the woman is PPart-come
'The woman has come.'

In addition to *zijn/is* other auxiliaries may express aspect and modality in combination with a nonfinite lexical verb. The modal (often with a reduced inflectional paradigm, one form for singular and one for plural) and the aspectual auxiliary are in V2 position and the lexical verb in sentence-final position. This is illustrated in (6a) and (6b). *Gaan* in (6b) expresses near future or inchoativity.

- (6) a. Modal auxiliary
Vader moet de brief lezen.
 father must.3SG.PRES the letter read.INF
 ‘Father must read the letter.’
- b. Aspectual auxiliary
Vader gaa-t de brief lezen.
 father go-3SG.PRES the letter read.INF
 ‘Father is going to read the letter.’

When expressing perfectivity, most Dutch verbs select the auxiliary *hebben* (‘have’), but with unaccusatives and ergatives the auxiliary *zijn* is used.

Table 2. Verb types and the expression of perfectivity and durativity

Verb type	Characterization	Example	Auxiliary	Durativity
State	External state: no movement, no endpoint, no change	<i>zitten</i> (‘sit’) <i>liggen</i> (‘lie’)	<i>hebben</i>	no
	Internal state: experiencer as subject	<i>kennen</i> (‘know’) <i>zien</i> (‘see’)		
Action	Activity: with agent and object	<i>een tak breken</i> (‘break a branch’)	<i>hebben</i>	yes
	without object; motion without endpoint	<i>lachen</i> (‘laugh’) <i>in het park lopen</i> (‘walk in the park’)		
Change	Resultatives: without agent; and with motion with endpoint	<i>breken</i> (‘break’), <i>gebeuren</i> (‘happen’), <i>komen</i> (‘come’), <i>naar het park lopen</i> (‘go to the park’)	<i>zijn</i>	yes

Within the first group of verbs selecting *hebben*, two verb types can be distinguished: statives and action verbs. Statives typically cannot be used with a durative aspect: They are not allowed in the ‘aan het+INF’ construction, as in (5b). The second group, selecting *zijn*, consists of verbs describing a change of state (without mentioning) or a movement with a clear endpoint: verbs like *breken* (‘break’), *veranderen* (‘change’), *komen* (‘come’). When verbs of motion do not show a clear endpoint, the auxiliary *hebben* is used. See Table 2 for an overview and examples.

2.3. Stages in the acquisition of finiteness in L1 Dutch

It takes a few years for a child to acquire adult-like command of finiteness in Dutch. However, there is no consensus as to the age at which Dutch children acquire finiteness. Some researchers (Polišenská 2010; Van Kampen and Wijnen 2000) report that three-year-old children have already mastered almost all finite morphemes. Other studies report that Dutch children around the age of three still show non-target-like use of finite morphemes (Blom 2003; De Haan 1996; Schlichting 1996; Wijnen and Verrips 1998;). A plausible explanation for this lack of consensus is that different criteria, different sorts of data (elicited versus spontaneous speech data) and different verb classes (i.e., lexical verbs, copulas, auxiliaries and modals) were involved to decide whether or not a child has acquired finiteness. Despite the divergent conclusions as to the age at which children acquire finiteness, most researchers agree that they acquire the intricacies of finiteness in a stepwise manner. The following is the most commonly accepted description of the major steps that lead to finiteness in Dutch.

Dutch children start their development of finiteness by using root infinitives (RIs) in which the verb is nonfinite and unmoved, that is, at the end of the sentence (Blom 2003; Haegeman 1995). This stage is followed by a stage in which children use finite verbs (FINs) and RIs at the same time (the so called Optional Infinitive Stage or the Differentiation Stage). Finite verbs appear in initial position (V1 or V2) and RIs in final position. Most researchers (e.g., Blom 2003; De Haan 1986, 1987; Jordens 1990; Schlichting 1996; Wijnen 1995) agree that finite verbs and nonfinite verbs are not only bound to distinct structural positions, but are semantically distinct as well, at least in the beginning of this stage. Early finite verbs (in V1 or V2 position) express time or modality and are statives rather than eventives; nonfinite verbs (in final position) denote action or change. The last stage marks the productive use of simple finite phrases, that is, sentences that contain a lexical finite verb moved to C (i.e., V2).

2.4. Accounting for the use of dummy verbs in L1 Dutch

Explanations suggested by researchers for the observed use of dummy auxiliaries by Dutch L1 children can be divided into two types: those in which it is claimed that dummy auxiliaries are primarily used to mark a syntactic position and to realise grammatical features, and that meaning plays a mi-

nor role (*structural accounts*), and those in which it is assumed that semantic and pragmatic aspects of finiteness are acquired before their morphosyntactic aspects (*functional accounts*).

2.4.1. *Structural accounts*

There are significant differences between the various structural accounts. Van Kampen (1997), and Hollebrandse and Roeper (1996), among others, propose a ‘least-effort’ account for the Aux+INF phenomenon. They argue that children use these periphrastic forms as a strategy to avoid the movement of the lexical verb to the second position without violating the grammar of Dutch: by putting the dummy, which carries tense, person and number properties, directly in second position, the child can leave the lexical verb in the original position and still produce a grammatically correct, finite sentence.

Van Kampen’s account interprets the Aux+INF phenomenon as an intermediate stage that precedes the final stage in which the child realizes the full function of the C position. When children clearly establish the V2 rule, the use of Aux+INF structures decreases (although, of course, they are not completely abandoned since some combinations, as for example *gaan*+INF, are allowed by the target language with the restricted reading of near future). According to Van Kampen’s analysis, the Aux+INF phenomenon is not primarily input-related and the decrease in the occurrence of this structure is dependent on syntactic rather than semantic discoveries made by the child.

Hollebrandse and Roeper (1996) propose an account for *do*-insertion in Dutch and English that is based on the assumption that a tense domain has to be c-commanded by the tense morpheme. They assume that auxiliaries are not inserted but ‘formed’ as a spell-out of the tense morpheme. They view *do*-insertion (and *is*-insertion as well, according to Roeper 1999) as a phonological spell-out rather than as a syntactic phenomenon.

Building on De Haan (1987), Blom (2003) also recognizes the relation between the use of dummy auxiliaries and verb movement, and she sees the overuse of periphrastic verbs as a step that mediates between the exclusive use of RIs and the productive use of simple finite lexical verbs. As she puts it, “Children overuse periphrastic verbs as long as they lack knowledge of the grammatical marking of finiteness by verbal inflections and, consequently, verb movement” (Blom 2003: 168). According to Blom, Dutch children use finite sentences before they have access to the morphological

rule to inflect verbs. In the early stages, children do not know that verb forms consist of segments, that is, stem+suffix. By implication, the earliest finite sentences contain what she calls 'lexical finiteness markers'. She claims that finiteness starts out as a lexical feature and is reanalysed as a grammatical feature that can be added to items that belong to the class of V by means of a morphological rule. The syntactic effect of the acquisition of inflections is that the operation of verb movement is introduced into the child grammar.

Research by Van Kampen (1997) and Zuckerman (2001; this volume) has shown that monolingual Dutch children use dummies in main sentences (sentences that require verb movement), and that dummies in subordinate sentences (that do not require verb movement) are very rare. This observation supports the hypothesis that the use of dummies is related to verb movement.

Zuckerman (2001) examined the use of the dummies *gaan* and *doen*, and proposed an account which he terms optional movement. Concerning the dummies *gaan* and *doen*, his proposal is that children mistakenly consider the *gaan*+INF and *doen*+INF constructions as identical to the standard finite form, and thus as a grammatical option for describing an ongoing event. Children are aware of two available options and, following considerations of economy, they prefer one of them in matrix clauses and the other in embedded clauses. The *is*+INF construction is not reported by Zuckerman.

2.4.2. Functional accounts

Jordens and Dimroth (2006) and Jordens (this volume) claim that early verb forms considered dummy auxiliaries (without meaning) by advocates of a structural account, have a function in the information structure of early child language. Those 'dummies' link the topic to the predicate and have a semantic-pragmatic meaning. Their linguistic function is to express properties of illocutionary force. They propose that *is* has the function of assertion, *doet* has a default function and *gaat* an aspectual function (see also Jordens, this volume).

Jordens and Dimroth (2006) offer a functional account to stipulate when children abandon the Aux+INF constructions and reach the final stage. As Jordens (1990: 1437) put it: "The periphrastic use of *doet* and *gaat*+INF will decrease in favour of systematic verb fronting as soon as the child ac-

quires a sense of the semantic difference between a particular Aux+INF pattern and its corresponding V-finite alternative”.

2.5. Research questions

What is clear from the above accounts is that all of them consider the use of dummy auxiliaries as an intermediate step towards the acquisition of finiteness. Although some of these researchers (e.g., Blom 2003; Van Kampen and Wijnen 2000) reported the use of *is* as a dummy auxiliary, most of them, with the exception of Blom,³ did not try to find an explanation for its use in the way they did for the overuse of *doen*- or *gaan*- constructions.

It is this explanation that the present study seeks to obtain. In order to do so, the following three research questions need to be addressed:

- Do auxiliaries in general and *is* in particular, show up before lexical finite forms are used productively?
An affirmative answer might indicate that they all have a role in the acquisition of finiteness.
- Do the dummy auxiliary verbs *zijn (is)*, *doen*, *gaan*, and the modal verbs emerge simultaneously, in such a way that they clearly are part of the same developmental stage?
An affirmative answer would provide evidence for a similar role of *is* and the other auxiliaries in the acquisition of finiteness.
- Do particular types of lexical verbs occur more frequently in combination with dummy auxiliaries?
An affirmative answer would suggest that the degree of difficulty of acquiring finiteness depends on the type of lexical verb.

3. Method

3.1. Data and participants

Our analysis is based on spontaneous longitudinal data from five Dutch monolingual children, aged between 1;6 and 3;6 years. The data come from the two large corpora (the Van Kampen corpus, Van Kampen 1994, and the Groningen corpus, Wijnen and Bol, 1993) of L1 monolingual Dutch available in the CHILDES databank (MacWhinney 2003). Except for one of the

children, Iris, the recordings were made regularly, with an interval of approximately two weeks between the recordings. Despite the reduced number of recordings in the case of Iris, due to recurrent middle ear infections⁴, it was decided to keep her in this study since she represents a considerable percentage of normally developing children. This holds as well for Laura, who also suffered from middle ear infections during the period in which the recordings used in this study were made (see Van Kampen 1997). Recurrent ear infections are often associated with temporary hearing loss and delayed language and speech development.

3.2. Data selection and analysis

The data selection started at a more global level by making an inventory of the occurrence of dummy auxiliaries in the corpora mentioned above. It was concluded that all children used dummy auxiliaries. Following this first survey, five children were chosen – Josse, Iris, Abel, Laura and Sarah – to be analysed in more detail. Data between the ages of 1;6 and 3;6 seemed to be appropriate for studying the role of dummy auxiliaries in the acquisition of finiteness, since, as reported in the literature (Blom 2003; Polišenská 2010; Schlichting 1996; Van Kampen and Wijnen 2000), this is the age range within which children acquire finiteness in Dutch. In this detailed analysis, the use – moment of first emergence, beginning of productive use⁵, and frequency – of candidates for dummy use was investigated: the verb *zijn* ('be'), being the focus of this study and the verbs *doen* ('do') and *gaan* ('go') known from previous literature. The use of auxiliary *hebben* ('have') and the modals was included in the analysis because these verbs may also function in combination with a nonfinite verb: modals with an infinitive and *hebben* with a past participle.

All recordings contain spontaneous speech of these children in an unstructured regular home setting, when talking with their father or mother and an investigator. The recordings were made roughly twice every month. The Abel corpus consists of 28 files, all of which were analysed. The language samples were recorded from age 1;10 until 3;4. The Josse corpus also consists of 28 files, recorded from age 2;0 until 3;4. All 28 files were included in the present analysis. The Laura corpus consists of 72 files and the recordings were made from the age of 1;9 to the age of 5;10. Of those files only 38, those from 1;9 until 3;4 years of age, were used for the analysis. The Sarah corpus consists of 50 files based on recordings from age 1;6

to 6;0, of which only those from 1;6 until 3;6 (34 files) were used for this study. Each transcription (i.e., each file) of these four children is based on a 45-minute audio recording. From the fifth child, Iris, there are 22 transcription files all of which were included in the present study. The audio recordings, based on 30 to 75 minutes, were made from age 2;1 until 3;6.

All utterances containing a verb, from all the above mentioned files, were coded. A coding system was developed in which synthetic and periphrastic verbs were distinguished (examples are in Table 3):

1. *Synthetic verbs* (consisting of one verb form):
RIs, stems, finite verbs, nonthematic verbs, light verbs, past participles.
2. *Periphrastic verbs* (consisting of two verbs):
Aux+ past participle, Aux+ infinitive / finite verb or stem, Aux+ preposition + (het +) infinitive/stem construction.

In order to see whether copula *zijn/is* precedes the emergence of the dummy auxiliary *zijn/is*, and whether modals precede the copula *zijn/is*, the two verb types were subdivided into subtypes, as can be seen in Table 3. In this table, two types of synthetic verbs are included that are most often used in a periphrastic construction, viz. modals and past participles. In order to differentiate them from the periphrastic forms, these independently used verbs are called 'bare': bare modals and bare participles. The light verbs *doen* and *gaan*, which can be applied to a wide range of activities and situations and may lack a specific meaning, are also taken apart from the lexical verbs because they can easily take over the thematic structure of other lexical verbs, and, therefore, are candidates for dummy auxiliaries.⁶ Separating them from the finite lexical verbs enables us to see whether these light verbs appear in initial position before their dummy auxiliary counterparts.

The verbs were coded on the basis of the form in which they appeared in the transcript and not on the basis of the interpretation of the transcriber. So, in an utterance like *Papa huis lopen* (Daddy home go.INF; 'Daddy goes home'), in which *lopen* could be an infinitive, but also a bare participle with omitted prefix *ge-*, is coded as an root infinitive.

Table 3. The two main categories of verbs and the encoded subtypes

Synthetic verbs	Example
Root Infinitive (final)	<i>Mama pop geven</i> (‘mom doll give’)
Stem of lexical verb (initial)	<i>Mama geef pop</i> (‘mom give doll’)
Finite lexical verb (initial)	<i>Mama geeft pop</i> (‘mom gives doll’)
Nonthematic verbs (initial)	
Copulas	
<i>zijn</i> (‘be’)	<i>Pop is mooi</i> (‘doll is beautiful’)
<i>hebben</i> (‘have’)	<i>Ik heb geld</i> (‘I have money’)
Bare modals	<i>Zij mag snoep</i> (‘she may candy’)
Thematic (potential light verbs)	
<i>doen</i> (‘do’)	<i>Ik doe dat</i> (‘I do that’)
<i>gaan</i> (‘go’)	<i>De boot gaat niet meer</i> (‘the boat goes no more’)
Bare past participle (final)	<i>Weggegaan</i> (‘gone away’)
Periphrastic verbs: Aux+NONF/FIN	
Aux + past participle	<i>Hij heeft een pop gemaakt</i> (‘He has made a doll’) <i>Hij is weggegaan</i> (‘He has gone away’)
<i>Zijn</i> (‘be’) + INF	<i>Konijn is ə huilen.</i> (‘Rabbit is ə cry.INF’)
<i>Zijn</i> + FIN	<i>Konijn is ə huilt.</i> (‘Rabbit is ə cry.FIN’)
<i>Zijn</i> + Prep + het + INF/FIN	<i>Hij is aan het lopen.</i> (‘He is walking.INF’)
<i>Hebben</i> (‘have’) + INF/FIN	<i>Ik heb pop maakt.</i> (‘I have doll make.FIN’)
Modal + INF/FIN	<i>Die kan niet liggen.</i> (‘That one cannot lie.INF’)
<i>Gaan</i> (‘go’) + INF/FIN	<i>Ik ga ook ə lopen.</i> (‘I go also walk.INF’)
<i>Doen</i> (‘do’) + INF/FIN	<i>(I)k doe even tekenen.</i> (‘I do just draw.INF’)

The following types of utterances were excluded from the analysis: utterances which seemed to have been stored in the lexicon as a chunk, for example the text of a song or a fixed expression, imperatives, false starts, unintelligible responses, interrupted responses and responses which were clearly a full or partial repetition of what the interlocutor had said. Also those utterances were excluded that were not classifiable, that is utterances which we were not able to interpret, for instance because they had no subject as in ‘*s(l)aap*’ (sleep.STEM) or because they were unintelligible as the following transcription illustrates ‘*o, (ge)k(n)oei(d)!*’.

4. Results

We examined the use of nonthematic and light verbs (*doen* and *gaan*) in bare form (without INF or past participle) and in the periphrastic Aux+INF construction in relation to the use of RIs in sentence-final position and in relation to the use of finite thematic verbs in sentence-initial (V1 or V2) position. All utterances containing a verb produced by these five children were counted. In Figures 1-5 nonthematic verbs and light verbs are classified under bare auxiliaries (bare Aux) because they can all behave as auxiliaries when combined with an infinitive. The copula form *is*⁷ also belongs to this class of verbs, but is represented separately, as it is the focus of analysis in this study. This also holds for *is* in the Aux+INF construction. Figures 1-5 show the most relevant findings for the five children. All figures run from month 18 to month 42. If there are no recordings in a given month no bar is shown. Each bar is the sum of all types of utterances produced in that month. All utterances with a verb produced by the child in that month add up to 100%.

4.1. The emergence of bare Aux, Aux+INF and finite lexical verbs

Abel

Abel’s samples run from 22 through 40 months of age. There is no data available for month 33. Abel’s analysis is thus based on data collected during a total of 18 months. In the first five months, each sample - in this analysis a sample consists of all recordings made in a month - contained fewer than 50 utterances with a verb. From the 10th month onwards all samples

have more than 50 utterances with a verbal element. The number of utterances with a verb ranges from 3 to 444 per sample.

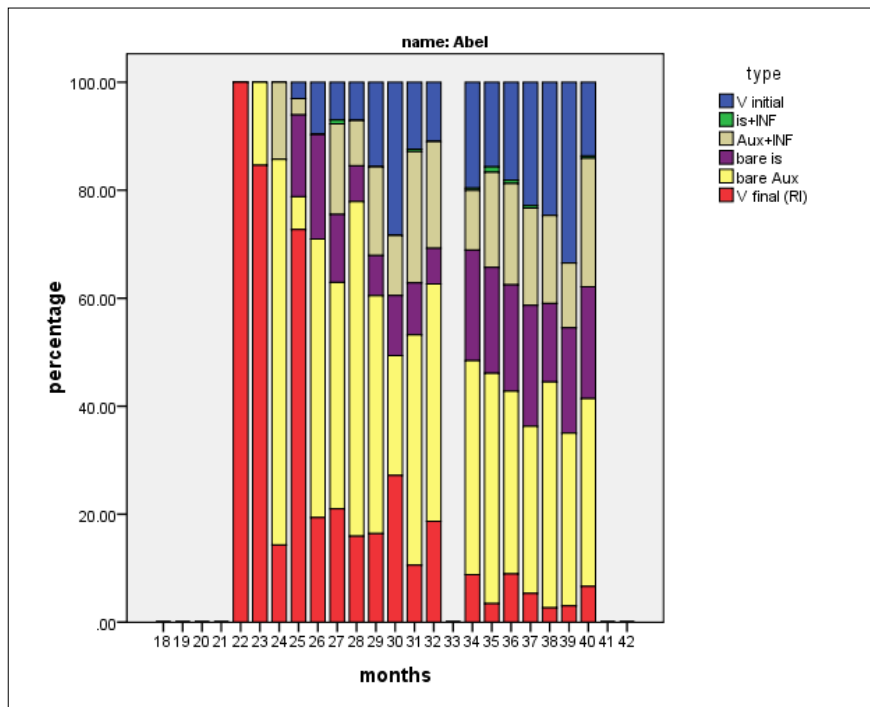


Figure 1. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Abel's speech over 18 months (22–40), with specification for *is*+INF and bare *is*.

As shown in Figure 1, at the age of 22 months Abel produces exclusively RIs. Their occurrence starts to decrease one month later and, except for the 25th month, this decrease is constant. In the last analysed samples the percentages of RIs are lower than 10%. Nonthematic verbs (bare Aux) appear at the age of 23 months (15%) and keep being used throughout all the analysed samples. In the last eight months their percentages oscillate around 40%. In month 24 the first periphrastic verbs start being used. Simultaneously with the appearance of a considerable percentage (15%) of bare *is* in month 25, thematic verbs in initial position are initially used in small numbers (less than 5%), increasing steadily and reaching percentages between

20% and 35% between the ages of 30 and 40 months. Abel produces thematic verbs in initial position productively at the age of 28 months. This is one month later than the age at which he starts using the construction *is+INF*. Abel uses *is+INF* sporadically and in low percentages. At 27 months of age he uses this construction only once. The next time he uses it is at the age of 31 months. In the period between months 34 and 37 he uses it twice every month, and again only at the age of 40 months.

Josse

Josse's samples run from 24 through 40 months of age. There is no data available for the 34th month. Josse's analysis is therefore based on data collected during a total of 16 months. At the age of 24 months Josse already produces more than 50 utterances with a verbal element per sample. So, with the exception of month 29, in which only 20 utterances were produced, all Josse's samples have more than 50 utterances with a verbal element. Overall the number of utterances per sample ranges from 20 to 440. What strikes the eye in Figure 2 is, that at the age of 24 months, Josse still produces about 96% RIs, much more than Abel does at this age. However, the percentage of RIs at 25 months of age is similar for both children, and there is a considerable decrease in the number of RIs in the next months reaching a level of less than 5% at the age of 40 months.

At the age of 24 months Josse produces simultaneously bare Aux forms, including bare *is*, and Aux+INF forms, including *is+INF*. During the next months all these forms continue to be used, the bare forms being used most frequently. The number of Aux+INF forms increases and stabilises at around 30% in the period between 31 and 39 months. At the age of 25 months Josse starts using thematic verbs in initial position. Figure 2 illustrates clearly that Josse's use of thematic verbs in initial position increases steadily and stabilises at around 20% in the last three months. At the age of 27 months Josse's use of bare *is* increases to 40%. He continues to use approximately the same percentage of bare *is* throughout the whole age range comprised in this analysis.

Josse already uses the periphrastic construction *is+INF* at the age of 24 months (one occurrence), and continues to use it through the whole age range that this analysis encompasses. At the age of 28 months he produces it again (once), at the age of 30 months he produces it twice, followed by three times in the next months. *Is+INF* occurs once in the month that follows and again twice when Josse is 33 months of age. The use of this construction increases in the following months: at the age of 35 months he

produces it four times, the next month twice and in the following month three times. At the age of 38 months Josse still produces this dummy three times and at the age of 40 months he produces it twice.

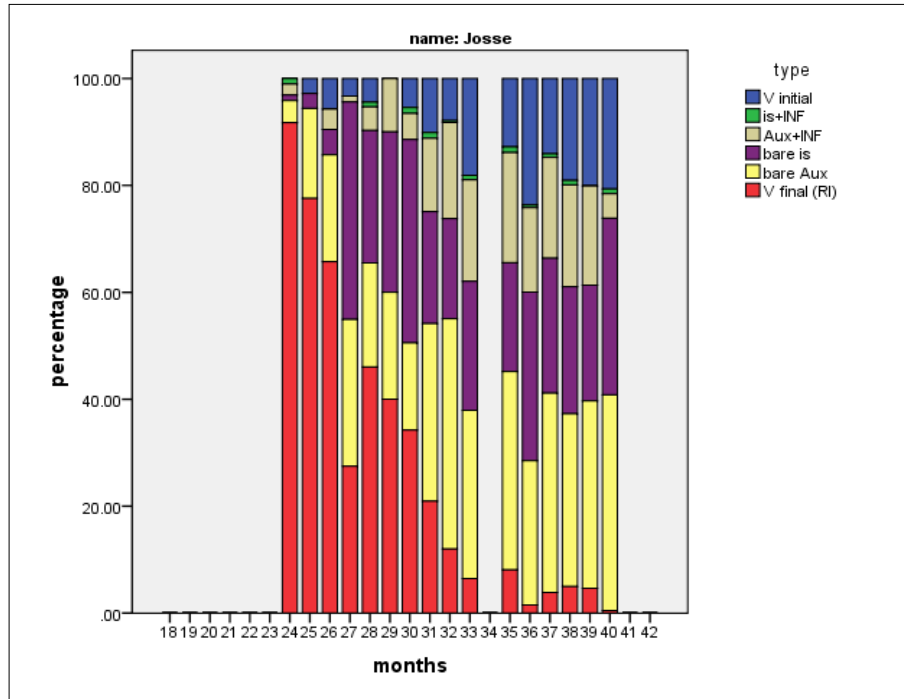


Figure 2. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Josse's speech over 16 months (24–40), with specification for *is*+INF and bare *is*.

Sarah

Sarah's recordings start already at the age of 18 months and continue until 41 months of age. The analysis of her language is thus based on data collected during a total of 24 months. In the first 5 months Sarah produces fewer than 50 utterances with a verbal element per sample. From the age of 23 months all samples have more than 50 utterances with a verbal element. The number of utterances per sample ranges between 14 and 392.

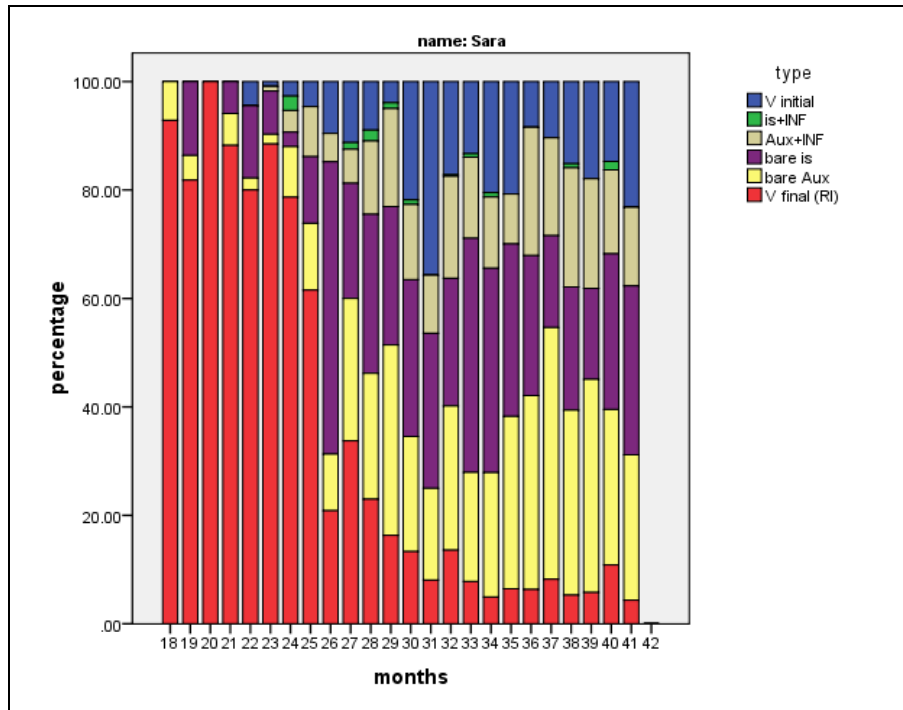


Figure 3. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Sarah's speech over 22 months (18–41), with specification for *is*+INF and bare *is*.

Figure 3 shows that, when she is 18 months old, Sarah uses almost exclusively RIs (90%), which percentage decreases gradually to less than 10% at the age of 41 months. At 18 months of age a small percentage (less than 10%) of bare Aux is also used. In the next month bare *is* shows up in her speech. From that age onwards until the age of 27 months, with the exception of month 24, the percentage of bare *is* is higher than that of the other bare verbs. From then on the numbers of bare *is* and the sum of the other bare verbs are more or less equivalent. Sarah starts using the Aux+INF construction at the age of 23 months, and *is*+INF at 24 months (two occurrences). Both constructions continue to be used until the age of 40 months. The construction *is*+INF is used in smaller numbers, but is, nevertheless, present in Sarah's speech during a considerable period of time. The next time it is used is at the age of 27 months (once). Its use increases in the

following months (eight times at the age of 28 months, three times at the ages of 29 and 30 months) and decreases from then onwards (month 31 null occurrences, month 32 one, month 33 two and month 34 one). After that, *is*+INF is used once at the age of 38 months and twice at the age of 40 months.

Sarah already produces the first thematic finite verbs at the age of 22 months. However, this use of lexical verbs in initial position is not productive yet (it concerns only two occurrences); its productive use starts at the age of 27 months (9 utterances and 7 different verbs). From that age onwards, Sarah's production of finite lexical verbs increases and the percentages oscillate between 4% and 36%.

Iris

As can be seen in Figure 4, the analysis of Iris' language is based on data covering 13 months. In the first sample, at the age of 25 months, Iris produces only three utterances with a verbal element. From the age of 33 months on, all samples contain more than 50 utterances with a verb. The number of utterances with a verb ranges from 3 to 362 per sample. The data shows the same tendencies as that of the children presented before, but there are some peculiarities. At the age of 25 months Iris produces RIs and two bare auxiliaries, *is* and forms of *hebben*. The percentage of RIs is considerably lower (35%) than that produced by the other children at this age. However, at the age of 32 months she still produces 62% RIs. That is almost twice as much as what she produces at the age of 25 months and three times as much as Josse and Sarah produce at that age.

At the age of 29 months, the construction Aux+INF and thematic verbs in initial position are used alongside with the RIs and the bare auxiliaries acquired previously, bare *is* being by far the most frequently used bare verb. At the age of 34 months thematic verbs in initial position are used productively (9 utterances with 5 different finite verbs), reaching the percentage of 14%. It is also at this age that Iris uses the construction *is*+INF (twice) for the first time. In the next month the use of this construction triples, but it decreases afterwards: At the age of 36 months there are no occurrences, at the age of 37 months two, at the ages of 38 and 39 months one and in the last two recordings, at the ages of 41 and 42 months, she uses it twice and once respectively.

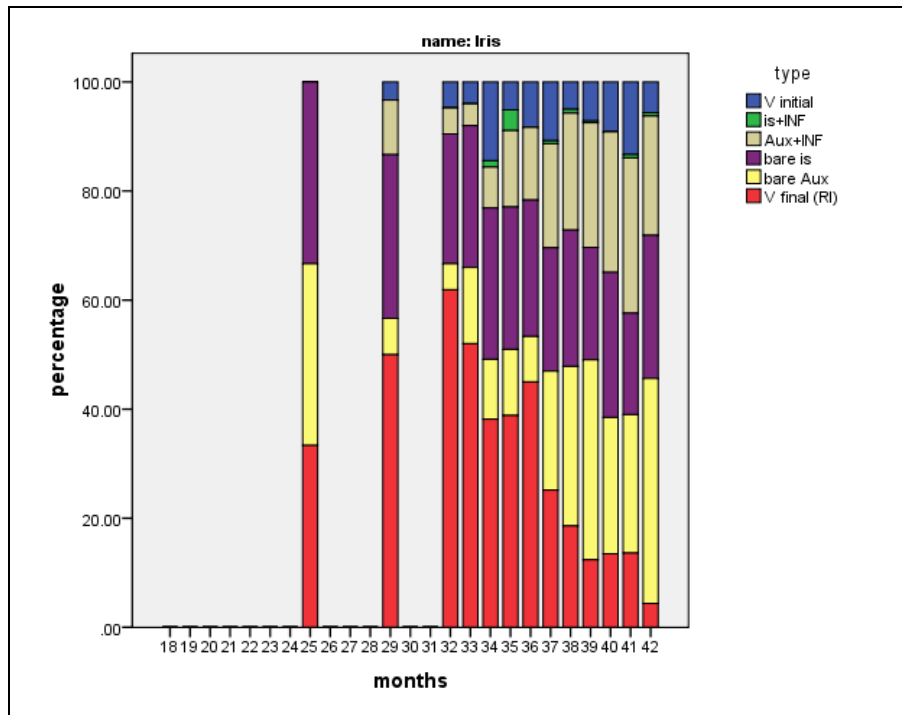


Figure 4. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Iris' speech over 17 months (25–42), with specification for *is*+INF and bare *is*.

The increase in the number of finite verbs around the age of 34 months occurs soon after placement of tympanic tubes in April 1993 (see endnote 4). However, in the next months the percentages of finite verbs decrease slightly. So, Iris seems to have caught up with the other children regarding the use of RIs (less than 10% at the age of 42 months), but she still produces fewer finite verbs than Abel, Josse and Sarah. At the age of 42 months initial thematic verbs only occur at a level of 6% in her speech.

These findings support the conclusion that Iris' communication skills '... appeared to have significantly improved. Nonetheless, her linguistic development appears to be somewhat retarded.' (see Germanic Corpora p.19 at <http://childes.psy.cmu.edu/manuals/>).

Laura

Laura's recordings start at the age of 21 months and continue uninterruptedly until 40 months of age. The analysis of her language is thus based on data collected during a total of 20 months. In the first three months Sarah produces fewer than 50 utterances with a verbal element per sample. From the age of 24 months on, all samples contain more than 50 utterances with a verbal element. The number of utterances with a verb ranges from 16 to 308 per sample.

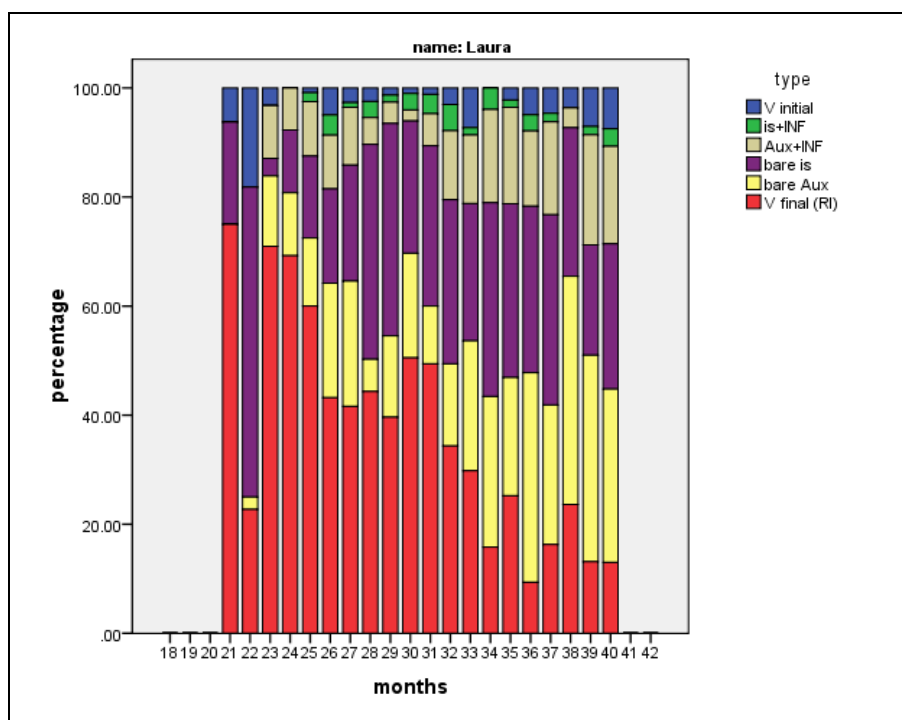


Figure 5. Distribution of RIs, bare Aux, Aux+INF constructions and thematic verbs in initial position in Laura's speech over 19 months (21 - 40), with specification for *is*+INF and bare *is*.

Figure 5 shows that Laura's use of RIs decreases but not as steeply as in the case of the children discussed previously. At the age of 21 months she produces about 75% of RIs and at the age of 40 months she still is producing more than 10% of RIs. Laura starts using the bare *is* at 21 months. At the

same age she starts producing finite thematic verbs in initial position. The other bare auxiliaries appear at the age of 22.

The construction Aux+INF starts being used by Laura at the age of 23 months, two months later than the first bare nonthematic verb, which was bare *is*. Of all five children Laura is the one who uses the combination *is*+INF most frequently. She starts using it twice at the 25th month of age and uses it consistently until the last sample analysed. At the age of 26 months she uses it three times and in the next month once. At 28 months of age its use increases, six times, but at the age of 29 months she uses it only twice. In the next two months she uses it three times per month. The use of *is*+INF increases to eight times in month 32, and decreases in the next three months to twice, three times and three times respectively. Its use increases again to six times in month 36. In the next month she produces it twice and in the month after there are no occurrences. When Laura is 39 months of age she produces this construction three times and in the next month ten times.

Interestingly, in the two months preceding the first use of the construction Aux+INF she already produces thematic verbs in initial position. However, in the months that follow the use of lexical verbs in initial position does not increase and it is only at the age of 35 months that they start being used productively. The fact that those finite verbs are not used productively, added to the fact that the use of finite forms drops in the next months, leads us to assume that these first occurrences are unanalysed insertions taken directly from the lexicon.

Laura's use of thematic verbs in initial position does not show the same increase observed in the development of Abel, Josse and Sarah. With the exception of the 22nd month, Laura's production of finite thematic verbs stays at percentages around 3%, rising to 7% in the last months of this analysis.

So, the overall picture from Figures 1 to 5 is that the use of RIs decreases as the children grow older from more than 75% between the ages of 18 and 22 months to approximately 10% around the age of 40 months. Iris and Laura show a less steep decrease of RIs than the other three children. While the numbers of RIs produced by the other three children at the age of 32 months have already dropped to percentages between 10% and 20%, Iris still produces 60% of RIs and Laura slightly less than 40%.

One other general conclusion from the figures above is that, with the exception of Josse, the use of nonthematic bare verbs (bare Aux), including

bare *is*, precedes the use of the periphrastic construction Aux+INF, and that both precede the productive use of thematic verbs in initial position. The copula *zijn*, which is produced almost exclusively in the third person singular form *is*, is used abundantly by all five children. It is the most frequently used verb form of all bare thematic and nonthematic verbs.

Figures 1 through 5 further show that in the case of three of the children (Sarah, Abel and Josse) the rise in the use of thematic verbs in initial position goes hand in hand with an increase in the use of the Aux+INF construction. After the age of 36 months these three children use a roughly equal number of thematic verbs in initial position and of the periphrastic construction Aux+INF. In the case of the other two children (Laura and Iris), the use of thematic verbs in initial position is also characterised by a gradual increase, but the Aux+INF construction is used more often than the finite thematic verbs. In the last samples analysed, both Iris and Laura still produce a large number of (dummy) auxiliaries and a few thematic verbs in initial position. Nevertheless, although the development of these two girls is slow, it follows the same pattern as that of the other three children.

The construction *is*+INF is used by all five children in small percentages, Laura being the one using it most frequently. All children, with the exception of Josse, who used several constructions simultaneously from the start, begin to use the *is*+INF construction after having started using bare Aux, bare *is* and Aux+INF. For two of the five children (Abel, Sarah) the productive use of thematic verbs in initial position started respectively two and three months after the first appearance of bare verbs and the Aux+INF construction: Sarah produces thematic verbs in initial position productively at age 2;03 and Abel at the age of 2;04. For the other three children the productive use of thematic verbs in initial position started later. Josse begins to use them at age 2;07, seven months after their first occurrence, Iris at the age of 2;10, and Laura at the age of 2;11, which is five and fifteen months respectively after the first use of thematic verbs in initial position.

4.2. Use of dummy auxiliaries

The preceding analysis gives us a window on the development of finite lexical verbs in relation to the RIs, the bare forms of nonthematic verbs and the periphrastic verbs in the five children investigated. It does not, however, address the research question whether the dummy auxiliary verbs *zijn*, *doen*, *gaan*, (and *hebben*) and the modal verbs occur in the same or in different

Table 4. Occurrence per child of bare nonthematic and light verbs, Aux+INF constructions and finite thematic verbs; prod.= productively used; mod = modal. Those months are presented that mark a change in using new forms.

Months	Bare nonthematic and light verbs	Aux+INF	Thematic V _{FIN}
Abel			
23	heb	-	-
24	heb, doe	mod+V	-
25	heb, doe, is	mod+V	V _{FIN}
27	heb, doe, is, ga, mod	mod+V, is+V, ga+V	V _{FIN}
28	heb, doe, is, ga, mod	mod+V, heb/ga/doe+V	V _{FIN} (prod.)
Josse			
24	heb, is	mod+V, is+V	V _{FIN}
25	heb, is, doe, ga	-	V _{FIN}
26	heb, is, doe, ga	ga+V, mod+V	V _{FIN}
28	heb, is, doe, ga, mod	mod+V, is / doe+V	V _{FIN}
31	heb, is, doe, ga, mod	ga+V, mod+V, is+V	V _{FIN} (prod.)
36	heb, is, doe, ga, mod	ga+V, mod+V, heb+V	V _{FIN} (prod.)
Sarah			
18	heb	-	-
19	is, mod	-	-
22	is, mod	-	V _{FIN}
23	is, doe	ga+V	V _{FIN}
24	heb, is, doe, ga, mod	ga+V, is+V	V _{FIN}
25	heb, is, ga, mod	ga+V, mod+V	V _{FIN}
27	heb, is, doe, ga, mod	ga+V, mod+V, is+V,	V _{FIN} (prod.)
28	heb, is, ga, mod	ga+V, mod+V, is / heb+V	V _{FIN} (prod.)
Iris			
25	heb, is,	-	-
29	heb, is, ga	ga+V, mod+V	V _{FIN}
34	heb, is, ga, doe	ga+V, mod+V, is+V	V _{FIN} (prod.)
37	heb, is, ga, doe, mod	ga+V, mod+V, is / heb+V	V _{FIN} (prod.)
Laura			
21	is	-	V _{FIN}
22	is, ga	-	V _{FIN}
23	heb, is, ga,	ga+V	V _{FIN}
24	heb, is, modal	ga+V, mod+V	-
25	is, doe, ga, mod	ga+V, mod+V, is+V	V _{FIN}
32	heb, is, doe, ga, mod	ga+V, mod+V, is+V, heb+V	V _{FIN}
35	heb, is, doe, ga, mod	ga+V, mod+V, is+V, doe+V	V _{FIN} (prod.)

developmental stages. Their simultaneous occurrence within the same developmental stage may support the idea that these auxiliaries play a similar role in the acquisition of finiteness, namely as predecessors of the finite lexical verb. Their successive occurrence would point to a differential role in the process of acquiring finiteness.

A closer look at the auxiliary system is given in Table 4 in which the categories of bare Aux and Aux+INF are specified for the five children in relation to the months in which they occur, including their first occurrence. The category of thematic V_{FIN} is added as well.

Table 4 leads to the observation that not modals, but the copulas *zijn* and *hebben* are the first bare forms.⁸ It should be noted that Abel and Josse use modals in the Aux+INF construction before using them in the bare form. Another observation is that all of these children overgeneralise the construction Aux+INF with the verb *is*, and this takes place before the productive use of finite verbs. Some children overgeneralize that construction also with the verbs *heb* and *doe* but this occurs later, in most cases when finite verbs are already used productively.

The modal auxiliaries and the dummy auxiliaries *zijn* and *gaan* are used in a consistent way by the five children. The frequency of the dummy auxiliaries *zijn* and *gaan* gradually diminishes but they do not disappear. One might have expected that dummy auxiliaries cease to be used, once children have discovered that finite sentences can be produced by placing thematic verbs in initial position. In order to explore why that does not happen, the use of (dummy) auxiliaries is investigated in the next subsection in relation to the thematic verbs that appear in initial position.

4.3. Which types of thematic verbs occur with (dummy) auxiliaries?

Not all types of verbs occur equally often with dummy auxiliaries. Although it has been reported (Blom 2003; De Haan 1987) that children tend to use different types of verbs in RIs, periphrastic constructions and finite sentences, to our knowledge no study has investigated which types of verbs occur with dummy auxiliaries.

In Table 5 an overview is given of the occurrence of the dummy auxiliaries *zijn* and *gaan* – first emergence, frequency and duration – with different verb types. The moment of first emergence and the frequency of finite lexical verbs in initial position are also presented in the table. One subtype of stative verbs, those indicating internal states – perception and

cognition verbs – seldom occur with dummy auxiliaries. These are verbs like *believe*, *know*, *like*, *see* and *hear*, which refer to states of cognition (thinking, knowing, perception) about the surrounding world. Only the verb *zien* ('see') occurs occasionally with dummy auxiliaries. Other stative verbs expressing internal state such as *voelen* ('feel') or *houden van* ('like') are used as finite verbs in initial position by these children as early as 2;03 years of age. These verbs, like the modals and the copula *zijn*, do not occur as RIs. One other subtype of stative verbs, those which express an external state, such as the verbs *zitten* ('sit'), *staan* ('stand'), *liggen* ('lie') do occur with dummy auxiliaries. The verbs that occur most frequently with dummy auxiliaries are action verbs. Resultatives occur infrequently with the dummy auxiliary.

In Table 5 both the finite verb and the stem are considered targetlike when produced in V1/V2 position and when a subject is present. Since stems appear around the same time as the finite forms, it might be that they are actually finite verbs which are incorrectly conjugated due to the immature language system of the children. This coincides with De Haan et al.'s (1995) classification, in which monosyllabic verb forms (stems and finite forms) appear in front and disyllabic verb forms (infinitives) in final position.

Thus, Table 5 shows that the finite verbs that are used most often by these five children are internal state verbs. This is exactly the opposite from what is observed with dummy auxiliaries. Internal state verbs are the verbs that are used least often with those auxiliaries.

Table 5. Overview of the first emergence and duration of the verb (sub)types

	State		Action		Change	
	External	Internal	(+) object	(-) object	+ endpoint	
ABEL	<i>Dummy use:</i> Zijn (is)+INF	(from-till) 2;11 (N=1)	(from-till) - -	(from-till) 2;10-3;00 (N=3)	(from-till) 2;03-3;04 (N=7)	(from-till) - -
	Gaan+INF	3;00-3;04 (N=4)	3;01 (N=2)	2;03-3;04 (N=26)	2;04-3;03 (N=22)	2;07-3;04 (N=10)
	<i>Target use:</i> Finite	(from) >2;03 (N=114)	>2;03 (N=233)	>2;02 (N=37)	>2;01 (N=42)	>2;03 (N=119)
JOSSE	<i>Dummy use:</i> Zijn (is)+INF	2;06-3;04 (N=4)	-	2;07-3;01 (N=8)	2;06-3;04 (N=7)	2;00-2;11 (N=2)
	Gaan+INF	2;07-3;01 (N=2)	3;02 (N=1)	2;03-3;02 (N=11)	2;02-3;04 (N=20)	2;07-3;03 (N=5)
	<i>Target use:</i> Finite	>2;04 (N=59)	>2;07 (N=194)	>2;08 (N=50)	>2;01 (N=44)	>2;02 (N=133)
SARAH	<i>Dummy use:</i> Zijn (is)+INF	2;04-2;09 (N=4)	-	2;00-2;09 (N=3)	2;00-3;04 (N=16)	2;10 (N=1)
	Gaan+INF	2;04-2;08 (N=10)	-	2;04-3;05 (N=54)	2;04-3;05 (N=36)	2;04-3;04 (N=10)
	<i>Target use:</i> Finite	>2;01 (N=90)	>2;00 (N=166)	>2;01 (N=47)	>2;02 (N=30)	>2;03 (N=37)
IRIS	<i>Dummy use:</i> Zijn (is)+INF	-	-	2;10-3;06 (N=4)	2;10-3;05 (N=11)	-
	Gaan+INF	-	-	2;11-3;06 (N=7)	2;05-3;06 (N=28)	3;03 (N=2)
	<i>Target use:</i> Finite	>2;08 (N=65)	>2;10 (N=61)	>2;10 (N=21)	>2;10 (N=31)	3;04 (N=22)
LAURA	<i>Dummy use:</i> Zijn (is)+INF	2;01 (N=3)	2;10 (N=1)	2;02-3;00 (N=26)	2;04-2;11 (N=26)	2;11 (N=3)
	Gaan+INF	2;11-3;02 (N=2)	-	1;11-3;04 (N=24)	1;11-3;03 (N=17)	3;00 (N=1)
	<i>Target use:</i> Finite	>1;10 (N=20)	>1;10 (N=61)	>2;04 (N=5)	>1;10 (N=8)	1;09 (N=20)

- = no occurrence; N = number of occurrences

5. Discussion and conclusion

The main purpose of this study was to find out whether *is*, as dummy auxiliary, possibly plays a role in the acquisition of finiteness and which role that is. Another aim of this study was to establish which dummy auxiliaries are used by Dutch monolingual children. As the auxiliary verb *zijn* is claimed to play a role in Dutch L2 acquisition (Van de Craats 2009; Verhagen this volume), we wanted to investigate whether this auxiliary has a similar role in the L1 acquisition of Dutch as other dummy auxiliaries, i.e., that of providing an intermediate step between the use of RIs and the use of finite verbs in V2 position.

The results show that the language development of the five children investigated is to a large extent in agreement with what is reported in earlier studies. What the present study adds is that there is a dummy *is* in L1 acquisition and that the stage of development within which the construction Aux+INF is used is not a relatively short, temporary one leading to a final stage in which finite verbs in initial position are predominantly used. What seems to happen is that both constructions (Aux+INF and V_{FIN}) are used alongside each other until age 3;6, and that the type of verb (co)determines which verbs are used in V2 position, and which ones remain in sentence-final position.

Table 6 gives the three developmental stages which were evident in our results. We base these stages on three distinct verb forms: RIs, bare verbs in initial position, and Aux+INF.

Stage 1: RIs

The five children investigated in this study started out by using RIs. First as a one-word utterance, and followed by longer utterances in which the verb appeared in the infinitive in sentence-final position, as exemplified in Table 6.

Stage 2: Bare (nonthematic) verbs and bare modals

Stage 1 is followed by a stage in which modals, the nonthematic bare verbs *zijn* and *hebben*, and some thematic (light) verbs like *gaan*, *doen*, start appearing at the beginning of the utterance. Most of these verbs, particularly the modals, and the verbs *zijn* and *gaan*, which have little meaning of their own, behave differently from the thematic verbs. They do not appear as RIs. Children use them from the beginning in their finite form and in the right place in the sentence. So, knowledge that the finite verb must be placed in left-peripheral position (V1 of V2) is acquired very early. From the mo-

ment they start using finite verb forms, all children consistently use them in initial position. At this stage, other types of thematic verbs are seldom used in sentence initial position.

Stage 3: The construction Aux+INF plus thematic verbs in initial position

In this stage some other thematic verbs, mainly statives and resultatives start occupying the same initial position as the bare nonthematic verbs. At the same time, children start using the periphrastic construction Aux+INF. Aux is filled in with modals, the copula *zijn*, the auxiliary verb *gaan*, and, sporadically and much later, with the verbs *doen* and *hebben*. When Aux is filled in with modals or the auxiliary *gaan*, this generally results in a grammatically correct utterance, whereas in other cases, when the Aux is filled in with the auxiliaries *zijn*, *hebben* or *doen*, the produced utterance is grammatically incorrect.

Table 6. Stages in the acquisition of finite thematic verbs in initial position

Stage	Child + age	Example
Stage 1: RIs	Sarah 1;06	<i>Ik sitte</i> (I sit.INF)
	Abel 2;01	<i>Ik ook een kleurboek kopen.</i> (I too a colourbook buy.INF)
Stage 2: Bare nonthematic and sporadically themat- ic verbs in initial position	Sarah 1;07	<i>Dese is ə op</i> (this is.FIN ə up; 'This is finished/ready')
	Josse 2;01	<i>Koekje moet daar.</i> (‘cookie must.FIN over there.’)
	Laura 1;09	<i>Valt daa(r).</i> (falls.FIN there)
Stage 3: Aux+INF (action verbs) and productive finite thematic verbs (sta- tive and resultative) in initial position	Abel 2;03	<i>Kan niet zoeken.</i> (can not search.INF)
	Abel 2;03	<i>Ze passen niet.</i> (they fit.FIN not; ‘they do not fit’)
	Iris 3;06	<i>Daar staat nog een stoeltje.</i> (there stands.FIN another little chair)
	Iris 2;08	<i>Hier zit ie in vliegtuig.</i> (here sits.FIN he in the airplane)

It is important to notice that both constructions become productive, that is they start both to be used five or more times in the same sample, around the same time. A detailed look at the several Aux+INF constructions can shed light on the actual role of the different (dummy) auxiliaries.

Table 4 makes it clear that although all dummy auxiliaries appear in the same stage, they do not appear simultaneously and are not used to the same extent, suggesting that they may play different roles in the acquisition of finiteness. The (dummy) auxiliaries *is*, *gaat* and the modals are pioneers in this phase and are the auxiliaries that are most frequently used by all five children. The auxiliary *gaan* and the modals seem to be bootstrapped by language input, since all of them are permitted and used abundantly in adult standard Dutch. The dummy auxiliary *gaan* –the most frequently used dummy– is, in addition, stimulated by child-directed speech. Klein (1974) reported that Dutch mothers often use the Aux+INF construction, including this (dummy) verb when talking to children.

The dummy auxiliary *is* appears for most children approximately one or two months later than the modal+INF and *gaan*+INF, and could be an overgeneralization of those two constructions. It can be hypothesised that the copula *is*, being so prominent in the Dutch language, and – as shown in the results of the present study – also in the language of young children, triggers the use of the dummy *is*.

The dummy auxiliary *doen* appears slightly later. Taking into consideration that four of the five children use the dummy *doen* considerably less often than the dummies *is* and *gaan*, it can be assumed that its role is less significant in the acquisition of finiteness. The fact that only one of the children (Abel) uses this dummy often (eleven times) while the other four children barely use it (Josse and Sarah use it three times, Laura twice and Iris only once) suggests that environmental factors, such as dialectal differences (see also Zuckerman, this volume), rather than child attempts to cope with the language system being learned, play a role in the use of this auxiliary as dummy. This is a less plausible explanation in the case of Abel, since he grew up in Amsterdam, where dummy *doe* is not used. Though, this dummy is used south east of Amsterdam (see Barbiers this volume: Map 1). Another explanation for the use of the dummy *doen* is that it is sometimes triggered by a question from the speech partner as the following example of Abel at 3;00 years of age illustrates.

- (7) Abel's speech partner: *Wat deed je nou?*
 what do.PAST you now?
 'What did you do?'
- Abel: *Ik doe vallen.*
 I do.1SG/STEM fall.INF

The dummy auxiliary *hebben* is used later than the other dummy auxiliaries. Abel and Sarah however, produced this construction fairly early. At the age of 2;4 utterances like those in (8) were attested.

- (8) a. *Ik heb niet zoeken.* (Abel 2;4)
 I have not search.INF
 'I do not search./I am not searching.'
- b. *(Ik heb sien uile(n) op? dak.* (Sarah 2;4)
 I have see.INF owls on the roof
 'I have seen owls on the roof.'
- c. *Die hebben we bouwde.* (Abel 2;4)
 those have we built.FIN
 'We have built those.'

Example (8a) seems to be a real dummy, since Abel is expressing an action in the present. Example (8b) is perhaps an attempt at producing the participle *gezien* ('seen'). The difficulty in producing the correct form could be due to morphological and phonological immaturity (sound or syllable deletion) inherent to the child's phonological stage of development. So, instead of producing the full construction Aux+Participle as in *Ik heb gezien* ('I have seen'), Sarah produces the more simple but ungrammatical construction Aux+INF as in *Ik heb zien* (I have see.INF; 'I have seen'). Recall that the constructions that fall under category Aux+NONF of the coding system used in this analysis (see Table 3) are not only the construction *hebben*+INF but also *hebben*+FIN.SG and *hebben*+stem. Many of the utterances produced by these children are of the last two types. Example (8c) illustrates the combination *hebben*+FIN.SG. In both examples (8b) and (8c) Sarah and Abel are expressing events and actions which have been completed. A closer look at the use of the 'dummy' *hebben* by all five children led us to the conclusion that what seemed to be finite and infinitival forms are actually attempts to produce a participle, in which case the verb *hebben* should not be categorised as a dummy auxiliary, but as an auxiliary expressing tense/aspect.

We can now give two affirmative answers to the first two research questions. The first one was whether auxiliaries in general show up before lexical finite forms are used productively. They do, and this leads us to the assumption that they have a pivotal function in the acquisition of finiteness. The second question was whether the dummy auxiliary verbs *zijn*, *doen*,

and *gaan*, and the modal verbs emerge simultaneously, in such a way that they are clearly part of the same developmental stage. The answer is affirmative: They seem to be part of the same stage. The use of the dummy *doen* seems to depend on the context of interaction or on regional differences. The dummy *gaan* occurs most probably due to children's inability to understand its inchoative meaning. The verb *zijn* — similarly to the modals and in contrast to the verbs *doen* and *gaan* — does not appear as RI. It starts to emerge as bare verb in sentence-initial slots and is the most frequently used bare verb. This high frequency of use, probably in combination with the fact that children hear this verb in the construction 'zijn+aan het + INF', seems to give rise to the dummy auxiliary *is*. In the light of these findings we are inclined to think that this auxiliary has a unique role in the acquisition of finiteness. The auxiliary *hebben* was included in our data analysis and it turned out to have another role, that of an auxiliary expressing tense/aspect.

The third research question was about the role of particular types of lexical verbs. Is there a substantial difference in the frequency with which particular types of lexical verbs occur in combination with dummy auxiliaries? The data shows that in four of our five children (Abel, Josse, Sarah and Iris) a sudden proliferation of finite verbs in initial position takes place between 2;3 and 2;10 years of age. A close analysis of the data makes it clear that the finite verbs in V1/V2 are not of the same type as those in final position. We observed mainly stative verbs in initial position and action and change verbs in final position. Of those stative verbs, the majority were internal state verbs, i.e. cognition verbs like *horen* ('hear'), *zien* ('see') and *weten* ('know'). These verbs, with a few exceptions, do not occur in the infinitival form nor do they occur in complex predicates of the type Aux+INF. The other group of stative verbs used by these children in the period covered by the analysis were those expressing external states (posture verbs such as *zitten* ('sit'), *staan* ('stand'), and *liggen* ('lie')). They were produced in smaller numbers (and used with dummy auxiliaries) than the internal state verbs. One other observation is that the increase of finite verbs in initial position goes hand in hand with an increase of the Aux+INF construction. Two things seem to be happening simultaneously: Increasingly more finite stative verbs occupy the V1/V2 position, and the RIs used in final position remain in that position and are combined with an auxiliary verb producing complex predicates of the type Aux+INF. That means that the increase of the V2 pattern does not reflect verb fronting. The data reveals that the majority of the verbs (RIs) used in the initial stage in final

position remain in final position, at least until age 3;6. The auxiliary system allows this to happen. The verbs in initial position are, most likely, directly retrieved from the lexicon and inserted in the V1/V2 slot. Thus, movement of the thematic verb in sentence-final position to initial position is limited in this stage, if not excluded at all. The above seems to provide evidence that verb movement is a difficult operation, and that it continues to be difficult even after children have acquired V2 for nonthematic verbs and for a specific type of thematic verbs, the internal state verbs.

In the light of these findings, we believe, in accordance with other researchers such as Van Kampen (1997) and Zuckerman (2001), that children use the Aux+INF construction as a mechanism to avoid movement. Both the economy principle (the possibility of minimizing movement operations) and the language input (auxiliary system) allow lexical verbs to remain in final position. The results of the present analysis indicate, however, that this strategy is not as temporary as Van Kampen (1997) suggested. It is important to investigate in more detail why certain types of verbs are difficult to move and what contributes to the eventual movement of those verbs to V2.

What does a child need to know to be able to move lexical verbs, especially action and resultative verbs, to V2? The child has to (1) learn that the finite marking falls on the leftmost verbal item, (2) realize that this verbal item carries both temporal/aspectual and person/number agreement information and (3) realize that lexical verbs can be moved from sentence-final to the second position in the sentence. The five children studied seemed to have learned (1) and (2) very early. This finding corroborates findings by other researchers (Blom 2003; Zuckerman 2001). What remains to be learned is (3) the movement of the lexical verb to V2. The third research question evidently receives an affirmative answer, but this has as a consequence that we have to find an explanation for the varying degrees of difficulty of acquiring finiteness in relation to the different types of lexical verbs.

It is plausible that semantic as well as morphological and syntactic factors play a role in determining the ease with which verbs move to V2. Analyses of adult and child language show that finiteness in both children and (native) adults varies per verb category. Children's use of finite and nonfinite forms correlates highly and significantly with that of (native) adults (Schlichting 1996). One of the determinants in using the finite form or nonfinite form of a verb mentioned by Schlichting is the semantic transitivity of a verb. According to Schlichting and Wijnands (1992), prototypi-

cal transitive verbs whose object registers a change caused by the action of the verb, like *bouwen* ('build') are mainly nonfinite; cognition verbs, which have no real direct object in the sense that they do not register such a change, e.g. *zeggen* ('say'), are mainly finite. In these cognition verbs it is rather the subject that experiences a change (Givón 1984: 100).

Our findings indicate that moving transitive activity verbs, whose object registers a change caused by the action of the verb, such as *bouwen* ('build'), do not easily move because the presence of the object causes an extra complexity – the verb has to move 'over' the object, as it were, in order to reach V2. As a consequence of this operation the linearity changes: OV changes into VO. This movement operation probably requires more working memory than when no interfering element is around. We therefore predict that transitive activity verbs will be the last to be fronted. 'Weaker' or slower learners, e.g., because of ear infections and accompanying reduced hearing, will use them with (dummy) auxiliaries during longer periods than typically developing children. We found such an effect for Laura and Iris. Recall that these are the two children who had middle ear problems. At the ages covered by this analysis these two children, just as the other three children, had already started using some verbs in initial position. However, Laura and Iris used finite action verbs with an object considerably less often than the other types of verbs. Laura used only two finite action verbs with an object, as opposed to 42 action verbs with an object in the construction Aux+INF (the construction modal+INF is excluded from the counts). She used 21 action verbs without an object and six resultative verbs with the construction Aux+INF. Iris also used very few finite action verbs with an object; only six as opposed to 25 of that type of verbs in the construction Aux+INF. That is considerably more than the other types of verbs used in the construction Aux+INF. Iris used only three external and two internal state verbs, 17 action verbs without an object and eight resultative verbs.

The proportion of action verbs with an object in both constructions for the other three children is as follows: Sarah used 45 of this type of verbs in the Aux+INF construction and 22 in the finite form; Abel used 38 of them in the Aux+INF construction and 14 in the finite form. Josse used 40 of this type of verbs in the Aux+INF construction and 15 in the finite form. The conclusion is that Laura and Iris, indeed, used finite action verbs with an object less often than the other three children, which supports our hypotheses that action verbs with an object may be more difficult to move than other types of verbs and that children whose development is delayed may

take longer to move them to the V2 position. They, therefore, use dummy auxiliaries during a longer period of time than children with typical language development (see De Jong et al. this volume). Further study is needed to test this hypothesis.

Some researchers offer a purely semantic explanation of the prolonged use of the Aux+INF construction. Jordens (1990) and Zuckerman (2001) proposed that the use of the periphrastic construction Aux+INF decreases in favour of systematic verb fronting as soon as the child acquires the semantic difference between particular Aux+INF patterns and their corresponding verb finite alternatives. The data from these five children presents a counterargument to this proposal. This data shows that even after they have started using some thematic verbs in initial position, children still have not grasped the semantic difference between this use and the use of the same verbs in the construction Aux+INF. That is, these children do not seem to understand the difference between for instance, *Hij gaat zien* ('He is going to see') en *Hij ziet* ('He sees/is seeing'). Zuckerman's study (2001; see also this volume) with Dutch speaking children ages 2;9 - 8;3 reveals that monolingual Dutch speaking children aged 3 to 4 optionally interpret the *gaan*+INF construction as indicating an ongoing event instead of indicating future or inchoativity as in Dutch standard grammar. Zuckerman's research further shows that, although older monolingual five to eight year olds perform better than younger children, they still have problems with the interpretation of the auxiliary *gaan*. We claim that this long lasting optional use of the construction *gaan*+INF is an indication that children continue to use this construction because they perceive it as equivalent in meaning to the construction with the finite verb in V2 position and, therefore, choose the one that is structurally easier and does not require fronting of the lexical verb. The (dummy) auxiliary seems to be used to mark a syntactic position and seems to have no meaning in the early acquisition of Dutch language by monolingual children.

Several clear conclusions can be drawn from the data above. The analysis showed that all five children not only used the dummy auxiliaries that are the most emphasized in the literature – *gaan* and *doen* – but also the dummy auxiliary *zijn*. The construction *zijn*+INF is used by all five children during a period ranging from nine to 17 months, and far more frequently than the often mentioned auxiliary construction *doen*+INF, which only appears sporadically. Just like adult L2 learners of Dutch, monolingual Dutch speaking children use free morphology to mark a syntactic relationship, and to realize person and number features separately from the themat-

ic verb. The dummy auxiliaries *zijn* and *gaan* and the modals play a significant role in that process. We want to go one step further and suggest that it is the copula *zijn* that sets off the process of acquisition of finiteness. Due to its frequency in the environmental input and its early sentence-initial appearance as a connecting element between subject and predicate, *zijn* plays a paramount role in raising the child's awareness of a sentence-initial verbal slot. The *zijn*+INF construction is brought about by this intensive use of the bare *is*. *Zijn*+INF, being the only auxiliary verb construction absent from the input, provides direct evidence that the periphrastic Aux+INF construction is an unconscious strategy to avoid verb movement and not an imitation of a pattern existing in the environmental input. The fact that other candidates for dummy use, such as the verbs *doen* and *hebben*, are seldom used by these children as dummy auxiliaries, can be seen as evidence supporting this claim.

Notes

- ¹ The examples are taken from the CHILDES databank: <http://childes.psy.cmu.edu/dat/Germanic/>
- ² We add the Dutch target form when the adult target form is different from the observed child form.
- ³ Blom (2003) suggests that the *is*+INF construction is a precursor of the prepositional infinitival construction: *is+aan het*+verb complement, and that Dutch children do not seem to make a distinction between those two constructions (cf. (5b) and (5c)).
- ⁴ Retrieved from CHILDES manual on of Germanic corpora, p.19: <http://childes.psy.cmu.edu/manuals/> in January 2012.
- ⁵ We considered a construction productive when it is used more than five times, with different verbs, within the same language sample.
- ⁶ It is a property of nonthematic verbs – not having a thematic structure of their own – to take over the thematic structure of the lexical verb in their complement. This is also the case with the light verbs *doen* en *gaan*. *Hij doet de auto repareren* (he does the car repair; 'He is repairing the car') or *Hij gaat de auto repareren* (he goes the car repair; 'He is going to repair the car'). Here *doet* and *gaat* have lost their original lexical meaning and thematic structure. See also Van de Craats & Van Hout (2010: 476–479).
- ⁷ We choose to mention only the form *is*, the third person singular of the verb *zijn*, because this is the conjugation used most often by these children.
- ⁸ When *hebben* occurs as a bare verb expressing possession it has the properties of a copula in a locative sentence (this goes back to Benveniste 1966), in which

the possessed element is at the possessor. One of the consequences is that *hebben* is a nonthematic verb that cannot be passivized.

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