

# The use of dummy verbs in children with Specific Language Impairment

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BA-Thesis

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This thesis gives an overview of the use of dummy verbs in the narratives of children with Specific Language Impairment. By looking at the verb phrases ten children with SLI in the age range of 6 to 8 years produced in a story-tell-task, an overview is given of the found characteristics. It was hypothesised that children with SLI, similar to TD children, would show a pattern of acquisition in which dummy use precedes the use of conjugation, but that the dummy phase that is extended in the SLI group. The age at which these children start to use dummies is also hypothesised to be higher. The results show that a pattern can be found in which these children indeed use dummies as a preliminary stage to conjugation. The use of dummies, especially in the present tense, decreased where the use of conjugation increased. Further research with more children should be done to confirm that the use of dummies is indeed a preliminary stage to conjugation as found in normal developing children.

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# 1. Introduction

Language is a skill that is seen as something everybody acquires without problems. Children learn how to produce and comprehend language seemingly without any difficulties. What most people do not know, is that quite a large group of children does not acquire language that easily. One of the most well-known affections that most people have heard about, is dyslexia, a (developmental) disorder of reading and writing skills. A much less well-known disorder is one that causes disruption to the development of verbal production and comprehension. Specific Language Impairment (SLI) is an example of an impairment where children have problems acquiring language from a very young age on. Although not many people have heard about SLI, approximately seven per cent of all five-year-olds suffer from this disorder (Leonard, 2000).

This thesis focuses on children with SLI. Children suffering from this disorder have several linguistic problems, which can often not be explained by a clear underlying aetiology. Research is done at the moment to determine what the exact phenomenon and problems of the children are. The research discussed in this thesis, is performed using data collected by Rob Zwitserlood MA of the University of Utrecht. He currently works as a PhD student on SLI. He collected data from sixty children with SLI and a hundred normal developing children. In this thesis a part of these data was used.

First of all this thesis will provide an overview of what SLI actually entails and which (linguistic) phenomena occur, with an emphasis on the use of verbs. After that several theories on SLI will be discussed. Section 2 will provide a closer look on how verb use develops in typically developing (TD) Dutch children and what is known about this development in children with SLI will be provided. In this part there will be an emphasis on dummy use and conjugation, a feature not yet fully explored in children with SLI.

After this literature discussion the research questions of this thesis will be stated with the accompanying hypotheses. The method will be discussed after that, as well as a description of the

materials, method and participants. After that the results will be given, followed by the discussion and conclusion.

### *1.1 Specific Language Impairment*

Children with Specific Language Impairment (SLI) show difficulties with language development without accompanying problems. These children show no abnormalities in for instance their hearing and intelligence. Why their language is impaired is therefore not clear. Children with SLI do not learn language as effortless and fast as TD children. Some of the children also fail to reach the same language level as other people when they reach adulthood. For these individuals, a plateau is reached before some language aspects are mastered (Leonard, 2000).

For the diagnosis of SLI, there are no specific inclusion criteria available. This fact makes it difficult to diagnose Specific Language Impairment. Instead of specific criteria, a diagnosis of SLI is based on exclusion. As mentioned before, children with SLI do not show typical problems that lead to language impairment, such as neurological dysfunction or hearing impairment. To be diagnosed therefore, these problems have to be excluded. A specific list of the excluding criteria can be found in table 1. According to these criteria, children with SLI do not suffer from hearing or neurological problems; have normal oral and physical functioning and a normal IQ. Their problems seem to be with language only. Although there are criteria for SLI, the language profiles of children with this diagnosis vary considerably. There is no one prototypical example of SLI, their difficulties lie in different aspects of language and in comprehension or production or both.

| <b>Factor</b>                           | <b>Criterion</b>   |
|---|--|
| <b>Language ability</b>                 | Language test scores of -1.25 standard deviations or lower; at risk for social devalue                         |
| <b>Nonverbal IQ</b>                     | Performance IQ of 85 or higher   |
| <b>Hearing</b>                          | Pass screening at conventional levels  |
| <b>Otitis media with effusion</b>       | No recent episodes   |
| <b>Neurological dysfunction</b>         | No evidence of seizure disorders, cerebral palsy, brain lesions; not under medications for control of seizures |
| <b>Oral structure</b>                   | No structural anomalies  |
| <b>Oral motor function</b>              | Pass screening using developmentally appropriate items   |
| <b>Physical and social interactions</b> | No symptoms of impaired reciprocal social interaction or restriction of activities                             |

Table 1 – Criteria for SLI (acquired from Leonard, 2000)

SLI has been researched since the early 1900s. Over the years the name and criteria for SLI have changed a lot. Even now, SLI is sometimes referred to as ‘developmental aphasia’, ‘word deafness’ and ‘developmental language disorder’ (Leonard, 2000). There have also been attempts to create subcategories with SLI, as the group is very heterogeneous. Wolfus, Moscovitch and Kinsbourne (1980) for example focussed on comprehension and formulation and found one group that had problems within production and one group that had problems with both production and comprehension. Other researchers however focussed on different fields and subcategories. All of them found several subgroups, but they never found the same sorts of groups. The children differ too much from each other to split them up in specific groups.

SLI seems to be a hereditary impairment. Often several individuals within one family are diagnosed with SLI. According to Tallal et al. (2001) there is a significantly higher rate of language

impairment within the families of SLI subjects than in the families of control subjects: 31 versus 7,1 per cent. However, specific numbers and percentages differ in different studies and handbooks. As for the range of children with SLI in society, the inheritance rate is also dependent on the diagnostic criteria. The definition of SLI in the research is often accountable for the great differences found in percentages.

## *1.2 SLI theories*

Several theories about the cause of SLI have been put forward. They try to explain SLI from different perspectives such as the linguistic knowledge, the information processing capacity and within specific mechanisms found in the brain. Explanations are sought in the linguistic knowledge for the known problems children with SLI have with the construction and rules of language. The problems of these children are caused by an incomplete knowledge of the rules and parameters of the language (Leonard, 2000). Within this general theory, several sub-theories are stated. Some researchers state that the problem lies with a problem in acquisition of functional categories (Eyer & Leonard, 1995). Gopnik (1990) states that the problems are caused by an inability to acquire implicit rules needed to use for example tense.

Another group of theories focusses on a possible limitation in information-processing capacity. It could be the case that children with SLI have a limited working memory capacity, in other words they do not have enough space for the processing of language. It is also possible that the children do not have enough mental energy to complete a specific element, or that the rate at which the language information is processed is too slow (Leonard, 2000). Other research focussed on parts of this hypothesis, where specific parts of the information-processing are pointed out as the bottleneck. One explanation is that children with SLI have problems with phonological memory (Gathercole and Baddeley, 1990). This phonological memory is a separate part in the working memory; they proposed that the children had trouble storing and retrieving information here. Locke (1992) hypothesized that the problems found within SLI can be accounted by a delay in learning. When language features are not acquired within a critical period, an eventual acquisition will be

executed by other brain structures that are not sufficient. These brain structures are located on the right hemisphere and are not optimally suited for language processing.

### ***1.3 SLI symptoms***

Because of the diversity that is found within SLI, substantial research has been done on specific phenomena that occur in the language of SLI children. It is thought that there are underlying similarities that appear with all the SLI cases, so called clinical markers. Because language use in children with SLI in general is a rather broad research field, most researchers have focussed on parts of language, such as production or comprehension, or more specifically on certain words or phrase types. In what follows, results on criteria and clinical markers of SLI will be discussed. The emphasis here will be on verb use, since the acquisition of verbs is especially troubling for SLI children.

#### **1.3.1 Overall view on symptoms of SLI**

Children with SLI have a delay in the acquisition of the first words, when compared to TD children. Trauner, Wulfeck, Tallal and Hesselink (1995) for example reported an average age of first word use at 23 months; a year later than the average of 11 months for TD children. There is however no qualitative differences between the *types* of words that children with SLI and younger TD children use (Leonard, 2000). When children with SLI reach the two-word stage, the developmental pattern does start to differ.

From two-word stage on, the children with SLI have a slower acquisition of language, and use immature language for a longer period of time than TD children (Leonard, 1998). Children with SLI tend to semantically misname pictures and objects on a higher rate than control groups and also produce more non-specific answers (Lahey and Edwards, 1999; Mc Gregor et al, 2002). Dysfluencies are also stated to be a part of SLI children's speech (Cummings, 2008). Furthermore children with SLI show severe difficulties with word learning (e.g. Gray, 2004) and tend to have most difficulties with words that indicate an action (Oetting et al, 1995). Actions are implied by verbs, and as can be seen in the next section verbs are often found to be a bottleneck for children with SLI.

### 1.3.2 Tense marking

Rice (2000) found that children with SLI have more difficulties with grammatical tense marking than TD children. The acquisition of –s third person singular present, -ed past, auxiliaries be and do is found to be more laborious. Children with SLI will produce sentences such as ‘dad sleep here’ for a longer period of time than TD children. When compared to children of the same age (age-matched), there is an enormous gap. Typically developing 5 year olds produce grammatical tense marking on a near adult level, where SLI children still have a lot of trouble producing these forms. Even when compared to younger children that have the same mean length of utterance (MLU) and are therefore at approximately the same language production level, SLI children lag behind. Grela and Leonard (2000) found that children with SLI omit auxiliary verbs more than their age-matched peers and language-matched children.

## 2. Dutch Tense System

### 2.1 Verb placement in Dutch

As this thesis will discuss verb use of Dutch children with SLI a brief description of verb placement in Dutch sentences will now be provided. In Dutch there are two possible positions for verbs in the sentence. First there is the base position in which the (finite) verb comes in a sentence-final position and the subject will be to the left of the verb, as shown in the embedded clause in example (a).

- (a) (ik denk) dat de jongen de hond aait  
(I think) that the boy the dog pets  
*(I think that the boy pets the dog)*

Second, in declarative matrix sentences the finite verb is typically situated on the left of the sentence, where it can only be preceded by one constituent, as shown in example (b).

- (b) de jongen aait<sub>i</sub> de hond *t<sub>i</sub>*  
the boy pets the dog

In these declarative sentences the finite verb is moved from its base position (t) to 'verb second' position. Verbs in verb second position *must* be inflected. To be able to use this 'Verb Second' position, a child therefore has to be able to move and inflect the verb (Wijnen, 1998).

If a lexical verb is used with a modal verb or auxiliary in the matrix clause, the main verb remains at the base position (as the infinitive) and the modal verb or auxiliary is inflected and moved to verb second, as shown in example (c).

(c) De jongen wil<sub>i</sub> de hond t<sub>i</sub> aaien.

The boy wants the dog to pet.

*The boy wants to pet the dog.*

A debate has been going on what exactly the basic position is in the Dutch language. On the one hand it is stated that Dutch is a SOV language, where the movement is rightward. On the other hand it is stated that Dutch is a SVO language and that the movement is actually leftward (Haegeman, 1994). The reason of the movement is also under debate, Wijnen and Verrips (1998) state that the movement is seen as a projection of a morpho-syntactic feature, like tense or agreement.

## 2.2 Tense acquisition in TD Dutch children

When TD children acquire Dutch, three stages can be distinguished. First, a root infinitive stage is found. In this stage children use verbs as a whole at the end of the sentence. No inflection is yet used until they are about 3,6 years old (Wijnen, 1998). An example of this stage is:

(d) poppehuis spelen (Jasmijn, around age 2)

doll house play

'(want to) play with the doll house' (taken from Wijnen, 1998)

After the root infinitive stage children will start acquiring inflection. The root infinitive is replaced for 'ga(at)' + infinitive or doe(t) + infinitive. They no longer use a single infinitive at the end of the sentence, but they use a dummy verb (*doen* or *gaan*) with an infinitive. This way the dummy verb is inflected, but no tense or additional meaning is complemented in the sentence. The children use of

these dummy verbs, instead of inflecting and moving of the lexical verbs. It is believed that the dummy auxiliaries are stored as whole units in the mental lexicon, this way the user can use an available dummy instead of an unavailable inflection (Blom and de Korte, 2011). An example of dummy use is as follows:

- (e) poesje gaat hier blijven staan (Jasmijn 2;6.1)  
kitty goes here remain stand  
'kitty is staying here' (taken from Wijnen, 1998)

After the stage of dummy + infinitive the children will learn to inflect the verbs. They will start to make sentences with simple present tense and perfect tense. The past tense is acquired after the present tense. Examples of inflections are as follows:

- (f) en ze draagt de planken (Anne, around age 4)  
'and she carries the planks'  
  
het mannetje koopte patat (Anne, around age 4)  
'the little man bought French fries'

After the stadium of inflection in simple present tense and perfect tense, the children will start using other conjugations of Dutch like the pluperfect and the imperfect.

### *2.3 Dummy use in typically developing children*

As described in 2.2, TD Dutch children go through a phase of using 'dummy' verbs in their language when learning to use tenses (Wijnen, 1998). These dummies are verbs that do not have any meaning, and can be used to carry tense without having to inflect the main verb. This way the child only has to know how to use the dummy and put the infinitive of the desired verb behind it. This dummy or place holder is a phenomenon that is a developmental stage in Dutch children's language (Wijnen and Verrips, 1998).

Research on dummy use has been done for typically developing L1 and L2 learners (Wijnen, 1998). This research suggests that the dummies are used as a specific stage in the child's

development. It is not yet clear if children use these dummies to avoid inflection of a verb because they find it difficult, or because they do not yet know how to use inflection. Wijnen (1998) states that the finite form is more difficult and therefore slower to access in the lexicon than the infinite form. Children would use dummies because they are more readily available. Furthermore, the use of dummies requires less effort, as this form does not demand movement, as suggested by Chomsky (1995). In other words, the children choose to use uninflected forms of verbs in the sentence-final position instead of making use of movement, which Chomsky called the 'merge over move' rule. Zuckerman (2001) proposed another possible explanation: children (incorrectly) assume that the use of dummies and the use of tense marking are semantically equivalent. It is only when they realise that dummy verbs cannot be used interchangeably with inflected lexical verbs, that they start using inflected verbs. The auxiliary 'gaan' for example has an aspect of future in the Dutch language. When the children acquire the actual meaning of this verb, they will be aware that they cannot use these verbs as they did before. Van de Craats (2010) furthermore hypothesised that dummy auxiliaries create the functional structure required for verb movement. The dummy use is therefore used as a practice structure when acquiring the V2 structure in Dutch.

Dummy use is not only found in L1 Dutch learners. L2 learners also tend to use dummies to avoid inflection, for inflection is not yet mastered (Van de Craats and van Hout, 2010). By using the dummy verbs, the language learner can proceed with unravelling the semantic system. However, when looking at another group that could possibly use dummies regularly, aphasic patients, dummy use does not occur in their language often. Zuckerman, Bastiaanse and Zonneveld (2001) looked at the dummy use of aphasic patients in embedded clauses and found minimal use of dummies in contrast to the control and SLI group.

#### *2.4 Dummy use in children with SLI*

Although there has been research on dummies in TD children, not much is known about the dummy use of children with SLI. In a study by de Jong (1999), the dummy use of 'gaan' in Dutch SLI children was investigated. De Jong looked at the past tense in SLI children, their age-matched peers and MLU-

matched children. He suggested that children with SLI tend to use 'gaan' often as a strategy of avoidance of inflection. He also investigated whether TD children do the same. The children were shown a video, after which they had to explain what had happened. The questions were stated in a way that the children would use the aimed tense. All the utterances were all examined.

The results were clear: 38% of utterances produced by the children with SLI were of the structure 'gaan' + infinitive. MLU matched children showed similar results; 33% of utterances were produced with 'gaan'. However, the age-matched children used significantly fewer 'gaan' sentences, only 21% of the cases. Rice et al (1995) found similar results; the SLI group in their research used non-finite forms of lexical verbs, when past tense was the target.

De Jong (1999) mentions that *gaan* is 'a willing (and perhaps early) 'tense carrier''. He also mentions that:

'There appears to be no reason to claim that the introduction of a pleonastic auxiliary is a device exclusive for SLI. As there were only two instances of an absent tense marker with *gaan* in an obligatory context in the SLI corpus, it can be hypothesised that *gaan* carries tense more consistently than the lexical verb does. The present data are not adequate for testing the hypothesis that marking of *gaan* precedes marking of lexical verbs. That would require longitudinal research' (p. 69)

With this he means that the use of dummies in children's language SLI could be a precursor of the use of the past tense. Children may not yet know how to use markings of lexical verbs and solve this by using dummies with infinitives.

Previous research on children with SLI shows that they have severe difficulties producing inflected verbs. The acquisition seems to involve the same stadia as TD children. However, recent research on Dutch children with SLI seems to suggest that the children with SLI go through a prolonged phase of using dummy auxiliaries, prior to acquiring tense marking skills. However, thus far this claim has not been investigated using longitudinal data.

### 3. Research questions

This thesis will explore children with SLI's use of dummy verbs in relation to tense marking. Although De Jong states that dummy use is not exclusive to SLI children, it appears that SLI children tend to linger in this stadium. Where TD children acquire the use of marking lexical verbs rather quickly, SLI children seem to have trouble attaining this stage. The overall use of dummies with children with SLI will be a subject of research here because this stadium in the development has not been looked into. With that, there will be a focus on the question if children use dummies as a precursor for lexical marking in children with SLI. With this question the view of De Jong that dummy use could be a preliminary stage will be tested.

The main question will therefore be:

- *Do Dutch children with SLI use dummy verbs in the same way as has been described in the literature for Dutch typically developing children?*

Within this main question there are two sub questions, investigating present and past tense. These sub questions are as follows:

- In what way does the present tense develop in Dutch children with SLI and what is the role of dummy verbs in this development?
- In what way does the past tense develop in Dutch children with SLI and what is the role of dummy verbs in this development?

#### 3.1 Hypotheses

Because not much research has been done on dummy use in children with SLI, the main question is rather broad. Based on the literature found on dummy use in typical L1 and L2 development and the literature on verb use in children with SLI a main hypothesis can be stated:

*Children with SLI will use dummies as a preliminary stadium to conjugation as found for typically developing children. A pattern similar to typical language development may be expected, where*

*children will first use infinitives, then dummies and after that conjugation. Because of the typical difficulties with verb use for this group of children, the dummy stage will be prolonged.*

For the two sub questions the following general hypothesis can be formed, which is applicable for both questions:

*The SLI children will first use the infinitive when using verbs. After that they will start to use dummy verbs as 'gaan' and 'ging' with an auxiliary. After that they will start with the conjunction of the verbs. Because children with SLI have known problems with verb use, the dummy stadium will probably take longer and overlap with the use of conjunction: the children will use dummy and conjunction interchangeably for a period of time before transferring to conjunction.*

With this similar hypothesis for both questions one difference can be found: the past tense is expected to be used at a later age than the present tense. The progress of both tenses will therefore be different; the present tense will be further developed than the past tense. These hypotheses are further sub dividable into separate topics, each applicable to a part of the dummy use.

### **3.1.1 Further predictions**

Mean length of utterance, or MLU, is the mean number of morphemes or words per utterance. In general it is stated that the higher MLU, the higher the language proficiency. The expectancy is therefore that a higher MLU will co-occur with higher use of conjunction. In other words, children with a high MLU will make less use of dummy verbs, because this is a preliminary stadium of conjunction. This development should be noticeable when all children are taken together: the MLU and conjunction will increase over age, while dummy use will decrease.

As mentioned before use of infinitives is the first stage in verb use. For TD children, this infinitive stage develops into the dummy stage. The hypothesis here therefore is, that children will use fewer to no infinitives when they acquire the use of dummies. When the stadium of conjugation is reached the infinitives will probably have decreased to a minimum.

The dummy use of children is suggested to be a way of evasion of conjugation. It is plausible that children will use fewer dummies when they use more lexical verbs. When they have acquired

conjugation there is no need to use the fixed forms anymore, so these will decrease in number with age.

## **4. Method**

In this research data were used from a longitudinal project on SLI by Rob Zwitterlood. First, the participants and the material will be discussed. After that the method will be split up in two parts. Part 1 will discuss the method and results of thirty children. Part 2 will discuss the method and results of a more detailed analysis of ten children.

### *4.1 Participants*

All participating children were six years old when the first data collection occurred. Within the next two data collections the children were all seven and eight years old respectively. None of the children had a hearing impairment or neurological conditions and all had been diagnosed with SLI.

Part 1: The group of thirty consisted of 7 girls and 23 boys.

Part 2: Of the group of ten, there were 4 girls and 6 boys.

### *4.2 Material*

Data were collected using a story telling task based on pictures, adopted from the Taaltoets Alle Kinderen, also known as TAK (Verhoeven & Vermeer, 2006). The collected data per child consist of two stories per age, using the TAK-taak. This task consists of two sets of 8 pictures, which together form a story. It is the child's task to tell this story. The stories were the same during all measurements. All stories were transcribed using Clan (MacWhinney, 2000). All pauses, stop and re-starts, repetitions and stutters were included in transcripts.

### *4.3 Analysis and discussion of thirty children*

Within the first part of the research, all utterances of the thirty children were specified per verb phrase. This was done for all three measurements (six, seven and eight years old) for every child. Within these verb phrases it was determined whether the verb phrase was an infinitive, a 'gaat'+ infinitive, a 'ging' + infinitive, a present tense or a past tense form. With these subgroups,

proportions were calculated in which the subgroups were divided by the total number of clauses with a verb. With all the results of the children of the six-year-old SLI group put together, no clear pattern was found. It was not the case that children used 'gaan' before the present tense and 'ging' before the past tense. Neither was found that the use of 'ging' and 'gaan' disappeared after a certain age (appendix 1). The results were too conflicting and general to give conclusive results that can be applicable on the hypotheses. It is therefore that further research was done, in which the groups of tenses were further divided, to see whether this would show different patterns in the language use of the children with SLI. Detailed results on the 30 children will therefore not be reported, but can be found in appendix 1.

#### *4.4 Detailed analysis of ten children*

In the second part of the research, a more in depth research was performed on a subgroup of ten of the thirty children with SLI. Verb phrases were categorised into more subgroups. The original groups, infinitive, 'gaat'+ infinitive, 'ging' + infinitive, the present tense and the past tense form were still present. However the categories present tense and past tense were adjusted. First the present tense was divided into simple present tense ('onvoltooid tegenwoordige tijd', ott in Dutch) and perfect tense ('voltooid tegenwoordige tijd', vtt in Dutch) and the past tense was divided into imperfect ('onvoltooid verleden tijd', ovt in Dutch) and pluperfect ('voltooid verleden tijd', vvt in Dutch). All other forms, other dummies, copula etc. were placed in different groups. The total amount of dummies was also calculated, where 'gaan' was combined with other, less frequently occurring, dummy verbs such as 'zit' and 'staat'. This was done for present and past tense separately. The most important categorised groups are as follows:

|  |                         |                        |
|--|-------------------------|------------------------|
| Infinitive:                            | 'meisje maken'          | (girl making)          |
| 'gaat' + infinitive:                   | 'het meisje gaat maken' | (the girl goes making) |
| 'onvoltooid tegenwoordige tijd' (ott): | 'het meisje maakt'      | (the girl makes)       |
| 'ging' + infinitive:                   | 'het meisje ging maken' | (the girl went making) |
| 'onvoltooid verleden tijd' (ovt):      | 'het meisje maakte'     | (the girl made)        |

For a full list of all the subcategories see appendix 2. All the categories were then calculated in per cent over all ten children, per age. In the first general calculations, no difference was made between past en present tense, they were calculated upon all the verb phrases present. The copulas also were taken into account (appendix 2) in this global table. This was done to see the amount of use of present and past tense within the stories at one age.

In the other calculation copulas were excluded in the verb phrases (appendix 3). Copula are not always accounted as full verbs, for they only have a helping function in certain constructions. In this part only lexical verbs were taken into account. There was also a division made between present and past tense. One table was made for the past tense, where all past verb phrases were counted. The other table was for the present tense. This way it is possible to see in how many present tense cases for example a 'gaan + aux' form was used. This division is necessary to be able to look at present and past tense separately.

In addition to the verb phrases the children used, the following calculations were done. MLU in words was calculated through CLAN per child, per age. For each child 3 MLU's were therefore calculated. The total amount of verb phrases was also counted and the total of all the dummies (not only 'gaan' and 'ging'). A list of all the dummies put together can be found in appendix 2. The last part exists of a detailed view on the infinitive, 'gaat'+ infinitive, 'ging' + infinitive, present and past tense when looking at all the children individually. These variables are the most important ones when looking at the use of dummies in children in SLI and could show a different view on the data when compared to the overall results. Statistical analysis was performed using SPSS 19. Differences between variables and measurements (age groups) were calculated with GLM Repeated Measures.

## 5. Results

### 5.1 General

Results of the more detailed analysis of the samples of 10 children will now be reported. In this section all percentages were calculated over all verb phrases, to give an overview of the children's verb use.

#### 5.1.1 Dummy use

Use of the dummy 'gaan'; + infinitive was investigated for all 10 children over time. When calculating the dummy use of 'gaan' for past en present tense individually no significant differences were found for present tense ( $F(2,9)=.700$ ,  $p=.424$ ) between age 6 and 7, 7 and 8 or 6 and 8. The past tense showed percentages that were approximately the same over the years, so no significant difference were found here either.

#### 5.1.2 Verb inflection

There is a significant increase of verb inflection, past tense 'ovt' (onvoltooid verleden tijd) ( $F(2,9)=5,237$ ,  $p=.048$ ) from age 6-8. This increase is not seen for the present tense ( $F(2,9)=2.66$ ,  $p=.618$ ).

|             | 'Gaat' + aux.        | Present simple ('ott') | 'Ging' + aux.         | Past simple ('ovt')   | Infinitive            | Dummies present tense | Dummies past tense    |
|-------------|----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 6 years old | 10,65%<br>(SD 10,38) | 27,26%<br>(SD. 9,98)   | 10,94%<br>(SD. 13,00) | 9,06%<br>(SD. 8,35)   | 10,54%<br>(SD. 15,25) | 11,69%<br>(SD. 11,65) | 11,57%<br>(SD. 12,95) |
| 7 years old | 4,76%<br>(SD. 5,91)  | 33,15%<br>(SD. 15,93)  | 9,95%<br>(SD. 9,87)   | 20,65%<br>(SD. 11,99) | 5,43%<br>(SD. 5,76)   | 6,53%<br>(SD. 7,36)   | 10,45%<br>(SD. 10,97) |
| 8 years old | 6,04%<br>(SD. 10,66) | 35,4%<br>(SD. 24,01)   | 10,95%<br>(SD. 11,22) | 22,1%<br>(SD. 15,50)  | 2,17%<br>(SD. 2,42)   | 7,05%<br>(SD. 10,69)  | 11,69%<br>(SD. 11,54) |

Table 2 – Verb use for all ten children, sd. in brackets

## 5.2 General without copula

After the overview on the percentages when calculated on all verb phases, a selection was done in which all copula were excluded from analysis. In this part the calculations were divided in present and past tense. Instead of the calculation over all verb phrases as in section 5.1, the present tense forms (simple present, 'gaat' etcetera) were calculated here over all present tense verb phrases and the past tense forms over all past tense verb phrases.

### 5.2.1 Dummy use

For the present tense of 'gaan' (table 3) no significant differences were found for use of 'gaan' + infinitive between ages six and eight ( $F(2,9)=2,129$ ,  $p=.179$ ). For the past tense of dummy 'gaan' (table 4) no significant differences were found over time ( $F(2,9)=.079$ ,  $p=.785$ ). Furthermore, no significant difference over time was found when taking all dummies together (present tense:  $F(2,9)=1,109$ ,  $p=.320$  and past tense: ( $F(2,9)=.964$ ,  $p=.356$ ).

### 5.2.2 Verb inflection

For present tense ('ott') there was a significant increase with age from 56% to 73% ( $F(2,9)=7,462$ ,  $p=.023$ ). Although an increase of past tense ('ovt') was found over time (36-56%), this difference was not found to be significant ( $F(2,9)=1.894$ ,  $p=.202$ ) due to large standard deviations.

|             | 'gaat'+ infinitive | Present simple ('ott') | Infinitive         | All dummies present tense |
|-------------|--------------------|------------------------|--------------------|---------------------------|
| 6 years old | 17,89% (SD. 15,64) | 55,56% (SD. 15,59)     | 11,49% (SD. 15,17) | 19,55% (SD. 15,87)        |
| 7 years old | 7,21% (SD. 7,81)   | 64,69% (SD. 23,38)     | 11,69% (SD. 12,15) | 9,07% (SD. 8,21)          |
| 8 years old | 7,72% (SD. 7,72)   | 72,65% (SD. 10,99)     | 8,35% (SD. 11,72)  | 11,42% (SD. 12,52)        |

Table 3 – Verb use in present tense without copula for all 10 children, sd. in brackets

|             | 'ging'+ infinitive | Past simple ('ovt') | All dummies past tense |
|-------------|--------------------|---------------------|------------------------|
| 6 years old | 25,07% (SD. 23,50) | 36,79% (SD. 31,82)  | 35,50% (SD. 31,51)     |
| 7 years old | 19,75% (SD. 16,06) | 49,80% (SD. 22,29)  | 20,86% (SD. 16,63)     |
| 8 years old | 21,86% (SD. 21,71) | 56,14% (SD. 31,38)  | 22,22% (SD. 21,85)     |

Table 4 – Verb use in past tense without copula for all 10 children, sd. In brackets

### *5.3 MLU*

The overall MLU of the children increases from 5 to almost 6. At age six it is 5,09 (sd. =,73) at age seven this was 5,55 (sd. =,98) and at age eight this is 5,9 (sd. =,64). No correlations were found between dummy use and MLU or past tense 'ovt' and MLU for these percentages did not show a clear descending or ascending pattern. However, a trend was found between the use the present tense 'ott' and MLU, however this trend was not significant ( $p=.051$ ,  $r^2=.997$ ).

### *5.4 Infinitives*

The infinitive use was calculated over all verb phrases and over the present tense without copula, these figures can be found in table two and three. Although a decrease in infinitive use can be seen, this difference was not found to be significant (with copula:  $F(2,9)=3,141$ ,  $p=.110$  and present tense without copula:  $F(2,9)=.667$ ,  $p=.435$ ).

### *5.5 Individual results*

Because of the high variation in the SLI group, it might be illuminating to look at individual children. The results in this section are therefore shown per child. The results are divided in present and past tense, where calculations were done on total in present tense on total present verb phrases and in the past tense on total past verb phrases.

#### **5.5.1 Dummies**

In the present tense, the use of 'gaan'+ infinitive shows that six out of the ten children show a clear decreasing pattern (table 5). One child shows an increasing pattern. One child uses no dummies at all. Two children show a random pattern, where the use at age seven differs from the trend seen when only looking at the difference between age six and eight.

| Child              | 1               | 2                | 3                | 4                | 5                | 6                | 7               | 8                | 9               | 10               |
|--------------------|-----------------|------------------|------------------|------------------|------------------|------------------|-----------------|------------------|-----------------|------------------|
| 'Gaat' 6 years old | 0,00%<br>(0/7)  | 18,18%<br>(4/22) | 0,00%<br>(0/10)  | 39,89%<br>(7/18) | 15,38%<br>(2/13) | 26,67%<br>(4/15) | 0,00%<br>(0/19) | 20,00%<br>(1/5)  | 44,44%<br>(4/9) | 15,38%<br>(2/13) |
| 'Gaat' 7 years old | 6,66%<br>(1/15) | 11,11%<br>(2/18) | 23,81%<br>(5/21) | 0,00%<br>(0/6)   | 7,14%<br>(1/14)  | 0,00%<br>(0/13)  | 0,00%<br>(0/15) | 0,00%<br>(0/14)  | 14,29%<br>(1/7) | 9,09%<br>(1/11)  |
| 'Gaat' 8 years old | 4,00%<br>(1/25) | 0,00%<br>(0/4)   | 37,50%<br>(9/24) | 0,00%<br>(0/4)   | 4,17%<br>(1/24)  | 0,00%<br>(0/6)   | 0,00%<br>(0/3)  | 14,29%<br>(3/21) | 9,52%<br>(2/21) | 7,69%<br>(1/13)  |

Table 5 – the use of 'gaat' + infinitive per child, divided on all present tense verb phrases

The use of 'ging' + auxiliary (table 6) shows, as did the general results, a conflicting view. Six children show an increase in the use of 'ging' between six and eight years old. Three show a decrease in these years. One does not use 'ging' in any of the years.

| Child                    | 1                | 2                 | 3              | 4                 | 5               | 6                | 7                | 8                | 9                | 10               |
|--------------------------|------------------|-------------------|----------------|-------------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| 'Ging' + aux 6 years old | 50,00%<br>(7/14) | 28,57%<br>(2/7)   | 0,00%<br>(0/1) | 33,33%<br>(1/3)   | 50,00%<br>(4/8) | 0,00%<br>(0/0)   | 0,00%<br>(0/3)   | 30,43%<br>(7/23) | 58,33%<br>(7/12) | 0,00%<br>(0/6)   |
| 'Ging' + aux 7 years old | 0,00%<br>(0/0)   | 22,22%<br>(2/9)   | 0,00%<br>(0/4) | 46,15%<br>(6/13)  | 16,67%<br>(1/6) | 42,86%<br>(6/14) | 7,40%<br>(2/27)  | 26,09%<br>(6/23) | 25,00%<br>(2/8)  | 11,11%<br>(1/9)  |
| 'Ging' + aux 8 years old | 0,00%<br>(0/15)  | 60,00%<br>(12/20) | 0,00%<br>(0/1) | 43,47%<br>(10/23) | 0,00%<br>(0/0)  | 32,14%<br>(9/28) | 16,67%<br>(2/12) | 36,36%<br>(4/11) | 0,00%<br>(0/1)   | 30,00%<br>(3/10) |

Table 6 – the use of 'ging'+ infinitive per child, divided on all past tense verb phrases

### 5.5.2 Verb inflection

The simple present (in Dutch the 'ott') shows few children that have a clear increasing pattern from six years up, the results at age seven are sometimes conflicting (table 7). In three of the children a decrease is seen between age six and seven. Four children show a decrease between seven and eight. However, nine out of ten show an increase in use of the simple present between six and eight years old.

| Child                  | 1       | 2       | 3       | 4      | 5       | 6       | 7      | 8       | 9       | 10     |
|------------------------|---------|---------|---------|--------|---------|---------|--------|---------|---------|--------|
| Simple present ('ott') | 85,71%  | 59,09%  | 50,00%  | 50,00% | 53,85%  | 46,67%  | 47,37% | 80,00%  | 44,44%  | 38,46% |
| 6 years old            | (6/7)   | (13/22) | (5/10)  | (9/18) | (7/13)  | (7/15)  | (9/19) | (4/5)   | (4/9)   | (5/13) |
| Simple present ('ott') | 80,00%  | 55,56%  | 28,57%  | 83,33% | 78,57%  | 100%    | 26,67% | 64,29%  | 57,14%  | 72,72% |
| 7 years old            | (12/15) | (10/18) | (6/21)  | (5/6)  | (11/14) | (13/13) | (4/15) | (9/14)  | (4/7)   | (8/11) |
| Simple present ('ott') | 68,00%  | 75,00%  | 58,33%  | 100%   | 75,00%  | 66,67%  | 66,66% | 71,43%  | 76,19%  | 69,23% |
| 8 years old            | (17/25) | (3/4)   | (14/24) | (4/4)  | (18/24) | (4/6)   | (2/3)  | (15/21) | (16/21) | (9/13) |

Table 7 – The use of simple present (ott) per child, divided on all present tense verb phrases

When looking at the simple past (the 'ovt' in Dutch, table 8), six of the children show an increase of use when comparing age six and age eight. Two children show a clear decrease over the ages. Of the children that show an increase in use, the results at age seven are often conflicting. In two of the children a decrease is seen from age six to age seven and an increase from age seven to eight. Four children show an increase from age six to seven and after that a decrease from age seven to eight.

| Child             | 1       | 2      | 3      | 4      | 5      | 6       | 7       | 8       | 9      | 10     |
|-------------------|---------|--------|--------|--------|--------|---------|---------|---------|--------|--------|
| Simple past (ovt) | 21,43%  | 57,14% | 100%   | 66,67% | 37,50% | 0,00%   | 33,33%  | 43,48%  | 8,33%  | 0,00%  |
| 6 years old       | (3/14)  | (4/7)  | (1/1)  | (2/3)  | (3/8)  | (0/0)   | (1/3)   | (10/23) | (1/12) | (0/6)  |
| Simple past (ovt) | 0,00%   | 44,44% | 75,00% | 38,46% | 50,00% | 57,14%  | 70,37%  | 34,78%  | 50,00% | 77,78% |
| 7 years old       | (0/0)   | (4/9)  | (3/4)  | (5/13) | (3/6)  | (8/14)  | (19/27) | (8/23)  | (4/8)  | (7/9)  |
| Simple past (ovt) | 73,33%  | 30,00% | 100%   | 30,43% | 0,00%  | 46,43%  | 66,67%  | 54,55%  | 100%   | 60,00% |
| 8 years old       | (11/15) | (6/20) | (1/1)  | (7/23) | (0/0)  | (13/28) | (8/12)  | (6/11)  | (1/1)  | (6/10) |

Table 8 – The use of the simple past (ovt) per child, divided on all past tense verb phrases

### 5.5.3 Infinitives

The use of infinitives shows a decrease between six and eight years old in four of the children (table 9). Two use no infinitives at all and two show an increasing pattern between ages six and eight. The rest shows a pattern where the use increases between six and seven and decreases between seven and eight.

| Child                  | 1               | 2                | 3                | 4               | 5               | 6               | 7                | 8               | 9               | 10               |
|------------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|
| Infinitive 6 years old | 14,29%<br>(1/7) | 4,55%<br>(1/22)  | 20,00%<br>(2/10) | 5,56%<br>(1/18) | 0,00%<br>(0/13) | 0,00%<br>(0/15) | 47,37%<br>(9/19) | 0,00%<br>(0/5)  | 0,00%<br>(0/9)  | 23,08%<br>(3/13) |
| Infinitive 7 years old | 6,66%<br>(1/15) | 11,11%<br>(2/18) | 19,05%<br>(4/21) | 16,67%<br>(1/6) | 0,00%<br>(0/14) | 0,00%<br>(0/13) | 40,00%<br>(6/15) | 0,00%<br>(0/14) | 14,29%<br>(1/7) | 9,09%<br>(1/11)  |
| Infinitive 8 years old | 8,00%<br>(2/25) | 25,00%<br>(1/4)  | 0,00%<br>(0/24)  | 0,00%<br>(0/4)  | 0,00%<br>(0/24) | 0,00%<br>(0/6)  | 33,33%<br>(1/3)  | 9,25%<br>(2/21) | 0,00%<br>(0/21) | 7,69%<br>(1/13)  |

Table 9 – Use of infinitives per child, divided on all present tense verb phrases

## 6. Discussion

The overall aim of this study was to investigate whether the developmental pattern of verb use as seen for Dutch typically developing children would be similar for SLI children. The overall hypothesis that children with SLI would first use infinitives, after that dummy verbs and will then switch to conjugation seems to be partially true. However in the current data the use of infinitives was seldom found, which can be explained by the fact that these children may have been too old and their language development had passed this stadium. Due to this it is impossible to state that the children first use infinitives based on these data. Use of dummy verbs however was present in these data. Contrary to our hypothesis however, we found that dummy verbs and conjugation are used simultaneously by these children in all age groups. Based on these data it therefore seems that these two stadia are not separate stages in the development of children with SLI. Again though, it is possible that the children already had a separate stage of using only dummies and no conjugation, before their sixth year of life. The data here are then a transitional stage to conjugation. Research starting from a younger age can be conclusive about this matter.

### 6.1 General findings

It was hypothesised that the use of dummy verbs would decrease over age and simultaneously the use of inflection would increase. The raw data for the ten SLI children seem to show the dummy use decreases from age six on. This decrease however is not found to be significant. This could be due to

the small group of children involved in this research (and the large individual variation). A significant increase however was found for the use of conjugation. It seems that the children use conjugation more the older they get. Furthermore, very few infinitives were used and this number seemed to drop further in our data (although not significantly) with age). This shows that the children learn how to inflect verbs when they become older.

The present tense analysis shows that the children's dummy use may decrease after age six, while the use of the simple present tense inflection ('ott') increases. It might be that they used dummies and simple tense inflection interchangeably before age six and after age six seem to realize that the meaning of the dummy verbs is actually different than thought before and inflection will be used more often. The use in past tense moreover seem to indicate that the children are still acquiring the past tense, for the percentages of the simple past are slowly rising while dummy use remains the same. The present tense on children with SLI in the ages six, seven and eight shows the typical development also found in literature on normal developing children. The use of dummies in general decreased, where the use of inflection increased. The rules of conjugation are becoming more settled in the brain, which makes them easier to access. The 'merge over move' rule (Chomsky, 1995) will become less used, for the access to the more difficult form of inflection will be easier and the child will acquire the knowledge that inflection is different from dummy use.

For the past tense a similar hypothesis was stated as for the present tense: the children would show an increase in the use of inflection and simultaneously a decrease in dummy use. This development however would occur at an older age, since the present tense develops before past tense (Wijnen, 1998), which becomes clear in the data. The 'ovt' is used in nine per cent at age six while the 'ott' is already used in 27 per cent (appendix 2). After this, the 'ovt' increases, but does not reach the same percentage as the present tense. Moreover, the past tense dummies remain at eleven per cent over the three years, another sign that the past tense is still developing. The same is found when looked at individual results, where no clear pattern was visible. Because the proportion of dummy use is stable and proportions of past tense are rather low, it seems the children are still

acquiring the past tense. It could be the case that the dummy use will decrease after the age of eight. The acquisition of past tense could still be in a dummy stage at ages six to eight. At age nine and ten it is possible that the use of past tense will still increase where dummies decrease, a sign that the next stadium is reached.

De Jong's statement that dummy use could be a preliminary stadium to conjugation has been partially confirmed in this research. In the data there is no significant evidence found that the use of dummy forms decreases over age, where conjugation increases. However, when the children were studied individually, most of the children did show a decreasing pattern of dummy use and an increasing pattern of conjugation, especially with the present tense. The other children seem to be in a different stadium, where the infinitive was still used and the dummy stage is still much used. The hypothesis De Jong stated could not be proven for the past tense, for the children's dummy use remained at the same level. However the past tense did show increasing figures, certainly when looking at individual cases. The hypothesis of a preliminary stage could be proven true, but the children should be followed into an older age to be certain. The results of the preliminary stage found in the present tense could be an indication that the results will be similar for the past tense but at an age older than eight.

## *6.2 MLU and dummy use*

The hypothesis that MLU would be higher as dummy and conjugation would be used more often, was neither confirmed nor dismissed. MLU did increase with age, proportions of conjugation rose as well and dummy figures decreased. However no correlation between MLU and the dummy 'gaan' was found. However a trend was found of a correlation of MLU and conjugation. The more the children acquire verb inflection use, the higher the MLU tends to get. To confirm whether this trend continues after age eight more research is needed on older children with SLI.

### *6.3 Infinitives and dummy use*

The hypothesis that infinitive use would decline on first glance appeared to be confirmed, but the results were not significant. It was also hypothesised that the use of infinitives would decline as the use of dummies would increase. This statement could not be confirmed with these data. As mentioned before there were not many infinitives produced by the children, these stages therefore could not be researched. The general conclusion can be as followed: when the children are acquiring dummies and conjunctions, the infinitive use declines to almost zero.

### *6.4 Verb inflection*

It was stated that that the children would use less dummies when they use more lexical verbs. When they have acquired conjugation there is no need to use the fixed forms anymore, so these will decrease in number with age. This hypothesis appeared to be true for the present time, although not significantly. An increase for conjugation was found where dummies and copula decreased. For the past tense however this was not found, this is possibly because the past tense is still in an initial stage, where the dummies are still used interchangeably with conjunction.

### *6.5 Limitations*

The data used in this research were all stories that children with SLI had to tell. All the children had to describe what was seen on pictures shown to them, and make a story out of these pictures. This approach has the advantage that the children can tell whatever they want, without having to complete sentences or produce sentences in a specific way. This way, their speech is spontaneous and representative for the way these children usually speak. However, the database is based on stories. In research on story structures it was found that Dutch second language learners tend to use the auxiliary 'gaan' more frequently when telling stories (Cornips and van der Ham, 2003). It is possible that the children with SLI used a similar pattern with the story-telling task used. The used data could therefore possibly be not equal to their ordinary every day speech. To be sure how the dummy use in children with SLI really is used in everyday language, an experiment has to be done with spontaneous speech.

Another issue found here, is that the children were only tested once a year. Within this year, major changes could have occurred in the children's speech. The level and progression may differ so much from the year before, that a slight change that was looked for here might have been already missed. It is possible that within the year the children progressed several stages already of present tense, dummy use and past tense, so no real successive stages were found. To counter this problem, it is proposed that children should be followed more intensively. The children's speech should be recorded more than once a year to be sure that successive stages are indeed missed within the speech of children with SLI.

With the overall results of the groups, it is possible that differences found in the data of the children level out due to a great variation. The children's speech differs with every individual. Some children with SLI use the past tense when they are 6 years old; others have not reached that level when they are eight years old or even older. In this research no significant differences were found between ages six, seven and eight. No distinct pattern was found within the development and use of dummy verbs. This could be the result of the levelling out of the variation of the children by using group averages.

### *6.6 Future research*

To make the statistics more reliable, these calculations should be done on more than 10 children as done here. A bigger group would give more statistical power. However, within this bachelor thesis this was not possible. Testing for dummy use with children with SLI should be done with at least 30 children to make the statistical results reliable.

It was assumed here that the various measures such as dummy use and use of simple present ('ott') and simple past ('ovt') are related to each other. It could however be the case that they are in fact not correlated. The results are then arbitrary. It seems here that some of the results are related to each other, like the increase in conjugation in the present time and the decline of dummies at the same time. To make sure these found results are indeed related, the correlations could be calculated. This is possible in further research on this subject.

In this thesis the children were taken together to look at trends. However when the children were looked at separately a lot of interesting data can be found. It seems that the children could be divided into two groups, based on their language level. Some of the children still used infinitives and dummies often. Other children were already acquiring the conjugation. The children could be looked at individually for more detailed results.

Furthermore it is possible that the use of 'gaan' and 'ging' are based on a complementary distribution. A child that uses the dummy 'gaan' frequently probably has not reached the 'ging' stadium yet. When the 'gaan' use decreases it is possible that the 'ging' use increases. The present tense is being acquired, but the past tense is not acquired until later. The 'ging' use will be used more frequently in this stadium. To see if there is indeed a complementary distribution, all the children should be looked at separately for this feature.

Another interesting feature found in the data, but was not looked into within this paper, is the correction of a dummy verb, in favour of conjugation. In the group of children with SLI these corrections were found. Children would start their sentences with a 'gaan + infinitive' form, but corrected themselves with a finite verb. It could be that these children achieved the stage in which they know that conjugation is seen as a superior form and are attempting to employ this language form more often. This phenomenon could be looked into, for it would demonstrate that there are stages in which dummy verbs are used.

## **7. Conclusion**

The aim of this research was to find out in what way children with SLI use dummy verbs in their everyday language. There was a separation between the use in present and past tense, for the present tense develops before the past tense. Not much research has been done on this subject; hypotheses are that the use of dummies could be as a preliminary stadium to conjugation or as an interchangeable form with conjugation. Because of the lack of research, an exploratory view was aimed at here, in which as much as possible factors were taken into account.

It was found that at age six, seven and eight children with SLI use dummies in both present and past tense. In present tense this use is declining over the years while the use of conjugation is increasing. The past tense dummy use remains at the same level through the ages. This can be explained by the fact that the present tense is already further developed and easier accessible, which results in more use of conjugation. The past tense is still in an earlier stage, where the conjugation forms are harder to access than the fixed dummy forms.

Other factors were also taken into account. The lexical verb use increases as the dummy use decreases. MLU increases slightly over the years, while the use of infinitives declines. A trend here was found between MLU and the present tense 'ott'. This could indicate that MLU is still a good measure of morphosyntactic development for ages six to eight.

Overall it could be stated that the dummy use declines from age six on, which is a pattern that is found in the literature of normal developing children, but on a slower basis. The use of conjugation is still very much in development over these years. It seems that the use of dummies is seen as interchangeable with conjugation until a certain age where the children develop the awareness that these forms are actually different. This stadium is reached earlier for the present tense than for the past tense.

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# Appendix 1

|                     | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 02-30-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-29-01 |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>6 gaat</b>       | 0,00%    | 10,00%   | 0,00%    | 29,17%   | 14,29%   | 8,00%    | 27,78%   | 0,00%    | 2,86%    | 12,50%   |
| <b>6 ging</b>       | 30,43%   | 6,66%    | 0,00%    | 4,17%    | 0,00%    | 20,00%   | 0,00%    | 0,00%    | 20,00%   | 0,00%    |
| <b>6 tt</b>         | 21,74%   | 66,67%   | 48,91%   | 5,42%    | 85,71%   | 52,00%   | 72,22%   | 43,48%   | 11,43%   | 75,00%   |
| <b>6 vt</b>         | 43,48%   | 13,33%   | 15,38%   | 8,33%    | 0,00%    | 20,00%   | 0,00%    | 17,39%   | 65,71%   | 0,00%    |
| <b>6 infinitive</b> | 4,35%    | 3,33%    | 35,71%   | 4,17%    | 0,00%    | 0,00%    | 0,00%    | 39,13%   | 0,00%    | 12,50%   |
| <b>totaal VP</b>    | 23       | 30       | 13       | 24       | 7        | 25       | 18       | 23       | 35       | 8        |
| <b>7 gaat</b>       | 3,13%    | 6,66%    | 20,00%   | 0,00%    | 0,00%    | 4,17%    | 0,00%    | 0,00%    | 0,00%    | 16,00%   |
| <b>7 ging</b>       | 0,00%    | 6,66%    | 0,00%    | 30,00%   | 19,35%   | 8,33%    | 21,42%   | 4,44%    | 15,79%   | 0,00%    |
| <b>7 tt</b>         | 88,89%   | 50,01%   | 44,00%   | 25,00%   | 35,48%   | 58,33%   | 46,42%   | 22,22%   | 36,84%   | 84,00%   |
| <b>7 vt</b>         | 0,00%    | 30,00%   | 20,00%   | 40,00%   | 45,16%   | 29,17%   | 32,14%   | 60,00%   | 47,37%   | 0,00%    |
| <b>7 infinitive</b> | 7,41%    | 6,66%    | 16,00%   | 5,00%    | 0,00%    | 0,00%    | 0,00%    | 13,33%   | 0,00%    | 0,00%    |
| <b>totaal VP</b>    | 27       | 30       | 25       | 20       | 31       | 24       | 28       | 45       | 38       | 25       |
| <b>8 gaat</b>       | 0,00%    | 0,00%    | 34,62%   | 0,00%    | 0,00%    | 4,00%    | 0,00%    | 0,00%    | 9,00%    | 18,75%   |
| <b>8 ging</b>       | 0,00%    | 22,22%   | 0,00%    | 31,25%   | 10,71%   | 0,00%    | 22,50%   | 15,00%   | 12,12%   | 0,00%    |
| <b>8 tt</b>         | 45,54%   | 18,52%   | 61,54%   | 12,50%   | 21,43%   | 96,00%   | 15,00%   | 10,00%   | 48,48%   | 78,13%   |
| <b>8 vt</b>         | 52%      | 55,56%   | 3,85%    | 56,25%   | 67,86%   | 0,00%    | 62,50%   | 70,00%   | 24,24%   | 3,13%    |
| <b>8 infinitive</b> | 2,94%    | 3,70%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 5,00%    | 6,06%    | 0,00%    |
| <b>totaal VP</b>    | 33       | 27       | 26       | 32       | 28       | 25       | 40       | 20       | 33       | 32       |

Table 10 – Verb forms of 30 children (child 1 to 10)

|                     | 06-30-01 | 8-11-2001 | 10-1-2001 | 10-12-2001 | 10-24-01 | 11-3-2001 | 11-13-01 | 12-3-2001 | 12-11-2001 | 12-17-01 |
|---------------------|----------|-----------|-----------|------------|----------|-----------|----------|-----------|------------|----------|
| <b>6 gaat</b>       | 23,81%   | 12,50%    | 27,78%    | 0,00%      | 15,38%   | 0,00%     | 0,00%    | 17,86%    | 0,00%      | 0,00%    |
| <b>6 ging</b>       | 33,33%   | 0,00%     | 0,00%     | 55,55%     | 0,00%    | 0,00%     | 21,05%   | 7,14%     | 13,33%     | 3,85%    |
| <b>6 tt</b>         | 19,05%   | 68,75%    | 72,22%    | 11,11%     | 53,85%   | 100,00%   | 10,53%   | 57,14%    | 50,00%     | 84,61%   |
| <b>6 vt</b>         | 23,81%   | 0,00%     | 0,00%     | 33,33%     | 30,78%   | 0,00%     | 68,42%   | 17,86%    | 36,67%     | 11,54%   |
| <b>6 infinitive</b> | 0,00%    | 18,75%    | 0,00%     | 0,00%      | 0,00%    | 0,00%     | 0,00%    | 0,00%     | 0,00%      | 0,00%    |
| <b>totaal VP</b>    | 21       | 16        | 18        | 18         | 13       | 23        | 19       | 28        | 30         | 26       |
| <b>7 gaat</b>       | 6,67%    | 4,55%     | 36,00%    | 3,33%      | 11,11%   | 0,00%     | 4,35%    | 0,00%     | 2,38%      | 0,00%    |
| <b>7 ging</b>       | 13,33%   | 4,55%     | 0,00%     | 30,00%     | 0,00%    | 0,00%     | 4,35%    | 17,39%    | 28,57%     | 3,57%    |
| <b>7 tt</b>         | 40,52%   | 45,45%    | 48,00%    | 20,00%     | 83,33%   | 52,00%    | 43,48%   | 30,43%    | 38,10%     | 96,43%   |
| <b>7 vt</b>         | 33,33%   | 40,90%    | 16,00%    | 46,67%     | 5,55%    | 48,00%    | 47,83%   | 52,18%    | 30,95%     | 0,00%    |
| <b>7 infinitive</b> | 6,25%    | 4,55%     | 0,00%     | 0,00%      | 0,00%    | 0,00%     | 0,00%    | 0,00%     | 0,00%      | 0,00%    |
| <b>totaal VP</b>    | 15       | 22        | 25        | 30         | 18       | 25        | 23       | 23        | 42         | 28       |
| <b>8 gaat</b>       | 8,70%    | 4,17%     | 10,00%    | 18,42%     | 0,00%    | 0,00%     | 6,45%    | 4,43%     | 0,00%      | 7,14%    |
| <b>8 ging</b>       | 0,00%    | 1,67%     | 0,00%     | 2,63%      | 15,00%   | 0,00%     | 0,00%    | 4,43%     | 20,69%     | 0,00%    |
| <b>8 tt</b>         | 87,00%   | 45,83%    | 70,00%    | 68,42%     | 2,50%    | 46,43%    | 51,61%   | 60,87%    | 44,83%     | 92,86%   |
| <b>8 vt</b>         | 4,35%    | 33,33%    | 20,00%    | 10,53%     | 82,50%   | 53,57%    | 41,94%   | 26,09%    | 34,48%     | 0,00%    |
| <b>8 infinitive</b> | 0,00%    | 4,17%     | 0,00%     | 0,00%      | 0,00%    | 0,00%     | 0,00%    | 0,00%     | 0,00%      | 0,00%    |
| <b>totaal VP</b>    | 23       | 24        | 20        | 38         | 40       | 28        | 31       | 23        | 29         | 28       |

Table 11 – Verb forms of 30 children (child 11 to 20)

|              | 13-13-1 | 13-26-01 | 14-2-2001 | 14-5-2001 | 20-6-2001 | 21-5-2001 | 24-5-2001 | 24-6-2001 | 25-23-01 | 27-23-01 | totaal |
|--------------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|--------|
| 6 gaat       | 0,00%   | 20,00%   | 28,13%    | 28,58%    | 0,00%     | 0,00%     | 8,33%     | 33,33%    | 12,12%   | 5,00%    | 11,25% |
| 6 ging       | 0,00%   | 4,00%    | 0,00%     | 0,00%     | 15,38%    | 5,56%     | 12,50%    | 0,00%     | 27,27%   | 35,00%   | 10,51% |
| 6 tt         | 28,57%  | 60,00%   | 65,63%    | 46,43%    | 38,46%    | 50,00%    | 66,67%    | 66,67%    | 27,27%   | 20,00%   | 49,32% |
| 6 vt         | 71,43%  | 16,00%   | 3,13%     | 3,57%     | 46,15%    | 4,44%     | 12,50%    | 0,00%     | 33,33%   | 40,00%   | 21,22% |
| 6 infinitive | 0,00%   | 0,00%    | 3,13%     | 21,43%    | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%    | 0,00%    | 4,75%  |
| totaal VP    | 28      | 25       | 21        | 28        | 26        | 18        | 24        | 18        | 33       | 20       | 22,00  |
| 7 gaat       | 0,00%   | 0,00%    | 0,00%     | 42,11%    | 5,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%    | 13,60%   | 5,97%  |
| 7 ging       | 0,00%   | 0,00%    | 26,67%    | 0,00%     | 5,00%     | 20,83%    | 23,53%    | 30,00%    | 25,00%   | 13,60%   | 11,75% |
| 7 tt         | 19,35%  | 95,34%   | 33,33%    | 42,11%    | 60,00%    | 54,17%    | 5,88%     | 23,33%    | 15,00%   | 50,00%   | 46,25% |
| 7 vt         | 80,65%  | 4,76%    | 40,00%    | 15,79%    | 30,00%    | 25,00%    | 70,59%    | 46,67%    | 60,00%   | 22,72%   | 34,05% |
| 7 infinitive | 0,00%   | 0,00%    | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%    | 0,00%    | 1,97%  |
| totaal VP    | 31      | 21       | 30        | 19        | 20        | 24        | 22        | 30        | 20       | 22       | 26,10  |
| 8 gaat       | 2,00%   | 2,70%    | 7,50%     | 65,00%    | 0,00%     | 16,66%    | 2,94%     | 32,00%    | 0,00%    | 17,86%   | 9,08%  |
| 8 ging       | 8,00%   | 0,00%    | 0,00%     | 0,00%     | 3,70%     | 3,33%     | 2,94%     | 0,00%     | 0,00%    | 0,00%    | 5,87%  |
| 8 tt         | 50,00%  | 70,27%   | 92,50%    | 35,00%    | 14,81%    | 63,33%    | 23,53%    | 48,00%    | 51,72%   | 78,57%   | 50,17% |
| 8 vt         | 40,00%  | 27,03%   | 0,00%     | 0,00%     | 81,48%    | 16,67%    | 70,59%    | 20,00%    | 48,28%   | 3,57%    | 33,64% |
| 8 infinitive | 0,00%   | 0,00%    | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%     | 0,00%    | 0,00%    | 0,73%  |
| totaal VP    | 50      | 37       | 40        | 20        | 27        | 30        | 34        | 25        | 29       | 28       | 30,00  |

Table 12 – Verb forms of 30 children (child 21 to 30)

## Appendix 2

A list of all the forms used in the data of the ten children:

|                                       |  |                          |
|---------------------------------------|--|--------------------------|
| Infinitive                            | 'meisje maken'                                       | (girl making)            |
| 'gaat' + infinitive (dummy)           | 'het meisje gaat maken'                              | (the girl goes making)   |
| 'onvoltooid tegenwoordige tijd' (ott) | 'het meisje maakt'                                   | (the girl makes)         |
| 'voltooid tegenwoordige tijd' (vtt)   | 'het meisje heeft gemaakt'                           | (the girl has made)      |
| 'ging' + infinitive (dummy):          | 'het meisje ging maken'                              | (the girl went making)   |
| 'onvoltooid verleden tijd' (ovt):     | 'het meisje maakte'                                  | (the girl made)          |
| 'voltooid verleden tijd' (vtt):       | 'het meisje had gemaakt'                             | (the girl had made)      |
| 'gaat'/'ging' lexical:                | 'het meisje gaat weg'                                | (the girl goes away)     |
| 'is'/'was' (copula):                  | 'het meisje is blij'                                 | (the girl is happy)      |
| 'zit'/'zat' (dummy):                  | 'het meisje zit te maken'                            | (the girl sits making)   |
| 'staat'/'stond':                      | 'het meisje staat te maken'                          | (the girl stands making) |
| 'wil'/'wilde':                        | 'het meisje wil maken'                               | (the girl wants making)  |
| 'moet'/'moest':                       | 'het meisje moet maken'                              | (the girl must making)   |
| 'is aan het'/'was aan het' (dummy):   | 'het meisje is aan het maken'                        | (the girl is making)     |
| Dummy totaal:                         | all forms of dummies mentioned above; taken together |                          |

|                     | 01-28-01    | 01-30-01    | 02-21-01    | 02-29-01    | 4-8-2001    | 04-16-01    | 04-20-01    | 5-3-2001    | 06-30-01    | 8-11-2001  | <b>totaal</b>  |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|----------------|
| <b>tt 6 jaar</b>    |             |             |             |             |             |             |             |             |             |            |                |
| gaat                | 0,00%       | 13,33%      | 0,00%       | 29,17%      | 7,41%       | 22,22%      | 0,00%       | 2,86%       | 19,05%      | 12,50%     | 10,65%         |
| gaat lex            | 0,00%       | 3,33%       | 0,00%       | 4,17%       | 3,70%       | 22,22%      | 0,00%       | 0,00%       | 4,76%       | 6,25%      | 4,44%          |
| ott                 | 26,09%      | 43,33%      | 28,57%      | 37,50%      | 25,93%      | 38,89%      | 39,13%      | 11,43%      | 19,05%      | 31,25%     | 30,12%         |
| vtt                 | 0,00%       | 0,00%       | 14,29%      | 0,00%       | 7,41%       | 0,00%       | 4,35%       | 0,00%       | 0,00%       | 12,50%     | 3,86%          |
| is (cop)            | 0,00%       | 3,33%       | 0,00%       | 12,50%      | 14,81%      | 16,66%      | 0,00%       | 0,00%       | 0,00%       | 12,50%     | 5,98%          |
| zit                 | 0,00%       | 3,33%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,33%          |
| staat               | 0,00%       | 3,33%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,33%          |
| moet                | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| wil                 | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| mag                 | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 3,70%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,37%          |
| inf                 | 4,35%       | 3,33%       | 35,71%      | 4,17%       | 0,00%       | 0,00%       | 39,13%      | 0,00%       | 0,00%       | 18,75%     | 10,54%         |
| is aan het          | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| dummy totaal        | 0,00%       | 19,99%      | 0,00%       | 29,17%      | 11,11%      | 22,22%      | 0,00%       | 2,86%       | 19,05%      | 12,50%     | 11,69%         |
| <b>vt 6 jaar</b>    |             |             |             |             |             |             |             |             |             |            |                |
| ging                | 30,43%      | 6,66%       | 0,00%       | 4,17%       | 14,81%      | 0,00%       | 0,00%       | 20,00%      | 33,33%      | 0,00%      | 10,94%         |
| ging lex            | 17,39%      | 3,33%       | 0,00%       | 0,00%       | 3,70%       | 0,00%       | 0,00%       | 5,71%       | 19,05%      | 0,00%      | 4,92%          |
| ovt                 | 13,04%      | 13,33%      | 7,14%       | 8,33%       | 11,11%      | 0,00%       | 4,35%       | 28,57%      | 4,76%       | 0,00%      | 9,06%          |
| vvt                 | 0,00%       | 3,33%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 8,70%       | 8,57%       | 0,00%       | 0,00%      | 2,06%          |
| was (cop)           | 8,70%       | 0,00%       | 14,29%      | 0,00%       | 3,70%       | 0,00%       | 4,35%       | 20,00%      | 0,00%       | 0,00%      | 5,10%          |
| zat                 | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| stond               | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| moest               | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| wilde               | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 6,25%      | 0,63%          |
| mocht               | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 0,00%      | 0,00%          |
| was aan het         | 0,00%       | 0,00%       | 0,00%       | 0,00%       | 3,70%       | 0,00%       | 0,00%       | 2,86%       | 0,00%       | 0,00%      | 0,66%          |
| dummy totaal        | 30,43%      | 6,66%       | 0,00%       | 4,17%       | 18,51%      | 0,00%       | 0,00%       | 22,86%      | 33,33%      | 6,25%      | 12,22%         |
| <b>Verb phrases</b> | <b>23</b>   | <b>30</b>   | <b>14</b>   | <b>24</b>   | <b>27</b>   | <b>18</b>   | <b>23</b>   | <b>35</b>   | <b>21</b>   | <b>16</b>  | <b>100,00%</b> |
| <b>MLU</b>          | <b>6,04</b> | <b>5,16</b> | <b>4,71</b> | <b>4,36</b> | <b>5,07</b> | <b>5,39</b> | <b>3,59</b> | <b>5,47</b> | <b>5,19</b> | <b>5,9</b> | <b>5,088</b>   |

Table 13- the present (tt) and past (vt) tense with copula per child - 6 years old

|                     | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | totaal  |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|---------|
| <b>tt 7 jaar</b>    |          |          |          |          |          |          |          |          |          |           |         |
| gaat                | 3,70%    | 6,66%    | 20,00%   | 0,00%    | 4,17%    | 0,00%    | 2,22%    | 0,00%    | 6,25%    | 4,55%     | 4,76%   |
| gaat lex            | 7,41%    | 10,00%   | 12,00%   | 0,00%    | 8,33%    | 0,00%    | 0,00%    | 5,26%    | 6,25%    | 0,00%     | 4,93%   |
| ott                 | 62,96%   | 33,33%   | 24,00%   | 25,00%   | 45,83%   | 46,43%   | 8,88%    | 23,68%   | 25,00%   | 36,36%    | 33,15%  |
| vtt                 | 0,00%    | 3,33%    | 8,00%    | 0,00%    | 0,00%    | 0,00%    | 4,44%    | 5,26%    | 0,00%    | 4,55%     | 2,56%   |
| is                  | 7,41%    | 3,33%    | 0,00%    | 0,00%    | 4,17%    | 3,57%    | 0,00%    | 2,63%    | 6,25%    | 9,09%     | 3,65%   |
| zit                 | 11,11%   | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 2,63%    | 0,00%    | 0,00%     | 1,37%   |
| staat               | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| moet                | 0,00%    | 0,00%    | 4,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,40%   |
| wil                 | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| mag                 | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| inf                 | 7,41%    | 6,66%    | 16,00%   | 5,00%    | 0,00%    | 0,00%    | 13,33%   | 0,00%    | 6,25%    | 4,55%     | 5,92%   |
| is aan het          | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 2,22%    | 0,00%    | 0,00%    | 0,00%     | 0,22%   |
| dummy totaal        | 14,81%   | 6,66%    | 24,00%   | 0,00%    | 4,17%    | 0,00%    | 4,44%    | 2,63%    | 6,25%    | 4,55%     | 6,75%   |
| <b>vt 7 jaar</b>    |          |          |          |          |          |          |          |          |          |           |         |
| ging                | 0,00%    | 6,66%    | 0,00%    | 30,00%   | 4,17%    | 21,43%   | 4,44%    | 15,79%   | 12,50%   | 4,55%     | 9,95%   |
| ging lex            | 0,00%    | 6,66%    | 0,00%    | 10,00%   | 4,17%    | 0,00%    | 11,11%   | 21,05%   | 12,50%   | 4,55%     | 7,00%   |
| ovt                 | 0,00%    | 13,33%   | 12,00%   | 20,00%   | 12,50%   | 28,57%   | 42,22%   | 21,05%   | 25,00%   | 31,81%    | 20,65%  |
| vvt                 | 0,00%    | 6,66%    | 4,00%    | 0,00%    | 4,16%    | 0,00%    | 2,22%    | 2,63%    | 0,00%    | 0,00%     | 1,97%   |
| was                 | 0,00%    | 0,00%    | 0,00%    | 5,00%    | 12,50%   | 0,00%    | 6,67%    | 0,00%    | 0,00%    | 0,00%     | 2,42%   |
| zat                 | 0,00%    | 3,33%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,33%   |
| stond               | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| moest               | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| wilde               | 0,00%    | 0,00%    | 0,00%    | 5,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,50%   |
| mocht               | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| was aan het         | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%   |
| dummy totaal        | 0,00%    | 9,99%    | 0,00%    | 35,00%   | 4,17%    | 21,43%   | 4,44%    | 15,79%   | 12,50%   | 4,55%     | 10,79%  |
| <b>Verb phrases</b> | 27       | 30       | 25       | 20       | 24       | 28       | 45       | 38       | 16       | 22        | 100,00% |
| <b>MLU</b>          | 7,46     | 5,69     | 5        | 5,09     | 4,92     | 4,8      | 4,13     | 5,8      | 6,73     | 5,86      | 5,548   |

Table 14 - The present (tt) and past (vt) tense with copula per child - 7 years old

|                  | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | <b>totaal</b> |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|---------------|
| <b>tt 8 jaar</b> |          |          |          |          |          |          |          |          |          |           |               |
| gaat             | 0,00%    | 0,00%    | 34,61%   | 0,00%    | 3,85%    | 0,00%    | 0,00%    | 9,09%    | 8,70%    | 4,17%     | 6,04%         |
| gaat lex         | 2,94%    | 0,00%    | 0,00%    | 0,00%    | 15,38%   | 0,00%    | 0,00%    | 0,00%    | 13,04%   | 8,33%     | 3,97%         |
| ott              | 35,30%   | 11,11%   | 53,85%   | 12,50%   | 69,23%   | 9,52%    | 10,00%   | 45,45%   | 69,57%   | 37,50%    | 35,40%        |
| vtt              | 2,94%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 2,38%    | 0,00%    | 3,03%    | 0,00%    | 0,00%     | 0,84%         |
| is               | 5,88%    | 0,00%    | 3,85%    | 0,00%    | 7,69%    | 0,00%    | 0,00%    | 0,00%    | 4,35%    | 0,00%     | 2,18%         |
| zit              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| staat            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 2,38%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,24%         |
| moet             | 0,00%    | 0,00%    | 3,85%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,39%         |
| wil              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 3,85%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,39%         |
| mag              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| inf              | 2,94%    | 3,70%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 5,00%    | 6,06%    | 0,00%    | 4,17%     | 2,19%         |
| is aan het       | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| dummy tc         | 0,00%    | 0,00%    | 38,46%   | 0,00%    | 7,70%    | 2,38%    | 0,00%    | 9,09%    | 8,70%    | 4,17%     | 7,05%         |
| <b>vt 8 jaar</b> |          |          |          |          |          |          |          |          |          |           |               |
| ging             | 0,00%    | 22,22%   | 0,00%    | 31,25%   | 0,00%    | 21,43%   | 10,00%   | 12,12%   | 0,00%    | 12,50%    | 10,95%        |
| ging lex         | 8,82%    | 3,70%    | 0,00%    | 15,63%   | 0,00%    | 7,14%    | 0,00%    | 0,00%    | 0,00%    | 4,17%     | 3,95%         |
| ovt              | 32,35%   | 44,44%   | 3,85%    | 21,88%   | 0,00%    | 30,95%   | 40,00%   | 18,18%   | 4,35%    | 25,00%    | 22,10%        |
| vvt              | 29,40%   | 3,70%    | 0,00%    | 3,13%    | 0,00%    | 4,76%    | 5,00%    | 3,03%    | 0,00%    | 0,00%     | 4,90%         |
| was              | 5,88%    | 11,11%   | 0,00%    | 15,63%   | 0,00%    | 19,05%   | 25,00%   | 3,03%    | 0,00%    | 4,17%     | 8,39%         |
| zat              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| stond            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 2,38%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,24%         |
| moest            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| wilde            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| mocht            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| deed             | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 5,00%    | 0,00%    | 0,00%    | 0,00%     | 0,50%         |
| was aan h        | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| dummy tc         | 0,00%    | 22,22%   | 0,00%    | 31,25%   | 0,00%    | 23,81%   | 15,00%   | 12,12%   | 0,00%    | 12,50%    | 11,69%        |
| <i>Verb phra</i> | 34       | 27       | 26       | 32       | 26       | 42       | 20       | 33       | 23       | 24        | 100%          |
| MLU              | 6,12     | 5,54     | 4,8      | 5,19     | 6,3      | 6,97     | 6,29     | 5,6      | 5,46     | 6,23      | 5,85          |

Table 15 - The present (tt) and past (vt) tense with copula per child - 8 years old

## Appendix 3

|                  | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | totaal |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--------|
| <b>tt 6 jaar</b> |          |          |          |          |          |          |          |          |          |           |        |
| gaat             | 0,00%    | 18,18%   | 0,00%    | 38,89%   | 15,38%   | 26,67%   | 0,00%    | 20,00%   | 44,44%   | 15,38%    | 17,89% |
| gaat lex         | 0,00%    | 4,45%    | 0,00%    | 5,56%    | 7,69%    | 26,67%   | 0,00%    | 0,00%    | 11,11%   | 7,69%     | 6,32%  |
| ott              | 85,71%   | 59,09%   | 50,00%   | 50,00%   | 53,85%   | 46,67%   | 47,37%   | 80,00%   | 44,44%   | 38,46%    | 55,56% |
| vtt              | 0,00%    | 4,45%    | 30,00%   | 0,00%    | 15,38%   | 0,00%    | 5,26%    | 0,00%    | 0,00%    | 15,38%    | 7,05%  |
| zit              | 0,00%    | 4,45%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,45%  |
| staat            | 0,00%    | 4,45%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,45%  |
| moet             | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| wil              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| mag              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 7,69%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,77%  |
| inf              | 14,29%   | 4,55%    | 20,00%   | 5,56%    | 0,00%    | 0,00%    | 47,37%   | 0,00%    | 0,00%    | 23,08%    | 11,49% |
| is aan het       | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| dummy            | 0,00%    | 27,08%   | 0,00%    | 38,89%   | 23,07%   | 26,67%   | 0,00%    | 20,00%   | 44,44%   | 15,38%    | 19,55% |
| Verb phrases     | 7        | 22       | 10       | 18       | 13       | 15       | 19       | 5        | 9        | 13        | 13,1   |
| <b>tt 7 jaar</b> |          |          |          |          |          |          |          |          |          |           |        |
| gaat             | 6,66%    | 11,11%   | 23,81%   | 0,00%    | 7,14%    | 0,00%    | 0,00%    | 0,00%    | 14,29%   | 9,09%     | 7,21%  |
| gaat lex         | 0,00%    | 16,67%   | 14,29%   | 0,00%    | 14,29%   | 0,00%    | 6,67%    | 14,29%   | 14,29%   | 0,00%     | 8,05%  |
| ott              | 80,00%   | 55,56%   | 28,57%   | 83,33%   | 78,57%   | 100,00%  | 26,67%   | 64,29%   | 57,14%   | 72,72%    | 64,69% |
| vtt              | 6,66%    | 5,56%    | 9,52%    | 0,00%    | 0,00%    | 0,00%    | 20,00%   | 14,29%   | 0,00%    | 9,09%     | 6,51%  |
| zit              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 7,14%    | 0,00%    | 0,00%     | 0,71%  |
| staat            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| moet             | 0,00%    | 0,00%    | 4,76%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,48%  |
| wil              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| mag              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| inf              | 6,66%    | 11,11%   | 19,05%   | 16,67%   | 0,00%    | 0,00%    | 40,00%   | 0,00%    | 14,29%   | 9,09%     | 11,69% |
| is aan het       | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 6,67%    | 0,00%    | 0,00%    | 0,00%     | 0,67%  |
| dummy            | 6,66%    | 11,11%   | 28,57%   | 0,00%    | 7,14%    | 0,00%    | 6,67%    | 7,14%    | 14,29%   | 9,09%     | 9,07%  |
| Verb phrases     | 15       | 18       | 21       | 6        | 14       | 13       | 15       | 14       | 7        | 11        | 13,4   |

Table 16 - The present tense (tt) without copula per child - 6 and 7 years old

|                  | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | <b>totaal</b> |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|---------------|
| <b>tt 8 jaar</b> |          |          |          |          |          |          |          |          |          |           |               |
| gaat             | 4,00%    | 0,00%    | 37,50%   | 0,00%    | 4,17%    | 0,00%    | 0,00%    | 14,29%   | 9,52%    | 7,69%     | 7,72%         |
| gaat lex         | 8,00%    | 0,00%    | 0,00%    | 0,00%    | 16,67%   | 0,00%    | 0,00%    | 0,00%    | 14,29%   | 15,38%    | 5,43%         |
| ott              | 68,00%   | 75,00%   | 58,33%   | 100,00%  | 75,00%   | 66,67%   | 66,66%   | 71,43%   | 76,19%   | 69,23%    | 72,65%        |
| vtt              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 16,67%   | 0,00%    | 4,76%    | 0,00%    | 0,00%     | 2,14%         |
| zit              | 12,00%   | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 1,20%         |
| staat            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 16,67%   | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 1,67%         |
| moet             | 0,00%    | 0,00%    | 4,17%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,42%         |
| wil              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 4,17%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,42%         |
| mag              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| inf              | 8,00%    | 25,00%   | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 33,33%   | 9,52%    | 0,00%    | 7,69%     | 8,35%         |
| is aan het       | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| dummy            | 16,00%   | 0,00%    | 41,67%   | 0,00%    | 8,34%    | 16,67%   | 0,00%    | 14,29%   | 9,52%    | 7,69%     | 11,42%        |
| Verb phrases     | 25       | 4        | 24       | 4        | 24       | 6        | 3        | 21       | 21       | 13        | 14,5          |

Table 17 - The present tense (tt) without copula per child- 8 years old

|                  | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | <b>totaal</b> |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|---------------|
| <b>vt 6 jaar</b> |          |          |          |          |          |          |          |          |          |           |               |
| ging             | 50,00%   | 28,57%   | 0,00%    | 33,33%   | 50,00%   | 0,00%    | 0,00%    | 30,43%   | 58,33%   | 0,00%     | 25,07%        |
| ging lex         | 28,57%   | 14,29%   | 0,00%    | 0,00%    | 12,50%   | 0,00%    | 0,00%    | 8,70%    | 33,33%   | 0,00%     | 9,74%         |
| ovt              | 21,43%   | 57,14%   | 100,00%  | 66,67%   | 37,50%   | 0,00%    | 33,33%   | 43,48%   | 8,33%    | 0,00%     | 36,79%        |
| vvt              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 66,67%   | 13,04%   | 0,00%    | 0,00%     | 7,97%         |
| zat              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| stond            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| moest            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| wilde            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 100,00%   | 10,00%        |
| mocht            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| was aan het      | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 4,35%    | 0,00%    | 0,00%     | 0,44%         |
| dummy            | 50,00%   | 28,57%   | 0,00%    | 33,33%   | 50,00%   | 0,00%    | 0,00%    | 34,78%   | 58,33%   | 100,00%   | 35,50%        |
| Verb phrases     | 14       | 7        | 1        | 3        | 8        | 0        | 3        | 23       | 12       | 6         | 7,7           |
| <b>vt 7 jaar</b> |          |          |          |          |          |          |          |          |          |           |               |
| ging             | 0,00%    | 22,22%   | 0,00%    | 46,15%   | 16,67%   | 42,86%   | 7,40%    | 26,09%   | 25,00%   | 11,11%    | 19,75%        |
| ging lex         | 0,00%    | 22,22%   | 0,00%    | 15,38%   | 16,67%   | 0,00%    | 18,52%   | 34,78%   | 25,00%   | 11,11%    | 14,37%        |
| ovt              | 0,00%    | 44,44%   | 75,00%   | 38,46%   | 50,00%   | 57,14%   | 70,37%   | 34,78%   | 50,00%   | 77,78%    | 49,80%        |
| vvt              | 0,00%    | 0,00%    | 25,00%   | 0,00%    | 16,67%   | 0,00%    | 3,70%    | 4,30%    | 0,00%    | 0,00%     | 4,97%         |
| zat              | 0,00%    | 11,11%   | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 1,11%         |
| stond            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| moest            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| wilde            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| mocht            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| was aan het      | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%         |
| dummy            | 0,00%    | 33,33%   | 0,00%    | 46,15%   | 16,67%   | 42,86%   | 7,40%    | 26,09%   | 25,00%   | 11,11%    | 20,86%        |
| Verb phrases     | 0        | 9        | 4        | 13       | 6        | 14       | 27       | 23       | 8        | 9         | 11,3          |

Table 18 - The past tense (vt) without copula per child - 6 and 7 years old

|                  | 01-28-01 | 01-30-01 | 02-21-01 | 02-29-01 | 4-8-2001 | 04-16-01 | 04-20-01 | 5-3-2001 | 06-30-01 | 8-11-2001 | totaal |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--------|
| <b>vt 8 jaar</b> |          |          |          |          |          |          |          |          |          |           | 0      |
| ging             | 0,00%    | 60,00%   | 0,00%    | 43,47%   | 0,00%    | 32,14%   | 16,67%   | 36,36%   | 0,00%    | 30,00%    | 21,86% |
| ging lex         | 20,00%   | 5,00%    | 0,00%    | 21,74%   | 0,00%    | 10,71%   | 0,00%    | 0,00%    | 0,00%    | 10,00%    | 6,75%  |
| ovt              | 73,33%   | 30,00%   | 100,00%  | 30,43%   | 0,00%    | 46,43%   | 66,67%   | 54,55%   | 100,00%  | 60,00%    | 56,14% |
| vvt              | 6,67%    | 5,00%    | 0,00%    | 4,35%    | 0,00%    | 7,14%    | 8,33%    | 9,09%    | 0,00%    | 0,00%     | 4,06%  |
| zat              | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| stond            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 3,57%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,36%  |
| moest            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| wilde            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| mocht            | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| was aan het      | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%     | 0,00%  |
| deed             | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 0,00%    | 8,33%    | 0,00%    | 0,00%    | 0,00%     | 0,83%  |
| dummy            | 0,00%    | 60,00%   | 0,00%    | 43,47%   | 0,00%    | 35,71%   | 25,00%   | 36,36%   | 0,00%    | 30,00%    | 23,05% |
| Verb phrases     | 15       | 20       | 1        | 23       | 0        | 28       | 12       | 11       | 1        | 10        | 12,1   |

Table 19 - The past tense (vt) without copula per child - 8 years old