How strong is the ban on non-finite verbs in V2? Evidence from early second language learners of German with and without SLI

Abstract: Using the standardized test LiSe-DaZ across four test rounds, we collected elicited production data from 22 typically developing early second language learners (eL2 TD) of German (mean age at T1: 3;7) and 11 older eL2 children with Specific Language Impairment (SLI) (mean age at T1: 7;1). Focusing on the relation between verb placement and verbal inflectional morphology two questions were addressed: Do eL2 children obey the ban on non-finite verbs in verb-second position (V2) in German, and do eL2 SLI children differ from their eL2 TD peers in their morpho-syntactic behavior? This is the first study on this issue to systematically differentiate between V2 and verb-final position (Vf) and between bare verb forms and infinitives, based on a large sample of elicited production data. Results show that from the first test round onwards verbal inflectional morphology and verb placement were strongly related in the TD and the SLI group. Bare verb forms occurred in V2 only and are argued to be finite; en-infinitives were restricted to Vf. We conclude that a) the restrictions for morphological markings are inextricably tied to specific syntactic positions, b) that this knowledge is still accessible when L2 acquisition starts around age 3, and c) that the ban on non-finite verbs in V2 is invulnerable in eL2 TD and in SLI, indicating that SLI is matter of severe delay.

Keywords: Early second language acquisition (eL2), Specific Language Impairment (SLI), Verb-second (V2), infinitives, bare verb form, German

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1 Introduction

In verb-second (V2) languages like German, the V2 position is restricted to finite verbs in the adult grammar; overtly marked non-finite forms such as en-infinitives are not licensed in this position (e.g., Haider 2010; Holmberg 2015; Vikner 1995). Typically developing (TD) monolingual children acquiring German seem to obey this ban on non-finite verbs in V2. Initially, verbs appear exclusively in verb-final (Vf) position and are non-finite, followed by a phase of variability between main clauses with finite verbs in V2 and main clauses with non-finite verbs in Vf. Importantly, infinitives are almost never found in V2 (Clahsen and Penke 1992; Tracy 1991; Weissenborn 1990). The same pattern has been reported for early second language (eL2) TD acquisition (Prévost 2003; Rothweiler 2006; Thoma and Tracy 2006; Tracy and Thoma 2009). Verb forms without any inflectional marking have been observed in some eL2 TD children, and have been argued to be covertly finite (Prévost 2003). This agrees with the assumption that knowledge of the relation between verb placement and verbal morphology is not expected to be vulnerable in eL2 acquisition, given that it is in place early in monolingual acquisition (Grimm and Schulz 2016; Tsimpli 2014).

In contrast to TD children, children with Specific Language Impairment (SLI) take much longer to acquire finiteness marking and subject verb agreement and often produce non-target main clauses up to age 10 (cf. overview in Hamann [2015]). Importantly, children with SLI have been reported to sometimes produce non-finite verbs in V2 position in monolingual acquisition (Clahsen 1991; Clahsen et al. 1997). The same has been reported for at least one SLI child with eL2 (Chilla 2008), suggesting that knowledge of the relation between verb placement and verbal morphology is vulnerable in eL2 SLI children, as in monolingual children with SLI.

Despite recent advances, a number of uncertainties persist and it is hence still unclear whether eL2 children with TD and with SLI obey or violate the ban on non-finite verbs in V2. Notably, findings on deficits in the verbal inflectional system are not easily comparable across languages, as languages differ in how they mark a verb as non-finite or finite. In some languages like English there is no distinct infinitival suffix, rendering the verbal stem (e.g., play-) and the infinitive (play.INF) homophonous, as well as all the present tense forms except for 3sg. In languages like Italian the infinitive is marked with a specific suffix (-are/-ire as in andare ‘go’, venire ‘come’) that is not used anywhere else in the inflectional paradigm. Still other languages like German mark the infinitive with an overt suffix (-en, as in spiel-en ‘play.INF’), which is used to mark some finite forms as well (cf. Section 2). Importantly, only languages of the latter two
types allow distinguishing between the overtly marked infinitival form and the verb stem.

In addition, in acquisition studies to date classification of verbs as finite or non-finite varies widely (cf. Section 3). While infinitives are generally considered to be non-finite, the finiteness properties of the so-called bare verb form (e.g., *spiel-Ø* ‘play-Ø’) are a matter of debate. Here we use the term “bare form” when referring to the form composed of the verb stem and a null morpheme/zero suffix (cf. Spencer and Zwicky 1998). In previous acquisition research, the difference between bare forms and *en*-infinitives has been neglected. Both bare forms and *en*-infinitives have been analyzed as “potentially non-finite” (Rothweiler et al. 2012), or bare forms have been excluded from analysis due to ambiguity between finite and non-finite (Clahsen et al. 1997). Bare forms have also been argued to be covertly marked for finiteness, while *en*-infinitives were analyzed as non-finite (Prévost 2003). The latter view corresponds to the argumentation followed in the present study.

Moreover, placement (V2/Vf) has not been considered in eL2 research when agreement deficits in verbs have been targeted (except for Prévost [2003]), thus masking potential connections between verbal morphology and verb placement. Furthermore, the types of verbs included in the analysis have varied across studies. This is important, because modals and auxiliaries as well as possessive *have* and *be* have been argued to behave differently from lexical verbs and to be less affected in SLI (e.g., Clahsen 1991; Wexler 1994). Some analyses included lexical verbs, modals, and auxiliaries except for *be* (Clahsen et al. 1997; Rothweiler et al. 2012), others examined lexical and functional verbs separately (Prévost 2003).

Of particular relevance here is the role that spontaneous speech corpora can play. These provide a wealth of natural data but have the disadvantage of comprising heterogeneous linguistic contexts for producing main and subordinate clauses. Finally, analysis of verbal inflections and verb placement is notoriously difficult in child acquisition research (Tracy 1991). How and what to count is guided by the underlying theoretical assumptions on German clause structure and the models assumed for TD development (Hamann 2015). Consequently, the coding and counting procedures have varied across studies making comparisons more difficult.

In this paper we look in detail at finite verb forms, *en*-infinitives, and bare verb forms in interaction with their placement (V2 vs. Vf) to address the central question of whether eL2 learners of German with TD and with SLI obey the ban on non-finite verbs in V2. Using elicited production collected via LiSe-DaZ (Schulz and Tracy 2011), we investigated whether the eL2 children distinguish between *en*-infinitives and bare verb forms regarding verb placement. More
specifically we asked whether eL2 children with SLI differ in these respects from eL2 children with TD. Our goal was to better understand the characteristics of eL2 acquisition and the nature of the impairment underlying the morpho-syntactic difficulties in SLI. Finally, we aimed to contribute to the theoretical debate of how hard-wired the restrictions are for verbal morphology in specific syntactic positions in children’s grammar.

The paper is structured as follows: In Section 2 we outline central theoretical aspects of verb placement and finiteness in German main clauses. In Section 3 we summarize previous research on the acquisition of finiteness and verb placement in TD and SLI development, both for monolingual and eL2 children, and present the research questions. In Section 4 we describe the design and the results of our study. The findings and their implications are discussed in Section 5.

2 Finiteness and verb placement in German

German belongs to the verb-second (V2) languages that have V2 in root clauses only, i.e. the finite verb obligatorily appears in second position in main clauses (cf. Holmberg [2015] for an overview of V2). This holds for subject-initial (1a) and for non-subject-initial root clauses (1b) alike, because German, unlike English, is a generalized V2 language. It shows V2 movement with all types of constituents that can be hosted by the prefield. The V2 property consists of two components: (a) Movement of the finite verb to the top-most functional head position, and (b) Movement of some XP to the specifier of this head (Haider 2010; Holmberg 2015). Put differently, the second position in German hosts only finite verbal elements; en-infinitives and verb stems are not licensed.

(1) a. *Lise fütter-t den Hund.*
   Lise feed-3sg the.ACC dog
   ‘Lise feeds the dog.’

   the.ACC dog feed-3sg Lise
   ‘Lise feeds the dog.’

The structure of German root and embedded clauses, the insertion of verbs as roots or inflected, and the trigger for V2 movement are matters of much debate.

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1 V1 structures will not be discussed separately.
In the following we briefly delineate the assumptions relevant to this acquisition study.

In line with frameworks in syntactic theory and in acquisition that postulate functional layers only when they are needed to explain the observational data, we adopt the syntactic architecture proposed by Haider (2010) for German. Accordingly, at least one functional projection exists above the VP, accommodating either the finite verb moved to the functional head position or the complementizer (for alternative assumptions, see Vikner [1995] among others). The two clause types are illustrated in (2a) and (2b) (Haider 2010: 85).

\[(2)\]
\[\text{a. } [\text{FP } X\text{Pi } [F^\circ V_{\text{fin-j}} (\ldots) \ [VP \ldots e_i \ldots e_j]]] \]
\[\text{b. } [\text{CP } C^\circ (\ldots) [[VP \ldots]\ldots V_{\text{fin}}]]\]

The verb is base-generated within a head-final VP. Clause-final finite verbs in German are checked in their VP-internal lexical head position and stay in-situ in the VP head position (2b). Movement applies only when the finite verb moves to the V2 position, i.e. the top functional head position (2a). We assume that subject-initial and non-subject-initial V2 clauses have the same structure, i.e. the finite verb always moves into the FP domain (cf. Vikner and Schwartz [1996]; Haegeman [1996]; Platzack [1998], for similar proposals). For this reason we use the term “V2” loosely for all clauses in which one single constituent linearly precedes the finite verb.

Consensus is lacking as to whether verbs are inserted from the lexicon into the structure as roots (e.g., Hale and Keyser 1993) or already inflected for tense and agreement (Chomsky 1995). In the spirit of Distributed Morphology (Hale and Keyser 1993) we assume that lexical roots are inserted in the syntactic computation and that tense (and aspectual) morphemes are then assigned and checked via agree with a higher functional projection. Following the standard view on agreement (Chomsky 2000), we posit that subject and verb are in an Agree relation. We further assume that under c-command an Agree relation holds between C or F, respectively, and V (Chomsky 2008). In German the subject checks and values the person and number features of the verb. German verbs are morphologically marked for number and person as well as tense. The present tense inflectional paradigm for lexical verbs consists of five different suffixes, as shown in Table 1.

\[\text{2 But see e.g., Travis (1984) who suggests different structures for subject- and non-subject-initial clauses.}\]
Table 1: German inflectional paradigm for lexical verbs in the present tense.

<table>
<thead>
<tr>
<th>Person</th>
<th>Suffix</th>
<th>Example spielen ‘play’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singular</td>
<td>1</td>
<td>-e</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Ø</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-st</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-t</td>
</tr>
<tr>
<td>Plural</td>
<td>1</td>
<td>-en</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-t</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-en</td>
</tr>
</tbody>
</table>

All present tense suffixes are obligatory, except for the 1sg form -e. This unstressed schwa may be deleted in colloquial speech. Unlike in English, infinitives such as spielen-en ‘play-inf’ can be distinguished from bare forms such as spielen-Ø ‘play-Ø’, since German infinitival verbs are overtly marked with the suffix -en. en-infinitives do not carry any tense and agreement features and are considered non-finite. The status of unlicensed bare verb forms, found mainly in learners’ grammar, is less clear. There are bare forms with Umlaut as in umfäll-Ø ‘fall over’, which pattern with the finite inflectional paradigm (fällt um ‘falls over’) and clearly differ from the verb stem umfall- and the infinitive umfall-en. This may indicate that bare forms are underlingly finite.

Consensus is also lacking with regard to what triggers V2 movement. Some accounts state that obligatory V2 movement of main verbs applies to languages with rich agreement systems such as German (e.g., Roberts 1993). The verb needs to check its phi-features Person and Number before LF. Therefore overt verb movement from V0 to a higher functional head is required. Alternatively, V2 is explained in terms of assertion: Verb movement to the top most functional domain (F0 in Haider’s [2010] model) allows checking the illocutionary force of the sentence, resulting in V2 (Reis 1985; Reis 1997; Wechsler 1991 among others). Note that the former accounts predict a causal relation between verb movement and finiteness and agreement marking, while the latter does not.

Given the assumption above that clause-final finite verbs in German are checked in their VP-internal lexical head position (Haider 2010), we hold that the verb does not leave the VP for the sake of tense or agreement but for the sake of illocutionary force, i.e. assertion for declarative clauses.

3 The imperative SG form patterns with the 1SG form.
3 Acquisition of verbal inflectional morphology and verb placement in German

3.1 TD children

The acquisition of verbal inflectional morphology, i.e. marking of finiteness and Subject Verb Agreement (SVA), and of verb placement is part of the core grammar that is claimed to be acquired early (Grimm and Schulz 2016; Tracy 1991; Tsimpli 2014). Both aspects have been well studied in German-speaking monolingual TD children, using spontaneous speech corpora (Clahsen 1986; Clahsen et al. 1996; Tracy 1991; Weissenborn 1990). In monolingual TD acquisition, target-like verbal inflection is mastered by age 3. In an earlier acquisition phase infinitives in Vf occur simultaneously with target-like inflected verbs in V2 (Clahsen 1986; Wexler 1993). To account for these phases, several theoretical approaches have been proposed including the Optional Infinitive Hypothesis (Wexler 1994), the Truncation Hypothesis (Rizzi 1993/94), and the Lexical Learning Hypothesis (Clahsen et al. 1996). Notably, non-inflected verbs in V2 are rarely attested (Tracy 1991), and in the few attested cases, bare forms are more frequent than *en*-infinitives (Clahsen and Penke 1992). Errors of substitution, i.e. forms that do not agree in person or number, are rarely found. Finite verbs are attested in Vf position in about 10% to 17% (Clahsen et al. 1996; Tracy 1991). This pattern suggests that young monolingual TD children are aware of the relation between verbal morphology and verb placement from early on.

E2 TD learners of German, with an age of onset of the L2 between 2 and 4, closely resemble their monolingual peers in the acquisition of verbal inflectional morphology and verb placement, as suggested by findings from spontaneous speech analyses (Prévost 2003; Rothweiler 2006; Thoma and Tracy 2006; Tracy and Thoma 2009). Target-like marking of finiteness and agreement and verb placement is mastered after about 6 to 18 months of exposure, preceded by a phase of producing infinitives in Vf side by side with target-like inflected verbs in V2 (Rothweiler 2006; Thoma and Tracy 2006). Errors of substitution are rarely documented. E2 TD learners of German also rarely produce *en*-infinitives in V2 (Prévost 2003; Rothweiler 2006), but at some point in acquisition they overuse bare forms in V2 (Chilla 2008; Prévost 2003; Rothweiler et al. this volume; for English: Haznedar 1997; Haznedar and Schwartz 1997; for Dutch: Blom and Baayen 2012). In line with Haznedar and Schwartz (1997), Prévost (2003) adopts the Missing Surface Inflection Hypothesis (MSIH) for child acquisition and argues that these bare forms are covertly specified as [+finite] and...
unspecified for person and number features. According to the author, this also explains why bare verb forms are only attested in finite positions, i.e. in V2 main clauses. Note, however, that Prévost's findings in support of the MSIH in German are based on a case study of one eL2 TD learner, leaving open the question of generalizability. Moreover, other accounts including the Agreement Deficit Hypothesis (ADH, cf. Section 3.2) hold that ungrammatical bare forms are potentially non-finite forms and indicate difficulties with SVA.

### 3.2 SLI children

Based on data from spontaneous speech corpora, monolingual German-speaking children with SLI have been reported to exhibit severe and persistent difficulties with verbal inflectional morphology and with verb placement. These difficulties have been explained in terms of a delayed development or a deficit (cf. Leonard 2014). Target-like verbal morphology for marking SVA is rather low, e.g., around 70% in a group of six 5- to 8-year-old monolinguals with SLI studied by Clahsen (1991) (for further analyses of the same children, cf. Clahsen et al. [1997]; Rothweiler et al. [2012]; Rothweiler et al. [this volume]). The SLI children used bare forms most frequently (59%), followed by substitutions, i.e. incorrect uses of finite forms (31%), and by en-infinitives (10%). To account for this data, Clahsen and colleagues proposed the Agreement Deficit Hypothesis (ADH) which states that children with SLI, monolingual or bilingual, have difficulty with grammatical morphology like SVA (for German: Clahsen 1991; Rothweiler et al. 2012; Rothweiler et al. this volume; for English: Clahsen et al. 1997). Rephrasing the ADH within a minimalist framework, Clahsen et al. (1997) state that phi-features on verbs, i.e. person and number, are impaired or lacking in children with SLI, while tense marking and the ability to raise the verb to V2 are unimpaired. They claim that as a result children with SLI may not be able to generate the correct finite form for a verb and may then resort to non-finite forms. In our view, it remains unclear whether the ADH predicts that agreement difficulty in SLI children surfaces mainly as substitution errors or as non-finite forms.

Results to date are mixed regarding the relation between verb morphology and placement. Some studies report that monolingual SLI children are aware of the relation between verbal morphology and verb placement, with non-finite verbs occurring in Vf parallel to target-like finite V2 structures (Clahsen et al. 1997; Rice et al. 1997), while other studies report that up to 44% of finite verbs
in main clauses are placed in Vf position (Hamann et al. 1998). According to Rice et al. (1997) monolingual SLI children resemble monolingual TD children in their verb placement patterns, but show an Extended Optional Infinitive (EOI) Stage, i.e. a stage in which they are not aware that tense marking is obligatory in main finite clauses (cf. also Wexler 2003). Note that non-finite verbs in Vf could also be explained by some version of the ADH (Clahsen et al. 1997). Other researchers argue for an impaired clause structure in SLI, resulting in prolonged problems with the full specification of the CP including wh-movement and subordination, as well as – for German – generalized V2 (for German: Hamann et al. 1998; Hamann 2015; for English: van der Lely 1998; for Hebrew: Novogrodsky and Friedmann 2006).

To date, research on eL2 SLI acquisition of German is scarce. Findings from the analysis of spontaneous speech samples of seven eL2 children with SLI indicate that verbal morphology for SVA is problematic up to age 8, with target-like inflection reaching only 74% overall (Rothweiler et al. 2012; Rothweiler et al. this volume). Note that in these studies bare forms and -en were classified as potentially non-finite. Focusing on children’s substitution errors the authors conclude that the error distribution of eL2 SLI and monolingual SLI children is similar and in both groups problems seems to be persistent. According to our own calculations of their data, bare forms (17%) and en-infinitives (6%) were in fact more frequent than substitutions (3%). Moreover, in line with the ADH, verb placement was not considered.

In summary, despite existing acquisition research the question remains open of how robust the ban on non-finite verbs in V2 is for early second language learners of German, with and without SLI. en-infinitives seem rare in V2, compared to bare forms, which are found more frequently and of which the analysis is controversial, as pointed out above. To address the limitations of previous research laid out in Section 1, we investigated the acquisition of finiteness marking in a larger group of eL2 children with TD and with SLI via an elicited production task, analyzing children’s verb forms in Vf and in V2 clauses separately and examining lexical and functional verbs independently.

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4 In Clahsen’s analysis bare forms were excluded due to their ambiguity between finite and non-finite; Hamann’s analysis was based on XVS structures only.
5 A careful evaluation of these accounts is beyond the scope of the present paper.
6 But see Chilla (2008), who found two en-infinitives in V2 in a small sub-subset of these eL2-SLI children.
3.3 Research questions

This study addresses the following questions:

[Q1] Do early second language learners of German obey the ban on non-finite verbs in V2?
(a) Which verb forms do eL2 children with TD and with SLI use in V2?
(b) Do eL2 children with TD and with SLI distinguish between en-infini-
tives and bare forms regarding verb placement?

[Q2] Do eL2 children with SLI differ from their eL2 TD peers in their morpho-
syntactic behavior?

Based on the findings from previous studies, the eL2 TD children were expected to restrict non-finite forms to Vf position, just as their monolingual TD peers, while early learners of German with SLI were predicted to allow non-finite forms also in V2, just as their monolinguals peers with SLI. Recall that our use of “V2” is loose, comprising both subject-initial and non-subject-initial clauses (cf. Section 2). Likewise, in our data analysis we did not distinguish between subject-initial and non-subject initial clauses, because our task allowed for subject drop and, moreover, favored subject-initial clauses.

4 Study

4.1 Participants

The participants were 33 children acquiring German as their second language (TD: 22, SLI: 11), who all took part in the longitudinal MILA study. Both participant groups were tested in four test rounds (T1, T2, T3, T4); the first three test rounds were administered in six-month intervals and T4 within a one-year-interval. The children were selected from the sample according to the following criteria: (1) All children are eL2: They had their first systematic exposure to German between the age of 24 and 48 months, typically when entering kindergarten. (2) At T1 they were at least 3;5 years and had a minimum of five months of exposure to German. (3) They had an age-appropriate nonverbal IQ, assessed by the nonverbal scales of the Kaufman Assessment Battery for children (Mel-

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7 The Project MILA (Principle Investigator: Petra Schulz) is part of the Research Centre IDeA. The design of the project was approved by the Ethics Committee of the German Psychological Association (DGPs).
Table 2: Participant information.

<table>
<thead>
<tr>
<th></th>
<th>eL2 TD</th>
<th>eL2 SLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Ø Age in years (range)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At T1</td>
<td>3;8 (3;5–4;1)</td>
<td>7;1 (4;4–9;3)</td>
</tr>
<tr>
<td>At T2</td>
<td>4;2 (4;0–4;4)</td>
<td>7;7 (4;8–9;8)</td>
</tr>
<tr>
<td>At T3</td>
<td>4;7 (4;4–4;9)</td>
<td>8;2 (5;4–10;3)</td>
</tr>
<tr>
<td>At T4</td>
<td>5;8 (5;4–6;3)</td>
<td>8;11 (6;6–10;9)</td>
</tr>
<tr>
<td>Ø Age at onset of acquisition of L2 in years (range)</td>
<td>2;10 (2;0–3;4)</td>
<td>3;3 (2;9–3;9)</td>
</tr>
<tr>
<td>Ø Months of exposure at T1 (range)</td>
<td>11 (5–19)</td>
<td>45 (7–75)</td>
</tr>
</tbody>
</table>

In light of the findings on eL2 acquisition, the age range for the TD and the SLI group was chosen so that main clauses were likely to be already produced by the children, but mastery of finiteness and verb placement was unlikely to be in place, i.e. the children were not matched on an external language variable. The mean age of the TD group was 3;8 years (range 3;5 to 4;1) at T1, and the mean age of the eL2 children with SLI at T1 was 7;1 years (range 4;4 to 9;3). The larger age range of the SLI group results from the observation that children with SLI show persistent morpho-syntactic deficits. Participant information is given in Table 2.

The children acquired different L1s, most frequently Arabic, Russian, and Turkish. All participants in the SLI group met the typical criteria of SLI: They had no signs of hearing problems or of psycho-social deprivation, assessed by parental questionnaires and all had an age-appropriate nonverbal IQ (cf. Leonard 2014). All children were enrolled in speech and language therapy and in addition scored below their age-appropriate norms in at least two out of nine scales in the standardized language test LiSe-DaZ normed for eL2 children (Schulz and Tracy 2011) (for details on this SLI criterion, see Grimm and Schulz [2014]). In addition, none of the children had any articulatory problems.

None of the participants in eL2 TD group received speech and language therapy. In addition, all eL2 TD children scored within their age-appropriate norms in at least eight out of nine scales of the LiSe-DaZ test.8

8 Parts of the sample were included in Wojtecka et al. (2013) and Schwarze et al. (2015). See Schwarze (2016) for a detailed description of the participants.
4.2 Materials and Method

Production data were collected with the elicited production task of the standardized test LiSe-DaZ (Schulz and Tracy 2011). Following the instructions of the test manual, 19 prompts were supplied by the experimenter to elicit sentences with a variety of verbs and inflectional verb forms differing in person and number. The prompts, mostly wh-questions, are part of the picture book narrative to allow for a natural story-telling context. Thirteen items targeted main clauses and six aimed at subordinate clauses. Example (3) illustrates elicitation of a main clause and a possible child utterance:

(3) Test item 6

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Experimenter (points to the picture):
Guck mal, was passiert denn auf diesem Bild?
‘Look, what is happening in this picture?’

Child:
Die Kinder spielen Ball mit dem Hund
‘The children are playing ball with the dog.’

Children’s utterances were analyzed morphologically and syntactically regarding inflectional marking and verb placement. Note that this analysis goes beyond the coding required by the test and, most importantly, performance on the related production scales SVK (subject verb agreement) and ESS (syntactic milestone) was not part of the classification of the children as TD or SLI. All children were tested individually by trained student assistants, and all test sessions were video-recorded for later transcription and coding. All verbal inflections were coded independently by two trained research assistants.

4.3 Data analysis

The entire data corpus consisted of 2315 utterances. For the purposes of the current study the following utterances were excluded from further analysis
(n = 585): single word utterances, utterances without a verb, fixed expressions (e.g., Ich weiß nicht ‘I don’t know’), imitations, and unanalyzable utterances. Structures with ambiguous verb placement such as Er geht (he go.3sg, ‘he goes’) and verb third structures (weil sie winkt dem Hund ‘because she waves the/dat dog’) were also excluded from further analysis. The resulting corpus consisted of 1730 utterances (eL2 TD: 1141, eL2 SLI: 589). These utterances were first classified (i) regarding the type of the main verb: lexical verb or functional (i.e. auxiliaries, modals, possessive have, be), (ii) regarding their sentence type: main clause (i.e. an independent clause) or subordinate clause (i.e. containing an overt complementizer like dass ‘that’, ob ‘whether’, weil ‘because’, wenn ‘if’), and (iii) regarding their verb placement: V2 or Vf. For the purposes of the current study, the focus was on main clauses (MC) containing a lexical verb in either V2 or Vf position. Of all utterances (MC and SC) analyzed, 753 utterances contained a lexical verb as the main verb (eL2 TD: 489, eL2 SLI: 264), and 977 utterances contained a functional verb as the main verb (eL2 TD: 652, eL2 SLI: 325).

In a separate step (iv) all main verb forms were coded for finiteness and for agreement with the subject. Verb forms were coded as finite if they were inflected with -e, -st, or -t. The form -en was coded as finite when used in 1PL or 3PL contexts (cf. Prévost 2003; Rothweiler 2006), otherwise it was coded as non-finite. The form -Ø was coded as “?finite” in all contexts except for 1SG, where it was coded as finite, because the bare form, resulting from Schwa-deletion, is accepted in this case (e.g., Ich komm ‘I come-Ø’).9 In coding for SVA we distinguished between correctly inflected verb forms (i.e. verbs with the target inflectional suffix, cf. Table 1) and non-agreeing verb forms (i.e. substitution, bare verb form, en-infinitive). In the case of substitution, the overt verb form carries the wrong person and/or number feature (e.g., du mach.t das ‘you make.3sg that’ instead of du mach.st das ‘you make.2sg that’). Bare forms are non-agreeing if used in a context other than 1SG, and the form -en is non-agreeing if used in a context other than 1PL or 3PL (cf. Clahsen et al. 1997). Table 3 illustrates the respective coding for V2 main clauses. The same classification and coding were used for Vf main clauses such as Der Hund mit dem Ball spiel.en ‘the dog with the ball play.inf’.

Note that in the context of this elicited production task subject drop is felicitous. Most subjects were realized overtly (TD: 93%, SLI: 91%). As the intended subject could be inferred from the standardized context in this task,

9 As pointed out by one reviewer, these forms could in principle also be bare verb forms. Note, however, that bare forms in 1SG contexts were very rare throughout the entire corpus (TD: 3, SLI: 4).
Table 3: Coding of main clauses.

<table>
<thead>
<tr>
<th>Verb form</th>
<th>Finiteness</th>
<th>Agreement</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target inflection</td>
<td>+ finite</td>
<td>+ agree</td>
<td><code>Der Hund spiel-t mit dem Ball.</code></td>
</tr>
<tr>
<td>Substitution</td>
<td>+ finite</td>
<td>– agree</td>
<td><code>Der Hund spiel-st mit dem Ball.</code></td>
</tr>
<tr>
<td>Bare form</td>
<td>? finite</td>
<td>– agree</td>
<td><code>Der Hund spiel mit dem Ball.</code></td>
</tr>
<tr>
<td>en-infinitive</td>
<td>– finite</td>
<td>– agree</td>
<td><code>Der Hund spiel-en mit dem Ball.</code></td>
</tr>
</tbody>
</table>

utterances with dropped subjects were included in the analysis, and target agreement was determined according to the implicit subject given by the preceding discourse.

4.4 Results

Let us first turn to the utterances with functional verbs as main verbs. Analyses of the main clauses revealed that functional verbs occurred almost exclusively in V2 across all test rounds in both groups (TD: 570/570 utterances; SLI: 284/285 utterances). Overall correctness rates for the inflections of functional verbs were very high (TD: 97%; SLI: 97%). Both findings – placement in V2 and target-like inflection – confirm previous studies showing that modals and auxiliaries as well as possessive have and be occur in the finite form from the beginning and never appear in Vf (Clahsen 1991; Prévost 2003; Wexler 1994).

In the following, we address the research questions by considering utterances with lexical verbs only. Table 4 summarizes the relevant data for lexical verbs in the eL2 TD and the eL2 SLI group.

Recall that 13 items prompted main clauses and six items subordinate clauses and that children were free in their choice of response. Therefore, all responses were analyzed independently of whether the target was a main or a subordinate clause. As shown in Table 4, the number of main clauses with Vf decreases across the test rounds, and the number of V2 main clauses increases as expected. To facilitate comparison of TD and SLI children, Figure 1 depicts the development of main clauses in percentage of V2 and Vf placement for both groups.

As seen in Figure 1, mastery of V2 in main clauses occurs much earlier in the eL2 TD than in eL2 SLI group. At age 5;8, after about 34 months of exposure
Table 4: Clause types containing a lexical verb in absolute numbers for both participant groups across the four test rounds. (T: Test round, MC: main clause, SC: subordinate clause).

<table>
<thead>
<tr>
<th></th>
<th>Test rounds</th>
<th>T1–T4</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>18</td>
<td>21</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>eL2 TD</td>
<td></td>
<td>MC (Vf)</td>
<td>54</td>
<td>16</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MC (V2)</td>
<td>358</td>
<td>48</td>
<td>81</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SC (Vf)</td>
<td>77</td>
<td>0</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All clause types</td>
<td>489</td>
<td>64</td>
<td>111</td>
<td>147</td>
</tr>
<tr>
<td>eL2 SLI</td>
<td></td>
<td>N</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MC (Vf)</td>
<td>37</td>
<td>15</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MC (V2)</td>
<td>193</td>
<td>42</td>
<td>49</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SC (Vf)</td>
<td>34</td>
<td>5</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All clause types</td>
<td>264</td>
<td>62</td>
<td>68</td>
<td>80</td>
</tr>
</tbody>
</table>

Figure 1: Development of verb placement in main clauses across the four test rounds for both groups in %.

to German, all main clauses produced by the eL2 TD children display V2, and main clauses with Vf are absent. The eL2 SLI group reaches this step on average 3;3 years later at age 8;11, after about 67 months of exposure. Leaving the large differences regarding chronological age and length of exposure aside for
a moment, the developmental paths of TD and SLI children are strikingly similar: Both groups start out with nearly 30% main clauses with Vf and take then about two years to reach mastery of verb placement in main clauses.

In order to answer the question of whether non-finite verbs are banned from V2 in early second language acquisition, we first analyzed the verb forms used by the eL2 TD and eL2 SLI children in V2 (Q1a). All verb forms were coded as target-like inflection, substitution, bare, or en-infinitive (cf. Section 4.3). Table 5 presents the results for lexical verbs in V2 produced by the eL2 TD learners.

Across all test rounds, the eL2 TD children inflected 91.3% of the lexical verbs in V2 target-like. At age 3;7 target-like inflection reached 81.3% and as of 4;7 it was at ceiling (97.2%). Substitutions were not produced at all during this age range; en-infinitives in V2 position occurred in only three cases (0.8%) across all test rounds; they are given in (4). Bare forms like (5) represent the most frequent error type in V2 during the first three test rounds as well as across all test rounds (7.8%).

(4) a. *der steh-en hier*
   he stand-INF here
   (28 TD 3;7 ME 13)10

   b. *der Hund fahr-en mit sein Schwester*
   the dog ride-INF with his sister
   (85 TD 4;0 ME 10)

Table 5: Verb forms of lexical verbs in V2 main clauses for eL2 TD children in absolute numbers and in %. (Mean age in years; ME = months of exposure).

<table>
<thead>
<tr>
<th>Verb form</th>
<th>T1–T4</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target infl.</td>
<td>327</td>
<td>39 (91.3%)</td>
<td>62 (76.5%)</td>
<td>103 (97.2%)</td>
<td>123 (100%)</td>
</tr>
<tr>
<td>Substitution</td>
<td>0</td>
<td>0 (81.3%)</td>
<td>0 (76.5%)</td>
<td>0 (97.2%)</td>
<td>0 (100%)</td>
</tr>
<tr>
<td>Bare form</td>
<td>28</td>
<td>8 (7.8%)</td>
<td>17 (16.7%)</td>
<td>3 (21%)</td>
<td>0 (2.8%)</td>
</tr>
<tr>
<td>en-infinitive</td>
<td>3</td>
<td>1 (0.8%)</td>
<td>2 (2.1%)</td>
<td>0 (2.5%)</td>
<td>0 (0.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>358</td>
<td>48 (100%)</td>
<td>81 (100%)</td>
<td>106 (100%)</td>
<td>123 (100%)</td>
</tr>
</tbody>
</table>

10 Child code, age in years and months of exposure.
(5) Die mach-Ø die Ballon
she make-Ø the balloon
(86 TD 4;4 ME 12)

In summary, eL2 TD children correctly inflect lexical verbs in V2 already at age 3;7, after just 11 months of exposure to the L2 German. Between the ages of 3;7 and 4;7 bare forms are the predominant error pattern (total \( n = 28 \)), while en-infinitives are basically absent throughout the entire period (total \( n = 3 \)). Table 6 presents the results for lexical verbs in V2 main clauses produced by the SLI learners.

Across all test rounds, the eL2 SLI children inflected 87% of the lexical verbs in V2 target-like. At age 7;1 target-like inflection reached 83.3% and it was at ceiling (97.6%) at the last test round at 8;11. Only one instance of substitution, given in (6) was found during this age range. Across all test rounds, two en-infinitives in V2 position were produced (1.08%), given in (7). Bare forms like (8) represent the most frequent error type in V2 overall (11.4%).

(6) du mach-t das kaputt
you make-3sg that broke
(76 SLI 9;3 ME 68)

Table 6: Verb forms of lexical verbs in V2 main clauses for eL2 SLI children in absolute numbers and in %. (Mean age in years; ME = months of exposure).

<table>
<thead>
<tr>
<th>Verb form</th>
<th>T1–T4</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target infl.</td>
<td>169</td>
<td>35</td>
<td>46</td>
<td>49</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>(87.0%)</td>
<td>(83.3%)</td>
<td>(93.9%)</td>
<td>(77.8%)</td>
<td>(97.6%)</td>
</tr>
<tr>
<td>Substitution</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(0.5%)</td>
<td></td>
<td></td>
<td>(1.6%)</td>
<td></td>
</tr>
<tr>
<td>Bare form</td>
<td>22</td>
<td>7</td>
<td>1</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(11.4%)</td>
<td>(16.7%)</td>
<td>(2.0%)</td>
<td>(20.6%)</td>
<td>(2.4%)</td>
</tr>
<tr>
<td>en-infinitive</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(1.0%)</td>
<td></td>
<td>(4.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>42</td>
<td>49</td>
<td>63</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>
(7) a. *die (= Hund) sitz-en mit = n Skateboard*  
the (= dog) sit-INF with = a skateboard  
(76 SLI 7;9 ME 47)  

b. *den Junge mach-en so*  
the.ACC boy make-INF so  
(75 SLI 7;8 ME 48)

(8) *Lise wink-Ø auch*  
Lise wave-Ø also  
(76 SLI 7;2 ME 42)

In summary, at age 7;1 eL2 SLI children exhibit correct inflection of lexical verbs in V2 in 83% of the cases, i.e. after 45 months of exposure to the L2 German. Bare forms are the predominant error pattern across test rounds (total $n = 22$), while *en-*infinitives are basically absent throughout the entire period (total $n = 2$).

Notably, near absence of non-target *en-*infinitives in contrast to frequent occurrence of non-target bare verb forms in V2 main clauses was found in the young TD and in the older SLI group, indicating that both groups do not treat them as interchangeable forms in V2. But, do eL2 TD children and eL2 SLI children actually distinguish between *en-*infinitives and bare forms regarding their verb placement (Q1b)? Or does this asymmetry result from a general preference for bare verb forms over *en-*infinitives in these groups? In order to address this concern we next analyzed children’s verb inflections in main clauses with Vf. Recall that main Vf clauses, i.e. independent clauses where the verb has not moved to V2, represent a licit stage in development (cf. Section 3). Table 7 illustrates the verb forms of lexical verbs in Vf main clauses for the TD group.

Out of a total of 54 Vf structures in the eL2 TD group, 52 were *en-*infinitives, as exemplified in (9). There was one case of substitution and one case of target-like inflection in Vf. The high number of *en-*infinitives in Vf indicates that eL2 TD children do not exhibit a general preference for bare verb forms over *en-*infinitives.

(9) *die Mama die Skateboard reparier-en*  
the mom the skateboard repair-INF  
(86 TD 4;4, ME 12)

Table 8 presents the results for the SLI children. Out of a total of 37 Vf structures, produced by the eL2 SLI children, 29 were *en-*infinitives like (10). Five
Table 7: Verb forms of lexical verbs in Vf main clauses for eL2 TD children in absolute numbers and in %. (Mean age in years; ME = months of exposure).

<table>
<thead>
<tr>
<th>Verb form</th>
<th>T1–T4</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age: 3;8 ME: 11</td>
<td>Mean age: 4;2 ME: 22</td>
<td>Mean age: 5;8 ME: 34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target infl.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>(1.9%)</td>
<td>(1.9%)</td>
<td>(33.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substitution</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(1.9%)</td>
<td>(6.3%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bare form</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>en-infinitive</td>
<td>52</td>
<td>15</td>
<td>21</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>(96.3%)</td>
<td>(93.7%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(66.7%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>21</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Verb forms of lexical verbs in Vf main clauses for eL2 SLI children in absolute numbers and in %. (Mean age in years; ME = months of exposure).

<table>
<thead>
<tr>
<th>Verb form</th>
<th>T1–T4</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age: 7;1 ME: 45</td>
<td>Mean age: 8;2 ME: 59</td>
<td>Mean age: 8;11 ME: 67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target infl.</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>(13.5%)</td>
<td>(16.7%)</td>
<td>(14.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substitution</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bare form</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>(8.1%)</td>
<td>(6.7%)</td>
<td>(7.1%)</td>
<td>(14.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>en-infinitive</td>
<td>29</td>
<td>10</td>
<td>13</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>(78.4%)</td>
<td>(66.7%)</td>
<td>(92.9%)</td>
<td>(71.4%)</td>
<td>(100%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>15</td>
<td>14</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

structures exhibit target-like inflection, and three have bare forms. The high number of en-infinitives in Vf indicates that, like eL2 TD children, eL2 children with SLI do not exhibit a general preference for bare verb forms over en-infinitives, independent of verb position.

(10) *der Hund hochfliegen*  
*the.NOM dog high.fly-INF*  
(78 SLI 8;6 ME 75)
In summary, unlike in V2 clauses, in Vf main clauses both the eL2 TD and the eL2 SL group produced *en*-infinitives frequently, while bare forms were nearly absent.

Before we directly compare the realization of verb forms in V2 and in Vf, we need to ensure that the Vf clauses, analyzed above as main clauses, are not simply attempts at subordination. Therefore, as an intermediate step we compared these Vf main clauses to Vf subordinate clauses and analyzed the verbal inflections of all Vf subordinate clauses that were marked as subordinate by an overt complementizer (cf. Section 4.3). The eL2 TD children produced a total of 77 Vf subordinate clauses with an overt complementizer, of which 72 (94%) showed target-like inflection. The five incorrect verb forms consisted of one substitution, two *en*-infinitives and two bare forms. The eL2 SLI children produced 34 Vf subordinate clauses with an overt complementizer, of which 30 (88%) showed target-like inflection. The four incorrect verb forms comprised two bare forms and two substitutions. In short, unlike in Vf main clauses, there was no preference for *en*-infinitives in Vf subordinate structures in either the TD or the SLI group. *en*-infinitives were specific to Vf in unembedded clauses.

We take this finding to indicate that eL2 children, both TD and SLI, at the specific ages tested distinguish between subordinate and main clause structures and, importantly, that *en*-infinitives in Vf main clauses are not simply instances of attempted subordinate clauses.

Subsequently, we directly compared the verb forms in V2 and Vf main clauses to test whether the TD and the SLI children distinguish between *en*-infinitives and bare forms regarding their placement (V2 vs. Vf) (Q1b). Table 9 summarizes the production patterns for lexical verbs for the TD group. In the eL2 TD group, the distribution of *en*-infinitives and bare forms differs between V2 and Vf: *en*-infinitives are significantly more frequent in Vf than in V2, and bare forms are significantly more frequent in V2 than in Vf (p’s < .000, Fisher’s Exact Test). Table 10 summarizes the respective production patterns for lexical verbs for the SLI group.

**Table 9:** Verb forms of lexical verbs in V2 and Vf main clauses for eL2 TD children in absolute numbers and in %.

<table>
<thead>
<tr>
<th>Verb form</th>
<th>V2 ( % )</th>
<th>Vf ( % )</th>
<th>Total (main clauses)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>en</em>-infinitive</td>
<td>3 (0.8%)</td>
<td>52 (96.3%)</td>
<td>55</td>
</tr>
<tr>
<td>Bare form</td>
<td>28 (7.8%)</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Substitution</td>
<td>0</td>
<td>1 (1.9%)</td>
<td>1</td>
</tr>
<tr>
<td>Target inflection</td>
<td>327 (91.3%)</td>
<td>1 (1.9 %)</td>
<td>328</td>
</tr>
<tr>
<td>All verb forms</td>
<td>358 (100 %)</td>
<td>54 (100 %)</td>
<td>412</td>
</tr>
</tbody>
</table>
As in the eL2 TD group, in the eL2 SLI group the distribution of *en*-infinitives and bare forms differs between V2 and Vf: *en*-infinitives are significantly more frequent in Vf than in V2, and bare forms are significantly more frequent in V2 than in Vf \((p's < .000, \text{ Fisher's Exact Test})\). These findings suggest that eL2 children with TD and older 2L2 children with SLI treat *en*-infinitives and bare forms differently.

In the final step, we tested whether SLI and TD children differ regarding this morpho-syntactic behavior (Q2). Table 11 summarizes the verb forms of lexical verbs for both child groups. Disregarding the differences in age and length of exposure, both groups show very similar response patterns. Target-like inflections in V2 constitute the dominant response type for both TD and

**Table 10:** Verb forms of lexical verbs in V2 and Vf main clauses for eL2 SLI children in absolute numbers and in %.

<table>
<thead>
<tr>
<th>Verb form</th>
<th>V2</th>
<th>Vf</th>
<th>Total (main clauses)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>en</em>-infinitive</td>
<td>2 (1.0%)</td>
<td>29 (78.4%)</td>
<td>31</td>
</tr>
<tr>
<td>Bare form</td>
<td>22 (11.4%)</td>
<td>3 (8.1%)</td>
<td>25</td>
</tr>
<tr>
<td>Substitution</td>
<td>1 (0.5%)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Target inflection</td>
<td>169 (87.0%)</td>
<td>5 (13.5%)</td>
<td>173</td>
</tr>
<tr>
<td>All verb forms</td>
<td>194 (100%)</td>
<td>37 (100%)</td>
<td>230</td>
</tr>
</tbody>
</table>

**Table 11:** Verb forms of lexical verbs produced in main clauses (V2 and Vf) in absolute numbers and in % for the TD and the SLI group.

<table>
<thead>
<tr>
<th>Verb form</th>
<th>Clause type</th>
<th>eL2 TD</th>
<th>eL2 SLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target inflection</td>
<td>V2</td>
<td>327 (79.4 %)</td>
<td>168 (73.0 %)</td>
</tr>
<tr>
<td></td>
<td>Vf</td>
<td>1 (0.2 %)</td>
<td>5 (2.2 %)</td>
</tr>
<tr>
<td>Bare form</td>
<td>V2</td>
<td>28 (6.8 %)</td>
<td>22 (9.6 %)</td>
</tr>
<tr>
<td></td>
<td>Vf</td>
<td>0</td>
<td>3 (1.3 %)</td>
</tr>
<tr>
<td><em>en</em>-infinitive</td>
<td>V2</td>
<td>3 (0.7 %)</td>
<td>2 (0.9 %)</td>
</tr>
<tr>
<td></td>
<td>Vf</td>
<td>52 (12.6 %)</td>
<td>29 (12.6 %)</td>
</tr>
<tr>
<td>Substitution</td>
<td>V2</td>
<td>0</td>
<td>1 (0.4 %)</td>
</tr>
<tr>
<td></td>
<td>Vf</td>
<td>1 (0.2 %)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>412 (100 %)</td>
<td>230 (100 %)</td>
</tr>
</tbody>
</table>
SLI children (79.4% and 73%). Substitutions are equally infrequent for TD and SLI children in both V2 and Vf. en-infinitives in Vf constitute the most frequent error type overall (TD: 12.6%, SLI: 12.6%), followed by bare forms in V2 (TD: 6.8%, SLI: 9.6%). The reverse error patterns, en-infinitives in V2 (TD: 0.7%, SLI: 0.9%) and bare forms in Vf (TD: 0%, SLI: 1.3%) are effectively absent in both the TD and the SLI group. An analysis of the distribution of all verb forms in V2 and Vf indicates a significant difference between the TD and the SLI group ($p = .01572$, Fisher’s Exact Test). However, this effect may be most likely caused by the high proportion of target inflections overall (495 of 642) compared to the low proportions of other verb forms resulting in significant effects for small differences between TD and SLI. A second analysis, restricted to en-infinitives and bare forms, reveals that the occurrence of these forms in V2 and Vf does not significantly differ between eL2 TD and eL2 SLI children ($p = .1465$, Fisher’s Exact Test). Considering the age difference between the two learner groups, this result is striking.

5 Discussion

The present study was guided by two main questions: First, do early second language learners of German obey the ban on non-finite verbs in V2? That is, which verb forms do eL2 children with TD and with SLI use in V2 (Q1a), and do eL2 children with TD and with SLI distinguish between en-infinitives and bare forms regarding verb placement (Q1b)? Second, do eL2 children with SLI differ from their eL2 TD peers in their morpho-syntactic behavior (Q2)?

In contrast to previous eL2 studies, we systematically differentiated between V2 and verb-final position (Vf) and between bare verb forms and infinitives, based on a large sample of elicited production data. Regarding Question (1a), bare forms represented the most frequent error type for V2 clauses in the TD (8%) and the SLI group (11%). In both groups, substitutions were absent in V2, and en-infinitives occurred very rarely. In Vf clauses, en-infinitives represented the most frequent response type in both groups (TD: 96%, SLI: 78%), while substitutions were absent. In the SLI group a few bare forms occurred in Vf (8%). Subordinate Vf clauses with an overt complementizer revealed a distinctly different pattern, with target-like inflection representing 94% (TD) and 88% (SLI) of the responses. As for Question (1b), en-infinitives were significantly more frequent in Vf than in V2, and bare forms were significantly more frequent in V2 than in Vf for both TD and SLI children, indicating that both groups distinguished between bare forms and en-infinitives regarding their verb
placement. As for Question (2), this finding shows that at age 7 to 9 eL2 children with SLI do not differ in their morpho-syntactic behavior from their TD peers who are younger by three years.

Our eL2 TD results from elicited production are in line with spontaneous speech studies, which found strikingly few instances of substitutions and *en*-infinitives, and some overuse of bare forms in V2 (Prévost 2003; Rothweiler 2006; Thoma and Tracy 2006). However, the conclusions drawn from the spontaneous speech study on German eL2 SLI (Rothweiler et al. 2012; Rothweiler et al. this volume) are not supported by our eL2 SLI results. These authors argue for a general agreement deficit of eL2 children with SLI in support of the ADH and hence disregard verb placement as a factor. In our study, there was no clear evidence for a general deficit in marking person and number, as substitutions were almost absent. Moreover, the systematic differences we found between bare forms and *en*-infinitives are not predicted by the ADH. Evaluating our eL2 SLI findings with respect to accounts proposed for monolingual SLI children, we find support for some CP deficit (Hamann et al. 1998) as well as for the EOI account (Rice et al. 1997): Unlike eL2 TD children who realized V2 in 90% of the main clauses already at age 4;7, the eL2 SLI mastered this step only at age 8;2, and up to that age produced *en*-infinitives in Vf side by side with finite verbs in V2.

Summarizing, we conclude that early second language learners of German, with TD and with SLI, obey the ban on non-finite verbs in V2 in three ways. First, lexical verbs in V2 are inflected target-like in the majority of cases (eL2 TD: 91%, eL2 SLI: 87%). Second, very few instances of *en*-infinitives in V2 are attested in the entire corpus (3 for TD, 2 for SLI). Third, bare forms – the most frequent error type in V2 – pattern with finite verbs but not with *en*-infinitives regarding their placement. Like finite verbs, bare forms were restricted to V2 and, unlike *en*-infinitives, bare forms almost never occurred in Vf main clauses.

These findings clearly indicate that bare verb forms in V2 should not be characterized as non-finite. In line with the MSIH, we assume that bare forms are not specified for person and number, but may carry a covert finiteness feature, allowing them to be hosted by the V2 position. As a consequence, V2 clauses with bare verb forms are taken to express assertive force (cf. Section 2). This assumption has *i.a.* implications for the realization of subjects. Given the standard assumption that subjects are assigned case by the finite verb, overt subjects should be found with bare forms in V2. This could be investigated in detail in future studies.\footnote{In our sample indeed most of the bare forms in V2 had an overt subject (TD: 24/28, SLI: 18/22); the rate was equivalent to that of finite verb forms.}
Our results from the TD group support the general claim that earliness in monolingual acquisition predicts sensitivity to age of onset effects in L2 acquisition. Knowledge of the relation between verb morphology and verb placement is acquired early in monolingual acquisition and is still accessible for second language learners with an age of onset between 2 and 4 (cf. Grimm and Schulz 2016; Tsimpli 2014). Child second language learners with a higher age of onset are hence predicted to violate the ban on non-finite verbs in V2 (for first evidence confirming this prediction see Haberzettl [2005]). The data from the eL2 SLI children indicate that the impairment underlying the difficulty with verbal morphology and verb placement is a matter of severe delay. The delay concerns a) mastery of V2, and b) overt realization of the phi-features person and number on the verb. There were no error types or acquisition stages that were specific to the eL2 SLI group. Most importantly, the ban on non-finite verbs was not violated in these learners. Hence this restriction seems to be invulnerable, even in children who face the dual challenge of having SLI and acquiring German as their second language.

By studying different acquisition types, we also contribute to the theoretical debate of how restrictions for morphological markings are tied to specific syntactic positions. The children in our study, who all had their first systematic exposure to German around age 3 and of whom some also have SLI, showed a strong connection between verbal inflectional morphology and verb placement across all clauses. This is important, as we analyzed subject and non-subject-initial clauses together. Given that the ban on non-finite verbs in V2 holds for SVX and XVS clauses alike, we argue that this restriction is most parsimoniously represented under the assumption that subject and non-subject-initial clauses have the same syntactic structure, e.g. FP in Haider’s (2010) model. This prediction could be tested in future studies distinguishing subject- and non-subject-initial clauses V2 main clauses.

One limitation of our study is the lack of comparable comprehension data. The production results may mask differences between TD and SLI children concerning the underlying representation of bare forms, as reported by Chondrogianni and Marinis (2012). They found that English eL2 TD children, like monolingual children with SLI (Montgomery and Leonard 1998), often omitted 3sg -s in their production, but were, unlike the SLI children, sensitive to grammar errors in an online-processing task. Hence the same bare form may reflect two different representations, one finite and unspecified for person and number, and one unspecified for both (cf. Prévost [2003] for a similar statement). A further limitation concerns the lack of monolingual groups in our study. Necessarily, we have not addressed whether eL2 children with SLI pattern with mono-
lingual children with SLI, or show a bilingual advantage or a delay (cf. Armon-
Lotem and de Jong 2015).

In summary, both TD and SLI children showed a strong connection between
verbal inflectional morphology and verb placement. Bare forms occurred in V2
only and were argued to be finite. We conclude that a) the restrictions for
morphological markings are inextricably tied to the specific syntactic positions,
b) that this knowledge is still accessible when L2 acquisition starts around age
3, and c) that the ban on non-finite verbs in V2 is not vulnerable in eL2 SLI.

Acknowledgments: I am indebted to Rosemarie Tracy for teaching me how to
regard conflicting and unclear data as crucial for understanding learners’
minds and grammars, for going on the LiSe – and many other – adventure trips
together and for her support all along. The research presented here was carried
out at the Research Center IDeA, funded by the LOEWE program for excellency
from the State of Hessen. We thank Angela Grimm for extensive discussion of
data and theory, Magda Wojtecka for her help with data coding and analysis,
and Jan-Henning Ehm for statistical advice. We also acknowledge the help of
the research assistants in collecting and transcribing the data. We thank the
audiences at GASLA 2012, GALA 2013, and DGfS 2013, as well as Adriana Bellet-
ti, Helen Engemann, Hubert Haider, Philippe Prévost, Luigi Rizzi, Emanuela
Sanfelici, Manuela Schönberger, Alex Thiel, Laurie Tuller, and the two anon-
ymous reviewers for their helpful questions and comments. We are grateful to
the children, their parents and the teachers in kindergartens and in special
needs centers for their participation in the study.

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