Does finiteness mark assertion?

A picture selection study with native speakers and adult learners of German

Sarah Schimke[1], Max Planck Institute for Psycholinguistics

1. Introduction

This study is concerned with the function of finiteness in declarative main clauses in native speakers and beginning adult learners of German. Beginning learners often produce utterances which lack finiteness marking, as in (1), which was produced by a learner in the present study:

(1) *herr grün noch schlafen*
Mr. green still sleep-INF

This utterance is non-finite both morphologically and syntactically: the verb carries the infinitival suffix *-en* and is not marked for agreement or tense. Moreover, it appears in utterance-final position, which corresponds to the target-like placement of non-finite verbs. The predominance of non-finite utterances in the production of young children and beginning adult learners is a well-known phenomenon: Park (1971), Clahsen (1982) and Mills (1985) report their use in children acquiring German as a first language and Perdue (1993) in adult learners of German, and other studies confirm this observation (e.g. Behrens 1993; Clahsen and Muysken 1986; Meisel 1990; Vainikka and Young-Scholten 1996). All of these studies report that learners initially produce mostly non-finite utterances. They then acquire the present tense agreement paradigm and start marking the verb for agreement with the subject. Verb forms marked for agreement appear in target-like second position in the sentence. An example of such a target-like finite utterance is (2), which was produced by the same learner who produced (1). The verb carries the *-t* suffix marking agreement with the third person singular subject:

(2)   *herr grün geht ins bett*
        Mr. green go-FIN to bed

Utterances of type (1) and (2) co-occur in learner language for an extended period of development, although only utterance (2) corresponds to the target-language norm.

The co-occurence of finite and non-finite forms has mainly been investigated from a formal perspective, as for example by Poeppel and Wexler (1993) in children and by Prevost and White (2000) in adult learners of German.[2] The aim of these studies was to investigate whether optional finiteness marking means that learners' syntactic knowledge differs from that of adult native speakers. In contrast, a study by Dimroth et al. (2003) takes a functional perspective. The aim of this study was to investigate whether the knowledge concerning the function (rather than only the form) of finiteness is different in native speakers and learners. Whereas studies taking a formal perspective have often come to the conclusion that the syntactic knowledge in learners is target-like (Poeppel and Wexler 1993; Prévost and White 2000, but see Meisel 1997 for a different view for second language learners), Dimroth et al. (2003) claim that the knowledge about the function of finiteness is not target-like in early phases of acquisition. According to them, finite forms are used for marking assertion by native speakers and advanced learners, whereas beginning learners have not yet discovered this function of finiteness and mark assertion with other means.[3] This entails that learners do not discriminate between the functioning of finite and non-finite forms in beginning stages of acquisition.

The aim of the present study is to test the claims made by Dimroth et al. (2003) about the function of finiteness in comprehension data from learners and native speakers. In a first step, the notion of assertion as used in the model by Dimroth et al. (2003) is summarized. The model is then presented in more detail, and it is motivated why it should be tested against comprehension data. Data from a picture selection experiment are presented, and it is concluded that they support the model proposed by Dimroth et al. (2003). Whereas (1) and (2) differ in assertion marking for native speakers and, to a lesser degree, for advanced learners, this is not yet the case for beginning learners. More precisely, the analysis reveals that beginning learners make a difference between the two utterance types, but that it does not yet correspond to the target-language distinction.

1.1. Finiteness and assertion in native German

The relation between assertion and finiteness has been developed in detail by Lasser (1997), who draws on work by Klein (1994; 1998). Klein argues that a finite utterance contains an abstract assertion operator that links the lexical meaning of the utterance to the time span the utterance is about, termed 'topic time'. Linking thereby means claiming that the state of affairs expressed in the utterance holds at the topic time of the utterance. According to this analysis, utterance (2) expresses by virtue of its morphosyntactic form that it is true at a particular point in time that Mr. Green goes to bed.[4]

This does not mean that utterances that are not marked for finiteness could not be interpreted as assertions. Consider the example given in (3):

(3)   *die nudeln noch ein bisschen zudecken*
        The pasta still a little cover-INF
        'I am (in the process of) covering the pasta for a short while'
        (Lasser 1997: 50)

As indicated in the paraphrase, the speaker is describing his or her activity while performing it. The listener can conclude from the discourse context that the descriptive content of the utterance holds at the moment of uttering it, and will probably take the utterance as a statement of this fact, thus as an assertion. Utterances can thus be used and understood as assertions even if there is no formal marking of this, at least as long as the assertion is uncontroversial in the given discourse context, as is the case in example (3).

In sum, Lasser proposes that finite and non-finite utterances can both be used to make assertions, but that they differ in whether the assertion is marked by the form of the utterance. Utterance (2) is marked for assertion, whereas utterances (1) and (3) are not specified in this respect.

1.2. Finiteness and assertion in learner language

Dimroth et al. (2003) present a stage-model of assertion marking in the acquisition of Germanic languages. According to this model, assertion is marked with other means than morphosyntactic finiteness in early learner language. This idea is based on the observation that utterances of beginning learners follow a strict word order: the first part of the utterance specifies the topic, understood as the entity, time or place for which a certain state of affairs is claimed to hold. This state of affairs is expressed in the second part of the utterance, the 'predicate'. Dimroth et al. (2003) claim that this utterance structure expresses, by default, that the information expressed in the predicate holds true for the topic at the topic time of the utterance. In addition, the relation between the topic and the predicate can be further specified by elements appearing between the topic and the predicate, in a so-called 'linking position'. The following examples illustrate that the linking position can be left empty (4) or filled with modal verbs (5). Other possible linking elements are the negator, particles and certain adverbials.

	Topic	Linking	Predicate
(4)	*chaplin*	*Ø*	*gehen strasse*
	chaplin		go-INF street
(5)	*kind*	*will*	*telefonieren*
	child	want-FIN	telephone-INF
	(Dimroth et al. 2003: 79-83)		

Dimroth et al. (2003) consider the described stage a lexical stage of assertion marking. They assume that the elements in the linking slot are used as assertion markers because their meaning (as opposed to their form) specifies the relation between the topic and the predicate. Learners then have to learn that assertion is expressed by morpho-syntactic means in the target-language. This requires a reanalysis of the lexically-based system. Following Jordens (2002), Dimroth et al. (2003) assume that this reanalysis is triggered by the acquisition of the auxiliary system, that is, structures which contain the auxiliaries *haben* or *sein*, as in (6):

(6)   *der charlie hat auch gemacht*

the charlie have-FIN also make-PP

(Dimroth et al. 2003: 87)

The auxiliaries *haben* and *sein* are used to express completed aspect and reference to the past. The auxiliary that appears in the linking slot therefore differs from the verbal linking elements acquired earlier in that it does not express a modal, but an aspectual or temporal meaning. According to Jordens (2002) and Dimroth et al. (2003), this changes the analysis of the linking slot from a lexical to a grammatical category, thereby leading to a shift in the way assertion is marked. The authors assume that learners associate assertion with finiteness from this point on, first with respect to auxiliaries, and subsequently also with respect to lexical verbs. It can be concluded that as long as the association between finiteness and assertion marking has not been understood by learners, they should not interpret finite and non-finite utterances differently. There might be reasons why certain verbs tend to appear in a non-finite and others in a finite form in early learner language, but the presence or absence of finiteness should not change the meaning of the utterance at this stage of acquisition.

1.3. Aim of the present study

The model presented by Dimroth et al. (2003) explains the optional finiteness marking in early learner language and also suggests a trigger for the change to a more native-like use of finiteness, namely the acquisition of the auxiliary-system.

However, as the model is based on production data only, it necessarily relies on researchers attributing functions to certain elements in learners' and native speakers' utterances. It has not been tested yet whether the assertion marking function of finiteness can also be evidenced in the way in which language learners and native speakers interpret finite and non-finite utterances. If native speakers and advanced learners, but not beginning learners, can be shown to associate finiteness with assertion, this would support the model proposed by Dimroth et al. (2003). If native speakers do not interpret finite and non-finite utterances as differing in assertion, this would cast doubt on the

relevance of this function for the acquisition process. The present study therefore aims at testing the assumptions made by Dimroth et al. (2003) about the function of finiteness in comprehension data from native speakers and learners. In comprehension, it is possible to compare the understanding of finite utterances with the understanding of otherwise identical utterances not marked for finiteness. Moreover, in an experimental setting, these utterances can be presented such that the function of finiteness is not inferrable from the context. Differences in finiteness marking should lead to differences in the interpretation of the utterances by native speakers and advanced learners. More precisely, if finiteness is indeed the formal marker of assertion for native speakers of German and for learners who have acquired the use of the auxiliary system, prediction (1) should be borne out:

(1) If the function of assertion can not be inferred from the discourse context, native speakers and learners using auxiliaries should interpret a finite utterance more often as an assertion than a non-finite one.

If moreover finiteness is indeed not yet a marker of assertion for learners of German who have not yet acquired auxiliaries, prediction (2) should be borne out:

(2) In learners who do not yet use auxiliaries, there should be no difference in the interpretation of finite and non-finite utterances with respect to assertion in any discourse context.

In the present study, native speakers and learners were presented with finite and non-finite utterances to test the above-given predictions. The interpretation of these utterances was assessed by means of a picture selection task (see Gerken and Shady 1996 for an overview of this task). In the following paragraph, the logic of the task as used in the present experiment is discussed in detail.

1.4. Logic of the task

In the following, relevant methodological decisions in the design of the task will be discussed in turn. This concerns the assumed interpretation of non-finite utterances, the context in which they were presented in the experiment, and the design of the pictures from which participants could choose in order to indicate their interpretations.

1.4.1. The interpretation of non-finite utterances

According to the analysis of finiteness summarized above, a non-finite utterance merely refers to a certain state of affairs, without asserting that this state of affairs is true for any particular topic time. As has been shown above when discussing example (3), if speakers choose to leave out formal markings of finiteness, the asserting function can usually be inferred from the discourse context. However, if the discourse context does not encourage such an inference, what would then be the interpretation of an utterance in which the lexical content of a sentence is expressed, but not marked as being asserted? In Standard German, constructions of this type are not infrequent (Fries 1987). Typically, they are used to express doubt or incredulity with respect to something that was just said (Klein 2006; Lasser 1997). In a way, they function like echo-questions; but in contrast to those, no question function is marked, and they need not be understood as questions. The following two examples collected by Lasser illustrate this:

> (7)   *ich (und) ins studio gehen?!*
>   I (and) to-the gym go-INF
>   'What! Me go to the gym?'
>   (Lasser 1997: 40)

> (8)   *Henry (und) heiraten ?! wirklich nicht*
>   Henry (and) marry-INF ?! really not
>   'Henry getting married? I don't think so.'
>   (Laser 1997: 40)

Such utterances "may, but need not involve rising intonation", and they presuppose that "from the point of view of the speaker, the proposition expressed is false or at least

debatable" (Lasser 1997: 40). The idea that the absence of finiteness marking in these sentences *contributes* to the expression of doubt is straightforward if it is assumed that a core function of finiteness is the marking of assertion. In the present experiment, it was therefore assumed that if non-finite utterances are interpreted as expressing doubt more often than finite utterances, this supports the analysis of finiteness as assertion marker.

1.4.2. The context of presentation

Crucially for the design of the task, the assumed interpretation of non-finite utterances is only obtained in certain discourse contexts. More precisely, a non-finite utterance can be used to express doubt only if the speaker and his or her interlocutor do not take the truth of the assertion for granted. The expectations built up in the discourse context are thus essential for the interpretation of non-finite utterances. For this reason, the utterances that had to be interpreted by the participants of the experiment were embedded in a dialogue. An example of the type of dialogue used is given in (9). Answer B1 represents the finite utterance that is expected in the given discourse context, and utterance B2 the corresponding non-finite utterance.

> (9)   A: *Glaubst du, dass Peter einen Tisch baut?*
>   'Do you think that Peter constructs a table?'
>   B1: *Peter baut einen Tisch*
>   Peter construct-FIN a table
>   'Peter constructs a table'
>   B2: *Peter einen Tisch bauen*
>   Peter a table construct-INF
>   'Peter construct a table'

The yes/no question in the first part of this dialogue makes clear that the truth of the sentence content cannot be taken for granted. It is for this reason that finiteness marking is expected in the answer, and that the absence of it in the second version of the dialogue

can be taken to mean that B doubts whether Peter constructs a table at the relevant time span.

However, using a non-finite utterance is not the standard way of expressing doubt. It asks for some pragmatic reasoning to come to the conclusion that if a speaker leaves out the marking of assertion, he or she might want to express doubt. An alternative interpretation of a non-finite utterance might be that the form was not produced intentionally, but that the speaker made a performance error. This is conceivable in particular because non-finite utterances are usually considered ungrammatical in German. To make the first interpretation more readily available for the participants in the experiment, two trigger conditions were created which consisted of finite and non-finite utterances respectively, but with a rising intonation both on the topic and the predicate part of the utterance (in contrast to all other utterances in the experiment which had a falling intonation contour). It was assumed that a rising intonation contour enhances the likelihood that hearers interpret an utterance as expressing doubt, and that this interpretation should be attributed relatively easily to the utterances in the trigger conditions. This would make this meaning more available for participants also for other utterance types in the experiment. In addition, expressing doubt via intonation is unique to spoken language. It should make it easier for participants to understand that they can take the utterances in the experiment as spontaneously spoken utterances. As a consequence, non-finite utterances should more likely be taken as meaningful choices rather than as performance errors. The trigger conditions were included for both non-finite and finite sentences in order to avoid introducing a bias for non-finite sentences only.

1.4.3. The pictures

In the experiment, participants heard dialogues of type (9), which always began with a yes/no-question. They then had to indicate their interpretation of speakers B's answer by selecting one out of three pictures. One of the pictures represented B's belief that the content of the utterance was true ("assertion picture" in the following), and another one depicted B's doubt about whether the content of the utterance was true ("open picture" in

the following). The third picture was a distractor picture. If only two pictures had been presented, it would have been impossible to know whether a picture was chosen because it matched the presented utterance, or because the remaining picture did not match the presented utterance. This problem is attenuated if participants can choose from three pictures. The three pictures for the item "Peter constructs a table" are shown in Figure 1:
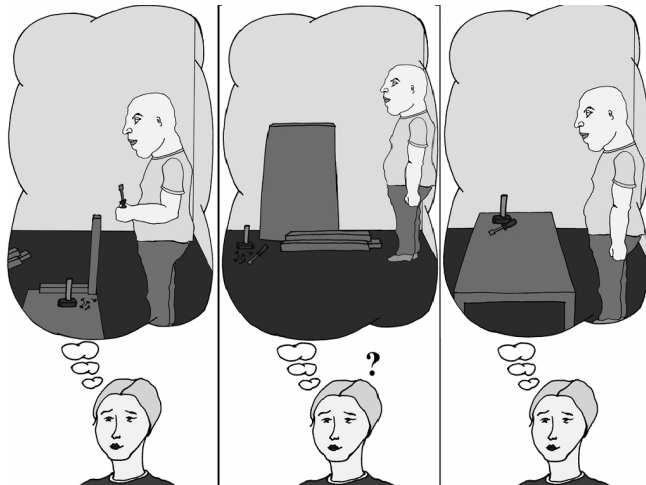
1: 'assertion picture'   2: 'open picture'   3: 'completed picture'
Figure 1: Pictures for item "Peter constructs a table"

Note that not only the performance (or lack thereof) of the activity is depicted, but also the speaker of the critical sentence (speaker B in the example dialogue above). The inclusion of B in the pictures was meant to highlight B's thoughts about the activity rather than the activity itself. This was done because the meaning difference between finite and non-finite utterances does not so much concern the activity in itself, but rather what the speaker thinks about the activity. Picture 1, the assertion picture, depicts B and the fact that she thinks about Peter constructing a table (as represented in the thought balloon). As there is no sign in the picture that B doubts about this activity taking place, this picture is expected to be chosen when hearers interpret B's answer as making the claim that this is true. On picture 2, the open picture, B doubts whether the construction of a table indeed takes place. Depicting doubt about an activity is hardly possible without still depicting at least part of that activity. Therefore, all the elements necessary for the performance of the activity are depicted in the thought balloon of the open picture, but, in contrast to the

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assertion picture, the performance of the activity itself is not depicted. In addition, there is a question mark above B's head. This picture is compatible with an interpretation of an utterance as expressing doubt about whether the expressed state of affairs holds at the relevant topic time. Doubting about whether an activity takes place is, however, not incompatible with thinking about it as taking place. A picture in which B thinks about an activity being performed, as the assertion picture, is therefore always compatible with both an 'assertion' and a 'doubt' interpretation. In sum, while the assertion picture (1) is compatible with both an 'assertion' and a 'doubt' interpretation, the open picture (2) is only compatible with a 'doubt' interpretation. If two utterances differ in whether they express an assertion or not, the utterance that does not express an assertion should more often be associated with the open picture, but not necessarily in all cases.

The distractor picture shows the activity as completed. It was assumed that both the finite and the non-finite utterance do not match this picture, as even the non-finite utterance is marked for non-completedness. This is the case because infinite forms as *bauen* contrast with the likewise infinitival past participle *gebaut*, such that *bauen* is specified as 'not-completed' and *gebaut* as 'completed' (Hoekstra and Hyams 1998).

Finally, it seemed important to introduce conditions which clearly matched picture 2 or picture 3, which is not the case for the conditions enumerated so far. For this reason, two additional control conditions were included. In one of these conditions, speaker B explicitly states that she does not know whether the activity under consideration takes place. Utterances were of the type *Ich weiß nicht, ob Peter einen Tisch baut* ('I don't know whether Peter constructs a table'). This was expected to lead to choices of the open picture. The other control condition included the use of an auxiliary construction which suggests completion - the perfect. Utterances in this condition were of the type *Peter hat einen Tisch gebaut* ('Peter has constructed a table'), and were expected to lead to choices of the completed picture.[5] In the following, information about the participants as well as an overview of all materials and the procedure of the experiment is given.

2. Method

2.1. Participants

Participants were 46 adult native speakers of Turkish[6] (29 female, 17 male) and 18 native speakers of German (10 female, 8 male). The Turkish speakers were acquiring German in an immersion setting. They had emigrated to Germany in order to work there or join their family. The average time of residency was 9 years, and the average age 33.3 years. Learners had received limited language teaching prior to the time of testing (5.4 months on average). The educational background of the learners was low in general (8.76 years of schooling on average, including primary school). Despite the relatively long average time of residency, learners' use of morphosyntax clearly corresponds to a low level of proficiency. The native speakers of German had a level of education comparable to that of the learners and very little knowledge of foreign languages. The average number of schooling years was 9.6. The average age in the control group was 41.5 years.

2.1.1. Production measures

Learners' production was assessed using a series of short picture stories developed by Verhagen (2005) for the elicitation of the auxiliary *hebben* in learners of Dutch.[7] As *haben* is used in similar contexts in German as *hebben* in Dutch, it was possible to use the same stories for the learners of German. Learners first saw each story from the beginning till the end and then again picture by picture. They were asked to describe what happened on each picture. In addition, learners were asked to retell a short silent movie (*The finite story,* Dimroth 2005). The movie was presented in short scenes and after each scene participants retold what had just happened. All retellings were recorded and transcribed.[8] Following Verhagen (2005)[9], learners were classified in a group not producing auxiliaries (no-aux group, n=22) and a group in which each learner produced at least one instance of the auxiliary *haben* (aux group, n=24). Moreover, it was assessed whether and how frequently learners used the two utterance types presented in the experiment. To this end, all third person singular present tense utterances containing a lexical main verb ending on *-t* or *-en* and a complement were selected from the transcripts.[10] The data revealed that learners used both finite and non-finite utterances. In most cases, morphologically finite

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utterances (verb ending on *-t*) were also syntactically finite (the verb appeared in second position), and non-finite verbs were mostly placed clause-finally. However, there were also utterances in which morphological and syntactic finiteness did not go together. Examples of all four utterance types are given in (10) to (13), all taken from retellings of a scene in which one person (Mr. Blue) knocks at the door of another protagonist of the film (Mr. Red):

(10) verb ending on *-t* , second position:
herr blau klingt aeh schlägt noch herrn rots tür
Mr. blue ring-FIN ehm hit-FIN still Mr. red's door

(11) verb ending on *-en*, final position:
blau tür klopfen
blue door knock-INF

(12) verb ending on *-t* , final position:
herrn rots tür schlägt
Mr. red's door hit-FIN

(13) verb ending on *-en* , second position:
schlagen der tür
hit-INF the door

The distribution of these four utterance types in the two groups is displayed in Table 1.

Table 1: The distribution of utterance types in the learner groups (absolute numbers)

	-t, second	*-en*, final	*-t*, final	*-en*, second
no-aux	26	107	10	44
aux	170	63	13	26

These data show that all utterance types appear in both groups, even though there are clear differences between both groups. The presence of both finite and non-finite

utterances in learners' production makes it a relevant question whether or not the different utterance types are associated with different meanings in learners' comprehension. The number of occurrences of each utterance type for each learner can be found in Appendix 1.

2.2. Materials

There were twenty different items in the task, each appearing in a dialogue as outlined above. To construct these items, seven simple and depictable activities were chosen, each involving a protagonist (e.g., *Peter* in the example given above), an object (e.g., *the table*), and a lexical main verb (e.g., *construct*). Each activity occurred in three different items, each time with a different protagonist performing the activity.[11] Each item could occur in one of the six different conditions introduced above: conditions 1 and 2 correspond to finite and non-finite utterances, as in (10) and (11) above. They are the critical conditions in the experiment: testing for a difference between them allows to confirm or reject the hypothesis stated above. Conditions 3 and 4 were the two trigger conditions involving rising intonation, and conditions 5 and 6 were the control conditions which gave participants the opportunity to choose the open and the completed picture respectively. An overview of all items and conditions is given in Appendix 2.

Items were pre-recorded: a male native speaker of German read out the questions, and a female native speaker of German read out the answers in the different conditions. For each item, three types of pictures as in the example presented above were created. One of the six possible orders of the three pictures was then chosen for each item and kept no matter in which condition the item appeared. This procedure assured that differences between conditions could not be due to a different order of the pictures and that overall, each order appeared equally often in the experiment.[12] In addition to the experimental items, six warm-up items were created that were used to familiarize participants with the task. In the warm-up trials, speaker A asked *An wen denkst du?* ('Who are you thinking of?'), and speaker B answered by giving the name of one of the three protagonists occuring in the items. The series of pictures used for the warm-up trials displayed B thinking of one of the protagonists on each picture. Note that the warm-up

trials did not make use of a verb in order to avoid any training effect for the verb-containing utterances in the experimental trials.

2.3. Procedure

Six different experimental lists were created, such that each item appeared in another condition in each of the lists. As the trigger conditions 3 and 4 are expected to influence the interpretation of conditions 1 and 2, the different conditions appeared in a pseudo-random order: there always was a trigger condition within the three items preceding each critical condition.[13] In addition, to control for an effect of the order of the items (as opposed to the order of conditions), an additional version was made of every list which started with the second half of the same list and administered to half of the participants.

The experiment was run on a laptop computer. Participants saw the pictures on the screen, heard the dialogues via headphones, and could indicate their choices by pressing buttons on a button-box. The experimenter was present during the whole experiment, but could not hear the dialogues. Before the experiment started, the experimenter showed a picture of the three protagonists that appeared in the dialogues to the participant and indicated their names. The experimenter then gave the the following instruction to the participants (in German)[14]:

> *You are going to hear a question and an answer to that question. Please decide what is meant with that answer by choosing one of the three pictures. In the beginning, the pictures and the sentences will be very easy, they get more complicated later on. Please think carefully about what the woman on the pictures wants to say, and look at the pictures carefully to choose the right one!*

Participants could then start the experiment by pressing any button. This started the six warm-up trials. During each trial, participants heard the question of speaker A (who was not depicted on the pictures), and then an answer of speaker B (who was depicted). They listened to this dialogue and then indicated their choice of a picture by pressing a button that was labeled with the same number as the picture in question. If they were unsure of

their choice, participants could listen again to the dialogue as often as they wanted, and the experiment only continued when they had chosen a picture. During the warm-up trials, the experimenter repeated the above instruction or gave further explanations when participants showed difficulties of understanding. If they had any questions after the warm-up trials, these were answered. Participants then went through the 20 experimental trials in the same way as in the warm-up trials. Again, they could listen to the utterances several times and the experimenter encouraged them to think about the meaning of each utterance, but no further indications were given as to what this meaning might be. No further explanations concerning the pictures were given either.

3. Results

An overview of the number of choices of each picture in each condition in the three different groups is given in Appendix 3.[15]

3.1. Trigger and control conditions

The results for the trigger conditions 3 and 4 show that participants indeed chose the open picture relatively frequently for these utterance types (between 20 and 56 percent of the time). Recall that it is not expected that the open picture is always chosen when an utterance expresses doubt, as the assertion picture is also compatible with this interpretation. The observed amount of choices of the open picture therefore seems sufficient to suggest that these conditions indeed enhanced the availability of a 'doubt' interpretation. The results for the control conditions 5 and 6 reveal that in general, the pictures were interpreted as anticipated: in participants of all groups, the open picture was chosen more frequently than the other two pictures when an utterance in condition 5 (the 'doubt' condition) was presented, indicating that it matches well the expression of doubt. The completed picture was chosen in the majority of cases in which the utterance contained an auxiliary (condition 6) in the aux-group and the native speakers group. This is not true for the no-aux group. However, this is probably not due to a misinterpretation

of the picture, but to a failure to understand the meaning of the auxiliary in condition 6. This is not surprising, given that auxiliaries are not yet produced in this group.

3.2. The interpretation of finite versus non-finite utterances

The hypothesis to be tested concerns the contrast between finite and non-finite utterances. Whereas these two types of utterance should not lead to different interpretations in the no-aux group, finite utterances should more often be interpreted as making an assertion than non-finite ones one by the other two groups. This should be visible in a difference in preferences for the assertion and the open picture: the proportion of choices of the assertion picture compared to the open picture should be higher in the finite than in the non-finite condition. The distractor picture was not expected to be chosen to a different degree in the two conditions. The choices of the three pictures in conditions 1 and 2 for all three groups of participants is displayed in Figure 2.
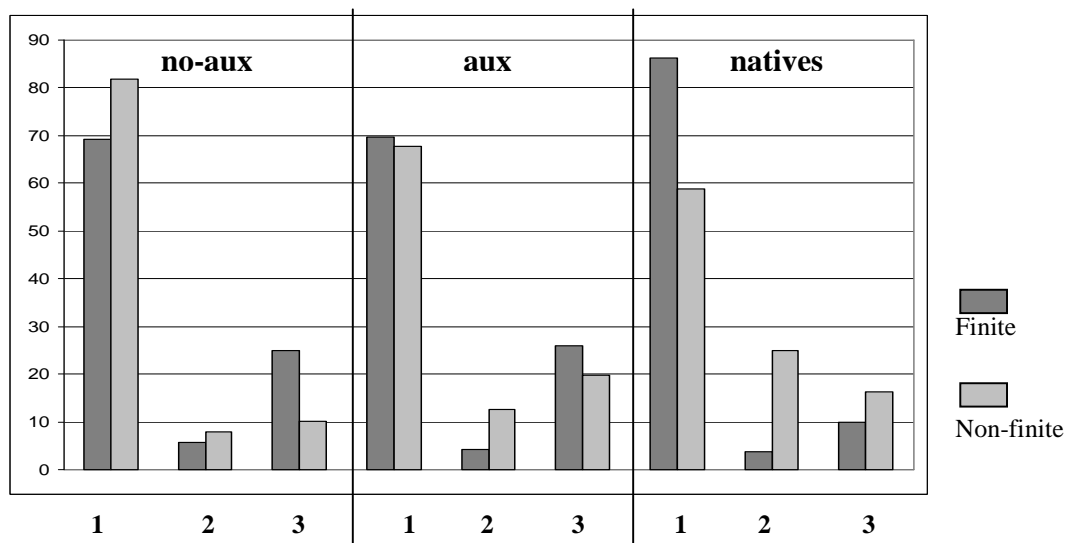

Figure 2: Choices of each of the three pictures in percentage of all trials of each condition.
1 = assertion picture, 2 = open picture, 3 = completed picture.

Whereas a difference between the conditions is only predicted for the assertion and the open picture, the results show that the completed picture is also chosen to different degrees in the two conditions, in particular in the no-aux group. To test whether this effect is significant, logit mixed-effect models with subjects and items as random factors,

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condition as the predictor of interest, and picture 3 (whether the completed picture was chosen or not) as the dependent variable were used for every group separately using the statistical software R (R development core team 2008, see Bates and Sakar 2007 and Jaeger in press, for the analysis used). That is, it was tested for every group whether the condition (whether the stimulus sentence was finite or non-finite) had a significant influence on whether the distractor picture was chosen or not. The analysis revealed that the condition significantly influenced the number of choices in the no-aux group (wald z = 2.82, p < 0.01). This effect is due to the no-aux group choosing the completed picture more often for finite than for non-finite utterances. In the two other groups, there was no effect of condition on the choices of the distractor picture (wald z = 1.16, ns for the aux group and wald z = 0.83, ns for the native speakers' group).

Subsequently, the analysis was repeated for every group with the same predictors and picture 1 vs. 2 (whether the assertion or the open picture was chosen) as the dependent variable. For this analysis, only those trials were taken into account in which either the assertion picture or the open picture was chosen. When only those trials are considered, the assertion picture was chosen in the majority of cases in both conditions in all three groups, but this preference was stronger for finite than for non-finite utterances. This pattern of preferences is depicted in Figure 3.
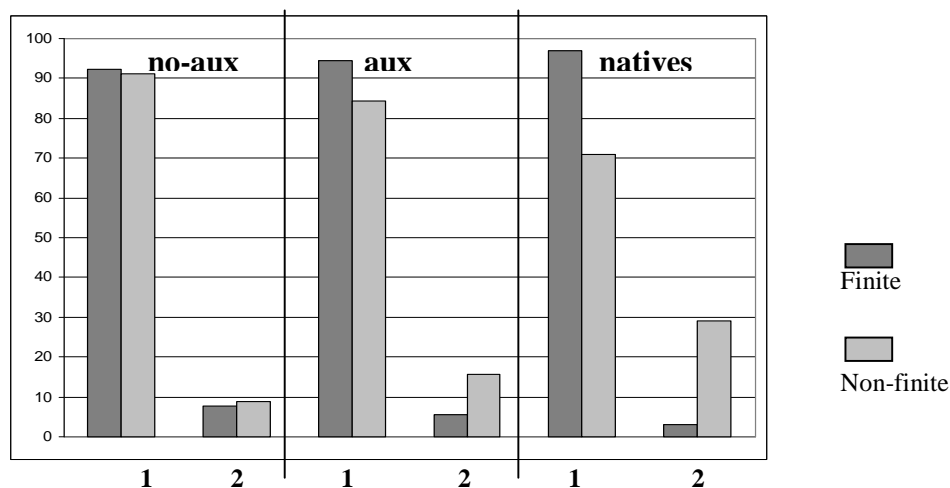

Figure 3: Choices of the assertion picture (1) and the open picture (2) in percentage of all trials in which one of these two pictures was chosen.

The condition significantly influenced the pattern of choices in the aux-group (wald $z = 2.01$, $p < 0.05$) and in the native speakers group (wald $z = 3.54$, $p < 0.001$), but it was not a significant predictor in the no-aux group (wald $z = 0.28$, ns).

The relatively small effect found in the aux-group raises the question whether there are subgroups in this group that have different preferences. As shown in Appendix 1b, the learners in the aux-group differ strongly in how often they used finite and non-finite utterances of the type tested in the experiment in the production task. There are two learners who have not used a single finite utterance containing a lexical main verb and a verb-complement, whereas others exclusively used utterances of this type (out of the four utterances types investigated here). It might be that a change in the interpretation of finite and non-finite utterances only takes place when the use of finiteness has become systematic, and that the effect in the aux-group is therefore carried exclusively by a more advanced sub-group within this group. To test whether this is the case, the percentage of finite utterances out of all four relevant utterance types was added as a covariate to the model for the aux-group. That is, it was tested whether in addition to the influence of the condition, the percentage of finite utterances used by each learner contributed to predicting the choices of the assertion versus the open picture. The analyis revealed that this covariate had no significant influence (wald $z = 0.89$, ns).

4. Discussion

The results are first discussed separately for the three groups of participants. In the final paragraph, it is discussed which conclusions concerning the changing interpretation of finite and non-finite utterances during the course of acquisition are suggested by the results of all groups taken together.

4.1. Native speakers

Native speakers chose the assertion picture more often for finite than for non-finite utterances, and the open picture more often for non-finite than for finite utterances. This is in line with the predictions and supports the assumption that finiteness marks assertion.

However, the results reveal as well that the assertion picture was still the preferred picture even for non-finite utterances. These choices of the assertion picture are presumably due to the fact that this picture is also compatible with the interpretation that speaker B doubts about the performance of the activity under consideration. This is reflected by the fact that the assertion picture was chosen in 30 percent of the cases even for utterances appearing in condition 5 (of the type 'I don't know whether Peter constructs a table'), which unambiguously express doubt. In addition to that, some of the choices of the assertion picture in the non-finite condition might also be due to participants having failed to draw the pragmatic implication that the absence of assertion indicates the expression of doubt in the discourse context as it was set up in the experiment.

As for the cases in which native speakers chose the open picture for non-finite utterances, it seems likely that speakers have indeed drawn this implicature. The absence of finiteness seems to be interpreted as possibly expressing doubt. It has to be noted however that there are alternative explanations for the choice of the open picture for non-finite utterances. This is because non-finite utterances are not only unspecified for assertion, but also for other aspects of sentence meaning that are usually expressed by the form and position of finite verbs, such as modality and sentence mode. The non-finite utterance might therefore not only be interpretable as an expression of doubt, but also of a certain modality, such as a *wish* or an *obligation*, or of a non-declarative sentence mode, such as a *question*. In addition, whereas the open picture was designed to express doubt about whether an activity takes place, it might well be interpreted as depicting a modal, interrogative or imperative meaning. One can imagine that the protagonist *wants* to complete the activity on this picture, as it is clear that its performance has not yet started. It is also conceivable to interpret the picture such that speaker B thinks that the protagonist *should* or *must* perform the action. As for other sentence modes, one could imagine that on the open picture, speaker B *asks* whether the activity under consideration is taking place, or that she wants to give the protagonist the *order* to perform the activity. These interpretations of non-finite utterances can therefore also explain the pattern of results. The fact that it is hard to pin down the exact interpretation that participants made of the non-finite utterance seems unavoidable due to the unspecified nature of this utterance type. What is more important than the exact interpretation is the fact that this

utterance type is significantly less often matched on the assertion picture than finite utterances, showing that, as predicted, the finite utterance type is better compatible with an assertion interpretation for native speakers.

These results for the native speaker group thereby set a point of comparison for the analysis of the learner data: choosing the open picture in about a quarter of the cases for non-finite utterances, and the assertion picture in about 87 percent of the cases for finite utterances[16], can be taken as a native-like understanding of finiteness as far as it can be measured in the present task.

4.2. The no-aux group

Beginning learners show a pattern of results that is very different from native speakers: they almost never chose the open picture, neither for finite, nor for non-finite utterances. The preferred picture for both utterance types was the assertion picture, which was chosen even more often for non-finite than for finite utterances. Finally, the distractor picture, on which the activity was depicted as completed, was significantly more often chosen for finite than for non-finite utterances.

A misanalyis of the present tense third person singular agreement morpheme *-t* as a marker of completed aspect has reported before for German child language by Tracy (1991) and Behrens (1993). Apparently, the present learner group makes the same misanalysis. For at least some learners in this group, the finite form is understood as expressing that the activity under consideration is completed. This is not the case for the non-finite utterance, which was rarely associated with the completed picture in this group. This finding is interesting because it reveals that learners perceive the difference between the two forms, even though they predominantly produce the non-finite form.

With respect to the main research question of this study however, one might wonder whether the misanalysis of *-t* as an aspectual marker might have covered a difference in assertion marking between the two utterance types. It can not be excluded that learners would have chosen the assertion picture for the finite utterance more often had they not had the opportunity to choose the completed picture instead. However, even if all the choices of the completed picture in the finite condition had been choices of the

assertion picture, there would still be no clear difference between finite and non-finite utterances with respect to the assertion picture. This is the case because in the present data, the assertion picture is chosen even more often for non-finite than for finite utterances. The overall pattern in the data therefore strongly suggests that learners who have not yet acquired auxiliaries make no difference in assertion marking between finite and non-finite utterances. This is in line with the predictions and the model proposed by Dimroth et al. (2003).

4.3. The aux group

Learners who have acquired auxiliaries behaved differently from learners who have not yet acquired auxiliaries. Finite utterances were more often matched on the assertion picture than non-finite utterances, whereas non-finite utterances were more often matched on the open picture than finite utterances. This pattern of results is in line with the predictions and supports the assumption that the acquisition of the auxiliary system leads to a change in the interpretation of finiteness.

However, several elements in the data in the aux group make it necessary to attenuate this conclusion. First, whereas learners' proficiency in production other than the acquisition of auxiliaries could not be shown to influence the interpretation of finiteness, it can also not be excluded on the basis of the present data that such an influence exists. The effect that was found in the aux group is so small overall that not all learners in this group can have contributed to it. It is not surprising that it is difficult to detect systematic influences on such an unstable pattern. Further research is desirable in which the impact of the acquisition of the auxiliary system should be disentangled from the impact of other developments in proficiency by using more sensitive measures.

More importantly for the present study, the small size of the effect casts doubt on whether it is justified to conclude that the learners in the aux group have a native-like understanding of finiteness. On the one hand, one might argue that there is more evidence for an association of finiteness and assertion in this group than is visible on first sight. This is because the presence of the completed distractor picture has the potential to blur the expected pattern of results, a potential already discussed for the no-aux group above.

In the aux group, the distractor picture was chosen in 26 percent of the cases when a finite utterance was presented, suggesting that a misanalysis of the *-t* morpheme is widespread also in this group. The distractor picture might therefore have attracted finite utterances away from the assertion picture, so that a difference in the choices of this picture between finite and non-finite utterances that might otherwise have appeared was not detectable. This means that the pattern of results might have looked more native-like if the distractor picture had not been presented.

On the other hand, it is unclear what choices would have been made for the non-finite picture had the distractor picture not been presented. If all the choices of the completed picture would then have been choices of the assertion picture, this would again result in a non-native like pattern. If they had been choices of the open picture, this would result in a more native-like pattern. I would like to suggest that the second possibility is more likely, because the fact that learners in the aux group chose the completed picture for non-finite utterances to a considerable degree at all can be taken as an indication that they hesitated to match this utterance with the assertion picture. At least, this seems to be a more plausible explanation than assuming that choices of the completed picture are due to an understanding of the non-finite utterance as being marked specifically for completed aspect. Rather, learners in this group might interpret the non-finite utterance as being unspecified both with respect to assertion and with respect to aspect. The latter suggests that these learners have not yet understood the opposition between infinitival forms marked as completed (past participles) and infinitival forms for which this is not the case, as the ones tested in the present experiment.

All in all, the results therefore suggest that learners in the aux group differ from native speakers in their knowledge about how completed aspect is marked. However, they seem to be similar to native speakers in making an association between finiteness and assertion, as suggested by Dimroth et al. (2003). Whereas in the no-aux group, the non-finite utterance is interpreted as at least as suitable as the finite utterance for marking assertions, this is not longer the case in the aux-group. This conclusion will be discussed in more detail in the following final paragraph.

4.4. The development in the interpretation of finite and non-finite utterances

In the following, it is discussed in how far the present data can be reconciled with suggestions in the literature about the development in the interpretation of finite and non-finite forms.

As for the interpretation of finite utterances, they clearly are understood as one possible way of making an assertion in all three groups. At least for part of the learners of both groups, finite utterances can in addition be understood as meaning that an activity is completed. This does however not contradict the association of finiteness and assertion marking, as the aspectual distinction is a more specific one and the expression of completed as well as ongoing aspect presupposes an underlying assertion. To my knowledge, the interpretation of the agreement morpheme *-t* as marking completed aspect has not been reported before for second language learners of German. It is interesting that it persists even after learners have acquired auxiliaries. Apart from this deviant interpretation however, the main interpretation of finite utterances as making assertions is not surprising on any account of language development. In particular, it is also expected according to the model in Dimroth et al. (2003) that was tested in the present study. According to this model, finite utterances are interpreted as assertions by beginning learners because for them[17], every juxtaposition of a topic and a predicate does so by default. For more advanced learners and native speakers, finite utterances are interpreted as assertions because they occur with a finite verb form in a finite position.

As for the interpretation of non-finite utterances, there is an extensive debate in the literature on this topic. A common suggestion is that non-finite utterances are used by learners in order to express a modal meaning (Ingram and Thompson 1993 for German; see also Hoekstra and Jordens 1994 and Wijnen 1996 for Dutch and Meisel 1990 and Ferdinand 1996 for French child language). Researchers differ in the explanations they give for this effect (see Hoekstra and Hyams 1998, and Blom 2007, for overviews), but very often, they point out that the origin of non-finite utterances such as (9b) (taken from above) in learner language might be modal sentences such as (9c):

(9b)   *Peter einen tisch bauen*
         Peter a table construct-INF

(9c)   *Peter will einen tisch bauen*
       Peter want-FIN a table construct-INF

The proposal is that children and adult learners derive utterances like (9b) in some way or another from utterances in the input that have the form of (9c). As these input utterances have a modal meaning, learners could come to associate this meaning with the infinitival form of the thematic verb (rather than with the modal verb) and subsequently use infinitives to express modal meanings. One might wonder whether this was also the reason for the choices of the open picture for non-finite utterances in the present experiment. As shown above, this picture might be understood as expressing a modal meaning. However, the data speak against the idea that learners in particular associate non-finite utterances with modality. If this were the case, the open picture should be chosen more often in the learner groups than in the native speaker group, as infinitival main verbs are not a common way of expressing modality for the native speakers. However, the reverse pattern was found. Learners associate non-finite utterances more often with simple assertion and less often with a modal interpretation than native speakers do, as evidenced by the different number of choices of the open picture in the two groups.

A related proposal in the literature is that learners only come to associate non-finite forms with modality when they have acquired finite forms. The idea of this proposal is that non-finite forms function as default or "elsewhere forms" in early learner language (Ferdinand 1996; Prevost and White 2000) and can be used to express different meanings. As soon as the more specific finite forms replace the non-finite forms in their function of expressing simple present tense declarative sentences, the meaning that is left for non-finite forms would then be that of expressing modality (Blom 2003). This proposal is not supported by the present data either. It does not seem to be the case that the more advanced learners in the aux group necessarily associate modality with the non-finite utterances. This would have predicted more choices of the open picture, and less choices of the completed picture in the aux group. In contrast to this prediction, learners in this group take both of these pictures about equally often, suggesting that they do not

achieve to map any specific meaning (from the ones presented on the pictures) on the non-finite form.

The most convinving interpretation of the data thus seems to be that learners change their preference for simple declarative utterances from non-finite forms (as preferred in the no-aux group) to finite forms (as preferred in the aux group). This is compatible with the idea that learners come to understand the association of finiteness and assertion marking. However, they then do not know how to interpret a non-finite form. Most likely, they perceive this form as being compatible with different meanings, and even with completed aspect, as reflected in the choices of the completed picture.

Finally, in the native speakers, the non-finite form is more often mapped on the open picture than on the completed picture. This can be explained by the assumption that infinitival forms that are no past participles are considered to be marked for non-completedness by native speakers, and that for native speakers, the meaning of the non-finite form therefore corresponds better to the open picture. As discussed above, the exact meaning of non-finite utterances for native speakers is hard to pin down, due to the fact that these utterances are unspecified for many semantic features. The present experiment should be considered as a first attempt to depict a likely interpretation following from this underspecified nature. Further research could investigate the possible interpretations of non-finite utterances in more detail by expressing more fine-grained distinctions of different modalities or sentence modes in the set of pictures that participants can choose from.

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Appendix 1a: overview of learners' production, no-aux group

Participant number	-*t*, second	-*en*, final	-*t*, final	-*en*, second	% -*t*, second	"hat"
20	0	2	0	3	0	0
39	0	7	0	1	0	0
44	0	7	0	0	0	0
45	0	15	0	0	0	0
48	0	1	0	0	0	0
53	0	10	0	2	0	0
55	0	1	0	0	0	0
57	0	3	0	1	0	0
61	0	5	2	0	0	0
72	0	3	0	0	0	0
73	0	9	0	1	0	0
50	0	7	2	0	0	0
60	0	1	0	1	0	0
26	1	0	1	12	7	0
62	1	10	0	2	8	0
42	1	3	0	7	9	0
51	1	9	1	0	9	0
52	6	4	2	9	29	0
71	1	2	0	0	33	0
58	4	4	0	3	36	0
37	5	3	2	0	50	0
65	6	1	0	2	67	0
Sum	**26**	**107**	**10**	**44**		**0**
Average	**1.44**	**4.73**	**0.49**	**2.29**	**14**	**0**

Use of the four utterance types and of the auxiliary' haben' in learners of the no-aux group: absolute numbers

Appendix 1b: Overview of learners production, aux-group

Participant number	-*t*, second	-*en*, final	-*t*, final	-*en*, second	% -*t*, second	"hat"
33	0	12	1	4	0	1
43	0	5	2	0	0	1
40	2	6	0	3	18	2
34	4	9	2	1	25	9
49	2	0	2	2	33	1
67	5	7	1	1	36	1
47	3	5	0	0	38	2
32	3	2	0	2	43	1
66	3	0	0	4	43	5
63	3	4	0	0	43	9
70	2	1	0	1	50	12
24	11	5	1	1	61	3
22	10	2	1	3	63	7
64	8	3	0	0	73	1
31	3	0	0	1	75	8
41	6	0	0	2	75	1
27	13	2	0	1	81	1
23	16	0	2	0	89	2
25	34	0	1	0	97	2
30	9	0	0	0	100	1
36	15	0	0	0	100	2
59	8	0	0	0	100	5
29	8	0	0	0	100	7
69	2	0	0	0	100	6
Sum	**170**	**63**	**13**	**26**		**90**
Average	**6.73**	**2.78**	**0.56**	**1.13**	**58**	**3.77**

Use of the four utterance types and of the auxiliary 'haben' in learners of the aux group:
absolute numbers

Appendix 2: List of conditions and items

Condition		Utterances	Expected picture
	A:	Glaubst du, dass Peter einen Tisch baut? 'Do you think that Peter builds a table?'	
1: finite, falling intonation	B1:	Peter baut einen Tisch. Peter build-t *(fin)* a table.	1
2: infinite, falling intonation	B2:	Peter einen Tisch bauen. Peter a table build-en *(inf)*.	?
3: finite, rising intonation	B3:	Peter? baut einen Tisch? Peter? build-t *(fin)* a table?	?
4: infinite, rising intonation	B4:	Peter? einen Tisch bauen? Peter? a table build-en *(inf)*?	?
5: uncertain	B5:	Ich weiß nicht, ob Peter einen Tisch baut. I know not, if Peter a table build-t *(fin)*.	2
6: completed	B6:	Peter hat einen Tisch gebaut. Peter has a table *ge*-build-*t (PP)*.	3

All conditions for the item "Peter baut einen Tisch"

Items 1-3:   Peter / Jan / Anne malt eine Blume.

Peter / Jan / Anne paints a flower.

Items 4-6:   Peter / Jan / Anne schreibt einen Brief.

Peter / Jan / Anne writes a letter.

Items 7-9:   Peter / Jan / Anne liest einen Brief.

Peter / Jan / Anne reads a letter.

Items 10-12: Peter / Jan / Anne stellt die Gläser auf den Tisch.

Peter / Jan / Anne puts the glasses on the table.

Items 13-15: Peter / Jan / Anne baut einen Tisch.

Peter / Jan / Anne constructs a table.

Items 16-18: Peter / Jan / Anne öffnet eine Dose.

Peter / Jan / Anne opens a can.

Itms 19-20:   Jan / Anne nimmt ein Bad.

Jan / Anne takes a bath.

Appendix 3: Overview of all results in the picture selection task

Group	no-aux			aux			natives		
Condition	**Pic1**	**Pic2**	**Pic3**	**Pic1**	**Pic2**	**Pic3**	**Pic1**	**Pic2**	**Pic3**
1: Finite, falling	**69.32** (61/88)	**5.68** (5/88)	**25.00** (22/88)	**69.79** (67/96)	**04.17** (4/96)	**26.04** (25/96)	**87.5** (63/72)	**2.78** (2/72)	**9.72** (7/72)
2: Non-finite, falling	**81.82** (72/88)	**7.95** (7/88)	**10.23** (9/88)	**67.71** (65/96)	**12.50** (12/96)	**19.79** (19/96)	**61.11** (44/72)	**25.00** (18/72)	**13.89** (10/72)
3: Doubt	**35.23** (31/88)	**48.86** (43/88)	**15.91** (14/88)	**10.42** (10/96)	**65.62** (63/96)	**23.96** (23/96)	**30.88** (21/68[x])	**57.35** (39/68[x])	**11.76** (8/68[x])
4: Completed	**51.14** (45/88)	**9.09** (8/88)	**39.77** (35/88)	**30.21** (29/96)	**09.38** (9/96)	**60.42** (58/96)	**20.00** (14/70[x])	**5.71** (4/70[x])	**74.29** (52/70[x])
5: Finite, rising	**59.09** (26/44)	**29.55** (13/44)	**11.36** (5/44)	**39.58** (19/48)	**43.75** (21/48)	**16.67** (8/48)	**52.78** (19/36)	**33.33** (12/36)	**13.89** (5/36)
6: Non-finite, rising	**61.36** (27/44)	**20.45** (9/44)	**18.18** (8/44)	**35.42** (17/48)	**52.08** (25/48)	**12.50** (6/48)	**41.67** (15/36)	**55.56** (20/36)	**2.78** (1/36)

Percentages of picture chosen per condition (absolute numbers of choices between brackets)
Pic1 = assertion picture, Pic2 = open picture, Pic3 = completed picture.
[x] Cases missing from 72 were excluded because there was an error in one of the presented pictures.

Notes

[1] I would like to thank Christine Dimroth, Josje Verhagen, Barbara Hemforth, Wolfgang Klein, Leah Roberts, Laura de Ruiter and Peter Jordens for very helpful discussions, Holger Mitterer, Jan-Peter de Ruiter and Juhani Järvikivi for advice on statistics, and Tilman Harpe for drawing the pictures for the experiment.

[2] Apart from the research on German reviewed in the text, the so-called "optional infinitive phase" (Wexler 1994) has also been described in the (first) language acquisition of other languages, among others French, English and Dutch (e.g. Pierce 1989; Harris and Wexler 1996; Haegeman 1994). This research as well has mostly taken a formal perspective on the phenomenon.

[3] Note that this concerns the function of finiteness in the target language. Dimroth et al. (2003) do not discuss the fact that second language learners presumably have discovered the function of finiteness in their first language. It might therefore be that a more adequate description of the learning task is that learners merely have to find out how finiteness is *formally expressed* in the target language before they can use it in their production and comprehension of this language. In this case, the knowledge about the *function* of finiteness, as it is available in the first language, could not be used in the L2 until learners have gained enough knowledge about its surface realization in the target language. On the other hand, it is also possible that the knowledge about the function of finiteness is not transferred from the source language. As it is unclear how these two possibilities could be distinguished empirically, at least in the data collected here, the question will be left open.

[4] One might wonder whether finiteness has the same function in non-declarative utterances, in particular, interrogatives. According to Lasser, an abstract assertion operator is present also in non-declarative sentences, so that the distinction between assertion and non-assertion making utterances is not the same as the distinction between declarative and other sentence modes. Whether this can be shown in speakers' interpretations is not investigated in the present study which is restricted to declarative utterances. The point is however taken up in more detail in the discussion.

[5] There is a vivid discussion on the precise analysis of the German (and similarly the Dutch) perfect, as in *Er hat angerufen/hij heeft gebellt*, lit. 'he has called'(see, e.g., Klein 2000; Thieroff 1992). In contrast to the English present perfect, it can combine with past tense adverbials, and it is often used in contexts in which English would use the simple past. It is not possible to go into this discussion here. In the test sentences, it only matters whether the action shown on the picture is interpreted as being over, as 'completed', when the sentence is interpreted.

[6] Nine of the learners were bilingual speakers of Turkish and Kurdish, and another one a bilingual speaker of Turkish and Arabic. One other subject reported to have acquired Azerbaijani and Russian while living in Azerbaijan. Knowledge of other foreign languages was very scarce in the learners as well as in the native control group, except for limited language instruction (mostly concerning English) during schooling.

[7] See Verhagen (2005, this volume) for a detailed description of the picture stories.

[8] One third of the data of three subjects (subjects 44, 57 and 69) and half of one subject (subject 60) were lost or could not be obtained, so that their production measures are based on a smaller number of utterances.

[9] In Verhagen (1995), learners are classified into two groups according to whether they produce *hebben* or not, and it is shown that only the so-called aux-group, in which *hebben* is used, shows knowledge of verb raising for lexical verbs in Dutch. This finding supports the hypothesis tested in the present paper that the acquisition of auxiliaries constitutes a turning point in the acquisition process.

[10] Imitations of utterances of the experimenter, self-corrected utterances as well as repetitions were excluded. Also excluded were utterances in which the ending was not clearly identifiable.

[11] The activity "to take a bath" occured only with two different protagonists, because only 20 and not 21 items were needed.

[12] Again, there were two orders (132 and 231) which appeared four and not three times to reach the number of 20 items.

[13] Note that conditions 1, 2, 5 and 6 appeared 4 times in each list, whereas the trigger conditions appeared only twice each. This was done in order to limit the overall length of the experiment and the number of trials which are presumably hard to interpret (conditions 2, 3 and 4, occuring in 8 trials all together) compared to trials in which the interpretation should be straightforward (conditions 1, 5 and 6, occuring 12 times all together). This unequal number does not present a problem for the analysis, as predictions only concerned the critical conditions 1 and 2 and only those were directly compared to each other.

[14] The instruction was given in a spoken form in German. If the Turkish participants showed problems of understanding, they could also read a written Turkish version of the instruction.

[15] Note that 6 cases had to be excluded in the native speaker group because there was an error on one of the pictures: the question mark appeared in the assertion instead of the open picture.

[16] There is no obvious explanation for why the finite utterance is not matched on the assertion picture in all cases by the native speakers. In the remaining about 13 %, it is more often matched on the completed picture (about 10 % of the cases) than on the open picture. This indicates that this picture might not be completely incompatible with an "ongoing" interpretation of the utterance. One can imagine that a sentence of the type 'Peter constructs a table' is still an acceptable description of a picture of Peter and a constructed table. Obviously, the assertion picture is a better match of that utterance type, but it is possible that participants did not always pay attention to the differences between the pictures in all trials, so that they sometimes might have chosen just a fitting picture instead of the most fitting picture. Note that this can clearly not explain all choices of the completed picture in the learner groups, as their number is too substantial. Moreover, the difference to the non-finite utterance in the no-aux group, which is not matched on the completed picture, would remain unexplained when taking this approach.