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Acquisition of *Nein* and *Nicht* and the VP-Internal Subject Stage in German

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Deprez and Pierce (1993) used negation data from German and other languages to support the hypothesis that subject noun phrases (NPs) originate within verb phrases (VPs). Deprez and Pierce argued that children go through an early stage of language acquisition during which subject NPs may optionally stay VP-internal. They claimed that during this stage, children do not distinguish between the negators *nicht* 'not' and *nein* 'no'. As a result, children produce negative utterances involving either negator, in which the negator occurs to the left of the subject. In their work, Deprez and Pierce did not systematically analyze German acquisition data, but rather relied on anecdotal data and examples cited in the literature. In this article, we analyze the negative utterances said by German-speaking children in transcripts of spontaneous speech. Contrary to Deprez and Pierce's claims, the results of our analyses indicate that German-speaking children distinguish between *nicht* and *nein,* using *nicht* in sentence-medial position for sentential negation and *nein* in sentence-initial position for anaphoric negation. Also contrary to Deprez and Pierce's theory, once negative utterances without overt subjects, anaphoric negatives, quantifier negatives, and unclear or stuttered negatives are excluded, there is no evidence that German-speaking children go through an early stage during which negation appears to the left of subject NPs.

1. INTRODUCTION

Deprez and Pierce (1993) used negation data from German and other languages to support the VP-internal subject hypothesis (Koopman and Sportiche (1987)). Deprez and Pierce argued that children go through an early stage of language acquisition during which subject noun phrases (NPs) may optionally stay verb phrase internal (VP-internal). In their work, Deprez and Pierce did not systemati-

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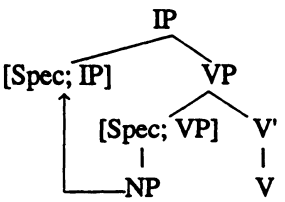
cally analyze German acquisition data, but rather relied on anecdotal data and examples cited in the literature. In this article, we analyze the spontaneous speech data of German-speaking children to determine whether children systematically distinguish between *nicht* 'not' and *nein* 'no' and whether they go through an early stage during which their negative utterances may be negation-initial (Neg-initial). Contrary to Deprez and Pierce's claims, our results indicate that children distinguish between *nein* and *nicht* at all times, using *nicht* exclusively in sentence-medial position for sentential negation and *nein* exclusively in sentence-initial position for anaphoric negation.

1.1. Theoretical Background

According to the VP-internal subject hypothesis (Koopman and Sportiche (1987)), the subject NP of a sentence is generated within the maximal projection of the verb. The subject NP is then raised to [Spec; IP], in which it surfaces in English sentences (see (1)).

(1) The subject originates within the VP and is raised to [Spec; IP]



A variety of arguments have been advanced in favor of the VP-internal subject hypothesis. Koopman and Sportiche (1987) argued on syntactic and semantic grounds that raising takes place in simple declarative sentences. Their syntactic diagnostics yield the same results whether they are applied to clear raising constructions (e.g., sentences involving *seem* such as *she seems nice*) or simple declarative English sentences (e.g., *she likes coffee*). This suggests that NP-raising does indeed take place in both types of sentences. Koopman and Sportiche also showed that the raising analysis of *seem* leads to an elegant linear mapping of D-structure and semantic representation. They argued that this linear mapping applies universally within and across languages, thus forcing a raising analysis for simple declarative sentences. Based on these arguments, Koopman and Sportiche concluded that the VP-internal subject hypothesis should be treated as the null hypothesis. Kuroda (1988), Contreras (1987), and Sportiche (1988) also defended the VP-internal subject hypothesis on conceptual grounds, employing notions of simplicity and theory-internal consistency.

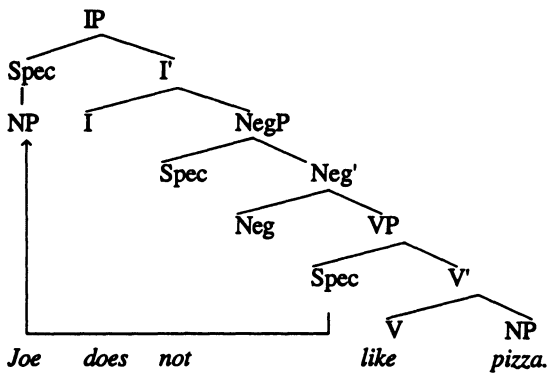
One major shortcoming of the VP-internal subject hypothesis is that it is difficult to test empirically because, with the possible exception of auxiliary-sub-

ject-verb-object word order languages such as Welsh or Irish, subjects are never overtly expressed within the VP and, thus, the VP-internal position of subjects can only be inferred indirectly.[1] Although overt expression of VP-internal subjects is absent from all or most adult languages, Deprez and Pierce (1993) argued that one can look for its overt expression in acquisitional data. Deprez and Pierce predicted that when the transformation that raises the subject out of the VP has not yet been fully acquired, subject NPs may surface in the position in which they are generated. Thus, if the VP-internal subject hypothesis is correct, subject NPs may remain VP-internal during early stages of acquisition.

1.2. Negation and the VP-Internal Subject Hypothesis

How can one test whether the surface position of a subject is internal or external to the VP? Deprez and Pierce (1993) used sentential negation as their diagnostic. According to Pollock (1989) and Hauptmann (1993), a sentential negator is represented by its own constituent, negation phrase (NegP), which dominates VP but is itself dominated by IP.[2] As long as Neg and subject NP have overt content, the linear order of the subject NP and the negator indicates unambiguously whether the subject remains in [Spec; VP] or is raised to [Spec; IP] (see (2)).

(2) The subject is raised to [Spec; IP], which is reflected in the order of subject and negator.



[1]In addition to the evidence from Welsh and Irish, it could be argued that expletive constructions (e.g., in English) are also examples of VP-internal subjects.

[2]Neither Pollock (1989) nor Hauptmann (1993) actually used an IP node in their proposed structural representations. Pollock split the IP into tense phrase (TP) and agreement phrase (AgrP), where TP dominates NegP and NegP dominates AgrP. Hauptmann included nodes for subject agreement projection (AgrSP), TP, and object agreement phrase (AgrOP), all of which dominate NegP. The difference between these models and our simplified version is not relevant in this context, because they all agree that a raised subject occurs to the left of the negator, whereas a subject that is not raised remains to its right.

If Deprez and Pierce (1993) are correct and young children optionally allow the subject to remain within the VP, then the negator may surface to the left of the subject in some of their negative utterances.[3] Deprez and Pierce cited acquisitional data from English, French, German, and Swedish that seem to support the VP-internal subject hypothesis. However, Stromswold (1996; in press) analyzed the English data and determined that Deprez and Pierce's English findings are largely the result of systematic biases in Deprez and Pierce's analyses.[4] For example, Deprez and Pierce included null subject sentences in their English analyses, although it is impossible to determine the order of subject and negator in the absence of an overt subject.[5] Furthermore, they did not take sufficient precautions to eliminate instances of anaphoric negation from their analyses.

In this article, we restrict our analysis to German negation data, being particularly careful to consider the context of utterances and to eliminate systematic biases such as counting anaphoric negatives as sentential negatives. Although Deprez and Pierce's (1993) method appears to be flawed, some researchers have reported findings similar to theirs. Wode's (1977), Park's (1979), and Clahsen's

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[3]However, even if Deprez and Pierce (1993) demonstrated that at a certain stage the negator sometimes surfaces to the left of the subject, it is questionable whether this should be taken as strong evidence in favor of the VP-internal subject hypothesis because there are alternative (and equally well-supported) explanations for that phenomenon that do not involve a misplaced subject. According to Zanuttini (1994), crosslinguistically, negation is interpreted at PolP (polarity phrase), a projection that c-commands the projection expressing tense. However, in some languages such as English the overt lexical element expressing tense does not raise to PolP. One might argue that children initially make the mistake of overtly raising the negator to PolP, which then leads to Neg-initial sentential negation. (We are grateful to an anonymous reviewer for directing us to this work.)

[4]Stromswold (1996; in press) demonstrated that the analyses that Deprez and Pierce (1993) performed on the English acquisitional data are seriously flawed, and when these methodological flaws are corrected, the English acquisitional data do not support their theory. Contrary to their theory, once negative utterances without overt subjects, anaphoric negatives, quantifier negatives, and unclear or stuttered negatives are excluded, there is no evidence that the 3 English-speaking children analyzed by Deprez and Pierce go through an early stage during which negation appears to the left of subject NPs. Contrary to Deprez and Pierce's claims, analyses of spontaneous speech data for 14 children reveal that English-speaking children distinguish between *no* and *not* and use *not* for sentential or constituent negation (paralleling German-speaking children's use of *nicht*) and *no* for anaphoric negation and quantification (similar to the German-speaking children's use of *nein* and *kein,* respectively). (See also Drozd (1995) in which some Neg-initial utterances are treated as exclamatory negatives rather than sentential negatives.) In addition, contrary to Deprez and Pierce's theory, during the purported VP-internal subject stage, English-speaking children do not incorrectly invert subject and auxiliary in declarative utterances, *how come* questions, or embedded questions. Furthermore, contrary to Deprez and Pierce's claims, when the VP-internal subject stage purportedly ends, English-speaking children do not begin to make subject-auxiliary inversion errors in matrix questions.

[5]Deprez and Pierce (1993) were explicit about counting null-subject sentences as having VP-internal empty subjects. They argue that null subjects can only be licensed inside the VP, under government by inflection. Although they might be correct, their argument presupposes what should be proven empirically. We must, therefore, conclude that Neg-initial utterances with null subjects do not constitute empirical support for Deprez and Pierce's claim.

(1982) German acquisitional data include utterances in which the negator surfaces in sentence-initial position. Unlike Deprez and Pierce, Park performed a distributional analysis on his data and found that such negator-initial utterances constitute a significant portion of all sentential negations.[6]

Deprez and Pierce's (1993) theory depends crucially on the assumption that when children are in the VP-internal subject stage, they do not distinguish between *nein* and *nicht.* In adult German, *nein* is used exclusively for anaphoric negation, whereas sentential negation invariably involves *nicht.* Because most of their examples of presubject sentential negation involve *nein,* Deprez and Pierce necessarily argued that children do not distinguish between *nein* and *nicht.* According to Wode (1977) and Clahsen (1982), *nein* and *nicht* are both used for sentential negation. However, contrary to Deprez and Pierce's claims, neither Wode nor Clahsen found that children go through a stage that allows the use of both *nein* and *nicht* for anaphoric and nonanaphoric negation. Wode argued that *nein* is only used for sentential negation when *nicht* is not yet available, and only during this early stage of acquisition can sentential negation with *nein* be sentence-initial. Once *nicht* becomes available, it always occurs in its correct, postsubject position. Clahsen (1982), Mills (1985), and Meisel (1980) also argued that sentential negation with *nein* is structurally different from sentential negation with *nicht.* When *nicht* is used, the word order is approximately the same as in the target language, whereas sentential negation with *nein* exhibits a word order similar to that of anaphoric negation. According to Clahsen (1982), in sentential negation using *nein,* the negator always occurs immediately adjacent to the verb. Meisel attributed this to semantic factors: The child reduces the scope of the negation to the semantically most salient element. Based on Clahsen's and Meisel's observations, it is reasonable to conclude that such semantically motivated operations are only possible in the absence of syntactic constraints that begin to apply at the same time that *nicht* becomes available. It appears that at the time when *nicht* becomes available, the negator has been assigned a fixed position in the syntactic structure and can no longer be moved to accommodate semantic intuitions. Indeed, one might expect the occurrence of the correct adult form *nicht* to be licensed by the successful assembly of a fixed NegP, perhaps in the same sense in

[6]Park (1979) reviewed Wode's (1977) four-stage theory of negation and, based on his own data, came to the conclusion that early Neg-initial negation is exclusively nonanaphoric and that anaphoric Neg-initial negation is acquired later. Park's findings are at variance with all other researchers cited in our study, and it is very difficult to assess their validity. In his article, Park (1979) gave only one example of each word order; furthermore, no context is provided, and it is impossible to determine whether all instances of negation have been correctly labeled nonanaphoric. (See footnote 11 for a discussion of some of the utterances.) Park's analysis is restricted to multiword utterances, which means that instances of anaphoric *nein*—where the negator was separated from the rest of the utterance by a longer pause (as they often are)—might have been excluded, thus introducing a bias toward nonanaphoric negation. Park (1979) did not indicate to what extent these potential problems have been addressed; hence, it seems warranted to take another look at original acquisition data.

which the successful assembly of other functional categories licenses verb–subject agreement.

In our analyses, we systematically examine the German acquisitional data in order to determine whether Deprez and Pierce's (1993) central conclusions result from methodological flaws or whether, as suggested by some of the researchers mentioned earlier, sentential negation is indeed optionally Neg-initial and no distinction is made between *nein* and *nicht.* We find that out of 56 possible sentential negatives, only 1 is likely to be an example of Neg-initial sentential negation.

2. METHOD

2.1. Participants

In our study, two criteria were used in selecting which children's corpora to analyze. First, the children's ages had to be within the range during which Deprez and Pierce (1993) predicted the transition from Neg-initial to Neg-medial sentential negation (roughly 2;0–2;5). The second criterion was that the corpora contain a sufficiently large sample of a child's spontaneous speech (preferably from a longitudinal study) so that we would be able to observe not only the occurrence but also the relative frequency of Neg-initial and Neg-medial utterances. The corpora of spontaneous speech samples presented in Table 1 are available through the CHILDES system (MacWhinney and Snow (1985)) and met the inclusionary criteria described earlier.

TABLE 1
Corpora Analyzed

Child	*Researcher*	*Age*[a]	*Lines Spoken*[b]
Julia	Clahsen (1982)	1;11	77
		2;0	73
		2;1	85
		2;2	115
		2;3	120
		2;4	167
		2;5	133
Inga	Wode (1974)	1;10	256
		2;9	842
Andreas	Wagner (1985)	2;1	2,297
Katrin	Wagner (1985)	1;5	1,447
Nicole	Wagner (1985)	1;8	1,726
Total			7,338

[a]Age is indicated by years;months. [b]Lines spoken refers to the number of lines said by children.

2.2. Types of Negation

Sentential negation was defined as negation in which a negator negates the entire proposition conveyed by a sentence. An example of an English sentence with sentential negation is *I don't like football.* This is an example of sentential negation because the entire proposition *I like football* is negated. Because only negative utterances that are examples of sentential negation are relevant for this study, in our analysis we took great pains to distinguish sentential negation from other forms of negation. For example, *I have a house with no garage* is an example of *constituent negation* because *no* only negates *garage* and not the proposition *I have a house.*[7] A third type of negation is *anaphoric negation.* In anaphoric negation the negator does not negate the sentence that it is a part of, but rather it negates a previous utterance. For example, if after hearing the utterance *You have to go to bed now,* a person responded *No, I want to stay up all night,* this would be an example of anaphoric negation.

2.3. Types of Negators

To identify all words that could be negators for the children, we used the CLAN utility *freq* (MacWhinney (1991)) to list all of the words in the transcripts that were said by the children. Out of this list, we extracted the following potential negators and, based on the context, divided them into three categories:

(i) *Nein* in its correct, mispronounced, or colloquial form: *nein, nei, nee.*

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[7]One can further subdivide this category into quantification and constituent negation. *Quantification* is a subtype of negation when a sentence is intended to communicate a quantity that happens to be zero but could have been another number.

Meaningful: (i) His grandmother has no teeth.
Also meaningful: (ii) His grandmother has five teeth.

Constituent negation, like quantification, has scope only over its NP, but the meaning of the sentence is equal to sentential negation.

(iii) I'm no fool. has the same meaning as: (iv) I'm not a fool.

Constituent negation differs from quantification in that its *no* does not correspond to a zero quantity that could have had another numerical value:

Meaningful: (v) I'm no fool.
Not meaningful: (vi) I'm five fools.

Although quantification (with zero value) and constituent negation differ somewhat in semantic force, they appear to be syntactically identical; hence, they were treated as one category in this article.

(ii) *Nicht* in its correct, mispronounced, or colloquial form: *nicht, nich, nit, nick, ni.*
(iii) Other potential negators, most of which either were constituent negators (*kein, keine, nichts, nix*) or turned out not to be negators at all (*jein, tein, hein, na, ne*).

To confidently assign a word to one of these groups, the context of children's utterances must be considered. We did this by using the CLAN utility *kwal* (= key word and line) to pull the five lines that immediately preceded and followed the utterances with potential negators.

3. RESULTS

3.1. Negative Utterances

As shown in Table 2, the five children used 689 potential negators overall. Of these, 365 were usages of *nein* (Type A negators) and 123 were usages of *nicht* (Type B negators). Because we were only interested in sentential negation, words that clearly were not negators were eliminated. We were more cautious about apparent constituent and anaphoric negators. Although words that are constituent negators in adult German (e.g., *kein, keine, nichts*) are never used as sentential negators by adult German speakers, it is possible that German-speaking children use these forms for sentential negation. However, we checked the context of all constituent negators and found no evidence that the children used them for

TABLE 2
Frequency of *Nein, Nicht,* and Other Potential Negators in Children's Speech

Child	*Age*[a]	*Type A* (Nein)	*Type B* (Nicht)	*Type C (Other)*	*Total*
Julia	1;11	5	0	0	5
Julia	2;0	17	0	0	17
Julia	2;1	2	0	1	3
Julia	2;2	2	2	1	5
Julia	2;3	4	8	1	13
Julia	2;4	1	15	0	16
Julia	2;5	0	8	2	10
Inga	1;10	22	9	0	31
Inga	2;9	70	41	8	119
Andreas	2;1	73	18	123	214
Katrin	1;5	75	19	26	120
Nicole	1;8	94	3	39	136
Total		365	123	201	689

[a]Age is indicated by year;month.

sentential negation. For these reasons, we eliminated all Type C negators from all subsequent analyses.

It is tempting to dismiss all instances of *nein* as anaphoric because in adult German *nein* is only used in anaphoric negation. However, Deprez and Pierce (1993) argued that during the developmental stage on which we are focusing, both *nein* and *nicht* can be used for anaphoric and sentential negation. Because this is one of Deprez and Pierce's central claims, we counted all instances of *nein* and *nicht* as potential sentential negators. Instances of clear anaphoric negation were eliminated at a later stage of the analysis, but that elimination was based only on context and not on whether the negator was *nein* or *nicht.*

3.2. Isolated Negators

Another group of nonsentential negatives that we eliminated were *isolated negators.* If a line of the transcript contained only the word *nein* or *neinein* 'no-no', the negative had to refer to a previous statement and thus had to be anaphoric. The same was true of negatives that were less isolated but were not part of a sentence, as in (3):

(3) nein, dort!
no, there!
(Inga, 2;9)

The children used 389 isolated negators. Table 3 gives the number of negators that appeared as part of a sentence, divided into *nein* and *nicht* utterances.

TABLE 3
Negators That Were Part of a Sentence

Child	*Age*[a]	Nein *'No'*	Nicht *'Not'*
Julia	1;11	0	0
Julia	2;0	1	0
Julia	2;1	0	0
Julia	2;2	0	2
Julia	2;3	0	6
Julia	2;4	0	14
Julia	2;5	0	7
Inga	1;10	0	0
Inga	2;9	8	22
Andreas	2;1	8	11
Katrin	1;5	2	12
Nicole	1;8	5	1
Total		24	75

[a]Age is indicated by year;month.

3.3. Anaphoric Negation

The next group of negative utterances that were eliminated were those complete sentences that were clearly anaphoric negatives. We were very restrictive about what we considered anaphoric negation and only eliminated an utterance if it met Condition A or Condition B outlined next:

> Condition A: If an utterance contained two negators and the second negator clearly functioned as a sentential negator, we were forced to conclude that the first negator was anaphoric.

(4) ING: nein, kann ich nich.
no, can I not
(Inga, 2;9)

As illustrated in (4), *nich* clearly functions as the sentential negator, and thus *nein* has to refer to something else, which means that *nein* has to be anaphoric. (We only rejected this negative as an example of sentential negation with *nein.* We accepted it as an example of sentential negation with *nicht.*)

> Condition B: If the context of a negative utterance strongly suggested that the negation was anaphoric, we eliminated the negative from further analyses.

(5) NIC: nee, neme nit # Koll ##
no, take with Nicole
NIC: neme mit ### [% 'nimmt mit'][8]
take with [% 'takes with (her)']
(Nicole, 1;8)

For example, in (5) Nicole is indicating that she wants to take the building blocks with her. We know this because she repeats *neme mit* 'takes with' to make her intention clear. Therefore, *nee* must be anaphoric.

We stress that we did not consider the fact that the transcriber had interpreted the negator as anaphoric to be sufficient evidence for rejecting it. Thus, for instance, even if the transcriber had placed a comma between the negator and the subject NP (as in *nein, ich kann das*; Andreas, 2;1), we did not reject the utterance unless further contextual information suggested that it was indeed anaphoric negation. As shown in Table 4, overall the children used 13 sentences that clearly contained anaphoric negatives and 86 sentences that potentially were sentential negatives.

We next divided potential sentential negatives according to whether *nein* or *nicht* was used as the negator. As shown in Table 5, the children used 11 potential sentential negatives with *nein* and 75 with *nicht* overall.

[8]Sentences with the format [%....] are comments or interpretations provided by the transcriber.

TABLE 4
Anaphoric Negatives Versus Potential Sentential Negatives

Child	*Age*[a]	*Clearly Anaphoric Negatives*	*Potential Sentential Negatives*
Julia	1;11	0	0
Julia	2;0	0	1
Julia	2;1	0	0
Julia	2;2	0	2
Julia	2;3	0	6
Julia	2;4	0	14
Julia	2;5	0	7
Inga	1;10	0	0
Inga	2;9	6	24
Andreas	2;1	2	17
Katrin	1;5	2	12
Nicole	1;8	3	3
Total		13	86

[a]Age is indicated by year;month.

TABLE 5
Potential Sentential Negatives

Child	*Age*[a]	Nein *'No'*	Nicht *'Not'*
Julia	1;11	0	0
Julia	2;0	1	0
Julia	2;1	0	0
Julia	2;2	0	2
Julia	2;3	0	6
Julia	2;4	0	14
Julia	2;5	0	7
Inga	1;10	0	0
Inga	2;9	2	22
Andreas	2;1	6	11
Katrin	1;5	0	12
Nicole	1;8	2	1
Total		11	75

[a]Age is indicated by year;month.

3.4. Neg-Initial and Neg-Medial Negation

Up to this point, our analyses were restricted to sentences with potential sentence negators. It should be stressed that the term *potential* is used here because it is far from certain that each of these sentences is an instance of sentential negation. All we can say so far is that, based on the context, none of these sentences clearly contained an anaphoric negator. The next step was to examine at what position in the sentence the negators occurred. We defined a negator to be *sentence-initial* if the negator was the first word in the line (as in (6)) or if the context of the utterance

indicated that words that appeared to the left of the negator were not part of the negative utterance (as in (7)).[9]

(6) nein essen.
no eat
(Julia, 2;0)

(7) eeeeee # nein # ham. [% 'nicht haben'; weint]
eeeeee # no # have [% 'not have'; cries]
(Nicole, 1;8)

All other negatives were considered non-sentence-initial. Henceforth, sentence-initial negatives will be referred to as *Neg-initial,* and sentences containing a non-sentence-initial negator will be referred to as *Neg-medial.* Table 6 gives the frequency of *nein* and *nicht* in Neg-initial and Neg-medial positions.

As shown in Table 6, the potential sentential negator *nein* always occurred Neg-initial, whereas *nicht* occurred in Neg-medial position 91% (68/75) of the time. This directly contradicts Deprez and Pierce's (1993) claim that both *nein* and *nicht* occur in Neg-initial and Neg-medial positions (Deprez and Pierce, 48).

3.5. Overt-Subject and Null-Subject Sentences

We now elaborate on our definition of *sentence.* We considered an utterance to be a complete sentence if (i) it included a verb and a subject (8); (ii) it contained an

[9]It would have been possible for the children to produce negative utterances in which the negator was not the first word of the utterance, which still could have supported Deprez and Pierce's (1993) theory:

(vii) Mami nicht ich trete.
[obj.] [neg.] [subj.] [verb]

or

(viii) Trete nicht ich Mami.
[verb] [neg.] [subj.] [obj.]

or

(ix) Trete Mami nicht ich.
[verb] [obj.] [neg.] [subj.]
'I don't kick Mommy.'

No instances of the word orders given in (vii) to (ix) occurred in our data; hence, we maintain our simplified definition of *sentence-initial,* which only accepts cases where the negator is literally the first word of the utterance.

TABLE 6
Nein and *Nicht* in Sentence-Initial and Non-Initial Positions

		Neg-Initial		*Non-Neg-Initial*	
Child	*Age*[a]	Nein *'No'*	Nicht *'Not'*	Nein *'No'*	Nicht *'Not'*
Julia	1;11	0	0	0	0
Julia	2;0	1	0	0	0
Julia	2;1	0	0	0	0
Julia	2;2	0	0	0	2
Julia	2;3	0	0	0	6
Julia	2;4	0	3	0	11
Julia	2;5	0	0	0	7
Inga	1;10	0	0	0	0
Inga	2;9	2	1	0	21
Andreas	2;1	6	3	0	8
Katrin	1;5	0	0	0	12
Nicole	1;8	2	0	0	1
Total		11	7	0	68

[a]Age is indicated by year;month.

overt subject but no overt verb, but context suggested an implicit verb (9); or (iii) it included an overt verb but no overt subject, but context suggested an implicit subject (10).

(8) Overt Subject and Overt Verb Category
ich kann das nich.
I can that not
(Julia, 2;4)

(9) Null Verb Category
Mami, iche Mutter nich.
Mom, I (am the) mother not
(Inga, 2;9)

(10) Null Subject Category
kann nich durch.
(the toy) can not (fit) through
(Julia, 2;5)

Because the relative order of negator and verb is not relevant for this study, null-verb negatives were treated as if they contained an overt verb. Null-subject negatives, however, were analyzed separately from overt-subject negatives because the relative order of negator and subject is relevant for this study, and one

TABLE 7
Neg-Initial Sentential Negatives

		Nein *'No'*		Nicht *'Not'*	
Child	*Age*[a]	*Null Subject*	*Overt Subject*	*Null Subject*	*Overt Subject*
Julia	1;11	0	0	0	0
Julia	2;0	1	0	0	0
Julia	2;1	0	0	0	0
Julia	2;2	0	0	0	0
Julia	2;3	0	0	0	0
Julia	2;4	0	0	3	0
Julia	2;5	0	0	0	0
Inga	1;10	0	0	0	0
Inga	2;9	0	2	1	0
Andreas	2;1	1	5	2	1
Katrin	1;5	0	0	0	0
Nicole	1;8	2	0	0	0
Total		4	7	6	1

[a]Age is indicated by year;month.

cannot determine whether the subject appears to the left or the right of the negator in a sentence that lacks an overt subject. In addition to the requirements outlined earlier, to be considered a complete sentence, the transcript had to indicate that there were no long pauses within an utterance. If a line contained two or more consecutive pause indicators (#), we concluded that the child actually uttered two sentences (or sentence fragments).[10]

As shown in Table 7, the children said only eight Neg-initial utterances with overt subjects, and seven of these eight utterances involved *nein.* Of the sentences we analyzed, these eight utterances are the only data that can potentially support Deprez and Pierce's (1993) hypothesis that there exists an early acquisitional stage during which subjects can surface to the right of the negator.[11] Again, the use of the qualification "potentially" is warranted. As we show in section 3.6, at

[10]Only six instances of "##" in a negative multiword utterance occurred in our data. In each case, the content and the context of the six instances clearly suggest that the pause markers correctly separated distinct utterances.

[11]In their article, Deprez and Pierce (1993) presented several examples of Neg-initial negation from Miller (1979) and Park (1981) that they considered to be nonanaphoric. Of these examples, 6 have overt subjects and 11 have null subjects. To evaluate whether these instances are anaphoric or sentential negation, one needs to consider the context of the utterance, but Deprez and Pierce provided context for only one null-subject negative and none of the overt-subject negatives. As stated in section 3.5, null-subject sentences can not be used as evidence for Deprez and Pierce's hypothesis. Thus, we focus our discussion on the overt-subject examples. Although Deprez and Pierce cited Miller (1979) as the source of 1 of their 6 overt-subject Neg-initial utterances, we were unable to find that example in Miller's (1979) book.

least five out of the eight remaining Neg-initial utterances are probably anaphoric negatives.

3.6. Neg-Initial Utterances Revisited

Thus far, we have purposefully been very lax about what we consider sentential negation because we are trying to demonstrate that the lack of evidence for Deprez and Pierce's (1993) theory is not the result of a biased or overly critical analysis of the data. The eight remaining potential negative utterances are given as examples (11) through (18). Careful analysis of the context of each example re-

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The other five examples of overt-subject Neg-initial utterances are taken from Park (1981). Park provided some context for only four of these utterances (all from Kathrin). Careful analysis of the context reveals that two of the four utterances can plausibly be regarded as instances of sentential negation, whereas the context does not help to disambiguate the other two examples.

The following two examples are quite convincingly interpreted as being nonanaphoric:

(x) Nein Batsch Hunger.
no uncle hunger

This probably means that the uncle is not hungry, because Kathrin says this as she stops giving the uncle pudding.

(xi) Nein dick Baby.
no fat baby

The mother had suggested that the doll will get fat if Kathrin continues to feed her, but Kathrin responds with the utterance in (xi) while continuing to feed the doll; hence, this utterance is also plausibly nonanaphoric.

Although classified as nonanaphoric by Park (1981), the context of the following two examples casts some doubt on that assessment:

(xii) Nein Auto kaputt.
no car broken

Park reported that the car is seemingly (but not actually) broken. Furthermore, the mother had asked if the car was *not* broken. A nonanaphoric interpretation is only plausible if we assume that Kathrin noticed that the car was not broken and ignored the negative polarity of the mother's question.

The context of Kathrin's fourth utterance (xiii) does little to clarify its intended meaning:

(xiii) Nein diese Messer auau.
no this knife hurting

This is said as Kathrin is cutting her pudding with a toy knife. Obviously for that task it is irrelevant whether the knife has the capacity to inflict pain, so it is unclear how the context could be used to support either an anaphoric or a nonanaphoric interpretation. Park's fifth example is taken from a list of utterances without context.

In sum, out of the 17 Neg-initial negatives that Deprez and Pierce (1993) themselves provided as support of their theory, only 2 are strongly consistent with their hypothesis. The extreme rarity of Neg-initial sentential negatives is consistent with them being speech errors.

veals that the first 5 examples are most likely examples of anaphoric negation, (16) and (17) could equally likely be anaphoric or sentential negation, and only (18) is likely to be an example of Neg-initial sentential negation.

(11) HEN: weisst du das?
'do you know that?'
ING: nee, weiss ich xxx.
no, know I xxx
(Inga, 2;9)

Despite the fact that the transcriber considered *nee* to be anaphoric (hence the comma), it is possible that in (11) *nee* is a sentential negator and refers to *weiss ich.* It is, however, equally possible that the unintelligible word *xxx* is the actual sentential negator *nicht,* which would then make *nee* unequivocally anaphoric.

(12) HEN: [% fragt ING] soll ich den Wuffi da rueberheben?
[% asks ING] 'Should I lift Wuffi [a stuffed animal] above that?'
ING: ja.
yes
ING: # [% aendert ihre Meinung 'changes her mind']
nee, ich # mach den Kopfkisse.
no, I # make him pillow
[% Sie will Wuffi aufs Kopfkissen legen]
[% she wants to lay Wuffi on the pillow]
(Inga, 2;9)

Again, it is not possible to interpret (12) as sentential negation without second-guessing the transcriber. Furthermore, there is no reason why Inga should respond to Henning's suggestion to lift Wuffi up by saying 'I don't make him pillow' or 'I won't lay him on the pillow'. Hence, it is clearly more reasonable to classify *nee* in (12) as anaphoric.

(13) ANN: hier ist dein Hubschrauber.
'Here's your helicopter.'
AND: . . . nein # da ist er . . .
. . . no # there is it
(Andreas, 2;1)

The context of (13) does not provide much information. We do know that Anna points out the helicopter to Andreas. Therefore, it makes sense to interpret *nein* as an anaphoric negator and conclude that Andreas insists that the helicopter is *there,* and not *here,* as Anna had claimed. Nevertheless, it is also possible (though less plausible) that Andreas wants to say that the helicopter is not *there* at all, in which case *nein* would be a sentential negator.

(14) AND: ### da Nikolaus guck.
there Nikolaus (is) look(ing)
THO: Andreas nich drangehen.
'Andreas, don't go near that.'
AND: nein # Nikolaus guckt.
no # Nikolaus (is) look(ing)
AND: ## Nikolaus guckt doch.
Nikolaus (is) look(ing)
(Andreas, 2;1)

Example (14) seems to be a clear case of anaphoric negation. In his first and third utterance, Andreas states that Nikolaus is looking, so it is reasonable to conclude that he is saying the same thing in his second statement.

(15) ANN: Thorsten holt einen, bleib du hier.
'Thorsten went to get one, you stay here.'
AND: nee ich guck.
no I watch
(Andreas, 2;1)

Although it is not made entirely clear from context, it is likely that in (15) Andreas wants to watch Thorsten do something. Because Thorsten is somewhere else, Andreas does not want to stay *here* either. His *nee* must therefore refer to Anna's suggestion to stay *here,* which means that this is probably another example of anaphoric negation.

(16) MUT: du drehst ihm ja den Kopf ab.
'You're twisting his head off.' [referring to a toy]
AND: nein so mach ich.
no so make I
(Andreas, 2;1)

In (16), one might expect that by saying *nein so mach ich* 'no so make I' Andreas is insisting that he is not doing anything wrong. *Nein so mach ich* could then be interpreted as 'I'm not doing that', which would mean that *nein* is an example of sentential negation. It is, however, equally likely that *nein so mach ich* means 'no, I'm doing something else', which would suggest that *nein* is anaphoric.

(17) OPA (Grandpa): kommt da ein Haifisch?
'Is there a shark coming?'
AND: ja.
'Yes.'

OPA: pass auf.
'Be careful.'
AND: e nich was mitfahren.
not something with-ride
AND: raus ist das # darein bleiben.
'That's out, stay in there.'
(Andreas, 2;1)

Examining the context of (17) does not clarify the meaning of this utterance, and it is impossible to determine whether anaphoric or sentential negation is intended. Although the initial *e* in (17) may be the subject of the sentence, it is also possible that *was* is the subject. If *was* is the subject, this would be an example of Neg-initial sentential negation.

(18) AND: nein, ich kann das.
no, I can (do) that
MUT: du kannst das?
'You can do that?'
AND: nein
no
(Andreas, 2;1)

In (18), Andreas was trying to repair something, and he clearly indicates that he cannot do it himself. *Nein, ich kann das* can therefore be interpreted as 'I cannot do that', which means that *nein* in (18) is a sentential negator. Despite the transcriber's decision to insert a comma, this is the best example of Neg-initial sentential negation found in the data.

4. DISCUSSION

4.1. Neg-Initial Sentential Negation Revisited

4.1.1. Comparison of our results and previous results. Overall, there were 56 possible sentential negatives with overt subjects. Of these, 48 were Neg-medial, and all 48 involved *nicht.* As discussed in section 3.5, close examination of the remaining 8 sentences reveals that only 3 sentences ((16), (17), and (18)) are likely to be instances of Neg-initial *sentential* negation with overt subjects. Moreover, an anaphoric and a sentential interpretation are equally likely for (16) and (17). This means that only 1 sentence ((18)) out of 56 identified overt-subject sentential negatives unambiguously supports Deprez and Pierce's (1993) hypothesis that during an early acquisitional stage the negator can surface to the left of the subject. Thus, our results strongly suggest that, contrary to

Deprez and Pierce's theory, sentential negation in German is essentially never Neg-initial and almost always involves the sentential negator *nicht* in sentence-medial position. Like adults, German-speaking children correctly distinguish between *nein* and *nicht* and use *nein* in sentence-initial position for anaphoric negation and *nicht* in sentence-medial position for sentential negation.

Our findings contradict Wode's (1977) somewhat weaker claim that sentential negation may involve *nein* but only when *nicht* is not yet available. However, given the additional assumption that only sentential negation with *nicht* is constrained by adult-like sentence structure (e.g., Mills (1985)), Wode's theory makes acquisitional predictions that are similar to what we observed in our analyses of the CHILDES data. For example, if children can only use *nicht* once they have begun to use adult-like syntactic structures, Wode's theory predicts that all sentential negatives with *nicht* should be Neg-medial, consistent with our findings. Under these assumptions, sentential negation with *nein* cannot be distinguished from anaphoric negation based on its structural characteristics, and a classification must rely on contextual information. Because the interpretation of contextual cues is not an exact science (and because many contextual cues were not available to us, as we only had access to transcripts), the disagreement between Wode's results and our results may simply reflect differences in the subjective interpretation of the intended meanings of the sentences. The fact that Wode's analysis used different corpora than our study may also have contributed to the differences between our findings and Wode's findings. Furthermore, it is possible that our study did not encompass the exact developmental period that is relevant for Wode's predictions because we selected our children based on the ages appropriate to test the predictions made by Deprez and Pierce (1993) and not based on the ages appropriate to test Wode's theory.

4.1.2. Nein-*initial negatives as performance errors.* If we accept Wode's (1977) findings and we interpret the one or two possible examples of *nein*-initial sentential negatives we found in the CHILDES corpora to be evidence that very young children do make errors with *nein,* the question becomes why children make errors with *nein* but not with *nicht.* One possibility is that children's *nein*-initial sentential negatives are performance errors and such utterances are never generated (or permitted) by their grammars. Recall that German-speaking children typically begin to use *nein* before they begin to use *nicht.* If we assume that children's performance abilities improve as they get older, their earlier use of *nein* instead of *nicht* means that they will be more likely to make performance errors with *nein* than with *nicht.* Notice that when we say that children make more errors in sentences with *nein* (e.g., allowing *nein* to surface in the wrong position), that does not mean that the negator *nein* is the source of all these errors. Failure to put another element in its correct position may result in *nein* appearing in the wrong relative position. Because such errors are more likely to occur during an early stage of acquisition, they are more likely to affect *nein* than

nicht. One problem for the performance theory account is that such an account cannot explain why children never use *nein* in non-initial position.

4.1.3. Misinterpreted surface structure. Perhaps the reason children use *nein*-initial utterances for sentential negation is that they are misled by the surface structure (linear word order) of anaphoric negatives. If children hear anaphoric negatives and incorrectly misinterpret them as sentential, they could erroneously conclude that German has two ways of forming sentential negatives. There are three problems with such an account. First, if children are misled by the surface form [*nein* S] and interpret it as grammatical sentential negation, there should be many such examples, and hence, their virtual absence is a strong argument against this account. Second, because children also hear examples of (correct) *nicht*-medial sentential negatives, children should produce both types of sentential negatives at the same age. Third, if children can be so easily thrown off by the surface structure of negatives, we might expect them to be confused by instances of ellipses where *nicht* precedes an NP (e.g., *Ich spiele Tennis nicht Fussball* 'I play tennis, not soccer') and conclude that *nicht* and *kein* can be used interchangeably. As mentioned later in section 4.2.4, our analyses of the CHILDES corpora indicate that children never use *nicht* in utterances that require *kein,* or vice versa.

4.2. *Nein* Versus *Nicht*

The results of our study and previous studies (e.g., Wode (1977), Clahsen (1982), and Park (1979)) indicate that German-speaking children acquire *nein* before *nicht.* Most researchers also agree that children use *nein* and *nicht* in different ways. There is consensus among researchers that children use *nicht* correctly in sentence-medial position for sentential negation. Most researchers also agree that children only use *nein* in sentence-initial position (but see Deprez and Pierce (1993)). There is disagreement among researchers about whether children use *nein* only for anaphoric negation or whether they also use *nein* for sentential negation. In this section, we discuss a number of possible explanations for children's earlier use of *nein* rather than *nicht* and for their ability to correctly distinguish between *nein* and *nicht.*

4.2.1. Input frequency. The hypothesis that the earlier acquisition of *nein* is a result of the greater frequency of *nein* in the parental input speech can be dismissed because parents use *nicht* much more frequently than *nein* (in our data, adults used *nein* 70 times and *nicht* 218 times in their interaction with the children). Furthermore, there is no indication that parents unconsciously vary their *nein*:*nicht* ratio to simplify the acquisition task for children.

4.2.2. Phonetic complexity. It is possible that children acquire *nein* before *nicht* because *nein* is phonetically less complex than *nicht* (e.g., *nicht* contains a consonant cluster, whereas *nein* does not). Deprez and Pierce (1993) pointed to studies of phonological acquisition cited by Owens (1984), which indicate that the palatal fricative in *nicht* is generally one of the last sounds to be acquired. We can explore the possibility that *nicht* is acquired late because it contains a palatal fricative by checking if other words such as *ich* 'I', which also contain a word-final palatal fricative, are also absent at this stage of acquisition. Indeed, we find that *ich* is typically absent during the stages when *nicht* is absent. These two words differ in their semantic salience; however, if in the sentence *Ich will nicht* 'I don't want to', the pronoun *ich* is omitted, the meaning of the sentence remains unchanged. If the negator is omitted, however, the meaning is reversed. Thus, if *ich* is unavailable at a given acquisitional stage, it is plausible that the child will simply omit it. If *nicht* is unavailable, one would expect the child to use some strategy to express negation. The most obvious way to do so would be to use *nein,* which is already available.[12] Thus, we might expect that children would allow *nein* to appear anywhere that adult German allows *nicht* to appear. Contrary to this prediction, our results and the results of other researchers suggest that even in children's early utterances, *nein* and *nicht* exhibit different syntactic properties, and children do not use *nein* where the adult language requires *nicht* (e.g., children do not use *nein* in a sentence-medial position). Perhaps the reason children do not substitute *nein* for *nicht* is that they know that only *nicht* may appear in NegP (the position for sentential negation). In summary, the fact that children do not substitute *nein* for *nicht* indicates that a phonetic-complexity account, although not necessarily false, is clearly incomplete.

4.2.3. Nein *as an isolated negator.* Even if we accept that phonetic complexity or some other factor accounts for why children use *nein* before they use *nicht,* we must still explain why children distinguish between the two and do not use *nein* where *nicht* is required or vice versa. Children's early use of sentence-initial *nein* exemplifies neither sentential negation nor anaphoric negation, but rather best exemplifies isolated negators with no syntactic connection to the utterance they precede. In fact, the only factor that seems to distinguish a case of anaphoric negation from a simple sequence of an isolated *nein* followed by an independent sentence appears to be semantic. According to this analysis, children use *nein* earlier because they do not have to master any sentential syntax to do so (i.e., they can use *nein* correctly even if they are just beginning to form multiword utterances).

[12]Alternatively, we might have found simplified forms of *nicht* without the palatal fricative. However, such forms (e.g., *nit*) are very rare. The most common simplified form (*nich*) still contains the palatal fricative.

4.2.4. Pragmatic/Discourse distinction. Children may distinguish between *nein* and *nicht* based solely on nonsyntactic pragmatic/discourse factors. For example, they might use *nein* when they want to negate a prior proposition and *nicht* when they want to negate the current proposition.[13] If children make a distinction along these lines, we would not expect them to confuse *nein* and *nicht.* However, if children indeed rely on a purely pragmatic strategy for distinguishing between *nein* and *nicht,* we might expect that they are only aware of the pragmatic/discourse function of *kein*—mainly that similar to *nicht, kein* is used to negate the current proposition. If this is true, we would expect them to confuse *nicht* and *kein,* as in (19) and (20), because both are used to negate aspects of a current utterance.

(19)	Ich bin kein Idiot.	*Ich bin nicht Idiot.
	I am no idiot	*I am not idiot
(20)	*Ich bin kein dumm.	Ich bin nicht dumm.
	*I am no stupid	I am not stupid

In other words, given that *kein* and *nicht* only differ with respect to syntax, if children only attend to pragmatic/discourse properties, we would expect the children to confuse them. Thus, the fact that we found no examples of children confusing *kein* and *nicht* in the CHILDES corpora suggests that children know more about the differences among *nein, nicht,* and *kein* than the pragmatic/discourse distinctions outlined previously.

4.2.5. Conservative learning of nein *and* nicht. If we are correct and children distinguish between *nein* and *nicht,* then children must have some innate knowledge or innate principle (such as the principle of suppletion, Pinker (1995), or the principle of contrast, Clark (1973)) that prevents them from collapsing *nein* and *nicht* into a single category. If children only use *nein* in sentence-initial position for anaphoric negation (i.e., if, contrary to suggestions by Wode (1977) and Clahsen (1982), children obey the structural restrictions for both *nein* and *nicht*), then they could use a conservative strategy to acquire both types of negators. The fact that children acquire *nein* before they acquire *nicht* could merely be a reflection of the fact that the correct use of *nein* requires children to have acquired less syntax than *nicht.* For example, anaphoric *nein* might function more as an isolated negator than as an element coordinated to the sentence it precedes (see section 4.2.3 earlier).

4.2.6. Lexical versus functional categories. Wode (1977) and others have argued that *nicht* is only used for sentential negation and always occurs in its

[13]Such a distinction would still need to be innate or to be the reflection of an innate principle, such as suppletion. See section 4.2.5 for further discussion of the role of suppletion.

correct sentence-medial position, whereas *nein* can be used in sentence-initial position for both anaphoric and sentential negation. If children acquire *nein* before *nicht* and if children use *nein* for both sentential and anaphoric negatives, what prevents children from overgeneralizing and allowing *nein* to appear where the adult German requires *nicht*? If Wode's description of the findings is correct, in a sense the puzzle is that German-speaking children seem to know enough about *nein* to only use it in a sentence-initial position but not enough to only use it for anaphoric negation—and they know enough about *nicht* to avoid using it incorrectly but not enough to actually use it. One possibility is that *nein* is available before *nicht* because some innate property ensures that *nicht* only appears in its correct structural position, whereas *nein* is not constrained in such a way. This innate property might be that the sentential negator is necessarily a member of a functional category, whereas an anaphoric negator is a member of a lexical category and, hence, cannot appear in NegP (a functional projection).

Stromswold (1990; 1994) proposed that the lexical–functional category distinction is a core distinction in language and that children have innate knowledge of this distinction. Lexical categories have open membership, and the rules that apply to one member of the category usually apply to all other members of the category. Functional categories have closed membership with a fixed and finite number of members. Members of functional categories often behave in relatively irregular and idiosyncratic ways, with some members exhibiting properties not exhibited by other members. According to Stromswold (1990; 1994) innate knowledge of the lexical–functional category distinction allows children to distinguish between categories of words that are semantically and syntactically very similar but not identical (e.g., pronouns vs. nouns, auxiliary verbs vs. lexical verbs, determiners vs. adjectives, etc.). Stromswold (1990; 1994) argued that the ability to distinguish between lexical categories and their corresponding functional categories prevents children from incorrectly conflating these categories and, hence, making errors from which they cannot recover using only positive evidence (for further discussion on nonrecoverable errors, see Pinker (1979)). In addition to preventing children from making nonrecoverable errors, keeping lexical and functional categories distinct allows for more efficient learning because it allows children to generalize within lexical categories—where such generalizations are usually permissible—while preventing generalization within functional categories, where doing so often leads to errors.

5. CONCLUSIONS AND FUTURE DIRECTIONS

Deprez and Pierce (1993) argued that acquisitional negation data can be used to support Koopman and Sportiche's (1987) VP-internal subject hypothesis. They argued that because during an early stage of acquisition children allow subjects to remain VP-internal, they will produce Neg-initial sentential negatives. However, our

analyses of the German negation data do not support such a conclusion. Once incomplete utterances, anaphoric negatives, null-subject negatives, and so forth were eliminated, we found only one example of a Neg-initial sentential negative. Stromswold (1996; in press) reached a similar conclusion about the English negation data. Thus, the German and English acquisitional data cannot be used as support for the VP-internal subject hypothesis.[14] Future studies ought to be conducted to review Deprez and Pierce's analysis of the French and Swedish data to determine whether they provide genuine evidence in favor of Deprez and Pierce's claim.

Deprez and Pierce (1993) maintained that the difference between *nein* and *nicht* in adult German does not affect their use during the acquisitional stage that we are investigating. However, our results, as well as the results of Wode (1977) and Clahsen (1982), indicate that *nicht* occurs almost exclusively in sentence-medial position in sentential utterances. In our data, 91% of all sentences containing *nicht* showed correct word order: The negator occurred after the subject, after the finite verb, and before the infinitival verb.

If it is true that *nicht* always occurs in its correct structural position, whereas *nein* is not constrained in such a way (i.e., that there are examples of *nein*-initial sentential negatives), then one may conclude that the child can use *nein* at an early developmental stage when he or she has not yet acquired some critical structural concepts that are necessary for the use of *nicht.* There are a number of possibilities as to what the critical structural concepts might be. The fact that *nicht* has only been found in sentential negatives suggests that the use of *nicht* requires that the child be able to generate full sentences. This would explain why only *nein* is used during one-word and two-word stages.[15] Some possibilities for which syntactic concepts might license the use of *nicht* include the availability of correct tense marking, correct agreement marking, correct case marking, or correct verb placement. If it is found that the acquisition of one or more of these concepts coincides with the acquisition of *nicht,* a strong case could be made for the functional difference of *nein* and *nicht.*

To identify such a correlation not only would be significant in itself, but would also hold an important lesson for future acquisitional research. If the acquisition of a syntactic concept (in this case, sentential negation) depends crucially on the correct realization of a syntactic tree structure, then one is only justified in using instances of the *correct* use of this concept (e.g., correct word order) as a basis for further inquiry into *other* aspects of sentence structure, such as the position of the subject. It is dangerous to draw conclusions about the position of a constituent in

[14]This does not mean that the VP-internal subject hypothesis is incorrect. It is possible that subjects originate within the VP but that the same forces that cause adults to obligatorily raise them also cause very young children who are learning English or German to raise them.

[15]Compare this account with Bloom (1970), who argued that English-speaking children are more likely to omit subjects in sentential negatives than in affirmative utterances or anaphoric negatives because the greater syntactic complexity of sentential negatives causes children to compensate by omitting subjects from sentential negatives.

the syntactic representation from the *incorrect* use of a syntactic concept, because it is possible that the syntactic concept is used incorrectly precisely because a complete syntactic representation has not yet been acquired. If it can be shown that correct sentential negation depends on the acquisition of certain structural element(s), Deprez and Pierce (1993) made precisely this mistake: They used instances of incorrect sentential negation but nevertheless drew conclusions about the position of the subject based on the assumption that even when used incorrectly, the negator has already been assigned a fixed, correct position in the structural tree. If children fail to use sentential negation correctly because they fail to assign a fixed position to the negator, this would cause Deprez and Pierce's conclusions about the position of the subject to be invalid.

The issue of whether Neg-initial sentential negation exists is important not only for whether it provides support for the VP-internal subject hypothesis. More generally, it can shed light on the child's ability to articulate useful semantic concepts before the correct syntactic representation has been acquired. At a time when the correct syntactic representation for sentential negation is not yet in place, the occasional need for a negative sentence will nevertheless arise. For example, it is likely that a 2-year-old child would occasionally want to state that a certain event is not occurring or that she does not want an event to occur. In such cases, one might expect the child to combine her knowledge of the semantics of negation with her knowledge of sentence production. The result might be something that is semantically, but not syntactically, equivalent to adult sentential negation. The way children do this may provide insight into the language learner's general capacity to use semantic concepts in a novel way (i.e., without being guided by positive evidence) before having settled on the correct structural representation.

Everything we have discussed thus far in this section holds regardless of whether our findings or the findings of Wode (1977), Clahsen (1982), or Park (1979) are correct. The distinction between our findings (that Neg-initial sentential negation does not exist) and, for instance, Wode's findings that Neg-initial sentential negation involves only *nein* and is syntactically different from negation with *nicht,* is not crucial in this regard, because both findings lead to the basic conclusion that syntactically constrained sentential negation is always Neg-medial and always involves *nicht.* It is this common denominator that has strong implications for the theory advanced by Deprez and Pierce (1993).

However, when looking beyond the task of verifying Deprez and Pierce's (1993) claims, the question of whether Neg-initial sentential negation—however different from the correct adult form—is acceptable at a certain stage of acquisition has important implications. If a child attempts to produce a negative statement, but lacks the grammatical concepts (or the lexical item *nicht*) to do so correctly, one would expect the outcome to be an incorrect approximation of the target. One obvious approximation would be sentential negation involving *nein.* If our findings are correct and such utterances are never produced (in spite of the

fact that *nein* is already available for use in other syntactic contexts), it suggests that the child already has some knowledge of how sentential negation must be structured and what type of category must be involved, even though the child's knowledge is not sufficient to actually generate grammatical sentential negation (as discussed in section 4.2.6).

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