Bybee, J. (2001) *Phonology and Language Use.* Cambridge: CUP.

Costa, T. & M. J. Freitas (2003) 'Obstruções na aquisição. A propósito da natureza dos estádios iniciais no desenvolvimento segmental', in: *Actas do XVIII Encontro Nacional da APL.* Lisboa: APL.

Dupoux, E. (2002) 'The phonetic filter hypothesis: how phonology impacts speech perception and vice versa'. Invited lecture presented at the *Second International Conference on Contrast in Phonology,* Toronto, May 2002.

Fikkert, P. (1994) *On the acquisition of Prosodic Structure.* Leiden: HIL.

Fikkert, P. & M. J. Freitas (1999) 'On reconstructing input representations: Crosslinguistic evidence from the acquisition of Onset clusters'. Poster presented at the *8th IASCL Conference,* San Sebastian, June 1999.

Fikkert, P. & M. J. Freitas (2002) 'The acquisition of vowel alternations in European Portuguese'. Paper presented at the *Second International Conference on Contrast in Phonology,* Toronto, May 2002.

Freitas, M. J. (1997) *Aquisição da Estrutura Silábica do Português Europeu.* PhD Dissertation, Universidade de Lisboa.

Freitas, M. J. (2001) 'Syllabic constituency and segmental emergence', in: M. Almgren, A. Barreña, M. Ezeizabarrena, I. Idiazabal & B. MacWhinney (eds) *Research on Child Language Acquisition. Proceedings of the 8th Conference of the IASCL.* Somerville: Cascadilla Press.

Freitas, M. J. (2003) 'The acquisition of Onset clusters in European Portuguese' in: J. Meisel (ed) *Probus.* Volume 15, n°1.

Freitas, M. J. & C. Rodrigues (2003) 'On the nature of s+C clusters in European Portuguese', in: L. Wetzels (ed) *Journal of Portuguese Linguistics.* Volume 2, n° 2.

Hayes, B. (to appear) 'Phonological acquisition in Optimality Theory: the early stages' in: R. Kager, J. Pater & W. Zonneveld (eds) *Fixing Priorities: Constraints in Phonological Acquisition.* Cambridge: CUP.

Jusczyk, P. (1997) *The Discovery of Spoken Language.* Cambridge, Mass: MIT Press.

Kehoe, M. (2002) 'The acquisition of unstressed syllables in bilingual children with a particular focus on vowel reduction. Paper presented at the *Deutsche Gesellschaft fur Sprachwissenschaft (DGfS),* Mannheim, February 2002.

Levelt, C. (1994) *On the Acquisition of Place.* Leiden: HIL.

Levelt, C. (2000) 'Schwa-schma: the development of /ə/ in Dutch child language'. Paper presented at the *16th IATL Conference,* Tel Aviv, June 2000.

Mateus, M. H. (1975) *Aspectos da Fonologia Portuguesa.* Lisboa: INIC.

Mateus, M. H. & E. d'Andrade (2000) *The Phonology of Portuguese.* Oxford: Oxford University Press.

Ostendoorp, M. (1995) *Vowel Quality and Syllable Projection.* PhD Dissertation, Tilburg: Tilburg University.

Peperkamp, S. & E. Dupoux (to appear) 'Coping with phonological variation in early lexical acquisition', in: I. Lasser (ed) *The Process of Language Acquisition.* Berlin: Peter Lang Verlag.

Peters, A. (2001) 'Filler syllables in early language development', in: M. Almgren, A. Barreña, M. Ezeizabarrena, I. Idiazabal & B. MacWhinney (eds) *Research on Child Language Acquisition. Proceedings of the 8th Conference of the IASCL.* Somerville: Cascadilla Press.

Vigário, M., F. Frota & M. J. Freitas (2003) 'From signal to grammar: rhythm and the acquisition of syllable structure', in: B. Beachley, A. Brown & F. Conlin (eds) *Proceedings of the 27th Annual Boston Conference on Language Development.* Volume 2. Sommerville: Cascadilla Press.

On the Scope of Negation
More evidence for early parameter setting

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1. Previous Research

In a seminal study of the acquisition of negation by English-speaking children, Klima and Bellugi (1966) proposed that children go through an initial stage in which sentential negation is 'external'. According to this proposal, a sentence such as the now famous (1a), *no the sun shining*, means the sun is not shining, with the negative wrongly located in sentence-initial position.

(1) a. No the sun shining.
    b. No sit there.[1]

During Klima and Bellugi's Stage 2 the negative moves inside the sentence to its adult position, as in example (2).[2]

(2) a. I no want envelope.
    b. He not little, he big.

More recently, Deprez and Pierce (1993) offered an explanation for Klima and Bellugi's stages based on a parameter-setting model of Universal Grammar (UG) (Chomsky 1981). Deprez and Pierce proposed that the subject raising parameter is initially set to allow the subject to remain inside VP. According to Deprez and Pierce, sentences containing "external negation" result when the subject fails to raise from its base position in Spec VP, as illustrated by the structure in (3):

(3) .... [$_{negP}$ no [$_{VP}$ the sun shining]]

It is assumed that subjects originate within VP in all languages, the position in which they are theta-marked (Kitagawa 1986, Koopman and Sportiche 1991). The subject raising parameter describes the difference between languages like English and Italian, for example, with respect to the surface position in which subjects are

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[1] It is important to note that while Klima and Bellugi analyzed sentences like (1b) as instances of external negation, it is difficult to know the position of the negative when the subject is absent. Most sentences at this stage have missing subjects.

[2] During stage 2 we also find *can't* and *don't,* which Klima and Bellugi analyze as negative elements like *no* and *not* even though they have a somewhat different distribution, viz. they do not occur in progressive constructions (e.g. *I no/not going* vs. the non-occurring **I don't/can't going*). Since *can't* and *don't* were not tested in our study we will have nothing more to say about these elements.

licensed. In English the subject must raise to Spec IP while in Italian the subject may raise, as in (4a) or remain in situ, as in (4b).

(4) a. I   ragazzi   sono   arrivati.
      the boys   are   arrived
      "The boys arrived"
   b.   Sono   arrivati   i   ragazzi.
      are   arrived   the   boys
      "The boys arrived"

Deprez and Pierce proposed that the option to remain inside VP is the default setting, hence the setting the child first assumes.[3] The parametric account of external negation provides a principled explanation for Klima and Bellugi's purported stages and also for a number of related properties in English and other child languages. It also argues strongly in favor of the continuity hypothesis – the position that child languages fall within UG parameters.

Deprez and Pierce's parametric analysis has been called into question recently on empirical grounds. Stromswold (1997) reanalyzes Deprez and Pierce's data and includes in her analysis only sentences with overt subjects in which the precise location of the negative element is clear. According to her analysis, which takes context into account, most instances of sentence-initial negation have an anaphoric interpretation, that is, they negate the previous sentence. Similar claims were made previously by L. Bloom (1970) and de Villiers and de Villiers (1979). Drozd (1995) also disputes the sentential analysis of external negation, suggesting instead that children's *no*-initial sentences express metalinguistic exclamatory negation.

Stromswold also did a separate analysis of the spontaneous utterances of 14 other children in the CHILDES database (MacWhinney & Snow, 1985) that Deprez and Pierce did not look at and again concluded that almost all instances of sentence-initial negation were anaphoric. According to Stromswold, the spontaneous speech samples also indicate, consistent with previously reported data (e.g. Bloom, 1970; Klima & Bellugi, 1966), that *not* surfaces later in production than anaphoric *no*. She thus concludes that the data do not support Deprez and Pierce's claims of an initial VP-internal subject stage. She argues, instead, that the early grammar of negation is identical to the adult grammar, that *not* occurs in a functional position inside IP, and that the *no* in early child utterances is in a sentence peripheral position, possibly CP.

2. Grammatical representations in child language

Hoekstra and Hyams (1998) (among many others) note that children are sensitive to the morphosyntax of the adult grammar from a very early age. They refer to this finding as Early Morphosyntactic Convergence (or EMC). For example, from the onset of multiword production children largely respect agreement rules (Hoekstra & Hyams, 1998) and show knowledge of target parameter settings for

[3] More specifically, Deprez and Pierce (1993) claim that case is assigned under government as a default, and that INFL cannot assign case to a subject NP under spec-head agreement until the parameter is reset.

various parameters, including the null subject parameter (Valian, 1990), V to I (Pierce, 1992) and V2 (Poeppel & Wexler, 1993 among others). However, it is unclear at what age children first acquire these aspects of grammar. A priori it is possible that they converge on the morphosyntax of their language *before* they produce multi-word utterances. Indeed, a number of comprehension studies using the preferential looking paradigm have shown that infants have knowledge of progressive morphology and word order (e.g., Hirsh-Pasek & Golinkoff, 1996), as well as subject and object *wh*-questions (Seidel and Hollich 2002) before they produce multi-word utterances or in some cases even begin to speak.

In the realm of negation all previous studies have been based solely on production data (e.g., Klima & Bellugi 1966; Bloom, 1970; Deprez & Pierce, 1993; Drozd, 1995; Stromswold 1997). This is problematic in two respects. First, they cannot tell us if children have a grammar of negation prior to the production of multiword utterances, and if they do, what the shape of this grammar is. Second, production data in this domain seem to be highly ambiguous. For example, some of the same speech samples that were analyzed in the Klima and Bellugi (1966) and Deprez and Pierce (1993) studies were also analyzed by Stromswold (1997), yet fundamentally different interpretations and conclusions resulted. Moreover, interpretation of spontaneous speech can be unreliable because contextual information is not always clearly specified, and naturalistic studies are rarely controlled.

By doing a comprehension task using the preferential looking paradigm we hoped to get around some of these difficulties.

3. Objectives of this study

Our preferential looking paradigm study was designed to determine whether children between the ages of 14 and 25 months have knowledge of negation before it surfaces in production. Our results allow us to evaluate the claims of the EMC and Continuity Hypotheses in the realm of negation. Do children have the target syntax 'all the way down', and if not, is their grammar within the limits imposed by the principles and parameters of UG, or do they treat negation in an 'unlinguistic' way?

We take Continuity and the EMC as null hypotheses because they postulate no difference between the two groups, adults and children. EMC leads to the prediction that children will show adultlike knowledge of negation. Accordingly, our hypotheses are those in (5):

(5) Hypothesis 1: Children represent sentence-medial *not* as sentential negation.
      Hypothesis 2: Children represent sentence-initial *no* as anaphoric.

A corollary to hypothesis 2 is that very young English-speaking children have the correct setting of the subject raising parameter, and hence know that the representation of sentential negation (in NegP) must occur to the right of the subject. If this is so, then a negative element appearing to the left of the subject is necessarily in CP, hence, anaphoric. A last hypothesis, then, is as in (6).

(6) Hypothesis 2': The subject raising parameter is set to disallow VP-internal subjects.

Thus, our study allowed us to explore whether there is some early stage, prior to productive multi-word utterances, at which the subject raising parameter is set at a default setting, as claimed by Deprez and Pierce.

4. The Experiments
4.1 Method: Preferential Looking Paradigm

We used the cross-modal preferential looking paradigm in two experiments. The first looked at comprehension of *not* and the second at comprehension of anaphoric *no*. For the clausal negation experiment, during each trial the children heard a linguistic stimulus while they were shown two competing images. Examples (7a) and (7b) provide an example of the sentence pairs children heard.

(7) Clausal negation study
   a.   The girl's not sleeping.
   b.   The girl's sleeping.

Children simultaneously saw an image of a sleeping girl and an image of the same girl sitting, while hearing one of the sentences in (7). We were interested in how long the children would look at a particular image, for example, the sleeping girl, in response to the negative sentence in (7a) compared to how long they looked at the same image in response to the affirmative sentence in (7b). We hypothesized that if children have knowledge of clausal negation, then the negative element *not* in sentence (7a) would direct their attention away from the image representing the negated predicate (i.e., away from the image of the sleeping girl). Therefore, Hypothesis 1 led us to predict that children would look longer at the sleeping girl while hearing the affirmative sentence in (7b) than while hearing the negative sentence in (7a).

Our method of analysis differs from other preferential looking paradigm studies which compare fixation time to the competing images within each trial. For example, a standard preferential looking paradigm study would compare how long the children look at the image of the sleeping girl vs. the image of the sitting girl when they hear sentence (7a). Instead, we chose a 'within item' analysis because a preliminary analysis of our data revealed that children had a strong preference to look at a particular picture in each pair, irrespective of the linguistic stimulus. In other words children seemed to find certain images intrinsically more interesting. Since fixation toward a preferred picture in response to a linguistic stimulus could not be disentangled from the children's inherent preference for the picture, we focused on the children's responses to the *dispreferred* pictures.[4] We thus compared

gaze duration to a specific (dispreferred) image as a function of sentence type (negative or affirmative). For example, we measured how long children looked at the sleeping girl when they heard the affirmative sentence *She's sleeping* as opposed to the negative sentence *She's not sleeping*.

The goal of the anaphoric negation experiment was to determine whether children assign an anaphoric or sentential interpretation to sentence-initial *no*. Sentences (8a) and (8b) illustrate the kind of sentence pairs we used to test children's knowledge of anaphoric negation.

(8) Anaphoric negation study
   a.   Is the girl sitting? No, she's sleeping.
   b.   Is the girl sitting? Hey, she's sleeping.

The lead-in question was necessary to provide a felicitous context for the experimental sentence. For this analysis, we were interested only in where the children looked during presentation of the second sentence, beginning with *no* or *hey*. Thus, fixation time was measured from the onset of the second sentence. As in the clausal negation study, we were interested in how long the children would look at a particular image in response to the negative vs. affirmative sentence, comparing, for example, fixation times to the image of the sleeping girl while hearing sentence (8a) as opposed to sentence (8b).

As per hypothesis 2, we predicted that the children would look longer at the sleeping girl in response to sentence (8a) than sentence (8b) because in sentence (8a) the children are given enough information about where to look immediately after hearing the word *no* (if *no* has an anaphoric interpretation), but in the case of (8b), they must wait until they hear the verb at the end of the sentence before they know to look at the sleeping girl.

4.2 Stimuli

The stimuli for the clausal negation study and the anaphoric negation study are shown in tables 1 and 2. For both studies, we used 4 different sentence structures: sentences with 1) a transitive verb, 2) an intransitive verb, 3) a verb with a prepositional phrase, and 4) a verb with an adjective phrase. The purpose of each sentence structure condition (SSC) was simply to add variety. Each SSC contained 2 variants, and each variant contained one affirmative and one negative sentence. There were thus 16 trials for each experiment, comprising 32 trials in both experiments.

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[4] This type of analysis is not unlike what is done in studies using truth-value judgment tasks (Crain & McKee, 1985) in which "no" responses are taken to be a more direct reflection of children's grammatical competence since children (and adults) are more likely to give a "yes"

response when they are confused or fail to comprehend the sentence (c.f. discussion in Crain & Thornton, 1998).

SSC	Description	Auditory stimuli	Visual Stimuli
SSC1	Intransitive verb	Variant A: Look, The girl's (not) sleeping. Variant B: Look, The girl's (not) sitting.	sleeping girl / sitting girl
SSC2	Transitive verb & DO	Variant A: Look, The boy's (not) hugging the doggie. Variant B: Look, The boy's (not) feeding the doggie.	boy hugging dog / boy feeding dog
SSC3	Verb & PP	Variant A: Look, The hat's (not) on the table. Variant B: Look, The hat's (not) under the table.	hat on a table / hat under a table
SSC4	Verb & AP	Variant A: Look, The boy's face is (not) clean. Variant B: Look, The boy's face is (not) dirty.	boy with clean face / boy with dirty face

Table 1: Visual and auditory stimuli testing sentential negation.

SSC	Description	Auditory stimuli	Visual Stimuli
SSC1	Intransitive verb	Variant A: Is the girl sitting? Hey (No), she's sleeping! Variant B: Is the girl sleeping? Hey (No), she's sitting!	sleeping girl / sitting girl
SSC2	Transitive verb & DO	Variant A: Is the boy feeding the doggie? Hey (No), he's hugging the doggie! Variant B: Is the boy hugging the doggie? Hey (No), he's feeding the doggie!	boy hugging dog / boy feeding dog
SSC3	Verb & PP	Variant A: Is the hat under the table? Hey (No), It's on the table! Variant B: Is the hat on the table? Hey (No), It's under the table!	hat on a table / hat under a table
SSC4	Verb & AP	Variant A: Is the boy's face dirty? Hey (No) it's clean! Variant B: Is the boy's face clean? Hey (No) it's dirty!	boy with clean face / boy with dirty face

Table 2: Visual and auditory stimuli testing anaphoric negation.

4.3 Participants

Our participants were 32 14-25 month-old children from monolingual, Standard American English-speaking households. According to parental report, 3 children were preverbal, 19 were in the holophrastic stage, and 10 were beginning to use multiword sentences.

4.4 Results
4.4.1 Sentential Negation

Table 3 shows mean fixation times for each dispreferred image as a function of sentence type (negative vs. affirmative control).

SSC-Variant	N	Image	Affirmative control sentence	Clausal negative sentence
SSC1	10	sleeping girl*	3.923 sec	2.637 sec
SSC2	6	boy hugging dog*	3.300 sec	1.344 sec
SSC3	7	hat on table	2.871 sec	2.733 sec
SSC4	4	boy with clean face	3.692 sec	2.333 sec

SSC1 $F(1,18) = 13.131, p = .0055$; SSC2 $F(1,10) = 15.177, p = .0115$;
SSC3 $F(1,12) = .069, p > .5$ and SSC4 $F(1,6) = 5.877, p = .0938$.

Table 3: Mean fixation times to each image for clausal negative and affirmative control sentences.

As Table 3 indicates, children always looked less at a given image in response to the negative sentence, than in response to the affirmative sentence. Thus, there is a clear trend in the direction predicted by Hypothesis 1. A one-way ANOVA shows that the effects reached significance in two cases (marked by asterisks in table 3), while a third approached significance. Although some results failed to reach significance, they are all in the predicted direction: Children looked less at a given image when accompanied by a negative sentence than when accompanied by an affirmative sentence.

4.4.2 Anaphoric negation

Table 4 shows the mean fixation times to each image in response to the affirmative control and anaphoric *no* sentences.

SSC-Variant	N	Image	Affirmative Control Sentence	Anaphoric negative sentence
SSC1	10	sleeping girl	2.027 sec	1.573 sec
SSC2	6	boy hugging dog	1.233 sec	1.500 sec
SSC3	7	hat on table	1.457 sec	0.662 sec
SSC4	4	boy with clean face*	2.042 sec	1.425 sec

SSC1 $F(1,18) = 1.047, p = .3328$; SSC2 $F(1,10) = .221, p > .5$;
SSC3 $F(1,12) = 3.186, p = .1245$; SSC4 ($F(1,6) = 38.383, p = .0085$).

Table 4: Mean fixation times to each image for affirmative control and anaphoric negative sentences.

As in the previous study, Table 4 reveals a clear trend. In all but one instance, the children looked *less* at an image (e.g., the sleeping girl) in response to the anaphoric negative sentence (e.g., *No, she's sleeping*), than in response to the affirmative sentence (e.g., *Hey, she's sleeping*). In other words, hearing *no* seemed to cause the children to look away from the matching image. Thus the children responded to anaphoric *no* just as they did to *not* in the previous study. The result reached statistical significance for SSC4.

The direction of these results goes against Hypothesis 2: children appear to interpret anaphoric *no* as a sentential negator.

5. Discussion

Hypothesis 1 predicts that the presence of *not* in the sentence should draw children away from the image representing the negated verb. Our results generally bore out this prediction, as shown in table 3. We take these results to indicate that preverbal infants and children at the earliest stages of multiword sentences demonstrate comprehension of clausal negation, thus supporting the EMC and Continuity Hypotheses and the claim that functional categories are present in early grammar before they are evidenced in production.

The anaphoric negation study was designed to test Hypotheses 2 and 2', which state that sentence-initial *no* has an anaphoric interpretation for children (as for adults) and that by the earliest multi-word stage, children have set the subject raising parameter to disallow VP internal subjects. Contrary to our predictions, however, children seem to treat anaphoric *no* as a sentential negator, demonstrating the same pattern of responses that they give for *not*. Thus, these children are not adultlike with respect to their interpretation of anaphoric *no*.

These results are surprising. Although Klima and Bellugi (1966) and Deprez and Pierce (1993) claim that sentence-initial *no* can have clausal scope in child grammar, Stromswold's reanalysis of the data, along with her analysis of the spontaneous speech of 14 other children, showed that virtually all instances of sentence-initial *no* had an anaphoric interpretation. Similarly, Bloom (1970) analyzed the spontaneous utterances of 3 children and claimed that sentence-initial sentential negation in child language is a "myth". The data collected in this experiment indicate the contrary, however.

We believe that our results allow us to reconcile these conflicting findings. We propose that there is in fact a VP internal subject stage as proposed by Deprez and Pierce (1993), but that it is earlier than previously thought. This stage seems to occur at a point at which children's productive abilities are very limited—as it is for the children in our study. The fact that few examples of sentence-initial sentential negation are found in production suggests that most children reset this parameter to the adult value before they start combining words, while a few show the remnants of a VP internal subject stage at the beginning of language production. We are proposing, therefore, that the few cases of external negation that are found in production are not performance errors, but represent the remnant of an earlier grammatical stage.[5] This idea is supported by the fact that we find evidence for a prolonged external negation stage in certain atypical populations, such as children who have undergone hemispherectomies and children with Specific Language Impairment. Examples are provided in (9).[6]

(9) Right Hemispherectomy: "MO" age:3;9
   a. 'No we call him Louie. No we call him anymore Louie'
   b. 'He throws my food and no I going get my food no, any food'
   c. 'No my son eats baby food' ['son' refers to MO's doll Louie]

(10) Specific Language Impairment (SLI): "Mike" age: 4;0
   a. 'No me like that'
   b. 'No me know'
   c. 'Not me did that'

As a hypothesis about older children, the VP-internal subject hypothesis is problematic for a couple of reasons: First, it is at odds with recent studies showing that there is no stage of productive language in which children show a non-target setting of UG parameters (e.g., the null subject, verb raising, V2, and head direction parameters) early in development (Valian, 1990; Boser, Lust, Santelmann & Whitman, 1992; Meisel & Muller, 1992; Pierce, 1992; Poeppel & Wexler, 1993; Wexler, Schaeffer & Bol, 2003). There is therefore no obvious reason why the setting of the subject raising parameter should be delayed relative to these others. Certainly, the input data provide ample evidence for the position of subjects with respect to negation in English. Moreover, there are in fact very few examples of "external negation" in production (once null subject sentences are excluded). Both these objections disappear, however, if the VP-internal subject stage occurs at an earlier point than previously hypothesized. If the subject raising parameter is set to the target value before the onset of sentence production, then this parameter is in line with others that have been studied

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[5] It should be noted that our interpretative results are consistent with Drozd's (1995) account of such sentences as metalinguistic exclamatory negation (e.g., No way the sun is shining!). However, our analysis differs from Drozd's, which claims that 'no' is in CP in such utterances.

[6] Examples are taken from our own unpublished data.

Anaphoric negation is a later development, most likely due to the fact that the interpretation of *not* depends only on sentence level syntax, while the proper construal of *no* depends on a discourse representation, which various studies have shown to be a later development (e.g., Thornton, 1995; Hyams, 1996; Avrutin, 1999; Avrutin & Coopmans, 2000).

References

Avrutin, S. (1999) *Acquisition of the Syntax-Discourse Interface.* Dordrecht: Kluwer.

Avrutin, S. and P. Coopmans (2000) 'Children who build bridges', *BUCLD 24.* Somerville, MA: Cascadilla Press, 80-91.

Bloom, L. (1970) *Language Development: Form and Function in Emerging Grammars.* Cambridge, Mass.: MIT Press.

Boser, K., B. Lust, L. Santelmann and J. Whitman (1992) 'The syntax of CP and V2 in early child German (ECG): The Strong Continuity hypothesis'. *Proceedings of NELS 22.* Amherst. MA: GSLA, 51-65.

Crain, S. and C. McKee (1985) 'The acquisition of structural restrictions on anaphora', in: S. S. Berman, J. Choe, and J. McDonough (eds.) *Proceedings of NELS 15.* Amherst: University of Massachusetts, GLSA.

Crain, S. and R. Thornton (1998) *Investigations in Universal Grammar: A Guide to Experiments in the Acquisition of Syntax and Semantics.* Cambridge, MA: MIT Press.

Deprez, V. and A. Pierce (1993) 'Negation and functional projections in early grammar' *Linguistic Inquiry* 24(1), 25-67.

De Villiers, P., and J. G. De Villiers (1979) 'Form and function in the development of sentence negation', *Papers and Reports on Child Language Development* 17, 57-64.

Drozd, K. (1995) 'Child English pre-sentential negation as metalinguistic exclamatory sentence negation'. *Journal of Child Language* 22, 583-610.

Hirsh-Pasek, K. and R. Golinkoff (1996) *The Origins of Grammar.* Cambridge: MIT Press.

Hoekstra, T. and N. Hyams (1998) 'Aspects of root infinitives', *Lingua* 106, 81-112.

Kitagawa, Y. (1986) *Subjects in Japanese and English.* Ph.D. Dissertation University of Massachusetts, Amherst.

Klima, E. and U. Bellugi (1966) 'Syntactic regularities in the speech of children', in: J. Lyons and R. Wales, (eds.) *Psycholinguistic Papers.* Edinburgh: Edinburgh University Press, 183-208.

Koopman, H. and D. Sportiche (1991) 'The position of subjects'. *Lingua* 85, 211-258.

MacWhinney, B. and C. Snow (1985) 'The child language data exchange system'. *Journal of Child Language* 12, 271-296.

Meisel, J. and N. Muller (1992) 'Finiteness and verb placement in early child grammar: Evidence from simultaneous acquisition of French and German in bilinguals', in: J. Meisel (ed.) *The Acquisition of Verb Placement.* Dordrecht: Kluwer, 109-138.

Pierce, A. (1992) *Language Acquisition and Syntactic Theory: A Comparative Analysis of French and English Child Grammars.* Dordrecht: Kluwer.

Poeppel, D. and K. Wexler (1993) 'The full competence hypothesis of clause structure in early German'. *Language* 69, 1-33.

Seidl, A. and G. Hollich (2002) 'Infants' and toddlers' comprehension of subject and object WH-questions'. *BUCLD* 26, 596-607.

Stromswold, K. (1997) 'The Acquisition of Inversion and Negation in English: A Reply to Deprez and Pierce', ms. Rutgers.

Thornton, R. (1995) 'Referentiality and *Wh*-Movement in child English', *Language Acquisition* 4, 139-178.

Valian, V. (1990) 'A problem for parameter-setting models of language acquisition', *Cognition* 35(2), 105-122.

Wexler, K., J. Schaeffer and G. Bol (to appear) 'Verbal syntax and morphology in Dutch normal and SLI children: How developmental data can play an important role in morphological theory', to appear in: *Syntax.*