

2002

## Children's Understanding of Principle B in ACD Constructions

Hirohisa Kiguchi

*University of Maryland, College Park*

Rosalind Thornton

*University of Maryland, College Park*

Follow this and additional works at: <https://scholarworks.umass.edu/nels>



Part of the [Linguistics Commons](#)

---

### Recommended Citation

Kiguchi, Hirohisa and Thornton, Rosalind (2002) "Children's Understanding of Principle B in ACD Constructions," *North East Linguistics Society*. Vol. 32 , Article 16.

Available at: <https://scholarworks.umass.edu/nels/vol32/iss1/16>

This Article is brought to you for free and open access by the Graduate Linguistics Students Association (GLSA) at ScholarWorks@UMass Amherst. It has been accepted for inclusion in North East Linguistics Society by an authorized editor of ScholarWorks@UMass Amherst. For more information, please contact [scholarworks@library.umass.edu](mailto:scholarworks@library.umass.edu).

### Children's Understanding of Principle B in ACD Constructions\*

Hirohisa Kiguchi and Rosalind Thornton

University of Maryland, College Park

#### 1. Introduction

Children's knowledge of constraints such as the principles of binding theory have proved fertile ground for testing the theory of Universal Grammar (e.g., Chomsky 1981 pp. 9). Since constraints cannot be learned without access to negative evidence, the theory posits that these principles are innate. Empirical findings from child language experiments have provided evidence of innate knowledge of Principles A and C, but it has been difficult to demonstrate that children have "complete" knowledge of Principle B.

Pioneering research on Principle B was conducted by Chien and Wexler (1990), who discovered that children adhere to Principle B in variable-binding contexts like (1), but not in sentences like (2), in which the pronoun has a referential NP antecedent instead of a quantified NP antecedent.

- (1) Every bear<sub>k</sub> is washing her<sub>k</sub>  
 $\forall x (\text{bear}(x) \rightarrow x \text{ washed } x)$  (bound variable)
- (2) Mama Bear<sub>k</sub> is washing her<sub>k</sub>  
 a. Mama bear ( $\lambda x (x \text{ washed } x)$ )  
 b. Mama bear<sub>k</sub> ( $\lambda x (x \text{ washed her}_k)$ )

---

\* We thank Shani Abada, Tiffany Ayres, Stephen Crain, Andrea Gualmini, Martin Hackl, Norbert Hornstein, Nina Kazanina, Luisa Meroni, Colin Phillips, Graciela Tesan, Andrea Zukowski, and the children, teachers and directors at the Center for Young Children at the University of Maryland, College Park. We are also grateful for feedback from the audience at NELS 32, especially S-Y Kuroda, Christina Tortora and Ken Wexler.

Chien and Wexler found that 5-year-old children rejected the illicit meaning of (1), in which every bear washes herself, about 85% of the time. The same children accepted the prohibited meaning of (2) in which Mama Bear washes herself, however, roughly 50% of the time. Children's robust rejections of (1) were interpreted by Chien and Wexler as evidence that Principle B is an innate principle of grammar. This is because the only way that the pronoun and the quantificational antecedent 'every bear' can be anaphorically related is through variable binding. On the other hand, in (2), there are, in principle, two possible ways to relate the pronoun and its antecedent. According to Reinhart (1983), and Grodzinsky and Reinhart (1993) the relationship may be variable binding, as in (2a) or coreference as in (2b).<sup>1</sup> Whether the relationship between the pronoun and the antecedent in (2) is one of variable binding or coreference, both relationships are illicit in the adult grammar. Since the experimental results testing sentences like (1) suggested that children know Principle B, Chien and Wexler attributed children's acceptances of sentences like (2) to the lack of pragmatic factors associated with coreference. In other words, in allowing (2), children are not permitting a grammatical representation that violates Principle B, but they are generating a representation that violates a pragmatic principle that characterizes adult grammars, but one that has not yet emerged in child grammars.

Pragmatic contexts in which local coreference is permitted in the adult grammar have been discussed by Grodzinsky and Reinhart (1993) and in more detail by Heim (1998). Identity debates are one such context. Heim provides the example in (3), where the same individual is being represented in two different guises.

- (3) Speaker A: Is this speaker Zelda?  
 Speaker B: How can you doubt it? She praises her to the sky. No competing candidate would do that.

It is also possible to force a local coreference interpretation in 'atypical' circumstances, where it is usually accompanied by heavy word stress (cf. Thornton and Wexler 1999). Consider (2), for example. If a speaker utters (2), with stress on the pronoun (as indicated by capital letters), then the intended interpretation is that Mama Bear's washing herself is an atypical, and therefore unexpected event. (Of course, pronominal stress and deixis may be used to indicate the disjoint reference interpretation of (4) also).

- (4) Mama Bear is washing HER (Mama Bear = HER)

The local coreference interpretation of (4) is natural, however, only if it is preceded by an appropriate discourse antecedent, for example something like (5).

- (5) Mama Bear washes her baby every morning. I have come a great distance to see her wash him. But it's not happening! Mama Bear is washing HER. I've come all this way for nothing!

---

<sup>1</sup> For ease of exposition, in the presentation of ACD structures, we will show coreference using coindexation, and talk about it as being subject to Principle B. However it should be kept in mind that in Reinhart's theory, coreference interpretations are subject to a pragmatic principle Rule I, and not Principle B. For Reinhart, Principle B applies only to bound variable representations.

Assuming that there is a learning component to pragmatic knowledge, children must be exposed to pragmatic contexts in which local coreference is permitted.<sup>2</sup> In addition, they have to learn that word stress is (typically) used by the speaker to cue the local coreference interpretation (see Thornton and Wexler, 1999). Independent research has shown that children have difficulty using word stress to disambiguate sentences (e.g. Cutler and Swinney 1987, Halbert et al. 1985, McDaniel and Maxfield 1992). Together, these two factors could conspire to bring about some number of errors in experiments testing children's interpretation of pronouns in syntactic environments subject to Principle B or a prohibition on coreference. Notice that in the variable-binding cases (i.e., (2)) the ones tested by Chien and Wexler (1990), any complicating factors are sidestepped; coreference is not at issue in such examples, so pragmatic context and word stress is not required to induce a referential dependency.

To further explore Chien and Wexler's analysis, Thornton and Wexler (1999) investigated whether children would respect Principle B in a variable-binding structure that has a referential NP antecedent instead of a quantified NP antecedent. They studied a VP ellipsis structure, shown in (6), where the sloppy interpretation of the sentence is ruled out by Principle B. The only possible interpretation, for adults, is the disjoint reference interpretation in which Gonzo and Snuffy cover some other male character. As dictated by parallelism, the pronoun in each VP refers to that individual.

- (6) a. Gonzo<sub>k</sub> covered him<sub>k</sub> with sun block and Snuffy did too  
 b. Gonzo<sub>k</sub> covered him<sub>k</sub> with sun block and Snuffy<sub>j</sub> <cover him<sub>j</sub>> too  
 Gonzo ( $\lambda x (x \text{ covered } x)$ ) & Snuffy ( $\lambda x (x \text{ covered } x)$ ) (Sloppy/bound variable)

Children rejected the illicit meaning in which Gonzo and Snuffy both cover themselves with sunblock 78% of the time. While this is a strong result, and supports the claim that children's knowledge of Principle B in variable-binding structures is innate, one might wonder why there were even as many as 22% errors. Our conjecture is that children's errors may have arisen because the pronoun is in a local relationship with its antecedent *in the overt syntax*. In the experiment we present in section 3, the pronoun is not c-commanded by its antecedent on the surface, so this factor is eliminated as a source of children's non-adult responses.

To date, then, there has not been a robust demonstration that children reject illicit coreference in sentences with ordinary pronouns that have referential antecedents. Presumably this is for the reasons just stated – in the sentence types that have been investigated, local coreference is often available, provided it is given the right contextual support, stress and so on. We propose that Antecedent Contained Deletion constructions are the right kind of structure to demonstrate children's knowledge that coreference is illicit, because the construction is not open to a local coreference interpretation. We turn now to the details of ACD constructions.

<sup>2</sup> It is likely that some pragmatic knowledge is innately specified. Grodzinsky and Reinhart (1993) claim that Rule I, a pragmatic rule, is part of the innate component, for example. Gricean rules are also viable candidates for innate specification.

## 2. Antecedent Contained Deletion and Pronominal Coreference

In VP ellipsis constructions like (6) in which the two clauses are conjoined with 'and', the antecedent VP and the recovered VP maintain parallelism when the gap is recovered in its base position. ACD sentences like (7a) are different. In ACD structures of this kind, Quantifier Raising (=QR) is required in order to satisfy the parallelism requirement.

- (7) a. John kissed everybody that Bill did.  
 b. John kissed everybody that Bill <kissed>  
 The matrix VP: kissed everybody that Bill kissed  
 ≠The recovered VP: kissed

Notice that in (7b), the recovered VP does not have the same content as the matrix VP, thus violating the parallelism requirement. To obey parallelism, the elided VP must be interpreted after QR is applied at LF, as illustrated in (8).

- (8) [everybody that Bill <kissed>]<sub>1</sub> John kissed t<sub>1</sub> (after QR)  
 The matrix VP: kissed  
 =The recovered VP: kissed

Keeping this in mind, let us consider ACD constructions containing pronouns. The sentence type shown in (9) was used in our experiment with children.

- (9) DW picked him the same book that Kermit did.

Notice that in (9), "Kermit" cannot refer back to the pronoun. According to Fiengo & May (1994), after the elided VP is recovered at LF, "Kermit" c-commands the pronoun in the ellipsis within the same clause, as shown in (10). Therefore, if "Kermit" is coindexed with the pronoun, coreference is prohibited.

- (10) [the same book that Kermit<sub>k</sub> <picked him<sub>k</sub>>]<sub>1</sub> DW picked him<sub>k</sub> t<sub>1</sub>

There are two pertinent observations to make about these target sentences. The first is that the pronoun is c-commanded by its antecedent (i.e., "Kermit") only inside the gap, not on the surface.<sup>3</sup> This makes it impossible to enforce a local coreference interpretation using word stress, because the relevant pronoun is elided. The second point is that the pronoun in the ellipsis cannot be a bound variable, as it is in sentences like (1) and (6), where children were found to have performed well. Since the overt pronoun in the first conjunct in (9) is interpreted referentially, due to a deictic usage, the pronoun in the ellipsis must receive a parallel interpretation; it must also be a referential pronoun. If the pronoun in the ellipsis is interpreted as a bound variable, the pronoun in the overt VP would also have to be interpreted as a bound variable. Consider the coordinate VP-ellipsis structures in (11).

<sup>3</sup> Since the subject of the matrix verb (=DW) is a female character, a difference in gender agreement makes the coreference between DW and the pronoun impossible. For those who are not familiar with children's TV programs, DW is a character from the program 'Arthur'.



262

Hirohisa Kiguchi and Rosalind Thornton

experimenter. At the end of the story, the puppet tries to say what happened. This is when the target sentence is presented. The child's task is to tell the puppet if it was right or wrong. If the child thinks the puppet was right, the child gives it a reward. If the child judges the puppet's statement to be wrong, the child gives it something else, so the puppet is encouraged to pay closer attention the next time. In this task, the adult interpretation of the target sentence is associated with the "wrong" answer. That is, if the child has the same grammatical knowledge as an adult, he or she will judge the puppet's statement to be false. If the prohibition on coreference is not in place, however, then the target sentence has an interpretation for children that makes it true, and the child should inform the puppet that it is right<sup>6</sup>. From the child's judgment of the puppet's statement, we can infer properties of the child's grammar.

### 3.2. *The Experiment*

The experiment was designed to examine children's interpretation of pronouns in ACD constructions like (14).

(14) DW picked him the same book that Kermit did.

For adults, the only possible interpretation of the sentence is that 'DW picked the same book for male A that Kermit picked male A, as shown in (15), because coreference between 'Kermit' and the pronoun would be illicit, as illustrated in (16). The prohibition on coreference forces the pronoun to refer to some other male character; one that is not mentioned in the sentence. Furthermore, the parallelism condition imposes a strict reading of the pronoun in the gap. That is, both DW and Kermit must choose a book for the same male individual.

(15) a. DW picked him<sub>j</sub> the same book that Kermit<sub>k</sub> did.  
b. [the same book that Kermit<sub>k</sub> <picked him<sub>j</sub>>]<sub>i</sub> DW picked him<sub>j</sub> t<sub>i</sub>

(16) a. \*DW picked him<sub>k</sub> the same book that Kermit<sub>k</sub> did.  
b. \*[the same book that Kermit<sub>k</sub> <picked him<sub>k</sub>>]<sub>i</sub> DW picked him<sub>k</sub> t<sub>i</sub>

The research question was to investigate whether children reject the interpretation of the pronoun that rules out illicit coreference in the gap of an ACD construction. For the remainder of the paper, we will talk about this illicit coreference as being ruled out by Principle B, in keeping with Chomsky's theory of binding. However, it should be clear that we are not testing an interpretation in which the pronoun is a bound variable. The experimental design is summarized as follows. Children were presented with a potentially ambiguous sentence in situations where both the local coreference reading and the disjoint reference reading of the pronoun in the gap are under consideration. The local coreference reading of the pronoun corresponds to the outcome of the story and makes the sentence true; if the pronoun is interpreted as having disjoint reference, on the other hand, the sentence is false. If children's grammars do not reject coreference due to

---

<sup>6</sup> The task operates on the assumption that children will judge a sentence to be true whenever they can. It is, in general, much easier to agree with a statement than to disagree (see Crain and Thornton 1998) for discussion.

Principle B, they should accept the test sentences. On the other hand, if children reject these sentences, then we would be demonstrating that children reject illicit coreference.

Let us turn to the story context used to test a sentence like (14). In the story that was acted out for the child, toy characters DW and Kermit want to buy a book for Bert, who is bored and sick in bed. At the bookstore, Kermit buys 'Blue's Clues' for Bert and a lady bug book for himself. DW borrows a dinosaur book for Bert from the library, and, by chance, seeing a lady bug book she thinks Kermit would like, borrows it for him. Both Kermit and DW return with their respective purchases. Kermit gives 'Blue's Clues' to Bert and shows him the ladybug book he bought for himself. Then, DW hands over the dinosaur book to Bert and she gives Kermit the lady bug book she borrowed for him.<sup>7</sup> At the end of the story, the puppet's statement is "That was a story about Bert, who's sick in bed, and DW, and Kermit. I know what happened. DW picked him the same book that Kermit did." If a child agrees with the statement and says, "YES" to the puppet, this means the child is allowing a non-adult interpretation, as in (16), allowing illicit coreference in the gap. In the story, it is true that DW picked Kermit the same ladybug book that he (=Kermit) picked himself. This corresponds to the illicit interpretation of the pronoun in the sentence as in (16), which violates Principle B. On the other hand, if the child says, "NO", it means that the child is interpreting the sentence in the same way as adults, obeying Principle B as in (15). In the story above, it is false that DW picked Bert the same book that Kermit picked Bert. This corresponds to the interpretation of the pronoun in the sentence that obeys Principle B.

In addition to target sentences like (14), children were also tested on unambiguous ACD sentences that contained a name instead of a pronoun, as in (17). These stories were controls, introduced to ensure that children can interpret ACD structures. The controls were interspersed among the target sentences. These control sentences were all true, so children were expected to tell the puppet that it was right.

(17) Piglet found Emily the same color egg Gonzo did

The subjects were 15 children between 4;1 and 5;10 years of age (mean age 4;8). The children were tested at the Center for Young Children, the preschool at the University of Maryland, College Park. In addition, we interviewed 32 undergraduates to ensure that the experiment invoked the expected judgments from adults. Each subject was presented with four target sentences in addition to three controls for children and four controls for adults. Children accepted the control sentences 98% of the time. They rejected the target sentences 50 times out of 60 = 85 % rejection across the group. The adult subjects accepted the control sentences 97% of the time, and rejected the target sentences 95% of the time.

### 3.3. *Interim Conclusion*

The results from the first experiment indicate that children know that the sentence 'DW pick him the same book that Kermit did' cannot mean that DW picked Kermit the same book that Kermit picked for himself. That is, children can correctly rule out illicit

---

<sup>7</sup> Note that DW does not buy anything for herself in the story. That is, local coreference in the matrix clause is not under consideration in this context.



However, Fiengo and May (1994) and Fox (1999, 2000) observe that coreference is possible in ACD constructions like (21) although Principle C is apparently violated. That is, in (21), the pronoun 'him' can be coreferential with 'the Smurf'.

(21) Dora gave him<sub>k</sub> the same color paint that the Smurf<sub>k</sub>'s father did.

The only difference between this sentence and the target sentences in the previous experiment is that the coindexed name is embedded further inside the DP, in its specifier position. That is, there is a possessive phrase 'the Smurf's father'. In such phrases, Fiengo and May (1994) and Fox (1999, 2000) propose that QR removes the coindexed name from the pronoun's c-command domain and no binding principle is violated after the covert operation, as shown in (22).

(22) [the same color paint that the Smurf<sub>k</sub>'s father <gave him<sub>k</sub>>]<sub>1</sub> Dora gave him<sub>k</sub> t<sub>1</sub>

Since the coindexed name is not in a c-command relation with the pronoun in (22), coreference is possible.<sup>8</sup> Thus, the sentence can mean 'Dora gave the Smurf the same color paint that his (=the Smurf's) father gave him.' From this, Fiengo and May (1994) and Fox (1999, 2000) conclude that this kind of ACD construction bleeds Principle C on the surface, and that Principle C is applied solely at LF.

Sentences like (21) were the target of our second experimental study. The logic is that if children are ignoring the surface binding relations of (21), and applying Principle C after QR, then presumably, they are ignoring the surface binding relations in (18a), and applying the binding theory after QR in this sentence type too. If so, we would expect children to reject sentences like (18a) due to Principle B (as they did), but to accept sentences like (21) because they involve no LF violation of Binding Principles.

#### 4. 2. *The Experiment*

The second experiment investigated whether or not children ignore Principle C on the surface in ACD constructions like (23).

(23) Dora gave him<sub>k</sub> the same color paint that the Smurf<sub>k</sub>'s father did.

For adults, one interpretation of the sentence is that Dora gave the Smurf the same color paint that the Smurf's father gave him (=the Smurf). This interpretation is available because coreference between 'the Smurf' and the pronoun does not violate any principle of binding theory at LF, as can be seen in (24b). This is the interpretation of interest in the present experiment. The parallelism condition imposes the strict reading of the pronoun in the gap. That is, both Kermit and the Smurf's father must give paint to the same person. The sentence also has a deictic interpretation, in which the pronoun refers to a character not mentioned in the sentence.

(24) a. Dora gave him<sub>k</sub> the same color paint that the Smurf<sub>k</sub>'s father did.  
b. [the same color paint that the Smurf<sub>k</sub>'s father <gave him<sub>k</sub>>]<sub>1</sub> Dora gave him<sub>k</sub> t<sub>1</sub>

<sup>8</sup> This also exemplifies coreference in the strict reading of the ellipsis as in (11b) and fn 4.

The experimental design is summarized as follows. Children were presented with an ambiguous sentence in situations where both the reading leading to violation of Principle C on the surface, and the disjoint reference reading (i.e., the deictic interpretation) of the pronoun, are under consideration. Both interpretations are grammatical in the adult grammar. The interpretation that would constitute a violation of Principle C, if it is applied on the surface for children, corresponds to the actual outcome of the story: This interpretation is true in the context. The alternative deictic interpretation of the pronoun, according to which Dora and the Smurf's father give paint to some other character makes the sentence false in the context. Children are expected to accept the target sentences, if the child's grammar applies Principle C at LF, after Quantifier Raising. On the other hand, the expectation is that children should reject these sentences if Principle C is applied on the surface.

The story context designed to test children's interpretation of (24a) would be as follows. One Smurf is chosen to be the special one who has the honor of painting all of the Smurfs' hats. Each year, the Smurfs paint their hats a different color. This year, the chosen Smurf decides to paint all of the Smurfs' hats green. His father gives him a can of green paint. Seeing one can of green paint will not be enough, Dora gives him another can of green paint. Next, Mickey Mouse shows up and offers to help the chosen Smurf with his task. But the Smurf explains that only Smurfs can take on the job of painting Smurf hats and he suggests that Mickey paint his own hat. The Smurf's father gives Mickey Mouse a can of red paint to do the job. Dora then gives Mickey Mouse an alternative, and hands him a can of yellow paint to use. Then, the Smurf's father and Dora watch the Smurf starting to paint the Smurf hats, and Mickey getting ready to tackle his own hat.

The story is followed by the puppet's statement: "That was a story about the Smurf, who has been chosen to paint all the Smurf hats green, and Dora, Mickey, and the Smurf's father. I know what happened. Dora gave him the same color paint that the Smurf's father did." If a child says "YES" to the puppet in response to the puppet's statement about what happened in the story, the child is presumably allowing the interpretation, as in (24), ignoring Principle C on the surface. In the story, it is true that Dora gave the Smurf the same color paint that his (=the Smurf) father gave him. This corresponds to the interpretation of the pronoun in the sentence as in (24), which allows a Principle C violation on the surface. On the other hand, if a child says, "NO", it can be interpreted to mean that the child is applying Principle C on the surface. In the story above, it is false that Dora gave Mickey the same color paint that the Smurf's father gave him – each person gave Mickey Mouse paint of a different color. This corresponds to the interpretation of the pronoun which obeys Principle C on the surface.

(25) Dora gave him<sub>j</sub> the same color paint the Smurf<sub>k</sub>'s father did.

The subjects of the experiment were the same 15 children studied in the previous experiment. As in experiment 1, children listened to 4 target stories with a similar plot line to the story described above. These 4 stories were interspersed with filler trials. In all, the children accepted the target sentences 56 times out of 60 targets=93%. That is, children interpreted the sentence 'Kermit gave him the same color paint that the Smurf's father did' as 'Kermit gave the Smurf the same color paint that his (=the Smurf's) father



268

Hirohisa Kiguchi and Rosalind Thornton

antecedent (as in (28)). Regardless, children's knowledge of Principle B has been shown to be in place only in variable-binding contexts. When the pronoun has a referential NP antecedent as in a sentence like "Mama Bear is washing her", some children are found to allow coreference.

Exactly why children allow non-adult coreference readings has been the subject of considerable debate. For Grodzinsky and Reinhart (1993), Principle B only applies in variable-binding contexts. Coreference is ruled out by a pragmatic principle, Rule I. Children's acceptance of coreference in sentences like "Mama Bear is washing her" is attributed to processing difficulty in calculating Rule I. Chien and Wexler (1990) and Thornton and Wexler (1999) pursued the idea that children lack the pragmatic knowledge that rules out coreference. This must be learned from experience. In addition, children must acquire the knowledge that in sentences like "Mama Bear is washing her", coreference is only allowed in a narrow range of situations, and is often signaled to the hearer by stress on the pronoun. Heavy pronominal stress allows the pronoun to refer back to its local antecedent, as in (29). The ability to interpret word stress does not develop until age 5 or 6, however (Cutler and Swinney 1987, McDaniel and Maxfield, 1992). These factors are used to explain why children allow the coreference reading even in 'ordinary' contexts, and in the absence of pronominal stress.

(29) Mama Bear is washing HER

Let us now return to the target experiment from experiment 1:

(30) DW picked him the same book that Kermit did

Experiment 1 found that children apparently reject a coreference interpretation of the pronoun. That is, children do not allow the meaning in which DW picks Kermit the same book that he picked for himself. Why do children prohibit coreference here, when they permit coreference in sentences like 'Mama Bear is washing her'? At this time, we can only speculate. Notice that in the ACD construction, the pronoun is subject to Principle B only in the ellipsis; it has no local antecedent in the first conjunct, given that DW is female. What is striking is that because the pronoun that is subject to Principle B is in the ellipsis, it cannot be stressed. While it is possible to stress the overt pronoun in (30), no amount of stress induces a coreference reading with 'Kermit'. Thus, it is not possible, even for adults, to use stress as a device to bring about a local coreference interpretation in these ACD constructions, perhaps for reasons of focus. Apparently, when pronominal stress does not enter the picture, children reject illicit coreference interpretations.

Finally, children are shown to bleed Principle C in ACD constructions, a finding that shows that children are attending to the binding/coreference relations in the representation, post Quantifier Raising. Thus the child data from ACD constructions can be used to support claims that the theory of Universal Grammar must embody some abstract level of Logical Form (LF). Overall, the experimental findings from the two experiments we have presented show that 4-year-old children can be shown to have judgments about the binding/coreference relations in ACD constructions equivalent to adults', despite the fact that ACD constructions must be comparatively infrequent in the input. This supports the view that the binding theory, and (some aspects of) knowledge about coreference relations, are innately specified.

## References

- Barss, Andrew, and Howard Lasnik. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 20:219-252.
- Chien, Yu-Chin, and Ken Wexler. 1990. Children's knowledge of locality conditions in binding as evidence for the modularity of syntax and pragmatics. *Language Acquisition* 1:225-295.
- Chomsky, Noam. 1981. *Lecture on government and binding*. Dordrecht: Foris.
- Crain, Stephen, and Cecile McKee. 1985. The acquisition of structural restrictions on anaphora. In *Proceedings of NELS 16*, 94-110. GLSA, University of Massachusetts, Amherst.
- Crain, Stephen, and Rosalind Thornton. 1998. *Investigations in Universal Grammar*. Cambridge, Mass.: MIT Press.
- Cutler, Anne and David Swinney 1987. Prosody and the development of comprehension. *Journal of Child Language* 14:145-167.
- Fiengo, Robert, and Robert May. 1994. *Indices and Identity*. Cambridge, Mass.: MIT Press.
- Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30:157-196.
- Fox, Danny. 2000. *Economy and Semantic Interpretation*. Cambridge, Mass.: MIT Press.
- Grodzinsky, Yosef, and Tanya Reinhart. 1993. The Innateness of Binding and Coreference. *Linguistic Inquiry* 24:69-101.
- Halbert, Anne, Stephen Crain, Donald Shankweiler and Elaine Woodams. 1985. Children's interpretive use of emphatic stress. Paper presented at the Eighth Annual CUNY Conference on Human Sentence Processing, Tucson, AZ.
- Heim, Irene. 1998. Anaphora and semantic interpretation: A reinterpretation of Reinhart's Approach. In Uli Sauerland, and Orin Percus, eds. *The Interpretive Tract*, 205-246 (MIT Working Papers in Linguistics 25.) MITWPL, Department of Linguistics and Philosophy, MIT, Cambridge, MA.
- Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19:33-91.
- McDaniel, Dana. and Tomas Maxfield. 1992. Principle B and contrastive stress. *Language Acquisition* 2:337-358.
- Pesetsky, David. 1995. *Zero-Syntax*. Cambridge, Mass.: MIT Press.
- Reinhart, Tanya. 1983. *Anaphora and semantic interpretation*. London: Croom Helm.
- Thornton, Rosalind, and Ken Wexler. 1999. *Principle B, VP Ellipsis and Interpretation in Child Grammar*. Cambridge, Mass.: MIT Press.

Department of Linguistics  
University of Maryland  
Marie Mount Hall 1401  
College Park, MD 20742

kiguchih@wam.umd.edu  
rt58@umail.umd.edu

