

## Principle B and Phonologically Reduced Pronouns in Child English

**Background:** The “Delay of Principle B Effect” (DPBE) is a longstanding finding in child language acquisition. Many studies (Chien and Wexler 1990, Thornton and Wexler 1999, among many others) have shown that young children (~3;0-6;0), unlike adults, accept an anaphoric interpretation of sentences like (1) in violation of Binding Principle B:

(1) This is Mama Bear; this is Goldilocks. *Is Mamma Bear touching her?*

A related finding in languages with clitic pronouns is that children often correctly *reject* the anaphoric interpretation of sentences like (1) when the clitic pronoun is used (e.g., McKee 1992 for Italian; Baauw, Escobar, & Philip 1997, for Spanish). Recently, the DPBE has been challenged by Conroy et al. (2009), who claim that children’s poor performance on sentences like (1) is a methodological artifact of previous studies (see also Elbourne 2005). Conroy et al. claim that when these sentences are introduced with more sophisticated stories for context, the DPBE disappears, and provide experimental evidence to this effect.

**Current study:** We reviewed sample videos of Conroy et al., and found that nearly all stimuli use the reduced form of the pronoun *him* (henceforth written ‘*m*’). Given that the reduced pronoun in English has often been analyzed as a clitic pronoun (Nevis et al. 1994, Spencer 1991), and given that clitic pronouns are found to erase the DPBE in other languages, we hypothesized that Conroy et al.’s discrepant results might be caused by their use of the clitic pronoun, rather than by their methodological innovations. Our study sought to replicate Conroy et al.’s experiments, while varying only the status of the pronoun (full vs. reduced). If there is no difference between the two conditions, it supports Conroy et al.’s methodological explanation for their results. If there is a difference, it suggests that Conroy et al.’s results were caused by reduced pronouns.

**Design:** Our truth-value judgment task (TVJT) closely followed Conroy et al.: experimenters act out story, a puppet makes a statement about the story (“I think...X”), and the child’s task is to reward or correct the puppet based on accuracy of the statement. The experimental materials consisted of 4 stories, near-replicas of Conroy et al.’s scripts. In our study, each subject saw each story twice, once paired with a ‘full-pronoun’ test sentence (e.g., “I think... Cow washed him”), and once paired with a ‘reduced-pronoun’ test sentence (e.g., “I think... Cow washed ‘m”). Target items were interspersed with an equal number of filler items, which used names instead of pronouns (e.g., “I think... Cow washed Horse”). Children were tested over two ~20-minute sessions consisting of 8 stories each (4 target, 4 filler). In a given session, a subject heard either all full-pronoun or all reduced-pronoun items. Sessions were held 1-2 weeks apart, and subjects were randomly assigned to hear either the full-pronoun condition or the reduced-pronoun condition in their first session.

**Preliminary Results:** 13 subjects have been run so far (ages 4;6 – 5;2, mean: ~4;11). 3 were not included in analysis because they got more than 2 filler items wrong. The results of the remaining 10 subjects indicate a statistically significant difference in rejection rate, i.e. adult-like performance, between the ‘full-pronoun’ and ‘reduced pronoun’ conditions ( $M=62.5\%$  vs.  $M=92.5\%$ ; Wilcoxon signed rank test,  $W=2.5$ ,  $Z=-2.22$ ,  $p<.05$ ).

**Discussion:** For full pronouns, children accepted the anaphoric interpretation, i.e. showed the DPBE, in 37.5% of trials. This is below Chien and Wexler’s (1990) rate of 51%, but in line with several other studies (McDaniel & Maxfield 1992: 41%; Boster 1991: 38%). For reduced pronouns, children accepted the anaphoric interpretation in only 7.5% of trials (compare to ~8-15% in previous studies of Romance clitics; Conroy et al.’s figure of 11%). Additionally, 7 out of 10 subjects gave more adult-like responses in the reduced condition

than in the full condition. Only 1 out of 10 gave more adult-like responses in the full condition. 2 got all right in both conditions.

The novel results are important in two ways. First, they demonstrate that the clitic effect extends to English reduced pronouns, showing that English reduced pronouns share a cross-linguistic acquisitional property of clitics. Second, they provide evidence that Conroy et al.'s (2009) discrepant results may have been caused by their use of reduced pronouns. The results of the relevant studies are summarized in the following table.

	Sophisticated story?	Reduced pronouns?	% acceptance of anaphoric interpretation
Conroy et al. (2009)	YES	YES	11%
Chien & Wexler (1990)	NO	NO	51%
Current study (full condition)	YES	NO	37.5%

We conclude that Conroy et al.'s adult like results were likely caused in large part by their use of reduced (clitic) pronouns, and that their claim that the DPBE is a methodological artifact is not well grounded.

Finally, we note that our results distinguish between competing explanations of the clitic effect. McKee (1992) suggested that that the clitic pronoun effect is due to the structural position of clitic pronouns (e.g., Eng. *I like **him*** vs. Italian *Io **l'**amo*). Avrutin & Wexler (1992) proposed that the effect is due to the referential dependence of clitic pronouns. Our results support the second explanation, since English full and reduced pronouns are plausibly in the same structural position.

## References

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