Unpublished appendix to:
Tieu, Lyn & Jeffrey Lidz. "NPI licensing and beyond: Children's knowledge of the semantics of *any*." *Language Acquisition*.

Appendix: Scope vs. domain restriction

An anonymous reviewer questions whether the design of the present study differs substantially from the design in Xiang, Conroy, Lidz & Zukowski (2006). In this appendix, we describe the critical differences between the two designs.

Let us first begin by stating that the goals of the two studies were different. While Xiang et al.'s study was designed to investigate the scope possibilities for different indefinites, the present study was designed to investigate the domain restriction possibilities for different indefinites. The challenge is that scope and domain restriction are easily confounded; let us attempt to tease them apart here.

First, there were four indefinites used across the two studies: *a*-NP, *any*-NP, *some*-NP, and the bare plural. Let us assume that all of these indefinites can in principle be interpreted as taking either wide or narrow scope.

Let us also assume for the moment that these indefinites can all associate with a domain of quantification that can be contextually restricted. Consider the domains of quantification that were made natural in the contexts in Xiang et al.'s study and in the present study. In Xiang et al.'s study, the most natural domain restriction contained the 'normal peas' that Billy was supposed to eat; 'mushy peas' were considered to be irrelevant, i.e. exceptions to the domain. In fact, it was made quite clear that the mushy peas didn't count, as Billy himself thought that he didn't have to eat them.

In our stories, the most natural domain restriction contained the subdomain of fuzzy stars that prevented Mickey and Minnie from being able to finish their puzzles; the irrelevant subdomains were the metal stars and the wooden stars that were found by the two characters, and set aside earlier in the story.

This means that across the two studies, there were three potential domain restrictions that the indefinites could reasonably be associated with:

- D": the largest domain in each context, e.g., both kinds of peas vs. all three kinds of stars
- D': the subdomain of things the characters acted upon, e.g., normal peas vs. metal and wooden stars
- D: the subdomain of things the character didn't act upon, e.g., mushy peas vs. fuzzy stars

These possible domain restrictions, along with the two scope possibilities for the indefinite, yield the six scenarios in Table 1; paraphrases for each reading are provided in (1) through (6).

Domain restriction	**Wide scope**	**Narrow scope**
D" (both kinds of peas / all kinds of stars)	True (1)	False (2)
D' (normal peas / metal and wooden stars)	False (3)	False (4)
D (mushy peas / fuzzy stars)	True (5)	True (6)

Table 1: Expected truth values for wide and narrow scope readings of the indefinite, with different domain restrictions.

(1) Domain restricted to D", Wide scope reading of indefinite
   a. *There are normal or mushy peas that the character didn't eat*
   b. *There are metal, wooden, or fuzzy stars that the characters didn't find*

(2) Domain restricted to D", Narrow scope reading of indefinite
   a. *The character didn't eat any normal or mushy peas*
   b. *The characters didn't find any metal, wooden, or fuzzy stars*

(3) Domain restricted to D', Wide scope reading of indefinite
   a. *There are normal peas that the character didn't eat*
   b. *There are metal or wooden stars that the characters didn't find*

(4) Domain restricted to D', Narrow scope reading of indefinite
   a. *The character didn't eat any normal peas*
   b. *The characters didn't find any metal or wooden stars*

(5) Domain restricted to D, Wide scope reading of indefinite
   a. *There are mushy peas that the character didn't eat*
   b. *There are fuzzy stars that the characters didn't find*

(6) Domain restricted to D, Narrow scope reading of indefinite
   a. *The character didn't eat any mushy peas*
   b. *The characters didn't find any fuzzy stars*

Participants in both experiments rejected the *any*-sentences. In Xiang et al.'s experiment, there are three possible explanations for these rejections. First, participants could have accessed a wide scope interpretation of the indefinite, while restricting the domain to the normal peas (3); this is plausible, given the naturalness of restricting the domain to the normal peas that Billy ate. Second, participants could have accessed a narrow scope interpretation of the indefinite, while restricting the domain to the normal peas (4); again, this is plausible because of the naturalness of restricting the domain to the normal peas. Finally, participants could have accessed a narrow scope reading of the indefinite, with *any* triggering widening of the domain to include both kinds of peas (1). Given the way the story was set up, it is difficult to decide among these three possibilities.

Since we were interested precisely in the different domain restriction possibilities, our stories made it so that the three possible explanations for *no*-responses would not be equally plausible. Consider again the three possible explanations for a *no*-response, this time in the context of the puzzle stories in our experiment. First, participants could have accessed a wide scope interpretation of the indefinite, while restricting the domain of the indefinite

to the metal and/or wooden stars (3); this would be rather unlikely, because it was made clear that the metal and wooden stars were irrelevant by the time the test sentence was uttered (the metal and wooden stars were not the reason that the characters failed to finish their puzzles). Second, participants could have accessed a narrow scope interpretation of the indefinite, while restricting the domain to the metal and wooden stars (4); again, this not very natural because the metal and wooden stars were no longer salient or relevant when the test sentence was uttered. Finally, participants could have accessed a narrow scope interpretation of the indefinite, with *any* triggering widening to include all three subdomains of stars (2); this was the target interpretation, and indeed our participants' justifications were consistent with them having accessed this interpretation.

One final difference between the two designs was the indefinite that was used as a control. The present study set out to assess domain restriction possibilities for the NPI, and it was therefore important to be able to compare the NPI with an indefinite that would also take narrow scope, but that might allow domain restriction where the NPI did not. Thus we included the bare plural, which can only take narrow scope under negation. This essentially allowed us to restrict our attention to the Narrow Scope column of Table 1. Bare plurals elicited *yes*-responses, suggesting domain restriction to the fuzzy stars; in contrast, *any* elicited *no*-responses, suggesting the domain had to include more than just the salient fuzzy stars. Xiang et al.'s study set out to assess scope possibilities, and therefore used the positive polarity item *some* as a wide scope control with which to compare the NPI. As we saw above, however, it's not clear that their design allows us to tease apart the different scope and domain restriction possibilities.

References

Xiang, Ming, Anatasia Conroy, Jeffrey Lidz & Andrea Zukowski. 2006. Children's understanding of polarity items. Poster presented at the conference on Architectures and Mechanisms for Language Processing.