"How many"-Questions and Pair-List Situations
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The contrast this squib discusses was observed by Calixto Aguero-Bautista (p.c.) and concerns the felicity of the questions in (1) in the following context: We are interested in the literary exploits of a group of students. Imagine that, last night, three students (John, Bill and Mary) read "War and Peace", five other students (Tom, Ian, Sue, Ann, and Lea) read "Buddenbrooks", and two other students (Tina and Lina) read "Ulysses". Since there's no student that read every book, the question (1a) is infelicitous in such a situation. (1b), however, is a felicitous question in the same situation, and could be answered as in (1b).

(1) a. Which students read every book last night?
   b. How many students read every book last night?
      Three "War and Peace", five "Buddenbrooks", and two "Ulysses"

For "which"-questions with quantifiers like (1a), I adopt Chierchia's (1993) analysis but use Engdahl's (1980) syntactic theory of reconstruction following (see also Aguero-Bautista 1999). Chierchia derives the following felicity condition "which"-questions with universals in pair-list situations: the universal must bind an implicit variable in the trace position of the "which"-phrase. As the semantic representation (2) illustrates, this binding relation is ruled out in (1a) by weak crossover.

(2) *Which_f every book_j f(student of j) read t_j

The "how many"-question (1b), however, is felicitous when the universal quantifier takes scope over the trace of the "how many"-phrase, without binding a variable in this position. This LF-representation, as shown in (3), doesn't violate the weak crossover condition.

(3) How_n every book_j [n-many students] read t_j

According to Cresti's (1995) semantics of "how many", (3) asks for the maximal number n such that every book was read by at least n students. Because "every book" takes scope above "n-many students", it's not important for (3) whether there are students that read every book. Therefore (3) is a felicitous question in a pair-list situation where every book was read by a different number of different students, like the one described above.

The complete answer (3) requires is "Two students read every book". However, an overly informative answer to a question is always felicitous, as long as it provides the relevant information. The answer given after (1b), I claim, is such an overly informative answer.

The weak crossover condition states an empirical mismatch between inverse scope and inverse binding. Here, we saw this familiar scope/binding difference in a new environment with pair-list answers. The result therefore supports Chierchia's claim that weak crossover is at work in (1a).

References