Quantifiers, alternatives, and 'certain' indefinites

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Schlenker (2006) provides an empirical argument for the necessity of functional quantification in the analysis of indefinite noun phrases. The sentence (1a) has (1b) among its interpretations, but (1b) cannot be expressed using only first-order quantification over individuals.

(1)   a. If every student makes progress in a certain area, nobody will flunk the exam.
      b. There is an assignment of areas to students such that if each student makes progress in the area assigned to him or her, nobody will flunk the exam.

On the other hand, this reading is easily expressed with quantification over Skolemized choice functions ("general Skolem functions" in Schlenker's terminology). Schlenker assigns (1a) on reading (1b) the logical form (2):

(2) $\exists F_{\langle 1 \rangle}$ if $[\forall x : \text{student } x]$ x makes progress in $F(x, \lambda y[\text{area } y])$, nobody will flunk the exam.

where $F_{\langle 1 \rangle}$ ranges over Skolemized choice functions of one individual argument.

It is well-known, however, that analyses of indefinites as functional variables which may undergo top-level existential closure are bound to overgenerate when an indefinite occurs in the scope of a non-upward-entailing operator (see Schwarz 2001). Such an analysis would assign a logical form like (3b) to the sentence (3a), incorrectly predicting (3c) as a possible interpretation of (3a), which lacks this reading.

(3)   a. If no student makes progress in a certain area, everybody will flunk the exam.
      b. $\exists F_{\langle 1 \rangle}$ if $[\text{no } x : \text{student } x]$ x makes progress in $F(x, \lambda y[\text{area } y])$, everybody will flunk the exam.
      c. There is an assignment of areas to students such that if no student makes progress in the area assigned to him or her, everybody will flunk the exam.

Notice that this interpretation cannot be blocked by an appeal to quantification over a restricted domain of "natural" functions, as in a given context the same functions validate both (3b) and (2).

I argue that functional analyses of wide-scope indefinites overgenerate because they build into the semantics of indefinites universal quantification which is properly introduced by a distributive quantifier like *every*. Skolemized choice functions are tools to encode dependencies, as between areas and students in (1a), while I argue instead that these dependencies follow automatically from the semantics of the quantifiers that support such readings. The difference between (1a) and (3a) comes down to a difference between their antecedents (with *certain* stripped):

(4)   a. Every student makes progress in an area.
      b. No student makes makes progress in an area.

Whereas (4a) can be made true in a number of different ways, corresponding to different assignments of areas to students, (4b) can be made true in *only one way*. Each proposition in the alternative set of (4a), in the sense of alternative semantics (Kratzer & Shimoyama 2002), or each proof of (4a), on the formulae-as-types interpretation of intuitionistic type theory (Fernando 2009), encodes an assignment of areas to students. Propagating these alternatives up in the right way (in part the contribution of *certain*) yields the desired interpretation for (1a), without predicting the illicit reading for (3a), since (4b) never encodes a dependency in the first place. I give a preliminary implementation of these ideas in the framework of alternative semantics.

Fernando, T. 2009. Situations as indices and as denotations. *Linguistics & Philosophy* 32. **Kratzer, A. & J. Shimoyama.** 2002. Indeterminate pronouns: The view from Japanese. *Proceedings of the Third Tokyo Conference on Psycholinguistics.* **Schlenker, P.** 2006. Scopal independence: a note on branching and wide scope readings of indefinites and disjunctions. *Journal of Semantics* 23. **Schwarz, B.** 2001. Two kinds of long distance indefinites.