All split scope is not alike

Klaus Abels (University College London) and Luisa Martí (CASTL/Universitetet i Tromsø)

Introduction. The split scope readings (SScRs) of negative indefinites (NIs) in (1a) (across intensional verbs) and (1b) (with topic-focus articulation (TFA) –a.k.a. 'hat contour' or 'bridge accent') are usually thought to constitute one and the same phenomenon (Jacobs 1980, Geurts 1996, de Swart 2000, Rullman 1995, Penka 2007) (/X...Y\ indicates TFA):

(1)a....weil du **keine** Jacke anziehen brauchst (all German dialects)
because you no jacket wear need
'...because you don't need to wear a jacket' (¬>*brauchen* >∃)

b. /JEDER Arzt hat **KEIN**\ Auto (some German dialects)
every doctor has no car
'Not every doctor has a car' (¬>∀>∃)

Analyses of SSc thus usually propose a single mechanism to derive the relevant readings in (1). In this talk we show that (1a) and (1b) have less in common than previously thought. The argument is partly based on new observations concerning the (un)availability of SSc with bound pronouns inside the NI-phrase. We propose an analysis of (1a) in the spirit of Hackl's (2001) and Heim's (2001) analysis of comparative quantifiers and Kratzer's (1998) analysis of pseudoscope with choice functions.

Variation. SScRs are available for NIs across intensional verbs in all varieties of German, but only East Upper German (EUG) (spoken in Bavaria and Austria) allows a SScR for (1b) (cf. Jacobs). Such dialect split is unexpected if (1a) and (1b) are one and the same phenomenon. In general, it is suggestive that, if a language allows SSc of NIs, then it allows SSc across intensional verbs, but not necessarily across quantified NPs; cf. the Scandinavian languages and English (English allows SSc across a subset of intensional verbs only; cf. Potts 2000).

Intonation. The SScR of (1b), in the dialects that allow it, requires TFA. The SScR of (1a), on the other hand, requires nothing of the sort in these varieties. Again, this suggests that (1a) and (1b) should not be treated as one and the same phenomenon.

Bound pronouns in the NI-phrase. The SScR for (1b) can be represented as in (2a). If this is correct, nothing should prevent the quantified NP from binding a pronoun inside the NI-NP, as in (2b). The representation of SScRs across intensional verbs is in (2c) (cf. Penka):

(2)a. ¬ [[∀ NP] ... [[∃ NP] ...]] b. ¬ [[∀ NP]$_i$ ... [[∃ [$_{NP}$...pronoun$_i$...]] ...]]
c. ¬ [[intensional verb$_{w'}$ ... [[∃ [$_{NP}$... noun$_{w'}$...]] ...]]

The binding in (2c) is necessary to generate *de dicto* readings for (1a). (2c) differs from (2b) only in the nature of the binder (quantified NP vs. intensional verb) and the bindee (pronoun vs. world variable). Whereas (2c) is the normal case for SSc with intensional verbs, (2b) is available in EUG only in a very restricted set of cases. Consider first (3):

(3)a. */[JEDER Arzt]$_i$ hat **KEINEN**\ seiner$_i$ Patienten vergiftet
every doctor has none his patients poisoned

b. ??/[JEDES Kind]$_i$ hat **KEIN**\ Spielzeug, das es$_i$ sich gewünscht hat(te), bekommen
every child has no toy that he self asked.for had gotten

c. ??/JEDER Arzt hat **KEIN**\ Geschenk von seiner Frau umgetauscht
every doctor has no present from his wife exchanged

(2b) is not available in EUG when the bound pronoun is in a partitive ((3a)), in a non-extraposed RC ((3b)), or in certain PPs ((3c)). Notice that when the pronouns are free the sentences are grammatical and SScRs are available.

(2b) is attested in EUG in some cases; (4b), with an extraposed RC, contrasts with (3b):

(4)a. /JEDER Professor hat **KEIN**\ Buch über sich aus der Bibliothek ausgeliehen
every professor has no book about himself from the library checked.out
'Not every professor checked out a book about himself from the library'

b. /JEDES Kind hat **KEIN**\ Spielzeug bekommen, das es sich gewünscht hat
every child has no toy gotten that he self asked.for has
'Not every child got a toy he had asked for'

A first attempt at a descriptive generalization here would relate (2b) with the possibility of moving a constituent containing the bound pronoun out of the NI.

SSc and binding are compatible in principle. (5) is possible (in all varieties of German) even if the bound pronoun is contained in a partitive, in non-extraposed relative clauses or in the same PPs that prevented (2b) in (3c) (only the counterpart of (3a) shown here):

(5) $[[\forall\ \mathrm{NP}]_i \ldots \neg[\text{intensional verb} \ldots [\exists\ [_{\mathrm{NP}} \ldots \text{pronoun}_i \ldots]] \ldots]]$

(6)[Jeder Student]$_i$ denkt, dass **keiner** seiner$_i$ Professoren anwesend zu sein braucht
every student thinks that none his professors present to be need
'Every student thinks that it's not necessary that a professor of his be present'

Given a number of unresolved empirical questions surrounding (1b), we leave its analysis for a future occasion.

Proposal. We propose that German NIs are negative ∃-quantifiers over choice functions. Because they are quantifiers, they have to QR, leaving a trace of type <et,e>:

(7) $[[\textbf{kein}]] = \lambda F_{<<et,e>,t>}.\neg\exists f\,[\mathrm{CH}(f) \,\&\, F(f)]$

The SScR of (1a) has an LF in which *kein* QRs above the intensional verb *brauchen* 'need' and the world variable associated with the noun *Jacke* 'jacket' is bound by *brauchen* (cf. Kratzer on intermediate readings for indefinites). 'Acc' is the accesibility relation for worlds:

(8) a. $[\textbf{kein}_1\ [\lambda\ [\text{you need}_{w'}\ \text{wear}\ t_1(\text{jacket}_{w'})]]]$

b. $\neg\exists f\,[\mathrm{CH}(f) \,\&\, \forall w'\ [w' \in \mathrm{Acc} \rightarrow \text{you wear}\ f(\text{jacket}_{w'})]]$

(8b) says that one cannot find a choice function that, for every world w', will pick a jacket in w' that you wear. If you wore a jacket in every world w', the choice function would pick the jacket that you wear in w'. Since there exists no such function, you must not be wearing a jacket in every world. If in some worlds you wear a jacket and in other worlds you don't, then it is not required that you wear a jacket, which is the SScR.

This proposal makes sense of the morphological make-up of German NIs: *kein* contains a negation and an ∃-quantifier in the morphology (*k-ein*, *n-iemand*) *and* in the semantics –like decompositional analyses; cf. Jacobs, Penka, Rullman. In contrast to these analyses, which treat negation and the ∃-quantifier as syntactically independent, the present analysis needs no further stipulation to predict that ∃ can never outscope negation (cf. de Swart). The analysis unifies the movement of the negative ∃-quantifier with the movement of degree quantifiers in Kennedy (1997), Hackl and Heim: both may cross intensional verbs but not other quantified NPs (this may have a deeper explanation in terms of Relativized Minimality); this is something that no previous proposal known to us achieves. Finally, the present analysis predicts, correctly, that examples like (1a) with *keine Jacke* replaced by *keine Jacke und eine Hose* 'no jacket and a pair of pants' are ungrammatical because the Coordinate Structure Constraint blocks asymmetric extraction of *kein* (and the verb *brauchen* is an NPI). It also predicts, correctly, that both conjuncts can contain *kein*, a case of ATB QR –but analyses that invoke an adjacency requirement between negation and the ∃-quantifier (Jacobs, Penka, Rullman) make the opposite prediction here.

References. Geurts 1996 'On *No*', *J. of Semantics* 13; **Hackl 2001** Comparative Quantifiers, MIT diss.; **Heim 2001** 'Degree Operators and Scope', *Festschrift for Arnim von Stechow*; **Jacobs 1980** 'Lexical Decomposition in Montague Grammar', *Theoretical Linguistics* 7; **Kennedy 1997** Projecting the Adjective, UCSC diss.; **Kratzer 1998** 'Scope or Pseudoscope? Are there Wide Scope Indefinites?' *Events in Grammar*, Kluwer; **Penka 2007** Negative Indefinites, Tübingen diss.; **Potts 2000** 'When even *no*'s NEG is Splitsville', *Jorge Hankamer WebFest*; **de Swart 2000** 'Scope Ambiguities with Negative Quantifiers', *Reference and Anaphoric Relations*, Kluwer