When Even No's *Neg is Splitsville*

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This note describes an unexpected interaction between the Negative Polarity Item (NPI) *need* and the determiner *no*. Unlike its Germanic brethren *kein* and *geen*, *no* does not normally allow its negation to "split" from it, taking scope over another operator and leaving an indefinite behind. However, when a *no* DP is the object of an NPI *need*-clause, determiner *no* happily divides.

1 Split readings

A much-studied property of the German negative determiner *kein* 'no' is that it permits 'split' readings such as (1c) alongside *de dicto* and *de re* readings; see Jacobs 1980, Kratzer 1995: §2.5, de Swart 1996, and references therein.

(1) Alle Ärtze   haben kein Auto. (de Swart 1996: (5))
    all   doctors have no   car
    a. = For all doctors *y*, it is the case that *y* has no car. (*de dicto*)
    b. = There is no car *x* such that all doctors have *x*.   (*de re*)
    c. = It is not the case that every doctor has a car.   (split)

For reading (1c), somehow—perhaps via lexical decomposition (Jacobs 1980, Kratzer 1995), perhaps via higher-order interpretation (de Swart 1996)—the negation associated with *kein* "splits" from the object DP, outscoping the subject quantifier and leaving an indefinite below. The Dutch determiner *geen* 'no' also permits split readings. But, in the vast majority of cases, English determiner *no* lacks a split reading; compare (1) with the English (2).

(2) All doctors have no car.

Sentence (2) has interpretations parallel to (1a,b), but (1c) is impossible. Similarly, (3) lacks a split reading (3c), unlike its German counterpart (4).

(3) The company must fire no employee.
    a. = The company is obligated to fire no employee.   (*de dicto*)
    b. = There is no employee *x* such that the company is obligated to fire *x*.   (*de re*)
    c. ≠ It is not the case that the company is obligated to fire an employee.   (split)

(4) Die Firma muss keinen Angestellten feuern.

Importantly, the split reading entails the *de re* reading, but the reverse entailment does not hold: suppose the company's stock has just plummeted, forcing it to make a layoff. Any employee will do, they're all equally paid, equally competent, and equally well-liked, but someone's got to go. The *de re* reading is consistent with this situation, but the split reading is not.

Thus, the crucial difference between English (3) and German (4) is that only the German sentence can be used to directly deny an assertion that some employee or other must be let go. The best (3) can do is the unlikely *de dicto* assertion that the company is obligated to keep everyone on, or the weaker *de re* claim that no single employee is necessarily the target of the impending lay-off.

2 But lest we start thinking in terms of parameters...

The behavior of NPI *need* is illustrated in (5); I cite some naturally occurring cases because judgments on NPI data vary considerably, the more so with *need*.

(5) a. You need *(not) eat the cauliflower.
    b. {No one / *everyone} need eat the cauliflower.
    c. "Anyone who doubts that need only get to know them."
                          —Tom Wolfe. "Stalking the billion footed beast".
                             The Best American Essays 1990 (p. 287)
    d. "All we need assume is that the rule assigning vowel length applies before the sonorization rule neutralizing the voicing distinction."
            —Michael Kenstowicz. *Phonology in Generative Grammar* (p. 71)

Initially, it looks like *need* has a fairly standard NPI profile. It is licensed in (merely) downward entailing environments like the restriction of a universal (5d), and even by quasi-downward entailers like *only* (5c). *Need* is a bit peculiar in that it permits its licensing negation to follow it, as in (5a) and (5c), but this just puts it in the class of NPIs that can be licensed by what de Swart (1998) calls *inverse scope*, as defined in (6).

(6) *Inverse scope*: An expression *a* has inverse scope over an expression *b* iff *b* is in the semantic scope of *a* but *a* does not c-command *b* at S-structure. (de Swart 1998: 181)

Other instances of inverse scope NPI-licensing are given in (7), which are due to Linebarger (1980); see also de Swart 1998: 179. The NPIs are italicized.

(7) a. He *gives a damn* about no one but himself.
    b. She *can help* doing none of these things.

Sentence (7b) must be interpreted as, roughly, "None of these things is such that it is possible for her to avoid doing them." The negative DP *none of these things* cannot take narrow scope with respect to the modal; the interpretation "It is possible for her to do none of these things" is blocked because, on that reading, NPI *can help* goes unlicensed.

Similarly, (5a) cannot be used to assert that you are obligated not to eat cauliflower (we should all be so lucky). In this respect, English NPI-*need* works like its German *brauchen* and Dutch *hoeven* (both 'need'), which are also NPIs and so cannot outscope their licensing negations.

It is possible for *need* to be licensed by a *no* DP in the object position of its clause. I cite attested cases in (8), again because judgments vary.

(8) a. "You need go nowhere else."

—J.M. Coetzee. 'Meat country'. *Granta 52: Food* (p. 47)

b. "She need give no thought to owning a fax machine or computer."

—Joseph Epstein. *With My Trousers Rolled* (p. 24)

c. "In principle, as I have defined "principle", the sciences of human nature need make no reference to consciousness and suffer no explanatory or predicative inadequacy."

—Colin McGinn. *The N.Y. Review of Books*, June 10, 1999 (p. 44, column 1)

d. "We need have no worries about him."

—Hans Magnus Enzensberger, 'In praise of illiteracy', *Harper's Magazine* , June 2000 (p. 27)

For concreteness, consider the simple case in (9). As expected, the *de dicto* interpretation is blocked. But, surprisingly, both split and *de re* readings are available, the split reading being the most prominent.

(9) The company need fire no employees.

a. $\neq$ The company is obligated to fire no employees.   (*de dicto*)

b. = There are no employees x such that the company is obligated to fire x.   (*de re*)

c. = It is not the case that the company is obligated to fire employees.   (split)

Sentence (9) contrasts minimally with (3) above. Suppose Mike, nervous employee of a much-hyped .com whose stock has plummeted, says to his fellow employee Greg, "I hear the company's going to fire someone. We're all equally likely to get the boot; they just need to make a cut." Greg could respond with (9) to deny the truth of this rumor. Although (9) does permit a *de re* interpretation, the assertion of this weaker proposition is consistent with an impending unselective layoff.

The felicity of (9) in this situation demands that we generate a split reading. The work of Jacobs, Kratzer, de Swart, and others provides the tools to do this elegantly. But the data remain puzzling: why does *no*, normally so preserving of its integrity, allow itself to come unglued only in the presence of a higher *need*?

References

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