

Positive Polarity – Negative Polarity*

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ABSTRACT. Positive polarity items (PPIs) are generally thought to have the boring property that they cannot scope below negation. The starting point of the paper is the observation that their distribution is significantly more complex; specifically, *someone/something*-type PPIs share properties with negative polarity items (NPIs). First, these PPIs are disallowed in the same environments that license *yet* type NPIs; second, adding any NPI-licenser rescues the illegitimate constellation. This leads to the conclusion that these PPIs have the combined properties of *yet*-type and *ever*-type NPIs: what appears to be a prohibition is nothing but “halfway licensing”. The paper goes on to propose a unification of the analyses of rescuable PPIs, NPIs, and negative concord, and questions the grounding of polarity sensitivity in the scalar or the referential semantics of the items involved.

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1. NPIs and PPIs – do they have much in common?

Natural languages have two broad categories of polarity sensitive expressions: negative polarity items (NPIs) and positive polarity items (PPIs). According to the crudest characterization, NPIs must, and PPIs must not, occur in the scope of negation. For instance:

- (1) I *(don't) see anything.
 (2) I (*don't) see something. * unless *some* scopes over *not*, or *not* is an emphatic denial

Is reference to the scope of negation in the two definitions a significant commonality? Initially it does not seem so. First, the relation between negation and *any* is thought of as a case of syntactic or semantic licensing, an altogether respectable kind of grammatical phenomenon, whereas the relation between negation and *some* seems like a boring prohibition (Horn 1989; 2001b:157) or a matter of pragmatic preference (as in Krifka 1992). Second, it is well-known that NPIs come in many flavors (Zwarts 1981 and subsequent literature), whereas PPIs seem to singlemindedly avoid scoping below a particular operator. If so, mentioning NPIs and PPIs on the same page seems nothing more than classificatory convenience.

The second dissimilarity is the easiest to show to only be apparent. Van der Wouden (1997) observes that the three classical types of NPIs are matched by three comparable types of PPIs in Dutch (see the semantic definitions in section 2). Outside Dutch, class (3a) is exemplified by Korean *pakkey* 'only' (an exceptive, Nam 1994), (3b) by English *yet*, and (3c) by English *ever*, for example.

(3) NPIs:

- [a] Must be in the scope of an antimorphic operator: *mals* 'tender', *pluis* 'plush'
 [b] Must be in the scope of an antiadditive operator: *ook maar* 'also but = any', *hand voor ogen* 'hand before eyes', *met een vinger* 'with a finger'
 [c] Must be in the scope of a decreasing operator: *hoeven* 'need'

(4) PPIs:

[a] Must not be in the scope of an antimorphic operator: *al* `already', *nog* `still'

[b] Must not be in the scope of an antiadditive operator: *een beetje* `a little', *nogal* `rather',
maar `but'

[c] Must not be in the scope of a decreasing operator: *allerminst* `not-at-all', *niet* `not'

Although the above NPI typology is not exhaustive (some NPIs are licensed in non-veridical contexts, see e.g. Giannakidou 1998) and not uncontroversial (decreasingness needs to be taken with a grain of salt, see e.g. von Stechow 1999), this much parallelism should already give us pause. Why are NPIs and PPIs sensitive to (at least roughly) the same semantic properties? Given van der Wouden's 1997 very general framework of collocational behavior, the fact that semantic notions like downward monotonicity and antiadditivity play a role in natural language would make it surprising if NPIs did not have PPI counterparts. This, however, leaves open whether a more specific connection can be established.

The existence of such parallelisms is one of the main building blocks of the analysis of PPIs that I will be proposing (although I am not yet in a position to explain why each particular NPI or PPI is sensitive to a given property).

Secondly, recall that NPIs and PPIs are thought to differ along the dimension of licensing versus prohibition. Progovac 2000 has made a proposal to bring PPIs into the licensing fold. According to this, PPIs are licensed in a non-negative polarity phrase that is located above the negative polarity phrase in clause structure; therefore, if the clause happens to contain a negation, the PPI automatically scopes above it. I show that PPIs cannot in general be required to scope above negation and offer an alternative characterization of PPIs in licensing terms.

A third important building block of my analysis is a fact already noted by Jespersen: while (5) is unacceptable on the `not>some' reading, the same reading is available in (6):

(5) You didn't see something.

cannot mean `You saw nothing'

(6) I don't believe that you didn't see something.

can mean `I don't believe that you saw nothing'

Jespersen reasoned that (6) was good because the two negations cancel out (viz., I believe that you saw something). C. L. Baker 1970 noticed that other elements, e.g. adversative predicates, have the same effect and developed a polarity-switching mechanism that essentially generalizes Jespersen's idea.¹ I show that this idea cannot be correct. My own explanation of why the illegitimate PPI constellation is rescued in certain contexts will, once more, exploit the NPI—PPI parallelism.

In this paper I provide a detailed description of the behavior of PPIs of the sort *someone* and *something*, and make two main arguments. In the first part of the paper I argue that these PPIs are double NPIs. They simultaneously exhibit the licensing needs of both class (3b) and class (3c) items – let us for the moment express this by saying that they have both a *yet*-feature and an *ever*-feature. These features are “dormant”, unless “activated” by a *yet*-licensing environment. The peculiar PPI-distribution is due to the fact that a *yet*-licensor activates both features but licenses only one of them. Therefore the *ever*-feature requires the presence of a second licenser.

The second argument offers a way to make sense of dormant features and activation by relating them to the proposals in de Swart and Sag's 2002 for negative concord and in Postal 2000a,b for *any* and *no*. I will argue that NPI-features are to be interpreted as negations. Dormancy occurs when the two negations simply cancel out semantically. Licensing is effected by resumptive quantification. The activation/licensing pattern of *some* turns out to fill gaps in Postal's system postulated for *any* and *no*. Finally, I consider the idea that the characteristics of NPIs and PPIs are intimately linked to a scalar or a referential semantics.

Part One: PPIs as double NPIs

2. Refining the description of the distribution of PPIs

In this section I revisit the standard characterization of *someone/something* type PPIs. The precise description of their distribution will be fundamental in developing the analysis.

There are various reasons to focus on *someone/something* type PPIs. First, they belong to

¹ Ladusaw 1980a and Dowty 1994 also assume a cancel-out analysis. Horn 1989 expresses doubts.

the by far largest class of PPIs, those sensitive to antiadditive operators (cf. van der Wouden's class (4b)), but within this class, their lexical semantics is straightforward as compared to that of *would rather*, *would just as soon*, etc. Second, being rather light they do not very easily act as specific indefinites and therefore allow us to separate the extra-wide scoping abilities of specific indefinites from the par excellence PPI-restriction vis-a-vis negation. Third, these PPIs are "rescuable" in the sense of (6) and thus exhibit an interesting combination of properties. Fourth, their properties appear to be shared by various PPIs in other languages, including Hungarian, which makes it easier to ascertain that this cluster of properties is not accidental.²

PPIs that do not belong to this type will only receive tangential attention here. Likewise, this paper will not address the cross-linguistic variation in the inventory of PPIs. For example, Szabolcsi 2002 observes that in Hungarian and in various other languages, (the counterparts of) *a(n)*-phrases and disjunctions exhibit the same PPI-properties as (the counterparts of) *some*-phrases, whereas *or* contrasts with *some* in English.³

A note regarding notation. Many of the examples discussed in this paper are acceptable on the 'some>not' reading but, crucially, not on the 'not>some' reading. In these cases I will attach the asterisk to the interpretation, not to the string itself.

2.1 PPIs and denial/contrast

Prior to setting out to review the data, note that PPIs can in fact occur within the immediate scope of clausemate negation if the latter is construed as an emphatic denial of a similarly phrased statement, e.g.:⁴

² I will not discuss pejorative *some* and degree expression *some*, pointed out by Jack Hoeksema (p.c.):

- (i) I don' t want some schmuck/*someone to handle my car.
- (ii) * John didn't throw SOME party.

³ Vanden Wyngaerd 1999 argues that closer examination reveals English *a(n)* to be a PPI. I leave this issue open since it is not pertinent to present concerns.

⁴ Horn 1989 analyzes denial as metalinguistic negation. See also van der Sandt 1991 and Geurts 1998. The possibility arises that denial is extraclassical negation and that is why PPIs can scope under it (see (24)-(27) below). This proposal, like the metalinguistic negation proposal, may run into problems with the fact that clause-bounded quantifiers may scope above denial, cf. Geurts 1998.

(7) He found something.

Wrong! He DIDn't / DID NOT find something. \checkmark not > some

Denial blurs the picture and thus must be controlled for. One useful method may be to judge the negated clause in the context of a *why*-question, which helps suppress the denial reading.

(8) Why did John look so disappointed?

Because he didn't find something. * not > some

Roger Schwarzschild (p.c.) points out that contrast, not just denial, may be the more appropriate category. In the following example, where negation is focused and *something* is unstressed, the `not>some' reading is fully acceptable in the second consequent:

(9) If you push the red button, you will see something, but if you press the blue button you WON'T see something.

2.2 PPIs cannot take narrower scope than what?

It is not specifically negation that our chosen PPIs are sensitive to. Consider the paradigm below. (10)-(11)-(12) show that besides clausemate negation, *some* cannot be in the immediate scope of a negative quantifier or *without*, although, as (13) shows, it is happy below *at most five*.

- | | | |
|------|---|-------------------------------|
| (10) | John didn' t call someone. | * not > some |
| (11) | No one called someone. | * no one > some |
| (12) | John came to the party without someone. | * without > some |
| (13) | At most five boys called someone. | \checkmark at most 5 > some |

What distinguishes the two sets of operators is that the former are antiadditive but the latter are merely decreasing:

- (14) A function f is decreasing iff, given $A \leq B$, $f(B) \leq f(A)$.
- (15) A function f is antiadditive iff $f(a \vee b) = f(a) \wedge f(b)$.
- (16) A function f is antimorphic iff antiadditive and additionally $f(a \wedge b) = f(a) \vee f(b)$, i.e. iff f is classical negation.

For example, *no one* but not *at most five boys* exhibits the antiadditive equivalence. Although left-to-right *At most five boys walk or talk* entails *At most five boys walk and at most five boys talk* (this entailment is characteristic of all decreasing functions), the right-to-left entailment does not hold, because different boys may be doing the walking and the talking.

- (17) No one walks or talks = No one walks and no one talks
- (18) At most five boys walk or talk \neq At most five boys walk and at most five boys talk

The next qualification (discussed in Kroch 1979:121-122, but not noted in subsequent literature) is that *some* can scope below an antiadditive if it is not in its immediate scope.⁵

- (19) John didn't offend someone because he was malicious (but because he was stupid).
 $\sqrt{\text{not}} > \text{because ...} > \text{some}$
- (20) Not every student said something.
 $\sqrt{\text{not}} > \text{every} > \text{some}$
- (21) John didn't say something at every party.
 $\sqrt{\text{not}} > \text{every} > \text{some}$
- (22) John doesn't always call someone.
 $\sqrt{\text{not}} > \text{always} > \text{some}$
- (23) John didn't show every boy something.
 $\sqrt{\text{not}} > \text{every} > \text{some}$

Finally, PPIs can happily scope below extraclassical negation and other extraclassical NPI-licensors (Ladusaw 1980a:84-85). I remain agnostic as to the precise category specification.

⁵ I assume, with Johnston 1994, that the *because*-clause adjoins to VP on the 'not because...' reading. (19) contrasts with *Because he was kind, John didn't offend someone* (**not > some*). Some speakers find the examples with overtly quantificational interveners less acceptable; stressing the universal facilitates its desired medial scope. On the other hand, these examples do not require the typical context and intonation contour of denial.

- (24) I don't think that John called someone.⁶ $\sqrt{\text{not}} > [\text{CP/IP some}]$
- (25) No one thinks/says that John called someone. $\sqrt{\text{no one}} > [\text{CP/IP some}]$
- (26) I regret that John called someone. $\sqrt{\text{regret}} > [\text{CP/IP some}]$
- (27) Every boy who called someone got help. $\sqrt{\text{every}} [\text{CP/IP some}]$

In the extracausal negation cases, *some* is interchangeable with *any*, in the sense that on the relevant reading (24) is truth-conditionally equivalent to (28), although the *some* sentence lacks the “widening plus strengthening” flavor associated with *any* (cf. Kadmon and Landman 1994 and related literature).

- (28) I don't think that John called anyone.

In the intervention cases, *some* cannot be replaced by *any* because the licensing of *any* is blocked by the interveners that shield *some* from negation (cf. Kroch 1979, Linebarger 1987):⁷

- (29) *John doesn't always call anyone.

All the parallel observations hold in Hungarian for indefinite pronouns formed with *vala-* ‘some’, noun phrases with *egy* ‘a(n), one’ and disjunctions (*vagy* ‘or’).⁸

⁶ In the Hungarian counterpart of (24), the complement is preferably in the conditional, not in the indicative. This conditional functions much like the subjunctive of negation in Romance and, inspired by Giannakidou 1998, may be regarded as a polarity sensitive item itself. Traces of such a preference might be detectable in English. (i) is better on the relevant reading than (24).

[i] I don't believe that he'd have done something like that.

⁷ Non-numerical indefinites, bare plurals, *any*, and modal *can* do not count as interveners in either case. Similarly, they do not induce weak islands; see Szabolcsi and Zwarts 1993 and Honcoop 1998.

⁸ These data were first noticed, and are discussed in detail, in Szabolcsi 2002. To make the examples simpler, I do not illustrate the role of intervention below:

- [i] Nem hívott fel valakit.
not called up someone-acc $*\text{not} > \text{some}$
- [ii] Nem hiszem, hogy felhívott volna valakit.
not think-I that up-called aux someone-acc $\sqrt{\text{not}} > [\text{CP/IP some}]$

One might wonder whether the clausemate versus extracausal contrast has to do with the intervention of the matrix predicate. The following data suggest that it is just a locality matter:^{9, 10}:

[iii] Nem adott neki egy pofont. not gave to-him a slap	* not > a
[iv] Nem hiszem, hogy adott volna neki egy pofont. not think-I that gave aux to-him a slap-acc	√ not > [CP/IP a
[v] Nem ismeri Kati-t vagy Mari-t. not knows Kati-acc or Mari-acc	*not > or
[vi] Nem hiszem, hogy ismerné Kati-t vagy Mari-t. not think-I that know aux Kati-acc or Mari-acc	√ not > [CP/IP or

⁹ According to Haspelmath (1997, pp. 249, 291) English *some* and Hungarian *vala-* differ in that *vala-* can occur with indirect negation but *some* cannot. Unfortunately, Haspelmath's category of indirect negation collapses implicit negation such as *without* and *lack* with extracausal negation (p.33), although he is aware that these may behave differently (pp.80-81). In view of the importance of locality in PPI-phenomena, I am not sure how Haspelmath arrived at an undifferentiated "yes" or "no" for this category in any language. P.292 seems to indicate that he determined that *vala-* occurs with indirect negation using the 'I don't think that...' context; but this accepts *some* just as well. I could not find out specifically what data led him to postulate the crosslinguistic difference. I thank a reviewer for pointing out the need to comment on this.

¹⁰ When CP is infinitival, the data are less clearcut. Voluntary and involuntary actions do not appear to behave alike:

[i] I don't want to offend someone / to break something.	√ not > [CP/IP some
[ii] I don't want to call someone / eat something.	?? not > [CP/IP some

On the other hand, the clausemate condition might be refined. Both primary and secondary predicates may host PPIs scoping below verbal negation. The most natural examples involve disjunctions. These are PPIs in Hungarian, see the footnotes; in [iii]-[iv], however, *vagy* scopes exactly like English *or*:

[iii] Nem tartom Jánost bátornak vagy okosnak.	√ 'I don't consider John brave or smart'
[iv] Nem láttam Jánost kalapban vagy parókásan.	√ 'I haven't seen John with a hat or a wig'

It appears that the domain within which the PPI cannot be in the immediate scope of an antiadditive operator is the minimal predication, rather than the minimal clause in the usual sense. It may be possible to argue that each such predication constitutes a separate CP. This position is compatible with recent analyses of small clauses (Starke 1995 and earlier literature). Likewise, the presence of a postnominal modifier (as in *something interesting*) often enables the PPI to scope directly below negation, indicating the presence of a separate predication domain.

- (30) John won without help from someone. * without > some
 (31) John won without someone helping him. √ without > [CP/IP some]

To summarize, the generalization so far is this:

- (32) *Some*-type PPIs do not occur within the immediate scope of a clausemate antiadditive operator. Schematically: *[AA-Op > PPI].

2.3 ... unless ...

Surprisingly, however, there are contexts that enable the PPIs to occur in the immediate scope of clausemate antiadditives. C. L. Baker 1970, who discussed matrix negation, *no one* and adversative predicates, pointed out that data like (33) were already noted by Jespersen:

- (33) I don't think that John didn't call someone. √ not > not > some
 (34) No one thinks that John didn't call someone. √ no one > not > some
 (35) I am surprised that John didn't call someone. √ surprise > not > some
 (36) I regret that John didn't call someone. √ regret > not > some

What natural class do the rescuing elements form? I observe that all contexts that license weak (*ever*-type) NPIs enable the PPI to scope directly below clausemate negation: ^{11, 12, 13}

¹¹ Some speakers do not like *Few boys didn't laugh* to begin with; they will reject the corresponding rescuing data. – A. Giannakidou (p.c.) notes that even modals and other merely non-veridical operators may act as rescuers. I will not pursue this suggestion here.

¹² Again, Hungarian indefinite and disjunctive PPIs exhibit the same behavior:

- [i] János ritkán nyert **valakinek** a segítségére nélkül. √ rarely > without > some
 `John rarely won without help from someone'
 [ii] Sajnálom, hogy nem adtam neki **egy** pofont. √ regret > not > a(n)
 `I regret that I didn't give him a slap'
 [iii] Kevés lány nem járt Londonban **vagy** Párizsban. √ few > not > or
 `Few girls haven't been to London or Paris'

- (37) If we don't call someone, we are doomed. \surd if (not > some)
- (38) Every boy who didn't call someone... \surd every (not > some)
- (39) Only John didn't call someone. \surd only > not > some
- (40) Few boys didn't call someone. \surd few > not > some
- (41) Few boys thought that you didn't call someone. \surd few > not > some

Thus, I suggest that the full description is this:

- (42) PPIs do not occur in the immediate scope of a clausemate antiadditive operator AA-Op, **unless** [AA-Op > PPI] itself is in an NPI-licensing context.

Recall that “immediate” means that there is no scopal intervener.

I note that although the investigation in this paper focuses on *some*-PPIs, more exotic members of the class like *would rather* appear to share similar properties. For example:

- (43) *John wouldn't rather eat Chinese.
- (44) John wouldn't always rather eat Chinese.
- (45) I am surprised that John wouldn't rather eat Chinese.

[iv] Ha nem eszünk **vagy** iszunk, végünk. \surd if (not > or)
 `If we don't eat or drink, we are doomed'

Russian *kogo-to* `someone-acc' and *ili* `or' seem the same (Y. Pomerantsev and A. Stepanov, p.c.). On the other hand, Korean *utun haksæng-ul* `some student-acc' (Seungwan Yoon, p.c.) and Dutch *of* `or' phrases (M. den Dikken, p.c.) seem to be non-rescuable PPIs. I will need to better understand the polarity systems of the latter languages before addressing these facts. Non-rescuable PPIs may be analyzable along the lines of Progovac 2000 (see section 4).

¹³ Some speakers judge that *Most boys / More than 40% of the boys didn't call someone* also allow the `called no one' reading. This is obviously in conflict with the NPI-licenser generalization. At this point I am not sure what to think of these judgments, since many other English speakers reject the examples, and they do not seem to work in Hungarian.

3. Questions

The questions that emerge from the foregoing discussion are as follows:

- (46) Why are PPIs prohibited in the immediate scope of a clausemate antiadditive operator?
- (47) How can this prohibition be represented as a positive licensing requirement?
- (48) Why is the illegitimate constellation rescuable by an NPI-licensing context?

I will begin with examining an answer that Progovac 2000 proposed for (47). The logic of the discussion will then lead me to (48). Question (46) will be tackled last.

4. Are PPIs forced to scope above clausemate negation?

A very natural answer to the question why PPIs can't scope below clausemate negation might be that they are for independent reasons forced to scope above it. If so, there is no need to talk about a prohibition at all. Discussing the Serbo-Croatian PPI *ne(t)ko* 'someone', Progovac proposes a specific implementation of the idea that PPIs must scope above clausemate negation. She assumes that a PPI has a syntactic feature [-neg] to be checked in a compatible Polarity Phrase.

“... there are two polarity phrases, the lower one typically associated with sentential negation particles, say NegP, and the higher one typically associated with other types of polarity information. Since the PPI in [*John did not see someone*] cannot check its [-neg] features in the lower negative PolP (or NegP), it is forced to raise to the higher PolP" (Progovac 2000)

I fully endorse the positive spirit of this proposal and appreciate the various elegant consequences Progovac points out it has. But there are reasons to look further for an explanation.

The most straightforward reason is that, as seen above, the PPIs under discussion in this paper happily scope below even clausemate negation under at least two circumstances:

- (i) another operator scopally intervenes between negation and the PPI, or
- (ii) the [negation > PPI] unit is in an NPI-licensing context.

I repeat some of the relevant examples:

- (49) John didn't offend someone because he was malicious (but because he was stupid).
 $\sqrt{\text{not} > \text{because} \dots > \text{some}}$
- (50) John didn't say something at every party.
 $\sqrt{\text{not} > \text{every} > \text{some}}$
- (51) I regret that John didn't call someone.
 $\sqrt{\text{regret} > \text{not} > \text{some}}$
- (52) If we don't call someone, we are doomed.
 $\sqrt{\text{if} (\text{not} > \text{some})}$

Neither of these possibilities should be available if the PPI was forced to scope above NegP, the locus of negation.

Progovac does not discuss data of type (i). She does discuss cases like type (ii), but evaluates them differently. In the spirit of her own proposal, she suggests that the PPI scopes above the clausemate negation though below the extraclausal one:

- (53) Ne tvrdim da Milan nekoga ne voli.
 'I don't claim of someone that Milan does not like him = There is no person of whom I claim that Milan does not like him'

Notice that the reading Progovac attributes to (53) is different from the one we are interested in: it is $\text{'not} > \text{some} > \text{not}'$, i.e. 'every' , rather than $\text{'not} > \text{not} > \text{some}'$, i.e. 'some' . In other words, on this reading the higher negation does not rescue an otherwise illegitimate constellation; there was none to begin with.

I leave it open whether Progovac's analysis of Serbo-Croatian PPIs is correct, i.e. whether cases of intervention ("shielding") and "rescuing" apply to *ne(t)ko*. But her proposal cannot be the general account of the PPI phenomenon I am concerned with because it does not cover at least the English and the Hungarian data, cf. (i) and (ii) above.

More generally, Progovac's account seems to rest on the tacit assumption that PPIs are specific indefinites in the sense that they are headed for a relatively high position in clausal structure and have the ability to scope above negation to begin with. But there are PPIs that are clearly not like that. Take non-referential expressions such as objects of creation verbs and measure phrases, which are sensitive to negative islands. The following sentences are strange or

unacceptable, because the PPI character of the expression is incompatible with narrow scope, whereas its negative island sensitive character prevents it from scoping above negation:

- (54) * John doesn't appreciate this somewhat.
 (55) ?? John didn't take some time off.
 (56) ?? John didn't come up with something.

Such PPIs, however, are perfectly happy when an NPI-licensor is added, showing that in this case they are legitimately scoping below the clausemate negation:

- (57) I regret that John doesn't appreciate this somewhat. `... to any extent'
 If John doesn't appreciate this somewhat...
 (58) I regret that John didn't take some time off. `... any time'
 If John didn't take some time off...
 (59) I regret that John didn't come up with something. `... anything'
 If John didn't come up with something...

Entirely similar contrasts can be produced with verbal disjunctions in Hungarian, which never scope above their own negation, hence they cannot scope between the two negations:¹⁴

- (60) János nem evett vagy aludt.
 John not ate or slept
 *`John didn't eat or didn't sleep' (only `either John didn't eat or John slept')
 (61) Nem hiszem, hogy János ne evett vagy aludt volna'
 not think-I that John not ate or slept aux
 `I don't think that John didn't eat or sleep' = `I don't think that he did neither'

¹⁴ Interestingly, while Russian and Serbo-Croatian verbal disjunctions are akin to Hungarian ones in that the scope of negation does not extend to the second disjunct, they are not rescuable in the manner of (61). On the other hand, nominal disjunctions are rescuable PPIs in these languages. I thank A. Stepanov and Z. Boskovic for the data.

The moral seems to be that the PPI phenomenon is most safely and profitably studied using expressions that are unable to scope above clausemate negation. PPIs functioning as specific indefinites have extra possibilities that are characteristic of them, but not of the PPI phenomenon in general.

We have thus established that the desired positive (licensing) statement of the PPI-generalization cannot simply force the PPI to invariably scope in a position above negation.

5. Rescuing by an NPI-licensor is NPI-licensing

Next, let us address the question as to why NPI-licensing contexts enable the PPI to scope immediately under a local negation. Recall that Jespersen's answer was that when an extra negation is added, the two negations cancel out and the PPI is in an innocuous positive context. If this explanation is correct, the rescuing facts are semantically trivial and offer no further insight into the PPI phenomenon.

5.1 Is the cancelling-out account of rescuing tenable?

First we must ask if Jespersen's suggestion might extend to the rescuing effect of the full set of NPI-licensors. Von Stechow 1999 claims that they can all be analyzed as (at least) Strawson-decreasing. Strawson-decreasingness is a property that characterizes the entailment relations between sentences in situations where their presuppositions are fulfilled.¹⁵ For example:

(62) I regret that John ate a vegetable.

(63) I regret that John ate spinach.

(62) does not entail (63), because John may have eaten cabbage, not spinach, for instance. But if the vegetable John ate happened to be spinach, then the fact that I regret that he ate a vegetable entails that I regret that he ate spinach. In other words, in situations where the presupposition of (63) is fulfilled, the contribution of *regret* itself is a decreasing one.

¹⁵ Ladusaw 1980b proposes a similar solution to the puzzle of monotonicity in factives. Giannakidou 2002 on the other hand argues against some aspects of von Stechow's proposal.

Consider now rescuing:

- (64) I regret that John didn't come up with something scary.
 `I regret that John came up with nothing scary'

Here *regret* and *not* do not cancel out in the standard sense: the sentence entails that John came up with nothing scary. In that sense, *some* is not in an innocuous positive environment. So the question is what might be achieved by redefining "positive" as "Strawson-increasing". That is,

- (65) Given $[[\text{something}]] \geq [[\text{something scary}]]$, does (a) Strawson-entail (b)?
 [a] I regret that John didn't come up with something scary.
 [b] I regret that John didn't come up with something.

The entailment probably goes through; similarly for *only*, analyzed along the same lines:

- (66) [a] Only John didn't come up with something scary.
 (67) [b] Only John didn't come up with something.

If so, then if von Fintel's approach is generally successful and being in a Strawson-increasing environment is sufficient for our PPIs to be licit, then Jespersen's proposal extends to the full set of rescuers.

I will argue, however, that the rescuing phenomenon is not what the above train of thoughts makes it out to be. I am not going to discredit the examples reviewed above. Instead, I am going to present other relevant examples that cannot be accounted for in this way.

The above argument rests on the assumption that PPIs are sensitive to the monotonicity properties of the full context in which they occur. (The cancelling out argument effectively says that the two decreasing functions are composed into an increasing one.) But this is implausible to begin with. Recall that PPIs are only allergic to clausemate negation and are happy within the scope of a higher negation. But they are in an equally antiadditive context in both:

- (68) John didn't come up with something. * not > some

(69) I don't think that John came up with something. \checkmark not > some

Why would the PPI care about the local context in (68) but not in (64)?

Second, if we add a further negation on top of the rescuer and thereby switch the polarity of the context, the PPI remains happy:

(70) I don't regret that John didn't come up with something. \checkmark not > some

Finally, the above account makes incorrect predictions concerning the range of possible rescuers. Recall one of the basic facts about the PPIs at hand: they cannot scope immediately below a local antiadditive but they do not resist being in the immediate scope of a merely decreasing local operator. For example:

(71) ?* No one came up with something.

(72) At most five people came up with something.

In other words, while the PPI is certainly happy in an increasing local context, it by no means requires one. What if we eliminate the antiadditive property of the local context and make it simply decreasing? The prediction is that the PPI will be rescued.

Szabolcsi and Zwarts 1990 observe that given two functions f and g , where g is antiadditive, their composition $f \circ g$ i.e. $\lambda x[f(gx)]$ is antiadditive iff f is multiplicative, viz. $f(a \wedge b) = f(a) \wedge f(b)$. The following informal illustration outlines the proof.

Negation is antiadditive, hence the predicate *doesn't walk or talk* is equivalent to *doesn't walk and doesn't talk*. The sentence *John doesn't walk or talk* continues to be equivalent to *John doesn't walk and John doesn't talk*, because *John* is multiplicative. *John A and B* is the same as *John A and John B*; thus adding *John* as a subject generalized quantifier preserves the *and* of the *doesn't walk and doesn't talk* obtained in the first step. But *More than two men don't walk or talk* is not equivalent to *More than two men don't walk and more than two men don't talk*. The reason is that *more than two men* is not multiplicative: *More than two men A and B* is not the same as *More than two men A and more than two men B* (different sets of men may be doing the A-ing and the B-ing).

In other words, the composed function *more than two men don't [verb]* is not antiadditive. (It is simply decreasing.) If extending the context by means of function composition is a possible means of rescuing the PPI, then we predict that adding *more than two men* above the offending antiadditive rescues the PPI as much as adding an NPI-licensor does. This prediction is just wrong:

- (73) ?* More than two men didn't come up with something.
cannot mean 'More than two men came up with nothing'

In sum, the arguments all point to one conclusion: the rescuing effect cannot be due to context extension.

5.2 [AA-Op > PPI] is a non-lexical NPI

I propose to take the properties of rescuing at face value and say that [AA-Op > PPI] is an NPI. It walks like one and it talks like one, therefore it is one.

To reiterate, we have noticed that the illegitimate constellation [AA-Op > PPI], in which a PPI scopes immediately below a clausemate antiadditive operator is rendered fully acceptable if an item that licenses weak (*ever*-type) NPIs is added scopally immediately above it. This points to the conclusion that the rescuing effect is nothing but NPI-licensing.

Consider, first, the fact that the set of NPI-licensors is not a simple and natural set. Therefore when we observe that the exact same set is relevant in connection with a new phenomenon, it cannot easily be taken to be pure coincidence. While von Stechow argues that Strawson-entailment is a reasonable and useful relation, it is probably not the only entailment relation relevant in natural language. Furthermore, von Stechow needs to work hard to show that *regret*, *be glad*, and others actually lend themselves to the Strawson-decreasing analysis. In other words, if Strawson-decreasingness (or some other property uniting weak NPI-licensors) turns out to be critical in a new domain, that is something to take note of.

A second respect in which rescuing is like NPI-licensing is that it is hindered by an intervener. Compare (74), in the spirit of Linebarger 1987, with the PPI-data (75):

- (74) I didn't expect that John would say anything because this was a public event (*but because I know how he is).
- (75) I didn't expect that John wouldn't say something because this was a public event (*but because I know how he is).

A third similarity is that once an NPI has found its licenser, adding another negative operator above it does not hurt. This is a non-trivial property since the expanded context is increasing. We have seen above that rescuing behaves the same way.

- (76) I **don't** think that John didn't come up with anything.
- (77) I **don't** regret that John didn't come up with something. √ not > some

I am not aware of any “distributional” properties of NPI-licensing that do not carry over to the rescuing of [AA-Op > PPI]. Thus, the proposed parallelism is this:

- | | |
|---|---|
| (78) <u>Unlicensed NPIs:</u> | <u>Licensed NPIs:</u> |
| *He saw [<u>anything</u>]. | I <u>don't</u> think he saw [<u>anything</u>]. |
| *He [<u>didn't</u> see <u>something</u>]. | I <u>don't</u> think he [<u>didn't</u> see <u>something</u>]. |

[AA-Op > PPI] differs from time-honored NPIs in that it is not a lexical entry and does not denote a minimal amount. This, I suggest, is a challenge for NPI-theories, rather than a reason to reject the newcomer.

6. PPIs are double NPIs

Why is [AA-Op > PPI] a NPI? Let us focus on the relation between AA-Op and the PPI.

The first clue, I suggest, is that the semantic property the PPI detests is antiadditivity. As was originally observed by Zwarts and quoted from van der Wouden in section 1, there is a class of NPIs that require precisely this kind of licenser. In English, examples are *yet* and *squat*. The latter is discussed in great detail in Horn 2001a and Postal 2000a; Postal calls it a vulgar

minimizer.

- (79) I haven't been here yet.
 (80) No one has been here yet.
 (81) *At most five people have been here yet.
 (82) *I regret that you have been here yet.
- (83) He didn't know squat. can mean 'He didn't know anything'
 (84) No one knows squat. can mean 'No one knows anything'
 (85) At most five people knew squat. cannot mean 'At most five people knew anything'
 (86) I regret that he knew squat. cannot mean 'I regret that he knew anything'

As Postal points out, NPI-*squat* must be distinguished from another use where it means 'nothing':

- (87) He knows squat. 'He knows nothing'

We are not concerned with the latter item, in fact, its existence must be carefully ignored. For each vulgar minimizer, some speakers of English have both usages, some only one of the two.

Interestingly, some of the NPIs that need an anti-additive licenser require the licenser to be clausemate. In Dutch such are *een hand voor ogen (zien)* '(to see) a hand before (one's) eyes' and *met een vinger (aanraken)* '(touch) with a finger' although not *ook maar* 'even' (Marcel den Dikken, p.c.).¹⁶ In English *squat* and, for some speakers, *yet* need clausemate licensers. This is best observed if we compare *didn't think*, where *think* is an optional neg-raiser, with *didn't say*, where *say* is not a neg-raiser:¹⁷

¹⁶ The clausemateness requirement for these PPIs is very strict: *Niemand wou hem met een vinger aanraken* 'Nobody would touch him with a finger' but **Ik geloof niet dat ze hem met een vinger zouden aanraken* 'I don't think that they would touch him with a finger'.

¹⁷ Cf. Horn 1989. *Think* is said to be a neg-raiser because *I don't think that he is here* can mean *I think that he is not here*, i.e. the superficially matrix negation can be interpreted in the complement clause. Note that this interpretation is optional. *Say* is not a neg-raiser in the same sense: *I didn't say that he was here* cannot mean *I said that he wasn't here*.

- (88) I didn't think that he knew squat. can mean 'that he knew anything'
- (89) I didn't think that he had been here yet.
- (90) I didn't say that he knew squat. cannot mean 'that he knew anything'
- (91) %I didn't say that he had been here yet.

Now the second clue is that our PPIs fail to scope under a clausemate antiadditive but do not mind an extracausal one. Both (92) and (93) are acceptable because *say* is not a neg-raiser and even *think* is only optionally a neg-raiser; i.e. in both cases the negation can be interpreted in the matrix clause:

- (92) I didn't say that he came up with something.
- (93) I didn't think that he came up with something.

Finally, the licensing of *yet* and *squat*, just like the licensing of *any*, is blocked by an intervening scopal element, cf. Linebarger 1987:

- (94) He didn't (*always) understand squat. on reading 'understand anything'

As a third clue, recall that a scopal intervener shields the PPI from the local antiadditive, e.g.,¹⁸

- (95) He didn't *(always) come up with something.

To summarize, we find an uncanny similarity as regards anti-additivity, clausemateness, and intervention:

¹⁸ As one reviewer points out, the correlation between the NPI-case and the PPI-case is not perfect. For example, while *often* blocks NPI-licensing (**He hasn't often called a single person*), *often* does not seem to shield PPIs: *He has(*n't) often called someone*, and *rescuing* is more robustly blocked by *because*-clauses than by quantifiers. I must leave this significant fact to further research.

the PPI phenomenon reduces to the NPI phenomenon. Exactly what NPI features a PPI happens to have is of secondary importance. Although I have argued that the features of *someone / something* type PPIs match quite closely the combined properties of *yet* and *ever*, we know that there are many other kinds of NPIs. Even the ones roughly classed together above are not entirely identical, e.g. *squat* seems to care more about the locality of its licenser than *yet*. It would be equally possible for a PPI to have a combination of two other NPI-features. At the same time, the proposal expects exactly the existence of the kind of correspondences that emerge from van der Wouden's work. Namely, whatever property is desired by some NPI may turn out to be detested by some PPI and/or to function as a rescuer thereof. Naturally, future more refined versions of this proposal may point out possible and impossible combinations. As of date, we know altogether little about why each NPI requires exactly the kind of licensers it does, why it is or is not sensitive to the closeness of the licenser, etc.¹⁹

¹⁹ A reviewer raises the interesting question of how the proposal in the text might account for items like Dutch *ooit* 'ca. ever' that van der Wouden 1997 calls bipolar: they require a decreasing licenser (an NPI-property) but cannot occur under a local antimorphic item (he calls this a PPI-property). Van der Wouden argues that NPI-hood and PPI-hood are two primitive properties and may therefore coexist in one item. As the reviewer notes, if van der Wouden's analysis is correct and I wished to assimilate *ooit* to the PPIs in (98), I would predict that they can only occur in two-licenser environments, contrary to fact. Apart from the fact that the properties *ooit* is sensitive to are not the same as those in (98), I believe that van der Wouden's bipolar analysis may be avoided if the fact that *ooit* cannot occur in a local antimorphic context is built into the characterization of the licensing of *ooit* as a NPI. The same holds for Serbo-Croatian i-NPIs, which, as van der Wouden points out, have a similar distribution, and for their Hungarian counterparts, e.g. *valami is* 'something even'. The bigger issue that this question points to, however, is that although the purely semantic characterization of the classes of licensers is by and large successful, it faces some embarrassing problems. In addition to the fact that "decreasing but not antimorphic" may be a funny semantic property, Horn 1997 notes that the overtiness of negation may make a difference for NPI-licensing even when two items have the same Boolean properties, e.g. *?Nobody but Chris/*?Only Chris slept a wink last night*. Likewise, Paul Postal (p.c.) points out that *an amount of milk equivalent to zero* is truth-conditionally equivalent to *no milk* but does not license NPIs. In this paper I do not subject the licensing properties to further scrutiny and simply take over the characterizations offered in the literature.

Part Two: PPIs, NPIs, and negative concord

7. “Dormant” versus “active” NPI-features: double negation versus resumptive quantification

The discussion of “active” and “dormant” features points to clear desiderata for the semantics. The interpretation of an NPI-feature must be a logical operator O such that each occurrence of O is semantically significant (cf. the active need for licensing) but two occurrences of O together look as though O is not even there (cf. dormancy). There is one and only one logical operator that fits the bill: negation.

Assume, therefore, that the positive polarity items we are investigating are interpreted, roughly, as $\lambda P \neg \neg \exists x [\text{person}(x) \ \& \ P(x)]$. That is, each NPI-feature is a negation. If these negations do not enter into a relation with an NPI-licenser, they simply cancel out when the truth conditions of the sentence are calculated (dormancy). This is what happens in examples (99)-(101):

- (99) He saw someone person' $\neg \neg \exists x [\text{person}(x) \ \& \ \text{he_saw}(x)]$
 (100) Few boys saw someone $\text{few } x [\text{boy}(x)] [\neg \neg \exists y [\text{person}(y) \ \& \ x_saw(y)]]$
 (101) It is not the case that he saw someone $\neg (\neg \neg \exists x [\text{person}(x) \ \& \ \text{he_saw}(x)])$

Interesting support for this interpretation comes from Latin, pointed out to me by Wayles Browne (p.c.). Latin has a series of indefinite pronouns that are formed with two negations (see the *Oxford Latin Dictionary*):

- (102) a. non nemo `some persons, a few’
 b. non nullus `a certain amount of, not a little; a number of, not a few; some men’
 c. non numquam `on various occasions, sometimes’

The following text shows that *non nemo* is indeed comparable to *someone*:²⁰

²⁰ Ernout—Thomas 1972:196 and <http://perseus.tufts.edu>. I thank Paul Elbourne for help with the example.

(103) video de istis qui se popularis haberi volunt abesse **non neminem** [...] **is** et nudius tertius in custodiam civis Romanos dedit.

`I see that of those men who wish to be considered attached to the people **one man** is absent [...] **He** only three days ago gave Roman citizens into custody.'

(Cicero, In Catilinam, 4.10)

The fact that *non nemo* can antecede non-c-commanded anaphora may seem surprising: according to one of the basic tenets of Dynamic Semantics, one negation “freezes” an existential (eliminates its dynamic potential to bind a non-c-commanded pronoun) and another negation does not “defrost” it. However, Krahmer and Muskens 1994:181 conclude that “we can take it as a general rule that as far as truth conditions and the possibility of anaphora are concerned double negations in standard English behave as if no negation was present.” Hungarian *nem kevés ember* ‘not few people’, which is similar in the relevant respect, is also capable of anteceding cross-sentential pronouns.

Naturally, the proposal to add two negations to the lexical representation does not extend to expressions like *a person* or *persons*, since they are not PPIs; their standard treatments remain in effect.

With the $\neg\neg\exists$ interpretation of *some*-phrases in mind, let us see what happens when both features of the PPI are licensed by appropriate licensors. I propose to interpret licensing as the formation of a binary quantifier. Binary quantifiers bind two variables simultaneously or, viewed from a generalized quantifiers perspective, operate on relations, not properties (May 1989, Keenan and Westerstahl 1994). Their syntactic formation is known as absorption. The idea here is to factor out the negative components of the two licensors and to let each form a binary quantifier with the negation corresponding to one of the NPI-features. For example:

(104) At most five boys didn't call someone

`not more than five boys not called not-not-one'

no<**x,y**>[**x**(more than five) boys **no**<**z,w**> [**z**(called) **w** (**y**(one))]]



- (107) Exactly three men read exactly three books.
- (a) asymmetrical scope: `there are exactly three men who each read exactly three books (9 books were read by men)´
- (b) resumption: `there are exactly three man-book pairs that stand in the read-relation (3 books were read by men)´²²

My own use of resumptive quantification maintains the identity requirement, albeit not in surface form but with reference to semantic interpretation.

To summarize, this section has offered a semantics for NPI-features, licensing, and dormancy.²³ Although some novel assumptions are made, the mechanisms appealed to have precedents in the grammar of quantification. What remains to be shown is that these ideas can be embedded in a general theory of NPI-licensing and that the specific patterning of the PPI-data can be accommodated. I will argue below that my proposal, motivated entirely by the distribution and interpretation of PPIs, fits perfectly with a larger picture of NPIs put forth in Postal 2000a,b. I first present my own construal of these assumptions in somewhat programmatic terms, then turn to the specific details that are relevant to capturing the distribution of PPIs.

8. Negative polarity and negative concord: Postal meets de Swart and Sag

8.1 NPI licensing: the basic idea

Traditionally, NPIs are treated as expressions that are unacceptable unless they occur in a licensing environment. Postal 2000a,b proposes a radically different approach. This does not start with lexical items that are designated to be NPIs. Instead, it assumes that certain expressions come with (semantically significant) underlying negations and map onto various surface morphologies depending on whether those negations stay in place or are removed (in a meaning

²² See May 1989 for discussion of what pairs count as distinct; this is not pertinent for negatives.

²³ This proposal is preliminary in various respects. For example, I simply talk about negations, without distinguishing Strawson-decreasing and antiadditive licensors. I assume that fine-tuning will be possible, to the extent that the relevant properties are truly semantic (see fn. 19 for a caveat).

preserving fashion).²⁴

For example, take an underlying representation that involves $\neg\exists$. This may surface as *no one* if the negation stays in place (*I saw no one*). Alternatively, it may surface as *anyone* if the negation raises out (*I didn't see anyone*) or gets deleted (*No one saw anyone*). The raising option will not be relevant to us and I will ignore it from now on. As regards deletion, it turns out that the appropriate deleter of the \neg of $\neg\exists$ is a local anti-additive (see the next section).

Deviations from this prototypical situation may occur in the cases of lexical gaps: for example, *yet* spells out $\neg\exists$ under raising/deletion, but it does not have a negation-retaining morphological counterpart.

One extremely interesting aspect of this proposal is that it does not rely on mechanisms that filter completed structures for well-formedness. Sentences with NPIs will always be well-formed, because the morphemes *any*, *yet*, *ever*, etc. appear only where the given underlying representations are legitimately mapped to them. Thus the system conforms to the requirement of being failure proof, which has always been at the heart of lexicalist theories like HPSG and categorial grammar and is advocated in Chomsky 2001.²⁵

Prior to proceeding further with details, let us immediately ask what is to be meant by deletion. Postal has a fully morphosyntactic mechanism in mind. In contrast, I envisage a semantic mechanism with stipulated morphological reflexes. In line with the suggestion in section 7, I propose to identify NPI-licensing with the absorption of the licenser negation and the pertinent negative component of the NPI into a binary resumptive quantifier.²⁶

²⁴ Postal's core proposal does not include free choice *any*. For the purposes of this paper I wish to remain agnostic as to the relation between NPI-*any* and FCI-*any*. The possibility of distinctness may be supported by the fact that adverbial NPIs do not tend to have FCI uses and that some languages, Hungarian among them, use different morphemes for the two.

²⁵ According to Chomsky 2001, the only consideration that prevents grammar as he views it from being entirely failure proof is the lexicalist approach to the categories of roots. I am grateful to Michal Starke for discussion of this point.

²⁶ I owe the crucial idea to interpret NPI-licensing via n-ary quantification to Dorit Ben-Shalom (p.c.). Ben-Shalom's own suggestion was to analogize on Moltmann's (1995, Section 4) treatment for sentences like the following:

[i] No man danced with any woman except with Mary.

[ii] John didn't see any woman except Mary.

The puzzle that Moltmann addresses is this. Certain exceptives modify only universal or negative quantifiers (*no one but Mary*, *everyone but Mary*, **some people but Mary*, **most people but*

(108) no<x,y> [[licenser ... x] ... [NPIy ...]]

This construal may even help assimilate Postal's proposal to standard feature checking. It is generally assumed in minimalist theory that features come in interpretable--uninterpretable pairs; one is carried by a head and the other by an XP. Feature checking is effected when the two enter into a specifier--head relation and the uninterpretable member of the pair is deleted. In the present case, both negations are semantically significant, therefore feature checking is effected by binary resumption.

8.2 Intervention effects

The use of resumptive quantification will explain why scopal interveners block NPI-licensing and shield PPIs, e.g.,

- (109) a. * I didn't **always** say anything.
 b. I didn't **always** say something.

Developing de Swart's 1992 proposal for intervention effects in split constructions (see (110)), Honcoop 1998 characterizes intervention effects in general as cases where an operator is separated from its restriction by a scopal element, and uses Dynamic Semantics to explain why this is bad.

(110) *Combien as-tu **beaucoup** conduit __ de camions?

Mary); though see Horn 2000 for some problematic examples. On the standard view, *any woman* is an existential; if so, the above sentences are predicted to be ungrammatical, contrary to fact. Moltmann proposes to form negative (universal) n-ary quantifiers <*no man, any woman*> and <*not, any woman*> and let the exceptive modify these. Although Moltmann never intended this to be a proposal for NPI-licensing, Ben-Shalom suggests that we might assume that in fact the relation between *any woman* and the negative is always established by n-ary quantification. Given my general concerns, however, I will be opting for a different kind of n-ary quantification than Moltmann. This allows me to preserve Postal's idea that *any*-phrases modifiable by exceptives are underlyingly negative quantifiers.

how-many have-you a lot driven of trucks

Now notice that resumptive quantification factors out the shared operator of two or more operator--restriction units. (In Pesetsky's 2000 terms, it might be a case of feature movement.) Without the intervener, *I didn't say anything* might be represented as below, using a variable-binding or a generalized quantifier style representation:

- (111) a. no $\langle x,y \rangle$ [at event (y) I say thing(x)]
 b. no[event,thing][said-by-me-at]

Always in (109) will separate the operator *no* at least from the *thing*-portion of its binary restriction. In this way, the present proposal naturally predicts the sensitivity of NPI-licensing to Linebarger's 1987 intervention effects.

In fact, Honcoop 1998 himself sought to subsume the intervention effects in NPI-licensing under his general theory, but he did so with reference to the mechanics of the computation of scalar implicatures. I believe that the present proposal is preferable, because it extends to the cases where no scalar implicatures are involved, cf. section 11.

8.3 Negative concord

As was mentioned in fn. 21, de Swart and Sag 2002 exploit the ability of two negations to either cancel out or to undergo resumption to account for the ambiguity of (112):²⁷

- (112) *Personne n' aime personne.*
 (a) no one is such that they love no one (everyone loves someone, double negation reading)

²⁷ De Swart and Sag take French *ne* to be semantically vacuous, so for them, only the two instances of *personne* are relevant. But both mechanisms generalize to *n* distinct operators. The asymmetrical scopal option (a) yields a positive statement if the number of negations is even and a negative one if the number of negations is odd. The resumptive option (b) yields a single negative, no matter how many negatives enter into the resumptive quantification. This is crucial because negative concord may involve an arbitrary number of negative quantifiers.

(b) no people stand in the love-relation (negative concord reading, resumption)

They implement absorption with the aid of Cooper-storage. Quantifier meanings are introduced when the quantifiers enter the syntax but are stored away and retrieved at an appropriate later point. Since absorption requires semantic constituents that are orthogonal to the usual syntactic ones, Cooper-storage indeed seems like an appropriate treatment at our present stage of understanding. De Swart and Sag also generalize standard resumption, which involves only clausemate quantifiers, to cover cases like the following:

(113) Je n'exige qu'ils arrêtent personne.

'I don't demand that they arrest anyone'

In this paper I do not attempt to go into details with negative concord but tentively adopt de Swart and Sag' s 2002 theory. Treating negative polarity and negative concord with the same semantic device seems quite natural. After all, they are variations on the same meaning.²⁸

Resumption will play a role in the proposed grammar in both its binary and its arbitrarily n-ary versions. Licensing is always binary resumption. On the other hand, negative concord may involve an arbitrary number of negative quantifiers; likewise, the same licenser may license an arbitrary number of negative polarity items that do not c-command each other, e.g.:

(114) No one talked with any man but Bill about any woman but Susan on any day but Sunday.

I assume that the *any*-phrases in (114) are first absorbed into a ternary quantifier (form one big NPI), which then establishes its relation with the licenser *no one* in a single step of binary resumption. In contrast, negative concord is effected in a single n-ary step (a big negative quantifier is formed), as in de Swart and Sag, and no licensing step is involved.

8.4 Interim summary

²⁸ Negative concord is a cross-linguistically diverse phenomenon and de Swart and Sag' s theory certainly does not cover the full spectrum. See most recently Déprez 2000, Giannakidou 2000, Herburger 2002, É. Kiss 2002, Surányi 2002, and Puskás 2002, among others.

In this section I have argued that the semantics that my PPI proposal entails for standard NPIs is viable. (i) It squares with Postal's conclusion that NPIs contain silent negations and (ii) Postal's negation-deletion can be recast as binary resumptive quantification. The central proposal of this paper needs one more ingredient: an account of the full distribution of PPIs. Offering one is the task of section 10. Section 9 lays some groundwork by introducing some further crucial aspects of Postal's proposal.

9. Postal on *any* and *no*

I now turn to those specific details of Postal's 2000a,b proposal that are relevant to the present concerns. The reader should bear in mind that in this section I summarize very detailed but still ongoing work. I focus on two issues: the underlying representations and the patterns emerging from mapping to surface morphology. This section retains Postal's deletion terminology.

The standard assumption is that *any* is an existential and *no* is a negative determiner (in those dialects of English that do not have negative concord). But Postal 2000a argues that both are ambiguous between a negative and an existential reading. One type of evidence comes from that subspecies of exceptives which is thought to attach to positive or negative universals; see the discussion in fn. 25. Postal 2000a,b notices that both *any* and *no* can host *but*-exceptives in some contexts but not in others:

(115) No one said **anything but hello**.

(116) *At most five people said **anything but hello**.

(117) I said **nothing but hello**.

(118) *I didn't say **NOthing but hello**.

(118) is to be compared with the fully legitimate double negation reading in (119); the significance of the pragmatically and intonationally distinct denial reading will be discussed in connection with (129).

(119) I didn't say NOthing (although I didn't say much). `I said something'

Another type of evidence for the ambiguity is that those instances of *any* and *no* that can be modified by exceptives can undergo negative fronting, e.g.

- (120) a. I didn't think that **any gorilla (but Kong)** would they try to train.
 b. * At most five people think that **any gorilla** would they try to train.

Postal concludes that both determiners are ambiguous at least between a negative and an existential version, and the two versions occur in different contexts.²⁹

Postal assumes that the underlying representation of those instances of *no* and *any* that can host exceptives involves $\neg\exists$, which is equivalent to a negative universal ($\forall\neg$), as desired. The interpretation of the sentence relies on this, but morphology may spell it out in more than one way. If the negation stays in place, the determiner is spelled out as *no*, as in *I saw no one (but Bill)*. If the negation is raised out or is deleted by an appropriate deleter, the determiner is spelled out as *any*, as in *No one saw anyone (but Bill)*. To account for the contrast in (115)-(116) the deleter of this underlying negation must be a local anti-additive operator.

The above considerations serve as the initial motivation for postulating some “invisible negations”. But more important to our present concerns are those *any/no*-phrases that do not host exceptives and are therefore diagnosed as underlying existentials. In the interest of a unitary mechanism that maps underlying representations to morphology, Postal assumes that these in fact involve two negations, $\neg\neg\exists$. Since this is equivalent to \exists , the enrichment does not affect the semantics while being instrumental in getting the morphology right. The two negations are dealt with in two separate steps. The lower negation gets deleted by the higher one. The higher one may either stay in place or get deleted by an external deleter, which in this case may be any Strawson-decreasing operator. In other words, the quantifier will end up with either one negative or none. Now the same rule applies as above: one \neg left in place spells *no*, no \neg left in place spells *any*.

²⁹ The distribution of English *any* is the union of the distributions of Serbo-Croatian *ni*-NPIs and *i*-NPIs in Progovac' s 1994 terminology. The twø*any*' s Postal recognizes are reminiscent of these two items.

It is straightforward to identify the single negation in Postal's $\neg\exists$ with the lower negation in his $\neg\neg\exists$: the former is said to require a local anti-additive deleter and the latter always turns out to be deleted by one (the higher negation in the same DP).

In the Appendix I write out some analyses and add the "Delete even numbers of negation" rule, but these details are not crucial to central concern of the present paper.

10. Placing PPIs into context

I propose that Postal's system as outlined above can be seen as the periodic table of elements: when the known elements are arranged in their proper places, the existence of further, hitherto unknown elements is predicted. I claim that the PPIs described previously in this paper fit into Postal's system; in fact, they fill gaps in the system. One advantage of noticing this fact is that certain peculiarities of the PPI's distribution will now require no specific stipulation.

10.1 The *some—any—no* paradigm for $\neg\neg\exists$

Recall that in section 6 I concluded that PPIs have two NPI-features: one that requires a local antiadditive licenser and another that is happy with any old Strawson-decreasing one. I noted that they may remain "dormant" or get licensed individually. In section 7 I proposed that these features be interpreted as negations which either cancel out (dormancy) or enter into two separate resumptive quantifications. This makes sense if NPI-licensing is in general interpreted using resumptive quantification, and in section 8 I proposed to make that move. In section 9 I summarized some aspects of Postal's work which, entirely independently, had concluded that those *any*-forms and *no*-forms that receive an existential interpretation have two underlying negations that may get deleted on the way to surface morphology.

I am now proposing that the *some*-forms I am investigating are just another way of spelling out an underlying $\neg\neg\exists$. More precisely, I intend a parallel claim to hold of all PPIs that have the same distribution as these *some*-forms. Disjunctions in Hungarian and several other languages are one case in point, as demonstrated in detail in Szabolcsi 2002; they will be interpreted as $\lambda p\lambda q\neg\neg(p\vee q)$. *Some—any—no* just constitute a particularly nice paradigm that has no accidental gaps. Items like *would rather* may be regarded as elements of a paradigm that

has accidental gaps in both the “*no*-slot” and in the “*any*-slot”.

Let us first establish that the two negations that Postal postulates can be identified with the two NPI-features that the first half of this paper offered evidence for. (i) One of Postal’s negations wants a local anti-additive deleter – notice that one of my NPI-features requires precisely this kind of a licenser.³⁰ (ii) The other negation in Postal’s existentials is happy with any Strawson-decreasing deleter – just like the other NPI-feature in PPIs.

With this in mind, consider the logical possibilities of Postal’s system. I will use the neutral term “license”, which for Postal means deletion and in my terms, the formation of a resumptive quantifier.

(121) Spelling out underlying $\neg\neg\exists$:

- | | | | |
|----|---|------------|----------------------------------|
| a. | one \neg licensed DP-internally,
other \neg stays in place | <i>NO</i> | (<i>I didn’t say NOthing</i>) |
| b. | one \neg licensed DP-internally,
other \neg externally | <i>any</i> | (<i>I didn’t say anything</i>) |
| c. | both \neg ’s stay in place | ??? | |
| d. | both \neg ’s licensed externally | ??? | |

We see that (121c,d) are possibilities that Postal’s system does not utilize; they ought to be excluded by brute force. But in fact, our PPIs occur in precisely these slots:

- | | | | |
|-----------|------------------------------------|-------------|--|
| (121)’ c. | both \neg ’s stay in place | <i>some</i> | (<i>I said something, etc.</i>) |
| d. | both \neg ’s licensed externally | <i>some</i> | (<i>Few people didn’t say something</i>) |

The one change this addition requires is a slight modification of the spell-out rule that covers both $\neg\exists$ and $\neg\neg\exists$. If two negations are left in place, spell *some*. If one negation is left in place, spell *no*. We now split the case where no negation is left in place. If two negations are licensed by DP-external licensers, spell *some*; elsewhere spell *any*. The elsewhere case comprises

³⁰ Incidentally, de Swart and Sag 2002 point out that the semantic condition on negative concord in French is that the participating operators be anti-additive.

situations where there was just one negation and it got removed as well as situations where there were two and one was licensed DP-internally and the other externally.

In a negative concord language the mapping algorithm must be extended to cater to *n*-words surfacing under resumption. In English *No one loves no one* is a somewhat isolated case and I will not attempt to bring it into the picture.

10.2 Deriving the “activation” data

Now let us see how placement into this context benefits the analysis of PPIs, over and above supporting the postulation of “invisible negations”. One important descriptive observation was that a local anti-additive operator “activates” both NPI-features but licenses only one (hence the need for a Strawson-decreasing rescuer). Thus, to safely discard the activation metaphor, we have to explain why the following possibilities to derive **No one said something* or **He didn’t say something* do not arise:

- (122) a. *AA-Op licenses one NPI-feature of the PPI; the other is left in place.
 b. *The same AA-Op licenses both NPI-features of the PPI.
 c. *Both NPI-features of the PPI are left in place in the context of AA-Op.

(122a) immediately follows from the spell-out rule. If one negation is licensed by the anti-additive and, crucially, the other is left in place, the determiner is spelled out as *no*, not as *some*. The second possibility would be for the same anti-additive operator to license both NPI-features of *something*, cf. (122b). If licensing itself is by definition a one-to-one relation between a licensor and a licensee (a binary operation), then this is possible if only the two NPI-features are first absorbed into a single NPI. Given our semantics, this case will be indistinguishable from (121b), where one of the NPI-features was licensed DP-internally by the other, the latter being licensed DP-externally. But in this constellation the spell-out rule chooses *any*, not *some*.

These observations illustrate the failure proof character of the proposed grammar, pointed out above.³¹

³¹ If the given item is part of a defective paradigm that has no negation-retaining form, we get unacceptability due to the morphological gap.

(128) NO one said nothing but hello. √ as a denial of *Someone said nothing but hello*

(125)-(126) differ from (128) in their intonation contour and discourse properties; the former have the characteristics of contrastive topicalization, the latter those of denial.

Taking denial into account, a generalization can be formulated as follows:

(129) Resume [AA-Op > strong-NPI feature]:

When a strong-NPI feature occurs in the immediate scope of a local antiadditive, it cannot remain unlicensed (unless the antiadditive expresses denial). Resumption is obligatory in this configuration.³²

(129) rules out the structures (127), where the strong NPI feature that remains unlicensed is embodied in $\neg\exists$. It also rules out (123), **No one didn't laugh*, if overt preverbal negation is subsumed under “strong-NPI feature”. But, crucial to the central concern of this paper, (129) certainly subsumes the classical PPI facts:

(130) No one said something * not>some, unless denial

(131) I didn't say something. * not>some, unless denial

³² (129) applies to *someone* only if the negation embodying *someone*'s weak-NPI feature (call it \neg_2) does not intervene between AA-Op and the negation embodying its strong-NPI feature (call it \neg_1). If \neg_2 intervened, it would shield \neg_1 from AA-Op. That is, the hierarchy inside *someone* must be $\neg_1\neg_2\exists$. The fact that plain *I saw someone* is acceptable points to the same conclusion: the strong-NPI feature \neg_1 can remain dormant only if it is not in the immediate scope of \neg_2 . How does this square with other considerations? Notice that in the rescuing case, e.g. *Only John didn't call someone*, the strong-NPI feature is licensed by the closer operator *not* and the weak-NPI feature by the farther operator *only John*. If the two licensing relations must form a nesting dependency, it supports the conclusion that the strong-NPI feature is higher, i.e. that we have $\neg_1\neg_2\exists$. This result contrasts with the $\neg_2\neg_1\exists$ hierarchy for *any* and *no* on their existential interpretation. Notice that in the case of *any* and *no*, the higher negation itself can be licensed by any Strawson-decreasing licenser. Thus the structures underlying *any* and *no* on the one hand and *some* on the other are not, and cannot be, identical as regards the hierarchy of the two NPI-features.

Recall that in the present setup, these unacceptable sentences might arise when both NPI-features of *someone* remain “dormant” (unlicensed). (129) rules this out with reference to the fact that one of these features is a strong-NPI feature in the context of a local antiadditive.

Invoking (129) does not amount to replacing the traditional prohibition (PPIs cannot scope under a local anti-additive) with another prohibition of the same sort. First, recall that the analysis of PPIs as double NPIs serves to explain the phenomenon of rescuing, which the traditional prohibition has nothing to say about. Second, (129) makes the PPI-restriction just a special case of a more general phenomenon, namely, a bias against double negatives and a preference for negative polarity licensing or negative concord (whichever the given language makes available). The reason why the two NPI-features of a PPI cannot remain “dormant” in the context of a local antiadditive is the same as the reason why **No one didn't laugh* and **I didn't say nothing (but hello)* are unacceptable on the double negation reading. And since the ability to generalize over these cases is contingent on positing “invisible negations” for PPIs, the generalization, if correct, supports this implementation of the observations made in Part One.

This conclusion may gain further support from the fact, pointed out by A. Giannakidou (p.c.), that double negation readings are cross-linguistically much less generally available than de Swart and Sag 2002 might lead one to expect. (129) predicts that double negation is possible when the lower of the two negations embodies a weak-NPI feature -- as is the case with *someone*, as discussed in fn. 32. It may well be that the cross-linguistic variation can be captured along these lines. Pursuing these connections must be left to further research, however.

11. Is polarity sensitivity grounded in scalar or referential lexical semantics?

This paper has argued that certain expressions are endowed with “NPI-features”, embodied by negations in their lexical semantics. NPI-hood and PPI-hood are not shown to follow from other lexical semantic properties of these items. The question arises whether this agnostic position misses some obvious empirical generalizations. In this section I consider two candidates: grounding NPI-hood in scalarity and PPI-hood in referentiality.

For a long time, the licensing of NPIs was studied without asking why NPIs want to be within the scope of a decreasing operator. In recent years the tide has turned: it has been

suggested that NPIs extend the domain of quantification and are subject to a strengthening requirement, or that NPIs being focussed minimal amount expressions, they give rise to contradictory scalar implicatures unless they are in an implication reversing context. (See Kadmon and Landman 1993, Lahiri 1997, Krifka 1992, 1995, and others.) This is an exciting and intuitively satisfactory development, although the fact that different NPIs require different kinds of licensors has not received a comparable explanation, which is disturbing. In any case, both Postal's proposal and mine are devoid of this kind of scalar semantic insight. Is this a deficiency? I believe it is not. Hoeksema (p.c.) observes that various standard NPIs, such as *much*, *in ages*, *either*, and *all that [adjective]* are not minimizers, and Chierchia 2001 systematically points out that the properties from which the above mentioned theories derive NPI-hood characterize only some, but not all, NPIs. Chierchia himself revises Kadmon and Landman's theory to the effect that widening cum strengthening is possible but not obligatory. Even this may be too much to ask, however. Recall that structures like [*didn't see something*] have been shown to be NPIs in the sense that they have exactly the same distribution as classical NPIs, but it is not obvious how they might fit Chierchia's recipe. Furthermore, it has been argued that minute details of licensing determine whether the same truth conditional content gets spelled out as *any*, *no*, or *some* (see (120)).

In view of these, it seems appropriate that scalar implicatures are not the driving force of the system. This does not necessarily mean that the present proposal is incompatible with the scalar insight. Perhaps the scalar semantics is parasitic on the system of polarity licensing, instead of driving it. This would be compatible with Giannakidou's 1998 approach on to polarity sensitivity and with a likeminded conclusion Giannakidou 2001 reaches in connection with free choice items.

Next, consider PPIs. A. Giannakidou (p.c.) suggests that PPI-hood might be derived from the referentiality of *some*-phrases, specifically, that they always assert existence in some model. Details notwithstanding, the question here, as in the case of NPIs, is whether such an explanation naturally extends to all PPIs. Some difficulties arise already in English. Phrases like *somewhat* and *to some extent* and objects of verbs of creation (see (54)-(56)) are not referential in the way *someone I know*, *a certain person*, etc. are. Then there are expressions like *would rather* that are rescuable PPIs but it is difficult to see any referential semantics in them.

Perhaps even more significant is the cross-linguistic variation in the inventory of PPIs. As

pointed out in footnotes 8 and 12, Hungarian disjunctions with medial *vagy* ‘or’ exhibit the same PPI properties that Hungarian *valaki* ‘someone’ and *valami* ‘something’ do, which in turn behave like their English counterparts; see Szabolcsi 2002 for a detailed description. Similar to Hungarian disjunctions are the counterparts in Russian, Serbo-Croatian, and a number of other languages, whereas disjunctions are not PPIs for example in English, Romanian, Bulgarian, and Modern Greek. It seems to me that a lexical semantic explanation of why *someone* is a PPI is plausible only if it also correctly predicts that Hungarian *vagy* is a PPI but English *or* is not. So maybe Hungarian *vagy* is a “referential disjunction” like *someone I know*, and English *or* is a “preferably non-specific disjunction” like *a person?* This is a very interesting possibility but as of date I do not see evidence for it. For example, Hungarian *vagy* clearly prefers narrow scope with respect to even a c-commanding clausemate quantifier and does not like to take extra-wide scope – I would say “wide scope *vagy*” is even more difficult than English “wide scope *or*” is according to Rooth and Partee 1982. “Wide scope *vagy*” can be forced by adding “but I don’t know which”. However, in this case the addition creates, rather than highlights, an interpretive option, because it carries a presupposition that needs to be globally accommodated. (I thank Philippe Schlenker for discussion on this matter.) All in all, I see no immediate evidence for Hungarian *vagy* being comparable to English referential indefinites. But then referentiality cannot be the key.

These, of course, are merely agnostic conclusions, drawn from specific premisses. There is nothing in principle to exclude the possibility that polarity sensitivity is derivable from lexical premisses that have not been considered.

Appendix

This Appendix summarizes some technical aspects of the analyses in Postal 2000a, for the reader whose interest goes beyond how this system forms a backdrop of this paper. The reader should bear in mind that this is my own brief summary of another linguist’s ongoing research. It lacks the factual richness of the original and it may well differ from the final stage of Postal’s work.

Postal assigns *any* and *no* forms two underlying representations: $\neg\exists$ (when the item can host a *but*-exceptive) or $\neg\neg\exists$ (when it cannot). As explained in the main text, such a negation may stay in place, raise out, or be deleted by an appropriate deleter. The spell-out rule is this:

when one negation stays in place, the determiner is *no*; when no negation stays in place, the surface form is *any* (or *ever*, *yet*, *squat*, etc. depending on the given item). The underlying negations are semantically significant, therefore deletions must preserve the polarity of the sentence. Postal suggests several conditions that conspire to ensure that the right number of negations get deleted. I propose that these can be collapsed into a single condition:

(132) The evenness condition on neg-deletion:³³

Only an analysis with an even number of chained neg-deletions is well-formed.

In some sentences, this condition forces the postulation of further abstract negations that get deleted. For example, (133) is such a case, where the single negation of the $\neg\exists$ of *anyone* is deleted by a verbal negation, which in turn is deleted by the subject *no one*.

(133) No one said anything (but hello).

- | | | | | |
|-----|-----------------|--------|-----------------|--|
| [a] | neg3- \exists | neg2-V | neg1- \exists | => neg1 is deleted by neg2; \exists is spelled out as <i>any</i> |
| [b] | neg3- \exists | neg2-V | <i>any</i> | => neg2 is deleted by neg3 |
| [c] | neg3- \exists | V | <i>any</i> | => neg3- \exists is spelled out as <i>no</i> |
| [d] | <i>no</i> | V | <i>any</i> | |

Such a verbal negation can only be deleted by an antiadditive operator. In (115), the deleter of verbal neg2 is the subject *no one*, indeed an antiadditive. The same analysis would not go through if the subject were merely decreasing, say, *at most five people*. This accounts for the contrast observed in (115)-(116), namely, that *No one said anything but hello* is grammatical, but *At most five people said anything but hello* is not. The sentence *At most five people said anything* will have an analysis, but one involving an existential underlying *any* (see below), therefore the exceptive cannot be added.

With this background, let us turn to derivations involving existentials. First consider how

³³ When the sentence contains several postverbal NPIs modifiable by exceptives, they should form a polyadic quantifier along the lines of Sag and de Swart's 2001. In this case, the even numbers rule counts the polyadic negative quantifier as having one neg (as is semantically appropriate).

$\neg\neg\exists$ gets spelled out as *no*. This obtains when one of the two negations is deleted and the other stays inside the noun phrase. The result is the (standard English, not negative concord) double negation *No one saw NO dog* ('Everyone saw SOME dog'). The analytical options in Postal 2000b are as follows:

(134) No one saw NO dog.

- | | | | | |
|-----|-----------------|--------|----------------------|--|
| [a] | neg4- \exists | neg3-V | neg2-neg1- \exists | => neg2 deletes neg1 |
| [b] | neg4- \exists | neg3-V | neg2- \exists | => neg2- \exists is spelled out as <i>no</i> |
| [c] | neg4- \exists | neg3-V | <i>no</i> | => neg4 deletes neg3 |
| [d] | neg4- \exists | V | <i>no</i> | => neg4- \exists is spelled out as <i>no</i> |
| [e] | <i>no</i> | V | <i>no</i> | |

Notice that the deletion of neg3 in (134) is forced by the even numbers condition. Once neg1 is deleted, another negation must also be. There is an alternative analysis, (135); on my assumptions however this is ruled out by (129):

(135) No one saw NO dog.

- | | | | | |
|-----|-----------------|--------|----------------------|--|
| [a] | neg4- \exists | neg3-V | neg2-neg1- \exists | => neg3 deletes neg2 |
| [b] | neg4- \exists | neg3-V | neg1- \exists | => neg1- \exists is spelled out as <i>no</i> |
| [c] | neg4- \exists | neg3-V | <i>no</i> | => neg3 is deleted by neg4 |
| [d] | neg4- \exists | V | <i>no</i> | => neg4- \exists is spelled out as <i>no</i> |
| [e] | <i>no</i> | V | <i>no</i> | |

There might be a third option, where neg3 deletes neg1 and neg2 stays in the DP. This might be excluded by a crossing constraint.

Now consider how $\neg\neg\exists$ gets spelled out as *any*. This obtains when neg2 deletes neg1 and neg2 is deleted by an external deleter.

(136) John/Few people didn't say anything.

- | | | | | | |
|-----|------|--------------|----------------------|----|--|
| [a] | subj | neg3-V | neg2-neg1- \exists | => | neg2 deletes neg1 |
| [b] | subj | neg3-V | neg2- \exists | => | neg3 deletes neg2 |
| [c] | subj | neg3-V | \exists | => | \exists is spelled out as <i>any</i> |
| [d] | subj | <i>not-V</i> | <i>any</i> | | |

In the above analysis the character of the subject is left unspecified. Whatever it is, it plays no role in the well-formedness of the structure. Alternatively, neg2 might be deleted by any Strawson-decreasing operator (I will use *few* as a representative, but it might as well be *no* itself), without the agency of verbal negation:

(137) Few people said anything.

- | | | | | | |
|-----|------------|---|----------------------|----|--|
| [a] | <i>few</i> | V | neg2-neg1- \exists | => | neg2 deletes neg1 |
| [b] | <i>few</i> | V | neg2- \exists | => | <i>few</i> deletes neg2 |
| [c] | <i>few</i> | V | \exists | => | \exists is spelled out as <i>any</i> |
| [d] | <i>few</i> | V | <i>any</i> | | |

Finally, below is a Postal-style analysis of one PPI-example with two neg-deletions (using my assumptions regarding PPIs):

(138) Few people didn't say something.

- | | | | | | |
|-----|------------|--------|----------------------|----|---|
| [a] | <i>few</i> | neg3-V | neg1-neg2- \exists | => | neg3 deletes neg1 |
| [b] | <i>few</i> | neg3-V | neg2- \exists | => | <i>few</i> deletes neg2 |
| [c] | <i>few</i> | neg3-V | \exists | => | \exists is spelled out as <i>some</i> |
| [d] | <i>few</i> | neg3-V | <i>some</i> | | |

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