Hungarian Disjunctions and Positive Polarity*

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1. *The phenomenon*

The de Morgan laws characterize how negation, conjunction, and disjunction interact with each other. They are fundamental in any semantics that bases itself on the propositional calculus/Boolean algebra.

(1) $\neg (p \wedge q) = \neg p \vee \neg q$
(2) $\neg (p \vee q) = \neg p \wedge \neg q$

This paper is primarily concerned with the second law. In English, its validity is easy to demonstrate using linguistic examples. Consider the following:

(3) Why is it so cold in here?
We didn't close the door or the window.

The second sentence is ambiguous. It may mean that I suppose we did not close the door **or** did not close the window, but I am not sure which. This `I am not sure which' reading is irrelevant to us because it has disjunction scoping over negation. But the sentence may equally well mean (and indeed this is the preferred reading) that we didn't close the door **and** did not close the window. This `neither' reading bears out de Morgan law (2).

Many speakers of Hungarian find that the counterpart of (3) is not ambiguous in the same way. The second sentence in (4) only has the `I don't know which' reading.[1]

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[1] *Lit.* and */√ will be used as follows. The literal English translation of a Hungarian example is prefixed with *Lit.* when the two crucially differ with respect to the interpretation of the connective. When * or √ is prefixed to a reading, the claim is that the given reading is (un)available to that sentence, and it is left open whether the sentence has another reading.

(4) Miért van itt olyan hideg?
why is here so cold
Nem csukt-uk be az ajtó-t vagy az ablak-ot.
not closed-1PL in the door-ACC or the window-ACC
'Why is it so cold here? *Lit.* We didn't close the door or the window'
(i) √ I don't know which
(ii) * neither

Does this mean that (for the relevant speakers) Hungarian *vagy* does not obey the de Morgan laws, i.e. that it is fundamentally different from disjunction/union? The following examples suggest that this is not the case. (5), just like its English counterpart, means that I don't think we closed the door **and** I don't think we closed the window:

(5) Nem hisz-em, hogy becsukt-uk volna az ajtó-t
not think-1SG that in-closed-1pl AUX the door-ACC
vagy az ablak-ot.
or the window-ACC
'I don't think we closed the door or the window'

Not only does this example bear out law (2), it is suggestive of what may be going on with *vagy*. Notice that English *some* is called a Positive or Affirmative Polarity Item (PPI, for short) because in the unmarked case it does not scope below clausemate negation, although it happily scopes under extraclausal negation, see (6) versus (7). The same holds for Hungarian *vala-* 'some', see (8) versus (9).

(6) What mistake did John make?
He didn't notify someone.
* 'He notified no one''

(7) I don't think that John notified someone.
√ 'I think John notified no one'

(8) Milyen hibá-t követett el János?
what mistake-ACC made-3SG PFX John
Nem értesített valaki-t.
not notified-3SG someone-ACC
'What mistake did John make? He didn't notify someone'

(9) Nem hisz-em, hogy János értesített volna valaki-t.
not think-1SG that John notified-3SG AUX someone-ACC
'I don't think that he notified someone (i.e. he notified no one)'

Thus, I maintain that disjunctions in Hungarian have the usual semantics but argue that they are PPIs. In what follows I make this claim more precise in two respects. Section 2 comments on the basic pattern discussed above. Section 3 shows that the PPI behavior of Hungarian disjunctions involves a significantly more complex pattern than the clausemate versus extraclausal negation contrast. Following the analysis developed in Szabolcsi (2001), section 4 argues that these PPIs are double NPIs, meaning that their peculiar distribution is due to the fact that they simultaneously exhibit the licensing needs of *yet*-type and *ever*-type NPIs. Section 5 is a preliminary discussion of the cross-linguistic variation in the PPI status of disjunctions.

2. *The basic pattern: Disjunctions as PPIs*

2.1 *Hungarian disjunctions*

Hungarian has at least three forms of disjunction:

(10) a. *vagy* 'or'
b. *vagy..., vagy...* 'either.... or... , but not both'
c. *akár..., akár...* 'either ... or even ...', ` whether .... or...'

In positive contexts, simple *vagy* appears to share the characteristics that most recently Chierchia (2000) has attributed to English *or*.[2] *Vagy* is interpreted as inclusive disjunction but carries a scalar implicature: *Becsuktuk az ajót vagy az ablakot* ` We closed the door or the window' is not felicitous when it is known to the speaker that both the door and the window had been closed. This implicature disappears when *or/vagy* is legitimately in an implication reversing (downward entailing) context; this is how the 'neither' reading can come about.

Paired *vagy..., vagy...* is always interpreted as exclusive disjunction, probably related to the fact that *vagy X, vagy Y* is obligatorily focused and focus in Hungarian carries identification by exclusion. Thus exclusivity does not disappear even in a downward entailing context and such sentences are marginal or at least difficult to process. This paper will not be concerned with paired *vagy..., vagy...*

Unlike the English connective *or*, medial *vagy* cannot be stressed. On the other hand, in paired *vagy..., vagy...* both connectives preferably bear stress.

As Hunyadi (1989) observed, disjunction *vagy* is most likely morphologically related to the *vala-* prefix that attaches to the question words *ki* 'who', *mi* 'what', etc. to form indefinite pronouns: *valaki* 'someone', *valami* ` something'. This recalls the situation in South/East Asian and Slavic languages: compare Russian *ili* 'or', *libo..., libo...* 'or..., or...', and *kto-libo* 'someone/anyone'.[3] The addition of the particle *is* 'also, even' turns the *vala-* pronouns into negative polarity items that are in complementary

[2] See Simons (2000) and Zimmermann (2001) for divergent analyses. These works, however, do not discuss the interaction of *or* with negation.
[3] See Cheng (1991), Jayaseelan (n.d), etc.

distribution with negative concord items. The structure and distribution of Hungarian *valaki is* `anyone', *valami is* `anything' is thus highly reminiscent of that of Progovac's (1988) I-NPIs (the Serbo-Croatian *i-* prefix is a particle meaning `also, even'); see Szabolcsi (1996) and Tóth (1998) for discussion. According to Hunyadi, disjunction *vagy* may also be related to the existential verb (*van-, vagy-* 'be'). On the other hand, unlike in South/East Asian and in Slavic, *vagy* shows no obvious relation to the yes/no question particle *–e* (compare the Russian interrogative complementizer *–li* with *ili* and *libo* above).

The other paired disjunction, *akár..., akár...* contains the morpheme that specifically forms free choice items (*akárki ` just anyone'* etc.). It only occurs in a modal or imperative context or in the antecedent of a conditional. This paired disjunction is also outside the scope of this paper.

2.2 *Vagy ` or' versus és ` and', across languages and across speakers*

The intuition that disjunction in Hungarian differs from that in English with respect to its ability to scope under local negation is supported by corpus data. Whereas locally negated disjunctions expressing `neither' are widely attested in both written and spoken English, ranging from scientific texts to the speech of kindergarteners, I was not able to find a single clear instance of it in hundreds of pages of the Hungarian Electronic Library.[4] The existence of a cross-linguistic contrast is confirmed by the fact that the speakers of Russian, Serbo-Croatian, Slovak, Polish, Italian, and Japanese that I had a chance to consult report judgments analogous to my own judgments of Hungarian, whereas Greek, Romanian, Bulgarian, and Korean appear to be similar to English.[5]

Interestingly, a parallel contrast exists between English and Hungarian regarding the interaction of negation and conjunction (*és* `and'). Bazar—Haddican—Woods (2001) observe that, except for a restricted set of cases, negated English conjunctions greatly prefer the 'not both' reading to the 'neither' reading:[6]

(11) We haven't closed the door **and** the window.
√ not both
?? neither

[4] Magyar Elektronikus Könyvtár, www.mek.iif.hu.

[5] I thank A. Stepanov, Y. Pomerantsev, and V. Rapoport for Russian, Z. Verzich and Ž. Boškovič for Serbo-Croatian, Š. Beňus for Slovak, J. Dudek for Polish, A. Gullí and F. Ferrari-Bridgers for Italian, K. Takeuchi for Japanese, C. Condoravdi for Greek, P. Stateva, M. Vulchanova, and B. Stamenova for Bulgarian, I. Chitoran, D. Isac, D. Steriade, and A. Grosu for Rumanian, and Chungmin Lee, Soo-Yeon Jeong, Ayoung Kim, Yoonjung Kang, and Seungwan Yoon for Korean data.

[6] In talking about the `neither' reading of conjunction in the context of negation I am not suggesting that it should be analyzed by scoping `and' over `not'. Indeed, in Szabolcsi (in progress) a different analysis is proposed. I am merely pointing out a truth-conditional equivalence or near-equivalence.

In contrast, the `neither' reading of Hungarian (12) is entirely natural and, indeed, this is the standard way of expressing that we did not close the door and did not close the window:

(12) Nem csukt-uk be az ajtó-t **és** az ablak-ot.
not closed-1PL in the door-ACC and the window-ACC
'*Lit.* We didn't close the door and the window'
√ neither

The 'neither' reading of *nem + és* remains equally possible where the same reading of *nem + vagy `not>or'* is also available, for example, where negation is extraclausal, as in (5):

(13) Nem hisz-em, hogy becsukt-uk volna
not think-1SG that in-closed-1PL AUX
az ajtó-t **vagy/és** az ablak-ot.
the door-ACC or/and the window-ACC
'*Lit*. I don't think we closed the door or/and the window'
√ neither

My preliminary research shows that the counterparts of *és* `and' exhibit comparable behavior in languages like Russian, Serbo-Croatian, Japanese, etc.

As was indicated in section 1, however, not all Hungarian speakers share the contrastive judgments this paper is concerned with.[7] Similarly, I have found significant cross-speaker variation in Bulgarian, though not in the other languages mentioned at the beginning of this section (but this is potentially due to the small sample of speakers that I have had a chance to consult at the present stage of my cross-linguistic research).[8]

Szabolcsi (in progress) examines the division of labor between disjunction and conjunction and the variation facts. The present paper, however, resorts to offering some preliminary considerations in section 5. The main bulk of the paper focuses on the judgments of those Hungarian speakers who, like myself, sharply observe the basic contrast outlined in section 1 as well as the rather specific patterns to be described in

[7] I am grateful to Márta Abrusán, Anikó Csirmaz, Beáta Gyuris, Julia Horvath, Katalin É. Kiss, Ildikó Posgay, György Rákosi, Balázs Surányi, Zoltán Gendler Szabó, Zsófia Zvolenszky, and Balázs Wacha for discussion of the Hungarian data. Some of them fully agree with my contrastive judgments, while some others accept readings I do not. I am not in a position to tell how statistically significant the speaker variation is.

[8] The reason why above I classed Bulgarian with English is that very clear local 'not>or' data can be found in corpora in Bulgarian, unlike in Hungarian. I thank Boyana Stamenova for analyzing 400 pages of chatroom texts for me.

section 3. For these speakers at least, the overall phenomenon is not simply a matter of preferences: certain *nem>vagy* readings are in and others are out. To simplify the presentation, I will refer to the judgments of this group as "the Hungarian judgments."

2.3 *Denial*

The basic contrast needs to be made more precise in various ways. Sections 2.3-2.5 undertake this job.

The first complication is due to sentences whose negation is interpreted as denial. Denials typically occur when the immediate linguistic context contains a sentence that the negated one echoes almost verbatim. Negation carries the only primary stress:

(14) Te becsukt-ad az ajtó-t vagy az ablak-ot!
you in-closed-2sg the door-acc or the window-acc
'You closed the door or the window!'
Nem igaz! NEM csukt-am be az ajtó-t vagy az ablak-ot!
not true not closed-1sg in the door-acc or the window-acc
'Not true! I DIDn't close the door or the window'

The same effect obtains when the sentence is used to give an emphatically negative response to a similarly phrased yes/no question.

The exceptional behavior of denials does not threaten the parallelism with English *some*. The fact the English *some*-PPIs can occur within the scope of denial negation is known for example from Horn (1989). Thus:

(15) You broke something.
Wrong! I DIDn't break something!

Judging negative sentences in isolation may make it difficult to control for the denial reading. It is useful to judge them in a context that eliminates or disfavors denial, for example, as an answer to a wh-question, as in section 1 of this paper. As in (4), repeated here, the disjunction in (16) cannot naturally be interpreted within the scope of negation; thus it is odd in this context (as indicated by #):

(4) Miért van itt olyan hideg?
why is here so cold
Nem csukt-uk be az ajtó-t vagy az ablak-ot.
not closed-1pl in the door-acc or the window-acc
'Why is it so cold here? *Lit.* We didn't close the door or the window'
(i) √ I don't know which
(ii) * neither

(16) Miért nem örül-sz a találkozás-nak?
why not rejoice-2sg the meeting-dat

‘Why aren’t you happy about the meeting?’
Mert nem szeret-em János-t vagy Péter-t.[9]
because not like-1sg John-acc or Peter-acc
‘*Lit*. Because I don’t like John or Peter’

Parallel observations hold for English *some*. (17) is odd, because the response cannot naturally be interpreted as meaning ‘Because I broke nothing’.

(17) Why did the boss praise you?
Because I didn’t break something.

One further distinction needs to be made. Szabolcsi (1983) observed that falling intonation (eradicating stress on negation, in Kálmán--Kornai' s (1988) terms) favors the non-specific, narrow scope reading of postverbal indefinites, while even intonation (stress retained on postverbal elements) favors the specific, wide scope reading. Therefore, the question arises whether the denial reading is not simply the one that assigns widest scope to negation. The following example shows that the answer is no. (18) has two negated conjuncts, the first with an indefinite that interacts freely with negation, the second with a disjunction. When the first conjunct is intoned in a way that makes the ' not>more than one assignment' reading natural, using the same intonation for the second conjunct will still yield the ' or>not' reading:

(18) János azért bukott meg, mert nem adott be egynél több házifeladatot és nem olvasta el Marlowe-t vagy Sheridant.
‘*Lit*. John flunked because he did not hand in more than one assignment and did not read Marlowe or Sheridan’

I conclude that denials should be kept apart when judging the PPI status of an item.

2.4 *The locality of negation*

Central to the PPI phenomenology is the contrast between clausemate and extraclausal negation.[10] The significance of this factor can be illustrated with data

[9] Notice that the positive version, *Szeretem Jánost vagy Pétert* ` I like John or Peter’ is also strange, but for an entirely independent reason. At least when it takes maximal scope, disjunction expresses an uncertainty, and it is odd for the speaker to be uncertain as to who he/she likes or, at least, to convey his/her uncertainty in this way. In contrast, a speaker who is uncertain about exam results may felicitously say, *Megbuktam fizikából vagy kémiából* ` I flunked physics or chemistry’. Thus,*vagy*-sentences with first person subjects must be handled with pragmatic care. *Mari nem szereti Jánost vagy Pétert* ` Mari doesn’t like John or Peter’ is, again, felicitous on the ` I don’t know which’ reading.

[10] In examples which involve extraclausal negation, the verb is preferably in the conditional mood (whose suffix is –*na/ne*), see (5), (9), (12), and (21), This conditional functions much like the subjunctive of negation in Romance and, inspired by Giannakidou (1997), may be regarded as an NPI itself. It may be

involving a type of negation that has not been noted in the literature.

Alongside the negative particles *nem* `not' and *ne* `not, subjunctive' (imperative), Hungarian has *nemhogy* and *nehogy*, composed of the above items and the subordinating complementizer *hogy*:

(19) Nem-hogy el-alud-t-am volna, el se álmosod-t-am.
not-that pfx-sleep-past-1sg aux pfx not.even drowse-past-1sg
'Let alone falling asleep, I did not even get drowsy'

(20) Ne-hogy meg-szök-j-él!
not.subj-that pfx-escape-subj.2sg
'Don't you run away'

I propose that *nemhogy* and *nehogy* are extraclausal negations. Beyond the fact that they incorporate the complementizer, this analysis is supported by the fact that they do not trigger the *verb prefix* order that clausemate negation does (*nem aludtam el, ne szökjél meg*). This analysis will generalize to *hogyhogy* `how come', a combination of *hogy(an)* `how' and the complementizer *hogy*, compare *?hogyanhogy* `how+that' versus *\*hogyanhogyan* `how+how' and **hogyhogyan* *`that+how'*. Marcel den Dikken (p.c.) has proposed that English *how come* is composed of the wh-phrase and the verb of a matrix clause, cf. *how [does it] come that...*, an analysis which explains why *how come* does not trigger subject/auxiliary inversion and why it does not extract to a higher clause. *Hogyhogy* has the same properties.

We predict that PPIs can scope below *nemhogy* and *nehogy*. This prediction is borne out. *Vala-* `some' PPIs yield the same results.[11]

(21) Nem-hogy be-csuk-t-ad volna az ajtó-t vagy az ablak-ot, ...
not-that in-close-past-2sg aux the door-acc or the window-acc
'Let alone closing the door or the window,...'

(22) Ne-hogy be-csuk-j-ad az ajtó-t vagy az ablak-ot!
not.subj-that in-close-subj-1sg the door-acc or the window-acc
'Don't you close the door or the window'

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that the subjunctive/conditional is preferred because it ensures that the complement clause as a whole is interpreted within the scope of the higher negation, which is a precondition for the existential to be so interpreted. But this story would not explain why in examples with adversative predicates, for instance, the complement need not be in the subjunctive/conditional to ensure the narrow scope of the PPI; indeed, in this context the indicative is required.

[11] *Nehogy* imperatives are more forceful than *ne* imperatives, so the suspicion arises that this is crucial to the acceptability of (22). While it is possible that emphasis enhances the effect of having extraclausal negation, no comparable emphasis is evident in (21).

(21) contrasts with our initial example (4) *Nem csuktuk be az ajtót vagy az ablakot `Lit*. We didn't close the door or the window', and (22) contrasts with (23):

(23) Ne csuk-j-ad be az ajtó-t vagy az ablak-ot!
not.subj close-subj.2sg in the door-acc or the window-acc
'*Lit*. Don't close the door or the window'

(23) is possible only as a vague suggestion (when we close everything, the air in the house is stuffy; so don't close the door or don't close the window).

It is important to mention here that some other *ne*-imperatives do allow narrow scoping *vala*- and *vagy*. For example:

(24) Ne tör-j-él össze valami-t!
not-subj break-subj.2sg pfx something-acc
'Don't break something'

(25) Ne bánt-s-ad meg Mari-t vagy Kati-t!
not-subj offend-subj-2sg pfx Mari-acc or Kati-acc
'Don't offend Mari or Kati'

A possible factor that distinguishes (24)-(25) from (23) in that the former warn against accidental, involuntary actions. A similar contrast is observable in infinitives. In (26), making a phone call is understood to be a voluntary action and the `not>some' reading is not very good (unless the sentence is a denial). In (27), offending someone is understood to be involuntary and the `not>some' reading is entirely natural.

(26) Nem akar-ok fel-hívni valaki-t.
not want-1sg up-call-inf someone-acc
'There is someone I do not want to call'

(27) Nem akar-ok (véletlenül) meg-bánta-ni valaki-t.
not want-1sg accidentally pfx-offend-inf someone-acc
'I don't want to offend someone (by accident)'

I am not yet sure what causes these contrasts; possibly, the intervention of a silent adverb `accidentally' between *ne(m)* and the PPI; see the discussion of intervention effects in 3.2. In any case, we see that in the class that I preliminarily identify as voluntary actions, *ne*-imperatives contrast sharply with *nehogy*-imperatives with respect to narrow scope PPIs, as predicted by the clausemate condition.

In another respect, the clausemate condition needs to be refined. Both primary and secondary predicates may host PPIs scoping below verbal negation. The most natural examples involve disjunctions. In (28)-(30), *vagy* can scope below negation exactly like English *or*:

(28) Nem tart-om János-t bátor-nak vagy okos-nak.
not consider-1sg John-acc brave-dat or smart-dat
'I don't consider John brave or smart'

(29) Nem látt-am János-t kalap-ban vagy parókásan.
not saw-1sg John-acc hat-in or wigged
'I haven't seen John in a hat or a wig'

(30) Nem szeret-em a hús-t elsózva vagy túlsütve.
not like-1sg the meat-acc oversalted or overcooked
'I don't like the meat oversalted or overcooked'

It appears that the domain within which *vagy* cannot be in the scope of a negation is the minimal predication, rather than the minimal clause (CP) 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 (e.g. Starke 1995) and with the general approach in Koopman and Szabolcsi (2000), one central claim of which is that even "restructured" infinitives are full CPs.

To summarize, the descriptive generalization that disjunctions (or, PPIs in general) do not scope below clausemate negation was facing two kinds of potential counterexamples. I have argued that these are not counterexamples. Denials are to be distinguished from run-of-the-mill wide scope negations, and some negations that at first blush seem clausemate are best analyzed as clause-external.

2.5 *Single versus multiple events*

In section 3 I will review various respects in which the simple generalization "PPI doesn't scope below clausemate negation" has to be qualified. These qualifications will all tie in with the proposed analysis of PPIs as double NPIs. There is, however, one qualification that seems independent.

The examples reviewed so far were all either eventive sentences pertaining to one particular event or stative ones. Let us call these single-event sentences. I observe that there is a significant contrast in the interaction of disjunctions with negation between these examples and those that I will call multiple-event sentences. For example:

(31) Tegnap este nem csuktuk be az ajtót vagy az ablakot. * not>or
'*Lit.* Last night we didn't close the door or the window'
(32) Ezideig nem csuktuk be az ajtót vagy az ablakot. √ not>or
'Up till now we haven't closed the door or the window'
(33) Még sohasem csuktuk be az ajtót vagy az ablakot. √ never>or
'We have never closed the door or the window'
(34) Senki se csukta be az ajtót vagy az ablakot. √ no one>or
'No one (has) closed the door or the window'

Examples like (33)-(34) might seem to suggest that it is the choice of a negative quantifier (*sohasem* `never', *senki se* `no one') as opposed to the negative particle *nem* that permits the narrow scoping of disjunction. (32) indicates that this is not the case, since (32) contains *nem*. (32) and (33) are practically synonymous.

A more precise description and an account go beyond the scope of this paper (although see 3.2 for a suggestion), but the data must be acknowledged in the descriptive generalization:[12]

(35) The single event qualification:
In single-event sentences, Hungarian disjunctions do not scope below clausemate negation, except in the cases to be discussed in section 3.

3. *The more complex pattern: Disjunctions as double NPIs*

Szabolcsi (2001) has shown that the actual behavior of *something/ somehow* type PPIs in English and in Hungarian is significantly more complex than the basic generalization suggests. It was argued that this complex behavior is the result of these PPIs being "double NPIs", i.e. they have two distinct NPI-features that require licensing. In this section I argue that Hungarian disjunctions fall into the same category.

3.1 *Anti-additive operators*

Van der Wouden (1994) observes that Dutch PPIs differ as to what kind of negative operator they resist being in the scope of. For example, *een beetje* `a little' is sensitive to anti-additive operators.

(36) Definitions
Anti-additive operators are a subset of the downward entailing ones.
f is downward entailing iff, given $A \leq B$, $f(B) \leq f(A)$.
f is anti-additive iff it bears out de Morgan law (2), viz. $f(a \vee b) = f(a) \wedge f(b)$.

Not, no one and *without* are all anti-additive, but *few men* is merely downward entailing:

(37) No one walks or talks = No one walks and no one talks
(38) Few men walk or talk ≠ Few men walk and few men talk

The equivalence in (38) does not hold because *Few men walk and few men talk* does not entail *Few men walk or talk*. (All downward entailing functions *f* support the entailment from *f(walk or talk)* to *f(walk) and f(talk)*.)

Negation itself is not only antiadditive, it is even antimorphic: it also obeys de Morgan law (1).

It turns out that *someone* and its counterpart *valaki* are sensitive to all anti-

[12] I am uncertain as to whether *vala-* `some' indefinites behave identically to disjunctions in this respect.

additive operators, not just negation. The same holds for *vagy*. Hungarian being a negative concord language, *nélkül* `without' is the operator that can safely establish this. (Recall from note 1 that *Lit.* is used when the literal English translation clearly differs from the Hungarian example with respect to the relative scope interpretation of negation and the connective.)

(39) János nem hívt-a fel Kati-t vagy Mari-t.
John not called-3sg up Kati-acc or Mari-acc
'*Lit*. John did not call Kati or Mari'
(i) √ or>not
(ii) * not>or

(40) János az ap-ja vagy az any-ja nélkül ment nyaral-ni.
John the father-3sg or the mother-3sg without went vacation-inf
'*Lit*. John went on vacation without his father or his mother'
(i) √ or>without
(ii) * without>or

On the other hand, *vagy* is happy under a merely downward entailing operator:

(41) Kevés fiú hívta fel Kati-t vagy Mari-t.
few boy called up Kati-acc or Mari-acc
'Few boys called Kati or Mari'
(i) √ or>few boys
(ii) √ few boys>or

The universal quantifier is not merely downward entailing but also antiadditive in its first, restriction argument, as is illustrated by the English equivalence below, which holds on the reading where *or* scopes inside the restriction:

(42) Every cat or dog is licensed = Every cat and every dog is licensed

In contrast to English, Hungarian *vagy* cannot scope in the restriction of *minden*:

(43) Minden macska vagy kutya törzskönyvezve van.
every cat or dog licensed is
(i) √ Every cat is licensed or every dog is licensed.
(ii) * Every cat is licensed and every dog is licensed.

There are various cases, however, where *someone, valaki*, and *vagy* can scope under a clausemate anti-additive operator. These will all be crucial in developing the proposed analysis.

3.2 *Intervention effects*

The first case where the PPI can in fact scope below an anti-additive operator is where another operator scopes between them:[13]

(44) János nem hívta fel mindig/gyakran Katit vagy Marit.
'John didn't always/often call Kati or Mari'
√ not > always/often > or

(45) János nem Katit vagy Marit hívta fel.
'It was not Kati or Mari that John called'
√ not > exclusive identification > or

In view of the fact that a scopal intervener may shield the disjunction, it might even be suggested that the contrast between multiple-event and single-event sentences, observed in section 2.5, has to do with the intervention of an event quantifier in multiple-event sentences between negation and *vagy* ("there has not been an event such that...") and the lack thereof in single-event sentences ("there is a particular event which is not such that..."). One difficulty with this account is that the intervention of plain existentials generally does not count (for a comprehensive theory of intervention effects, see Honcoop 1998). Since *egy* ` a(n), one' indefinites are probably also PPIs in Hungarian, this is best illustrated with English:

(46) Why did the book store go out of business?
Because they didn't sell a book to someone.
* not > a book > someone

Therefore only the relevant reading of (44)-(45) will be ascribed to intervention.

3.3 *Are PPIs bound to scope above NegP?*

What is wrong with the PPI scoping below the anti-additive operator? Progovac (2000) makes the interesting proposal that the explanation can be stated in positive licensing terms. She proposes that Serbo-Croatian *ne(t)ko* ` someone' has a [-neg] feature to check.

> ... 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] feature in the lower negative PolP (or NegP), it is forced to raise to the higher PolP. (Progovac 2000)

This account may be correct for the data Progovac is concerned with, but it does

[13] The sentences sound better on the *nem mindig, nem gyakran* order, but they are also acceptable as given in (44). It is not crucial for the intervener to be adjacent to (or even form a unit with) negation.

not extend to *someone, valaki* and *vagy* type PPIs. First of all, we have just seen that a scopal intervener enables these to scope under clausemate negation – this should not be possible if they were forced to scope above NegP.

But there is another, more surprising way to legitimize the forbidden scoping. Already Jespersen (1917) noticed that examples like (47) are perfect:

(47) I don't think that John didn't call someone.
√ not > not > some

Jespersen surmised that (47) is good because the two negations cancel out; see also Baker (1970). In Szabolcsi (2001) a detailed argument is put forth to the effect that this explanation cannot be correct. In the present paper I merely discuss the significance of such data with respect to Progovac's proposal.

Whereas Progovac does not consider intervention data, she does consider Serbo-Croatian facts similar to (47), but evaluates them differently than Jespersen. She assumes that in (48) *ne(t)ko* scopes above the clausemate negation but below the extraclausal one, which is entirely legitimate (example and interpretation from Progovac 2000):

(48) Ne tvrdim da Milan nekoga ne voli.
not claim that Milan someone not likes
'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'

On this account we have *not>some>not*, as opposed to *not>not>some*. If this is indeed the only possible interpretation of (48), then the account is correct for *ne(t)ko*. But there are other PPI that are unable to scope above clausemate negation and are nevertheless rescued if a second negation is added on top. One such PPI is weak island sensitive *somewhat*:

(49) * John didn't appreciate this somewhat.
(i) * not > somewhat (because *somewhat* is a PPI)
(ii) * somewhat > not (because *somewhat* is weak island sensitive)

(50) I regret that John didn't appreciate this somewhat.

Hungarian verbal disjunctions present another relevant case. They are interesting in that the negation preceding the first verb does not even extend to the whole disjunction:[14]

[14] Unless the negation is constituent negation: *Nem "evett vagy " dohányzott, hanem "aludt* ` He wasn't eating or smoking, he was sleeping' (K.É. Kiss, p.c.). Cf . (45) above.

(51) János nem evett vagy dohányzott.
John not ate or smoked
(i) * not>or i.e. *not ate and not smoked
(ii) * or>not i.e. *not ate or not smoked
(iii) √ (not ate) or (smoked)

Nevertheless, adding another negation enables the reading (51i):[15, 16]

(52) Nem hiszem, hogy János ne evett vagy dohányzott volna.
not think-I that John not ate or smoked aux
'I don't think that John didn't eat or smoke'
√ not > not > or

(49)-(50) and (51)-(52) show that in this constellation, PPIs can actually scope below the clausemate negation. Specific indefinites that can take extrawide scope are misleading examples to consider: they have abilities that not all PPIs have.

3.5 *All weak NPI-licensers rescue the PPI*

We have seen that adding an extra negation above the clausemate antiadditive operator AA-Op enables the PPI to scope immediately below AA-Op. But is negation the only rescuer? In fact, all licensers of weak (*ever* type) NPIs do the job. For example, the following Hungarian sentences have the same interpretations as their literal English translations:[17]

(53) a. Kevés fiú nem hívott fel valakit.
'Few boys didn't call someone'
b. Kevés fiú nem hívta fel Katit vagy Marit.
'Few boys didn't call Kati or Mari'

(54) a. Csak János nem hívott fel valakit.
'Only John didn't call someone'
b. Csak János nem hívta fel Katit vagy Marit.
'Only John didn't call Kati or Mari'

[15] The Russian counterpart of (51) behaves identically: in *Ivan ne el ili kuril*, the scope of negation is confined to the first disjunct. But unlike in Hungarian, the Russian counterpart of (52) retains this effect. Arthur Stepanov (p.c.) proposes that the reason is syntactic: negation cliticizes to the first verb. The crosslinguistic difference suggests that in Hungarian, the phenomenon observed in (51) is probably semantic.

[16] The fact that the form of the negative particle in the complement clause of (52) is *ne*, as opposed to *nem*, has to do with mood choice, cf. note 10.

[17] Hungarian verbal disjunctions are also rescued in all of these contexts.

(55) a. Meglep, hogy János nem hívott fel valakit.
'I am surprised that John didn't call someone'
b. Meglep, hogy János nem hívta fel Katit vagy Marit.
'I am surprised that John didn't call Kati or Mari'

(56) a. Ha nem hívsz fel valakit, véged.
'If you don't call someone, you are doomed'
b. Ha nem hívod fel Katit vagy Marit, véged.
'If you don't call Kati or Mari, you are doomed'

The Hungarian NPIs licensed by these operators are the counterparts of Progovac's Serbo-Croatian I-NPIs: *valaki is* and *bárki is* ` even someone'.

Likewise, the otherwise unavailable 'neither' reading of nominal disjunctions in Russian is enabled in NPI-licensing contexts (Y. Pomerantsev and A. Stepanov, p.c.).

(57) Ja ne dumaju, čto Ivan ne pozvonil Petru ili Maše.
'I don't think that John didn't call Peter or Mary'

(58) Ja sozhaleju, čto Ivan ne pobyval v Londone ili v Parize.[18]
'I regret that John hasn't been to London or Paris'

(59) Ja udivlen, čto Ivan ne pobyval v Londone ili v Parize.
'I am surprised that John has not been to London or Paris'

(60) Nemnogie dumajut, čto Ivan ne pozvonil Petru ili Maše.
'Few people think that John didn't call Peter or Mary'

(61) Tol' ko Ivan ne pozvonil Petru ili Maše.
'Only John didn't call Peter or Mary'

On the other hand, Dutch nominal disjunctions seem like unrescuable PPIs (M. den Dikken, p.c.) and require a different account, possibly the kind proposed by Progovac.

4. *PPIs in Szabolcsi (2001)*

To summarize, the more precise generalization is as follows (abstracting away from the single-event qualification):

(62) The PPI-generalization for *vagy 'or'*:
Vagy does not scope directly below a clausemate anti-additive operator AA-Op, unless [AA-Op > *vagy*] is in an NPI-licensing context.

[18] To date I have not found a multiple versus single event distinction in Russian.

In Szabolcsi (2001) it is argued that *someone/valaki* type PPIs conform to the same generalization and the following analysis is proposed.

The first key fact is that the [AA-Op > PPI] configuration is rescued by any context that licenses weak (*ever*-type) NPIs, see (62). The most straightforward interpretation of this fact is that [AA-Op > PPI] is a non-lexical NPI. This is corroborated by a further similarity between NPI-licensing and the rescuing of [AA-Op > PPI]: once a legitimate constellation is created, the addition of a further downward entailing operator does not make a difference. That is, in both cases it is the presence of a local licensor, rather than the polarity of the context as a whole, that matters:

(63) I (don't) regret that John called anyone. √ any

(64) I (don't) regret that John didn't call someone' √ not>some

(65) Few people/I don't believe that John called anyone. √ any

(66) Few people/I don't believe that John didn't call someone. √ not>some

Thus, the proposed parallelism is as follows:

(67)

Unlicensed NPIs:	Licensed NPIs:
* John said anything	Few people said anything
* John didn't say something	Few people didn't say something

Next, why is [AA-Op > PPI] an NPI? The key fact here is that there is a type of NPIs, English *yet* among them, that require a licensor that is antiadditive (see (68)-(69)) and clausemate (see (70)-(71)).

(68) No one has been here yet.

(69) ?? Few people have been here yet.

(70) I don't think that he has been here yet.

(71) ?? I didn't say that he has been here yet.

Note that *think* is an optional neg-raiser. Therefore in (70), negation can be interpreted in the complement clause, clausemate to *yet*. *Say* is not a neg-raiser at all, which explains why *yet* is not licensed in (71).

As with all NPIs, the licensing of *yet* is blocked by a scopal intervener:

(72) *I don't think that most people have been here yet.

Thus, the second parallelism we find is this:

(73) [AA-Op > *yet*] licensing, unless relation is blocked by intervener
[AA-Op > PPI] prohibited, unless relation is blocked by intervener

We can now put (67) and (73) together as follows. Our PPIs have two NPI features: a strong-NPI feature (like that of *yet*) and a weak-NPI feature (like that of *ever*). In the rescuing cases, both these features are licensed by appropriate operators:

(74) downward entailing > [anti-additive > **PPI**]
licensor licensor ***strong-NPI feature***
|_____|
weak-NPI feature
|_____|

In other words, the PPI does not really resist being in the immediate scope of a local anti-additive operator; instead, its strong-NPI feature is licensed by that operator. This, however, amounts to "halfway licensing" only: a second licenser is needed for the weak-NPI feature. The fact that this second licensor is often absent and thus the halfway licensed PPI is illegitimate creates the impression that the PPI resists being in the immediate scope of the anti-additive operator.

What happens if the PPI occurs in contexts like *I saw someone, Few people saw someone*, and *I don't think that he saw someone*? Szabolcsi (2001) argues that in these cases the two NPI-features remain "dormant". Semantically speaking, this is possible because the two NPI-features are interpreted as negative operators (i.e. *some* is $\neg\neg\exists$) that may "cancel out" purely truth-conditionally. The specific pattern of when dormancy is possible and when the NPI-features require actual licensors is shown to fall into place within a larger system that Postal (2000) proposes for standard NPIs and negative quantifiers, such as *anyone* and *no one*.

The reader is referred to Szabolcsi (2001) for details. The claim relevant for the present paper is that *vagy* `or' shares all the above properties with *something, somehow*-type PPIs and should therefore be analyzed as a double NPI.

5. *Cross-linguistic variation*

The big question is what explains the cross-linguistic variation regarding the PPI-status of disjunctions. Presently I am not able to answer this question but I can offer some preliminary considerations, including negative results.

One hypothesis might be that there is no PPI parameter for disjunctions. They are PPIs in all languages, and the observed cross-linguistic differences are due to differences in the locality of negation. Recall that especially disjunctive PPIs are sensitive to predicatemate negation. It might be argued that in English the auxiliary that supports negation inescapably forms a separate predication domain (a CP in a non-trivial sense). Then negation always counts as non-local to the disjunction, wherefore its

PPI-hood never manifests itself. In contrast, in Hungarian, Russian, and Serbo-Croatian negation is extremely close to the verb and therefore to the disjunction, so the PPI-hood of the latter becomes relevant. This hypothesis seems to be refuted by Bulgarian and Korean. Negation in Bulgarian appears to work very similarly to Russian and Serbo-Croatian and yet, according to both corpus data and the elicited judgments of some speakers, disjunctions can scope below local negation, as in English. Korean on the other hand is an interesting test case because it has two versions of negation, with so-called long negation comparable to English and short negation comparable to Hungarian/Russian. But disjunctions scope below either of them. (75) is a case of short and (76) a case of long negation. Both mean `Mary eats neither apples nor pears' even though, note, `apple or pear' is in the accusative, not a *–to* marked NPI:

(75) Mary-neun sagwa-na pae-reul an muk-neun-ta
Mary-nom apple-or pear-acc not eat-pres-decl

(76) Mary-neun sagwa-na pae-reul mukci ani-ha-n-ta
Mary-nom apple-or pear-acc eat-inf not-do-pres-decl

A second hypothesis would link PPI status to the inability of the disjunction morpheme to bear stress. In English, (77) with unstressed *or* is ambiguous, but stress as in (78) disambiguates the `neither' reading:

(77) John hasn't taken Chemistry 1 or Physics 10.

(78) John hasn't taken Chemistry 1 OR Physics 10.

As D. Steriade and A. Grosu (p.c.) have pointed out, Romanian *sau* `or' exhibits a similar differential behavior depending on stress. In contrast, Hungarian *vagy* 'or'and Russian/Serbo-Croatian medial *ili* 'or' cannot bear stress at all (unlike their paired versions, not relevant here). One might hypothesize, then, that the ability of the connective to be phonetically prominent determines whether it scopes below local negation, possibly because focal prominence forces the disjunction into a low scope position. But once again, Bulgarian *ili 'or'* and Korean *–na* 'or' appear to refute the correlation. Although some speakers find that medial disjunctions can bear stress or pitch accent in these languages, the correlation with scope seems way too weak to establish a parametric dependency.

Another set of hypotheses might connect the behavior of conjunctions and disjunctions in a language (cf. section 2.2). The simplest assumption might be that Hungarian-type languages give preferential treatment to conjunction, and the 'not>or' scope interpretation is blocked whenever a truth-conditionally equivalent reading of `not + and' is available. But as it stands, this is plainly not true. As was noted in (13), in various cases, non-local negation among them, both connectives may yield the same `neither' interpretation.

An alternative way to connect the *és* `and' and *vagy* 'or' data was suggested to me by A. Kroch (p.c.). This makes crucial reference to the existence of cross-speaker variation noted in section 2.2. and is modeled after the account of the loss of V2 in Middle French, proposed by Clark and Roberts (1993) and reviewed in Kroch (2000). We now assume that the PPI-hood of disjunction is an independent parameter, but how easy it is to figure out the value of this parameter in the course of first language acquisition is contingent on the wealth of relevant data. In languages like Hungarian, which have a general preference for the *nem ... és* 'not ... and' strategy, data pertaining to the interaction of 'not' and 'or' are scarce. Therefore first language learners will differ as to how they interpret what data they are exposed to. Some of them may conclude that `or' is a PPI, but some others may conclude that it is not. The latter speakers will then actually produce a certain amount of 'not>or' data, which in turn serves as input to younger speakers and the PPI-status of `or' begins to erode.

Naturally, all these hypotheses require further careful examination, and the last two hypotheses highlight the need to address the cross-linguistic differences in the behavior of `and'. This task is undertaken in Szabolcsi (in progress).

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