Scalar marking without scalar meaning: 
*non-scalar, non-emphatic* EVEN-marked NPIs in Greek and Korean

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**Abstract**  
This paper makes two points. First, we argue that in negative polarity items (NPIs), a marker EVEN does not necessarily license a scalar inference. Our test cases are two EVEN particles (*kan*, *-rato*) that appear in *non-emphatic, non-scalar* NPIs in Greek and Korean. In these NPIs, EVEN is ‘weakened’ since the NPIs are not scalar and they lack prosodic focus. Our second point is that, having no scalar contribution, EVEN gets ‘recycled’ as a marker of *referential vagueness* (Giannakidou and Quer 2013). A referentially vague NPI carries a felicity condition of variation, requiring that the speaker is considering at least two different values for it; it can be viewed as a remnant of the original additivity of EVEN. Our analysis implies a morphology recycling in NPI-lexicalization, parallelizing similar processes of weakening and reanalysis with negation known as the Jespersen cycle; and we suggest that prosodic cues (prosodic prominence or lack thereof) must be taken into consideration in order to determine if EVEN-marking corresponds to scalar meaning. Our data show that the true indicator of scalarity in NPIs is *not* the presence of a marker EVEN, but ‘emphasis’— and this characterizes not only Korean and Greek NPIs but also, we argue, the behavior of *any.*

1 **Introduction: EVEN, scalarity and negative polarity**

This paper is about how a researcher should proceed when she encounters a particular NPI containing the focus additive particle EVEN. Since Lahiri’s 1998 paper on EVEN-NPIs in Hindi, a strict isomorphism is usually assumed between form (EVEN) and meaning (scalar and additive presupposition). This way, it is claimed, we have a compositional account that doesn’t simply stipulate the NPI property, but derives it from EVEN itself. EVEN-NPIs are claimed to generally be *scalar*, i.e., they are taken to trigger a scalar structure (Fauconnier 1978, Israel 1996, 2011, Krifka 1995 among others) which produces a rhetorically strong, *emphatic* assertion.

The main finding of our study here is that EVEN marking does not necessitate scalar meaning. We present two classes of NPIs in Greek and Korean that are EVEN-marked yet not scalar. In these NPIs, the scalar component of EVEN is weakened, or ‘bleached’, and gets reanalyzed. In historical linguistics, it is a very common to use the metaphor of morphology ‘bleaching’ and reanalysis; and especially in the area of negation and polarity, we have a very well known such dynamic process: the Jespersen cycle (Jespersen 1917). The Jespersen cycle is a theory of change positing phases of ‘weakening’ and loss (e.g. French *ne* weakens and loses the meaning of negation), followed by new meaning assignment (the particle *pas*, previously non-negative, now receives the meaning of negation; *ne*, previously negation, now becomes simply a

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1 We follow Giannakidou 2007 in using upper case letters to indicate ‘even forms crosslinguistically’.
scope marker). Another famous example is free choice marking (Giannakidou 2001): in English we find –ever in the free choice item whoever, which at some point may have had a temporal meaning but no longer has. In both cases, the original meaning (negation, temporal meaning) gets weakened and, strictly speaking, lost. But something remains, e.g. scope marking of negation (ne), a scale (time) in whoever— or intensionality in free choice items that use a modal source for free choice marking (Spanish, French, Catalan; see Giannakidou 2001, and Giannakidou and Cheng 2006 for more discussion). For such cases, then, reliance on literal meaning would have to be relaxed, and a successful analysis would require a more nuanced mapping between form and function— crucially, one that acknowledges the possibility of semantic weakening and reanalysis in predictable ways. Regarding NPIs, such a move still allows a compositional account of the reanalyzed, meaning— which, as we said, may still retain a loose yet visible connection to the original one.

Here we suggest such weakening and reanalysis of EVEN, and illustrate with two EVEN-containing NPIs in Greek and Korean. Remarkably, though containing EVEN, these NPIs are neither prosodically prominent (‘emphatic’) nor scalar. These NPIs typically appear de-accented, and the statements with them are rhetorically neutral, not scalar. EVEN gets reanalyzed as a marker of referential vagueness (Giannakidou and Quer 2013), we will argue. Referential vagueness is referential indeterminacy (or, ‘anti-specificity’), distinct from free choice which, as shown in section 5, is emphatic and exhaustive. Referential vagueness is a mere requirement for variation: it simply requires that the domain of the NPI contain alternative values, but it does not order these values. The fact that we find a parallel in two typologically distant languages—Greek and Korean— makes our finding remarkable, and predicts that similar patterns will not be hard to find in other languages.

Before we start, we want to mention a study very similar in spirit to ours— Hoeksema’s 2010 reanalysis of the Dutch NPI-enig. In his paper, Hoeksema discusses a change in the distribution of NPI enig, and correlates the narrowing of the distribution—its gradual shift towards strict NPI-status from a broader NPI status in earlier stages of Dutch— with a reanalysis from a non-emphatic NPI to a more emphatic NPI. This reanalysis is accompanied by a change in distribution from nonveridical environments (non-emphatic) toward negative environments (emphatic), and a change in meaning: from a non-scalar, ‘weak indefinite’ use (non-emphatic, broad NPI) to a scalar one (emphatic). This study is important for the general argument of scalar vs. non-scalar shifts in NPIs, and the correlations with intonation we argue for here.

The structure of our paper goes as follows. First, we illustrate the main data in Greek (section 2) and Korean (section 3), showing the paradoxical occurrence of a scalar particle in a non-scalar, non-emphatic NPI. These data show that (a) EVEN loses its scalarity in the non-emphatic NPI, and (b) the emphatic variants of the NPIs remain scalar. So, we establish a pattern where emphasis indicates whether EVEN contributes scalarity, and absence of it indicates that EVEN is weakened, i.e. losing its scalar component. In section 4, we offer our analysis of weakened, non-scalar EVEN as conveying referential vagueness. We conclude in section 5 with a discussion of particular examples in imperatives and with modals, illustrating the differences between the non-scalar referentially vague NPI, and the prosodically prominent variant of it in Korean, which triggers the scalar exhaustive inference of free choice. Our conclusion will be that free choice is a scalar, exhaustive inference that a polarity item may have in non-negative contexts.
2 Greek NPIs: emphatic and non-emphatic variants

2.1 EVEN, emphatic and non-emphatic NPIs, and scalarity

Since Veloudis 1982, it has been a common observation that Modern Greek has the two variants of NPIs illustrated below, distinguished by ‘emphatic accent’ (Veloudis 1982, Giannakidou 1997 et seq., Tsimpili and Roussou 1996). Importantly, at least one element in the paradigm contains the word ‘kan’ which is one of the four words for EVEN that Modern Greek possesses (Giannakidou 2007). The NPIs are inflected for gender, case and number, like all nominals in Greek. Upper-case letters indicate ‘emphatic accent’.

<table>
<thead>
<tr>
<th>(1)</th>
<th>kanenas/KANENAS</th>
<th>‘anyone, anybody/no-one, nobody’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tipota/TIPOTA</td>
<td>‘anything/no thing’</td>
</tr>
<tr>
<td></td>
<td>pote/POTE</td>
<td>‘ever/never’</td>
</tr>
<tr>
<td></td>
<td>puthena/PUTHENA</td>
<td>‘anywhere/nowhere’</td>
</tr>
<tr>
<td></td>
<td>katholu/KATHOLU</td>
<td>‘at all/not at all’</td>
</tr>
</tbody>
</table>

*Kan* etymologically derives from the conjunction particle ke ‘and’ and an ‘if’—so, it marks additivity. Striking similarity is found in the morphology of Korean *rato* in which ra is ‘if’ and to is ambiguous between ‘even’ and ‘also’—so here too we mark additivity. (Historically *ke an* ‘and if’ has been a concessive marker, though synchronically this meaning is lost on *kan*; ‘even if’ is *akomi ke an* not just *kan*; this comment will be relevant later, when we discuss the alleged concessiveness of the Korean cognate -rato). EVENs as a class in Greek contain ‘and’, e.g. *ou-te* (te being ‘and’ in Ancient Greek), *akomi ke* (positive EVEN). Oute is an NPI-EVEN in Greek, and *kan* may co-occur with *oute* as *oute kan*. The following data, from Giannakidou 2007, illustrate the basic oppositions:

(2)  
<table>
<thead>
<tr>
<th>(a)</th>
<th>I Maria dhen efaje akomi ke to pagoto. (positive EVEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the Maria didn't eat even the ice cream.</td>
</tr>
<tr>
<td>(b)</td>
<td>I Maria dhen efaje outage kan to pagoto. (NPI-EVEN)</td>
</tr>
<tr>
<td></td>
<td>the Maria didn't eat even the ice cream</td>
</tr>
<tr>
<td>(c)</td>
<td>I Maria dhen efaje kan to pagoto. (NPI-EVEN)</td>
</tr>
<tr>
<td></td>
<td>the Maria didn't eat even the ice cream</td>
</tr>
</tbody>
</table>

(3)  
| (a) | I Maria efaje akomi ke to pagoto. (positive EVEN)       |

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2 Prosodic differentiation in NPIs is not particular to Greek, but has emerged, in various studies, as a decisive factor of distinguishing paradigms: e.g. Hoeksema 2010 mentions Sahlin’s 1979 study of a prosodically marked-up corpus of spoken English, where we find substantial differences between stressed and unstressed *any*. Krifka 1995 also mentions crucially a distinction between emphatic and non-emphatic *any* (more on this later). Hoeksema 1999 reports on several prosodic differences between polarity-sensitive and nonsensitive *ooit* ‘ever’ in Dutch, possibly with comma intonation in the case of nonsensitive *ooit*, and emphatic lengthening of the vowel in the case of polarity-sensitive *ooit*. Yoshimura 2007 argues for prosodic differentiation in Japanese NPIs, and Eckardt (2011) similarly argues for emphatic and non-emphatic variants of the German *irdend*-indefinite which seems to be parallel to the referential vagueness facts we discuss in section 4. These observations collectively show prosodic marking to be rather systematically recruited in NPI distinctions, and that emphatic NPIs are typically scalar and more restricted distributionally. In this context, we show later (section 5) that in Korean too prosody plays an important role.
the Maria ate even the ice cream.
b. *I Maria efaje \{oute/kan\} to pagoto. (NPI-EVEN)
the Maria ate even the ice cream

In positive sentences, the NPI EVENs *oute and *kan are excluded; in negative sentences, the positive EVEN *akomi ke is excluded. Modern Greek is therefore a language that lexicalizes positive vs. negative polarity EVEN—and as far as we know, the use of *oute goes back to Homeric Greek being spoken 2800 years ago (Willmot 2013). *Kan has no other uses besides EVEN, and here are a few more examples (from Giannakidou 2007):

(4)  a. Metaniosa pu to skeftika \{kan/*oute\}!
    I regret that I even thought of this.
   b. Anoikses \{kan/*oute\} to vilvio? ‘Did you even open the book?’

Both *oute and *kan are NPI-EVENs (see discussion later); but *kan is a broader NPI, as we see. *Oute is a strict NPI, with a negative morphosyntactic feature and therefore requires syntactic agreement with negation (Giannakidou 2007). *Kan, a broader NPI-EVEN, shares its distribution with yet another polarity sensitive EVEN—*esto. For the purposes of the discussion in this paper and in order to avoid unnecessary complications, we consider *kan and *esto as equivalent (for slight differences between the two, see Giannakidou 2007). The *kan/*esto EVEN and its contrast with the strict NPI *oute becomes relevant in section 3, when we discuss the -to vs. -rato contrast in Korean which exhibits a parallel distinction.

In the NPI *kan-enas manifests *kan, and *kan-enas is literally ‘even one’. Regarding the prosodic distinction, it is not crucial, from the perspective of the present discussion, to decide what kind of prosodic prominence the emphasis is, e.g. if it is the same as phonological focus, or maybe lengthening, or something else—though this would be worth investigating in the future, and one would in fact not be surprised if ‘emphasis’ turned out to be more than one property. Regarding Greek, Giannakidou 1998, 2000 notes that other quantifiers, e.g. poli ‘much/very’, *lijj *few’ also come in emphatic and non-emphatic variants, corresponding to English lexical contrasts (very vs. too is ‘poli/POLI’, *few versus a few ‘LJI/ljj’). Emphasis on the NPIs is not syntactic focus (see discussion in Giannakidou 1997, 1998, pp. 227-231, 2000): for instance, emphatic NPIs can be topicalized, can co-occur with clitics, and they can stack—unlike focused items which show none of these properties. Recent work (Chatzikostantinou et al. 2012) shows that NPI-emphasis is acquired very early in Greek children (as early as five years).

With negation and the antiveridical without, both variants of NPIs appear:

(5)  a. Dhen idhe kanenan o Janis.
    not saw NPI-person the John
    ‘John didn’t see anybody.’ = John DIDN’T see anybody (#at all).
b. *Idhe kanenan/KANENAN o Janis.
c. Dhen idhe KANENAN o Janis.
    not saw NPI-person the John
    ‘John didn’t see ANYBODY at all.’
(6)  xoris na dhi {kanenan/KANENAN}.
    without subj see.3sg NPI-person
    ‘without having seen anybody.’
Truth-conditionally, the statements with emphatic and non-emphatic NPIs are equivalent, but they differ in rhetorical force. There is a parallel with emphatic and non-emphatic any (Krifka 1995): non-emphatic any is non-intensified any, as indicated by the marking #at all. The non-emphatic NPI (which typically comes with accented negation, like any) is an existential in the scope of negation, making a neutral statement of it not being the case that the speaker saw somebody, no scalar dimension in it. The sentence with the non-emphatic NPI is a typical negative answer to a polar question “Did you see anybody?”. But the emphatic NPI, just like emphatic any at all makes a scalar statement: compare I didn’t see anybody, versus I didn’t see anybody at all! To appreciate this difference consider the common claim that any under negation resists accessing contextually restricted domains (Chierchia 2006), and that generally unrestricted domains of quantification are indeed “routinely available in the contexts in which any shows up” (Arregui 2008). These claims are true for the emphatic variant NPI and the (also emphatic) intensified any at all, but not for the non-emphatic NPI/any which seem to be neutral negation and need not apply to an unrestricted or open domains.

The difference in scalarity is manifested clearly in the following scenario, which forces a scalar response (thanks to one of the reviewers for suggesting this test):

(7)  
Context: Maria is supposed to read 4 articles this week for semantics 2, of which only one is required and the other are optional. Maria is notoriously late in doing her readings, and she usually does the minimum. So her friend Ariadne asks the day before class:

Ariadne: Dhiavases toulaxiston to ypoxreotiko arthro?
‘Did you read at least the required article?’
Maria: a Ax, oxi! Den dhiavasa KANENA arthro!
b Ax, oxi! # Den dhiavasa kanena arthro!
# I DIDN’ t read any articles.
‘I didn’t’ read any article at all!’

In this context, we can differentiate between the emphatic and non-emphatic variants of NPIs: the non-emphatic one, in contrast to the emphatic one, is really pretty bad since the question forces a scalar, biased reading (the required article is the most likely to read, or the least likely to ignore). The non-emphatic NPI is an odd device in scalar contexts. Giannakidou 1998, 1998 characterizes the Greek nonemphatic NPI as a ‘referentially deficient’ non-scalar narrow scope existential, and Hoeksema 2010 similarly claims that Middle Dutch nonemphatic enig (very similar to kanenas) is a referentially deficient, non-scalar NPI. Non-scalar non-emphatic NPIs have also been identified in Norwegian (predicative NPIs, Julien 2011). The common properties of this kind of NPI are (a) non-emphatic prosody, (b) non-scalarit; and (c) narrow scope wrt to negation and other licensors.

It is useful to reiterate that prosodic differentiation is relevant also for any: any acquires the scalar flavor only when ‘emphatic’:

(8)  

| a. I DIDN’T find any mistakes (#at all). | No scalarity |
| b. I didn’t find ANY mistakes (at all)! | Scalar statement |

Here too one can argue for emphatic and non-emphatic version (Krifka 1995), and we would like to connect this to claims against scalarity of any. The scalarity of any is also known as
‘widening’ (Kadmon and Landman 1993), but since then the idea that any always induces scalar readings has been challenged (see e.g. recent works such as Arregui 2008, Duffley and Larivée 2012). The latter offer a lot of examples showing that any has no scalar uses:

(9) a. Did you hear any noise?
    b. Did you hear even the slightest sound?

Duffley and Larivée claim that “contrary to questions with end-point scalars, such sentences [with any] usually do have the force of neutral information-seeking questions. Since information questions do not normally bear on scalar end-points, a scalar analysis of any is ‘highly problematic’ in this environment” (Duffley & Larivée 2012:30). And they continue: “a good number of common uses of any are not amenable to a scalar interpretation at all”, as in the examples below (from Duffley & Larivée) which indicate simply that “regardless of its particular identity one member of the nominal set concerned is as good as any other”:

(10) If you find any typos in this text, please let us know.
(11) Hitting any key will reactivate the screen.
(12) Any prime number greater than 2 is odd.

In these contexts, any is interpreted neutrally, and, notably, it is also de-accented. The negation with the emphatic NPI/any, on the other hand, produces a rhetorically strong statement, and rhetorical strength is typically attributed to scalar structure (Fauconnier 1975, Krifka 1995), with or without EVEN. Notice crucially, that “the idea that any generates alternatives need not be tied to a domain-widening analysis”, as pointed out in Arregui (2008: 46). “Several authors have made use of alternatives without calling on domain widening”, Arregui continues, and the analysis of referential vagueness that we suggest in section 4 builds on exactly that.

Israel 1996, 2011 claims that scalar NPIs are ‘argumentative’ operators (Israel 2011), triggering a scale structure where all alternatives (exhaustification) are informationally ordered (Krifka 1995), and all stronger alternatives are negated. Krifka formalizes this in his notion of Scalar assert, given below:

(13) \textit{Scalar NPI triggers Scalar.assert} \quad \text{(Krifka 1995)}
    a. \textsc{assert}(<B,F,A>)(c) = c \cap B(F) \text{ iff } B(F) \text{ is assertable wrt } c \text{ and the speaker has reason not to assert any other alternatives to } B(F), \text{ and some other alternative is assertable and would make a difference in } c.
    b. \textsc{assert}(<B,F,A>)(c) = \textsc{scalar.assert}(<B,F,A>)(c)
        \text{iff the alternatives are informationally ordered with respect to each other}
    c. \textsc{scalar.assert}(<B,F,A>)(c) =
        \{i \in c \mid B(F) \text{ holds in } c \text{ and all stronger alternatives are negated}\}

This schema is Krifka’s rendition of Fauconnier’s Scale Principle, and the gist is that a scalar NPI triggers informational ordering and exhaustification, thus producing an intensified universal

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3 Likewise, Lahiri 1998 rejects the idea that any contains EVEN (e.g. as argued in Lee and Horn 1994), and explicitly states that his EVEN-based analysis of Hindi NPIs cannot transfer to any (Lahiri 1998: section 11.4).
negation that is rhetorically stronger than a neutral, non-intensified negative statement (compare even without the NPI e.g., *I didn’t eat* with *I didn’t eat at all*). As mentioned already, such rhetorically stronger, scalar negations are produced not just with emphatic NPIs, but also with overt intensifiers such as *a single, at all, even*, and the so called minimizer NPIs such as *eat a bit, budge an inch*, etc.

(14)    a. John didn’t see a student at the meeting. (non-emphatic negation)  
    b. John didn’t see {a single*/ANY} student at the meeting. (emphatic negation)  
    c. John didn’t see even one student at the meeting.  
    d. John saw no students at all.  
    e. John didn’t budge an inch.

The Greek sentences with emphatic NPIs are equivalent to the intensified English statements, and intensification produces scalarity. But non-stressed *any* and nonemphatic NPIs pattern together in involving non-intensified negations. This difference is important because it shows that negation plus NPI/*any* need not always produce an emphatic, scalar statement (*pace* Chierchia 2006), even though a focus particle (*kan*) is used. And from the perspective of *any*, it also shows that scalar readings are possible, without scalar marking.

### 2.1 Syntactic differences between emphatic and non-emphatic NPIs

We show now the systematic differences between emphatic and non-emphatic NPIs in Greek.

(i) Fragment answers. Only the emphatic NPI can give a successful fragment answer:

(15)    - Pjon idjes? “Who did you see?”  
     - {KANENAN/*kanenan}.  
     A ‘Nobody/*Anybody.’  
     B: *Oute kan enan* fittiti! ‘Not even one student’.

The ability to answer negatively as a fragment is the hallmark property of NPIs known as *n*-words (Laka 1990; Zanuttini 1991, Giannakidou 2006). The non-emphatic NPI cannot be used as a fragment. Giannakidou 1998, 2000, 2006a claims that the fragment NPI is the remnant of an elliptical structure, and “given that the remnants in fragment answers are accented, non-emphatics are excluded because they are not accented.” (Giannakidou 2000: 469). Notice the impossibility of *anybody* in a fragment, also due to de-accenting.

(ii) Licensing in islands

Another difference between emphatic and non-emphatic NPIs with negation concerns locality. Non-emphatic NPIs, but not emphatic NPIs, are licensed in syntactic islands, with the negation (or other licenser) in the main clause. The example below illustrates this with a relative clause (but other examples are given in Giannakidou 1998, 2006a; see also Quer 1993 for a similar observation about Catalan n-words):

(16)    Dhen prodhosa mistika [pu eksethesan {kanenan/KANENAN}]  
     betrayed.1st secrets that exposed.3pl NPI-person
‘I didn’t reveal secrets that exposed anybody.’

In this respect, non-emphatics are again like any which appears in islands, see the translations. Importantly, non-licensing of KANENAN in the island was one of the arguments in Giannakidou that set apart the emphatic NPI from focus in situ which is fine in islands (Tsimpili 1995).

(iii) Long distance licensing
Given that non-emphatic NPIs appear in islands, it is not surprising that they also appear long-distance, again like any. Notice too the contrast with the emphatic NPI:

(17) I Ariadne dhen ipe oti idhe {tipota/*TIPOTA}.
    the Ariadne not said.3sg that saw.3sg NPI-thing
    ‘Ariadne didn’t say that she saw anything.’

The observed locality of the emphatic NPI is again typical of negative concord, and is reminiscent of universal quantifier dependencies, which are also clause-bounded (for Greek, see Farkas and Giannakidou 1996). The non-emphatic item again behaves like any. Giannakidou 1997, 1998 uses additional diagnostics such as almost/absolutely modification (emphatics accept it, but non-emphatics don’t) and suggests that the emphatic NPI gives rise to the universal reading typically derived by the scale structure. The analysis of Korean to-NPIs will coincide with the Greek emphatics, as we propose in section 3.

(iv) Licensing in broader nonveridical contexts
Emphatic and non-emphatic NPIs also differ in their NPI status. Non-emphatic NPIs appear in non-negative nonveridical contexts (Giannakidou 1998, 2011), they are therefore ‘broad’ NPIs, but emphatic NPIs are strict NPIs (Giannakidou 19988). For the non-emphatic NPI, we use in the examples ‘some or other’ to indicate non-scalarity:

(18) Pijes {pote/*POTE} sto Parísi?
    went.2sg ever in-the Paris
    ‘Have you ever been to Paris?’

(19) An dhis tin Elena {puthena/*PUTENA}, na tis milisis.
    ‘If you see Eléna someplace or other, talk to her.’

(20) Context: I am hungry. Is there anything to eat?
    Fae {kanena/*KANENA} milo.
    eat.imp.2sg any apple
    ‘Eat some apple or other.’

(21) Bori na irthe {kanenas/*KANENAS} modal verb
    can.1sg subj left.3sg NPI-person
    ‘It is possible that some guy or other came in.’

(22) I Ariadne epenine na afisoume {*KANENAN/kanenan} subj perasi mesa.
    the Ariadne insisted.3sg subj let.1pl NPI-person subj come.3sg in
    ‘Ariadne insisted that we allow someone or other to come in.’

The nonemphatic NPI is further licensed with various modalities, habitual sentences etc. (see Giannakidou 1998, 2011 for more details). The core data are summarized in Table 1:
Table 1: Distribution of NPIs and *any* in nonveridical contexts

<table>
<thead>
<tr>
<th>Environments</th>
<th>Any</th>
<th>Greek non-emphatic NPI</th>
<th>Greek emphatic NPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Negation/without</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>2. Questions</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>3. Conditional (<em>if</em>-clause)</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>4. Restriction of <em>every/all</em></td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>5. (Non-antiadditive) DE Q</td>
<td>OK</td>
<td>??</td>
<td>*</td>
</tr>
<tr>
<td>6. Modal verbs</td>
<td>OK, with FC</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>7. Directive attitudes (<em>e.g.</em> want)</td>
<td>OK, with FC</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>8. Imperatives</td>
<td>OK, with FC</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>9. Habituals</td>
<td>OK, with FC</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>10. Disjunctions</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>11. *prin/<em>before clauses</em></td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>12. Future</td>
<td>OK, with FC</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>13. Progressives</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<tr>
<td>14. Episodic perfective past sentences</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>15. Affirmative existential structures</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>16. Epistemic veridical attitudes (<em>e.g.</em> believe, imagine, dream)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

As this table shows, the emphatic version behaves like a strict NPI (Giannakidou 1998), licensed only by negativity; but the non-emphatic and *any* are broader NPIs, with very similar distributions in a broad set of nonveridical contexts. (For *any*, we adopt Giannakidou’s 2001, 2011 thesis that it is an NPI with a free choice implicature, free choice being an exhaustive inference arising with emphasis typically, more on this in section 5). In section 3, we will add Korean, and see a parallel between to-NPI (strict NPI, just like the emphatic), and *rato*-NPI which has the broad distribution of the non-emphatic NPI in nonveridical contexts.  

2.2 The puzzle of non-emphatic NPIs with EVEN

Given what we presented so far, the obvious puzzle is: if EVEN ‘*kan*’ is present in both the emphatic and non-emphatic NPI series, how come only one of them is scalar? This is a quite paradoxical situation, and requires us to ponder a bit on the nature of EVEN.

Consider English *even* in a positive sentence first.

(23) The Dean invited *even* Bill.
(24) i. \( \exists x [x \neq \text{Bill} \land C(x) \land \text{invited (Dean, } x)] \), and  
ii. \( \forall x [x \neq \text{Bill} \rightarrow \text{likelihood (Dean inviting } x) > \text{likelihood (Dean inviting Bill)}] \)

---

4 Importantly, Hindi EVEN-NPIs according to Lahiri 1998 have the broad distribution observed in Table 1, but are analyzed as scalar. It is possible that in the Hindi data prosody also plays a role and that Lahiri’s data can be revisited along the prosodic dimension we observe here, a suggestion for future research.
Even, a focus additive particle, does not affect the truth conditions of a positive sentence: the sentence asserts that the Dean invited Bill.\textsuperscript{5} Even contributes two presuppositions: an additive one, and a scalar one (Karttunen and Peters 1979). The additive presupposition says that there is a set of alternative values to the even phrase in the context (C(x)), another focus particles, e.g. also, too, also carry additivity (The dean invited Bill also). The scalar presupposition, on the other hand, seems to be exclusive to even— The dean invited Bill also/too isn’t scalar— and imposes a ranking of the alternatives on a scale (Horn 1989, Kay 1990), which can be likelihood (Karttunen and Peters), contextually given (Giannakidou 2007), or noteworthiness (Herburger 2000). The even phrase is to be placed at the lowest or near-lowest end on the scale, which means that, in the positive sentence, the even phrase picks out the least likely/noteworthy value from the given set of alternatives.

So, EVEN is both additive and scalar, and associates with the lowest end of a (likelihood or noteworthiness) scale. With negation, this is reversed: the EVEN phrase associates with the highest value, and Rooth 1985, argued that we are dealing with NPI-even in English.

\begin{align}
\text{(25) & } & \text{The Dean didn’t invite even Bill.} \\
\text{(26) } & i. & \exists x [x \neq \text{Bill} \land \neg (\text{Dean invited } x)] \\
& ii. & \forall x [x \neq \text{Bill} \rightarrow \text{likelihood (Dean inviting Bill)} > \text{likelihood (Dean inviting } x)]
\end{align}

Now, Bill is the most likely person to have been invited. (Karttunen and Peters scoped even above negation, but this is not important here). In English, we do not see lexical alternation between high-value (NPI-EVEN) and low-value EVEN, but in many languages we do find a lexical difference. As we mentioned earlier, Greek lexicalizes NPI-even in the forms of outcome and kan (Giannakidou 2007), and Korean likewise contains multiple EVENs (J.H. Lee 2010).

\begin{align}
\text{(27) } & [	ext{oute/kan-EVEN}] = \lambda x \lambda P: \exists y [y \neq x \land C(y) \land \neg P(y)] \land \\
& \forall y [y \neq x \[(\text{likelihood } P(x)) > \text{likelihood } P(y)]]. \neg P(x)
\end{align}

Not inviting the most likely person triggers the negation of all other stronger values (by any version of the scale principle), and this is the typical interpretation of sentences with the NPI-EVEN: if it true that John didn’t read even/oute the title, and we all agree that the title is the most likely thing to read in a book (hence the weakest thing to say about having read in a book), then it follows that John didn’t read much else. The scalar inference is thus key to deriving the universal negation, and in the emphatic NPI, kan functions scalarly, as expected. With non-emphatic NPIs, however, kan is de-accented, so it cannot trigger a scalar structure.

In multiple kan-NPIs (Giannakidou 1997), as opposed to multiple EVENs, one needs to say in addition that EVEN gets absorbed:

\begin{align}
\text{(28) } & a. & \text{I Maria den ipe tipota se kanenan.} \\
& & \text{Mary didn’t say anything to anybody.} \\
& b. & \text{I Maria den ipe TIPOTA se KANENAN!}
\end{align}

\textsuperscript{5} The alternatives are variables of type e because the focus of even is the nominal argument, but even can also target other constituents, e.g. adjectives, cardinality predicates, verbs, or clauses, generating in each case alternatives of the appropriate type. When we consider the various types of attached constituents, throughout the paper we are using even and its counterparts with nominals to keep things simple for the comparison with the Greek/Korean items.
Mary didn’t say anything to anybody.

c. # Mary didn’t introduce even John to even Bill.

Multiple *evens*, as we see in the c example, are dispreferred, but multiple EVEN-NPIs are fine. The emphatic variant requires that multiple *evens* get ‘absorbed’, and function jointly as one EVEN (see Giannakidou 2007 for an absorption analysis of Greek *oute*). In other words, multiple emphatic NPIs give rise to negative concord (and the same can be said for Korean later). With regular EVEN this simply can’t happen. So, even when EVEN functions scalarly in the NPI, it still differs from independent EVEN.

It seems unavoidable then to conclude the following:

(a) In Greek, we have two series of (at least partially) EVEN-marked NPIs, and they are *prosodically differentiated*: we find an emphatic and a non-emphatic variant.

(b) It is prosody, not EVEN marking, that makes an NPI scalar: only the emphatic EVEN-NPI is scalar.

(c) In the scalar EVEN-NPI, we have negative concord, i.e. a kind of absorption where EVEN is interpreted only once.

(d) In the non-emphatic NPI, EVEN does not produce a scalar structure.

We move on now to draw similar conclusions about the Korean data.

3 Korean EVENs and NPIs

3.1 Two EVENs with NPIs in Korean


(29) a. amwu/nwukwu-*to* (emphatic/strong NPIs)
    b. AMWU/NWUKWU-*rato* (NPIs)
    c. amwu/nwukwu-*rato* (non-emphatic/weak NPIs)
    d. amwu/nwukwu-*na* (FCIs)

Here we added the FCI paradigm, typically marked with the disjunction marker *na* ‘or’. We also see two variants of *rato*-NPIs, one emphatic, one non-emphatic, and we come back to this later. J.H. Lee 2010 offers an analysis of the *to* vs. *rato* alternation paralleling the Greek EVENs. She argues that *to* is NPI-EVEN like *oute*: with strict distribution in negative/antiveridical contexts, and subject to agreement. The *to*-NPI is just like emphatic NPIs/*oute* in Greek, not appearing in non-negative polarity contexts such as questions:

(30) {Amwu/nwukwu}*to* oci-anh-ass-ta. [Korean]
     anyone-even come-Neg-Pst-Decl
     ‘No one came.’

(31) *(Amwu/nwukwu)*-to o-ass-ni?
     anyone-even come-Pst-Q
     ‘Did anyone come?’
(32) a *Irthe KANENAS? [Greek] came.3sg even-NPI
   b Irthe kanenas?
      ‘Did anyone come?’

(33) a *Irtheoute i Maria?
came.3sg even Maria
   b Irthe kan i Maria?
      ‘Did even Maria come?’

Recall that the nonemphatic variant is OK, as indicated, and so is kan. The parallel is clear here: to-NPIs are strict NPIs, and here is our lexical entry for to:

(34) Lexical entry for to
    \[[[\text{to-EVEN}]] = \lambda x \lambda P: \exists y [y \neq x \land C(y) \land \neg P(y)] \land \forall y [y \neq x \land (\text{likelihood } P(x) > \text{likelihood } P(y))]. \neg P(x)\]

This is exactly the entry of oute/kan. So, to-NPIs and emphatic Greek kan-NPIs trigger scalar structure, and derive universal negation in the expected and well known ways outlined before. In addition, to and Greek emphatic NPIs, as we said following Giannakidou participate in negative concord structures. Stress in the to-series doesn’t seem to affect the already emphatic NPI amwu-to, and its status as strict NPI; unlike the Greek NPI, the to-NPI contains to, a strict NPI itself, and the properties of to (scalarity, strict NPI-status) are passed over.

We want to draw attention here to the fact that the rato-NPI comes in two variants, stressed and unstressed (or ‘lengthened’ and ‘unlengthened’). The unstressed rato NPI creates the weak, non-scalar statements we described for the Greek non-emphatic NPI, and it also appears in a variety of nonveridical contexts, including questions, imperatives, modal verbs, subjunctive clauses, disjunction, etc. (illustrated in 3.3), without prosodic emphasis. One crucial difference from Greek kanenas, however, is that rato NPIs are blocked in the antiveridical context (Lee, Chung & Nam 2000, Lee 2003, Choi 2007, Giannakidou and Yoon 2011):

(35) a.??/*Na-nun \{amwu/nwukwu\}-rato manna-ss-ta. [Korean]
    I-Top anyone-even meet-Pst-Decl
    ‘I met someone or other.’
   b.??/*Na-nun \{amwu/nwukwu\}-rato an manna-ss-ta.
    I-Top anyone-even not meet-Pst-Decl
    ‘I didn’t meet someone or other.’

In Greek, the existence of the emphatic NPI does not block the non-emphatic NPI. The reason for this crosslinguistic difference may be due to general properties of Greek and Korean—e.g. in Greek EVEN marking is partial, not appearing in the full paradigm, but in Korean it applies to the whole paradigm. That would render Korean, but not Greek, a case of morphological blocking, but the details need not concern us here. Our goal is rather to offer more concrete evidence that the unstressed rato-NPI patterns with the prosodically weak Greek NPI.

Before we do that, it is finally useful to remind that the difference between the \{amwu/nwukwu\} in the Korean grammar seems to correlate with domain specificity (nwukwu)
vs. open domain (non-specific *amwu*); see Lee et al. 2000, Kim and Kaufmann 2006, Park 2009, Giannakidou and Quer 2013. Furthermore, it has been claimed that *nwukwu* can occur free-standing, i.e. it is not an NPI. In contrast, *amwu* is always a limited distribution item (Lee 1999, Lee et al. 2000, Kim and Kaufmann 2006, Yoon 2008ab). The difference has been oftentimes attributed to domain widening effects with *amwu* (Sells 2006, Choi 2007, a.o.); C. Lee (1999; Lee et al. 2000) claims that there is no widening, but a role of concession which can apply to a very specific domain. For the purposes of our current discussion, the differences between *nwukwu* and *amwu* are not decisive, so we will put them aside.

### 3.2. Differences between *to*-NPIs and *rato*-NPIs

The following properties confirm that *rato* and *to* NPI series exhibit the systematic differences that we saw in section 2 between non-emphatic and emphatic Greek NPIs respectively.

**i) Fragment answers**

NPI *amwu-to* can give a successful fragment answer, while the non-emphatic *amwu-rato* can’t.⁶

(36) - Nwukwu-lul po-ass-ni? “Who did you see?”
  - {Amwu-to/*amwu-rato}.
  ‘Nobody/*Anybody.’

The *rato* NPI is excluded, in a similar fashion to the non-emphatic Greek NPI: it is de-accented.

**ii) Licensing in islands**

*Amwu-rato* appears in syntactic islands, e.g. a relative clause, but *amwu-to* is ungrammatical:

(37) a. Ney-ka [{*amwu/nwukwu*]-lato kwanryento[y]-n] pimil-ul nwuselhan-tamyen…
  you-Nom anyone-even involve-Rel secret-Acc reveal-Cond
  ‘If you reveal secrets that involves anyone, …’
  I-Top anyone-even involve-Rel secret-Acc reveal-Neg-Pst-Decl
  ‘I didn’t reveal secrets that involved anyone.’

The *rato*-NPI behaves like the Greek non-emphatic NPI/*any* appearing in islands and licensed by negation in the main clause.

Regarding *to* in *amwu/nwukwu-to* NPIs, it is implausible to assume that *even* has literal meaning, since multiple occurrences of *EVEN* are normally bad, but multiple occurrences of *to* and *amwu/nwukwu* are OK as in the following examples.

(38) #Bill-to John-to chotayha-yss-ta.
    Bill-even John-even invite-Pst-Decl
    ‘#Even Bill invited even John.’

---

⁶ A reviewer questions the felicity of *amwu-to* itself as a fragment answer. The use of *amwu-to* as a fragment answer may be context sensitive, but we follow the literature which reports it as well-formed (Ahn and Cho 2011, Chung 2012). Furthermore, the *n*-word status of *amwuto*, has been shown by a number of diagnostics such as clause-boundedness, *almost*-modification, in addition to the elliptical answer (Yoon 2008c).
Multiple *to* is odd, as we see, and very difficult to parse. Multiple focus particles are avoided, not just in Korean but in language generally, and don’t seem to be ‘absorbed’. But multiple occurrences of *to* with *amwu/nwukwu* are allowed, on a par with what we saw earlier with Greek. In other words, just like in Greek, the EVEN particle in Korean triggers EVEN-concord.\(^7\)

### 3.3 Rato NPI: distribution in nonveridical contexts

Now let us see how emphatic and non-emphatic NPIs differ in their NPI status. Just like Greek, only *rato* NPIs are licensed in polarity contexts which are not negative, but simply nonveridical. We start with questions:

**Question**

(40) Phari-ey hanpen-\{rato/*to\} kapo-ass-ni?
     Paris-Loc once-NPI visit-Pst-Q
     ‘Have you ever been to Paris?’

Compare also:

(41) a. Phathi-eyse \{amwu/nwukwu\}-rato manna-ss-ta. [Korean]
     party-at person.NPI meet-Pst-Decl
     ‘I met someone or other at the party.’

b. Phathi-eyse \{amwu/nwukwu\}-\{rato/*to\} mannanke-ni?
     party-at person.NPI meet-Q
     ‘Did you meet someone or other at the party?’ (continued by “You look so happy!”)

NOT a rhetorical question

The example *b* is *not* a rhetorical question. It is just a regular information question, and notice that the NPI-even *to* is unacceptable. The absence of biased reading suggests that *rato* does not have the expected scalar contribution that would yield negative bias.

More occurrences of *rato*-NPIs are provided next:

**Conditional**

(42) Swuni-lul etise-\{rato/*to\} po-myen kunye-eykey yaykihay-la.
     S.-Acc place.NPI see-if her-Dat talk-Imp
     ‘If you see Swuni *someplace or other*, talk to her.’

**Imperative**

(43) amwu sakwa-\{rato/*to\} cipe-la.

---

\(^7\) The *to*-series is claimed to be a universal above negation (Sohn 1995, Kim 1999, Sells 2006, Yoon 2008c), something that has been argued for Greek emphatic NPI (Giannakidou 1998, 2000), and Japanese *mo* (Shimoyama 2001 for the *dare-mo* NPI). Sells 2006 also intends to argue for a universal analysis, but combines it with a widening component in *to*-NPI, which, given what we say here, seems to be the scalar component of *to*. Overall, as we said earlier, the universal inference can be derived from the focus scalar structure of EVEN and general principles such as *Scalar assert*, Fauconnier’s scale principle.
any apple.NPI take-Imp
‘Take some apple or other.’

Modal verb

\(\text{(44) } \text{amwu-}\{\text{rato}/*\text{to}\} \ oass \ \text{ulswu iss-ta.}\)
\(\text{person.NPI } \text{came } \text{possible-Decl}\)
‘It is possible that some guy or other came in.’

Directive intensional verbs

\(\text{(45) } \text{Swuni-nun } \text{amwu-}\{\text{rato}/*\text{to}\} \ tulyeponayla-ko \ kocippwuri-ess-ta.}\)
\(\text{S.-Top } \text{person.NPI } \text{let in-C } \text{insist-Pst-Decl}\)
‘Swuni insisted that we allow someone or other to come in.’

For comparison, the distribution of any, Greek NPIs and Korean rato-NPI (C. Lee 1999, Lee et al. 2000, C. Lee 2003, Choi 2007, J.H. Lee 2010, Lim to appear) in nonveridical contexts is summarized in Table 2. C. Lee (1999; see also Nam 1994, 1999, Lee et al. 2000, C. Lee 2003, for Korean NPIs) argues that rato morphologically brings in concession, eg. it decomposes into \(\text{(amwu)}-i-ra-to \ ‘\text{coplua-DEC-EVEN’}\). Recall that Greek \text{kan} consists of \text{ke an} ‘and if’, very similar concessive composition; however, as we mentioned at the beginning, synchronically, there is no concessivity in the assertions with nonemphatic \text{kan-NPIs}, and it is at any rate a matter of showing whether rato has an active concessive component in the NPI. We see in section 5 that there are clear non-concessive use of the rato-NPI, e.g. in utterances of suggestion, so just like with the scalability of EVEN, in the NPI formation it is plausible that concessiveness is lost, or at least weakened. For now, suffice it to see the parallel between the rato-NPI and the non-empthatic \text{kan-NPI} in terms of being de-accented, non-scalar NPIs.

Table 2: Distribution of NPI, and any in nonveridical contexts

<table>
<thead>
<tr>
<th>Environments</th>
<th>Any</th>
<th>Greek kanenas NPI</th>
<th>Korean(\text{amwu}/\text{nwukwu-}) rato NPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Negation</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>2. Questions</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>3. Conditional (if-clause)</td>
<td>OK (FC possible)</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>4. Restriction of every/all</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>5. (Non-antiadditive) DE Q</td>
<td>OK</td>
<td>??</td>
<td>OK</td>
</tr>
<tr>
<td>6. Modal verbs</td>
<td>OK, with FC</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>7. Directive attitudes (e.g. want, insist)</td>
<td>OK, with FC</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>8. Imperatives</td>
<td>OK, with FC</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>9. Habituals</td>
<td>OK, with FC</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>10. Disjunctions</td>
<td>*</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>11. prin/before clauses</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>12. Future</td>
<td>OK, with FC</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>13. Progressives</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>14. Episodic perfective past sentences</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>15. Affirmative existential structures</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>16. Epistemic attitudes (e.g. believe, imagine, dream, say)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

\text{Rato} is itself an EVEN appearing in the same nonveridical contexts (J.H. Lee 2010). This is an important point since it allows us to see that the properties of the EVEN determine the
distribution of the NPIs in Korean: (i) to is NPI-even, so the NPIs containing it only appear with negation; (ii) rato is a broader EVEN, and the NPIs containing it are broader too.

To conclude, parallel to the Greek non-emphatic EVEN-NPI which is licensed broadly in nonveridical contexts, Korean employs the rato-NPI with similar distribution and non-scalar flavor. We proceed now with our analysis of the role of EVEN in the non-emphatic NPI.

4 EVEN as an NPI marker: referential vagueness

Having concluded that rato and kan must be reanalyzed in NPI formations, we present here our analysis of what we think their non-scalar function is. In the non-emphatic variant, we will argue that EVEN has a function relating to its additive meaning: referential vagueness (Giannakidou and Quer 2013). Referential vagueness expresses the speaker’s indeterminacy or lack of interest about the value of the NPI, and requires that there be some variation in possible values.

To understand the point about variation, observe what happens when the NPI is found in a legitimate nonveridical context—so it is licensed— but we continue with a specific, fixed value. Notice the translation with ‘or other’:

**Greek**
(46) a. Thelo na sinandiso kanena glosologo. #Ine aftos o kyrios eki.
   ‘I want to meet some or other linguist. ??It’s that guy over there.’
   b. Thelo na sinandiso kanenas kathijiti. #To onoma tu ine Veloudis.
   ‘I want to meet some or other professor. #His name is Veloudis.’
   c. Thelo na sinandiso kanenas kathijiti. #Ine o proedros tu tnmimatos filosofias.
   ‘I want to meet some or other professor. #He is the head of the Philosophy Department.’

**Korean**
(47) Na-nun enehak kyoswu {amwu/nwukwu}-rato manna-ko sip-ta.
I-Top linguistics professor anyone-even meet-C want-Decl
#Kukes-un ceki ce namca-ta.
it-Top there that guy-Decl
‘I want to meet some linguistics professor or other. #It’s that guy over there.’

These contexts all ascribe to the speaker prior knowledge of the value or identity of the referent of the NPI, and kanenas and rato-NPI are bad. They seem to require indeterminacy. How we identify the referent doesn’t matter— we use the ostension, naming, and description tests following Aloni and Port 2006, to app., and they all create infelicitous use. In the sentences above, the speaker says that she wants to meet with a linguist, but she has no linguist in mind. She is not picky, has no specific interest who she meets; maybe she is curious to meet linguists, or she has a linguistic question, and some linguist or other would do.

This indeterminacy of reference— or, as Giannakidou and Quer put it, non-committal stance— is reminiscent of ignorance inferences we get with free choice items (FCIs). But FCIs are typically emphatic and have been described as scalar, universal or exhaustive (Giannakidou 2001, Giannakidou and Cheng 2006, Giannakidou and Quer 2013, Menedez-Benito 2010)— unlike our NPIs which are none of these. In the non-emphatic/rato NPI, ineterminacy is more about not having someone specific in mind, rather than exhausting values, and Giannakidou and
Quer call it, for this reason, ‘referential vagueness’. If accented, as we see in section 5, *rato* may acquire the exhaustivity of a FCI; but referential vagueness lacks exhaustivity, and appears to be just an anti-specificity constraint that there be some variation in the possible values for the NPI.

Referentially vague existentials expresses a form of ‘intense’ indefiniteness that Giannakidou and Quer label *anti-specificity*; and are used typically in contexts “where the speaker does not have a particular individual in mind, is not sure about it” (Giannakidou, Papadopoulou, and Stavrou 2014: 12), or if she simply feels that identity doesn’t matter. Alonso-Ovalle and Menéndez-Benito 2013 put it succinctly: the speaker is ignorant with these indefinites about ‘knowing who’. So, referential vagueness reflects a state of vagueness the speaker has about the identity of the referent. Haspelmath says that “with non-specific phrases, whose referents are not identifiable in principle, the question of identifiability by the speaker does not even arise.” (Haspelmath 1997: 45). We take this to support what we are saying, namely that the actual value of the indefinite does not matter, and so the speaker uses anti-specific indefinites (referentially vague items as well as FCIs) when (a) she in uncertain about who the referent is, and (b) who the referent doesn’t matter (indifference).

Giannakidou and Quer note that non-polarity indefinites such as Greek *kapjos*, and Spanish *algún* can also have the property of referential vagueness:

(48) **Greek**

Thelo na miliso me **kapjon** glosologo. *#Ine aftos o kirios eki.*

I want to talk to *some linguist or other*. ??It’s that guy over there.’

(49) Thelo na miliso me **kapjon** kathijiti. *#To onoma tu ine Veloudis.*

‘I want to meet some professor or other. #His name is Veloudis.’

(50) Thelo na miliso me **kapjon** kathijiti. *#Ine o proedros tu tmimatos filosofias.*

‘I want to meet some professor or other. #He is the head of the Philosophy Department.’

**Spanish**

(51) Tengo que leer un artículo de **algún** profesor.

*#Es aquel señor de allí, pero no sé cómo se llama.*

‘I have to read an article of *some professor or other*. ??It’s that guy over there, but I don’t know his name.’

---

8 These existentials are also known in the literature as ‘referentially deficient’ (Giannakidou 1997, 1998, 2011), ‘low referential’ (Partee 2008), ‘epistemic’ (Jayez and Tovena 2006, Alonso-Ovalle, Luis and Paula Menéndez-Benito 2013), ‘modal’ (Alonso-Ovalle and Menéndez-Benito 2010), ‘irreferential’ (Jayez and Tovena 2006), ‘epistemically non-specific’ (Haspelmath 1997), and ‘extremely non-specific’ (Farkas 1998). The terms ‘modal’ and ‘epistemic’ have been popular, but given that specificity is also an epistemic constraint, ‘epistemic’ fails to reflect the constraint involved with these *non specific* indefinites. Similarly, the term ‘modal’ does not allow us to distinguish between vague indefinites and FCIs, which are also modal (or intensional; Giannakidou 2001, Giannakidou and Cheng 2006). It hence seems preferable to use the term *anti-specific* (as in Giannakidou and Quer) to refer to this class of ‘marked’ (Aloni 2011) indefinites as a more accurate and theory-neutral alternative. Anti-specific indefinites include FCIs, referentially vague indefinites, and possibly other indefinites within the space of indeterminacy of reference.

9 Lim (to appear) notes the additivity function in -*rato*, though he claims that the additivity is weakened when combined with a regular non-indefinite noun in *N-rato*.

10 *Kapjos* and *algún* are not NPIs, i.e. they occur with simple past positive sentences:

(i) a Kapjos fittis telefonise. [Greek]

Some *student or other* called.

b Ha llamado *algún* estudiante. [Spanish]
(52) Tengo que quedar con algún profesor. #Se llama Bill Ladusaw.
   ‘I have to meet with some professor or other. #Her name is Bill Ladusaw.’
(53) Tengo que quedar con algún profesor. #Es el director del Departamento de Filosofía.
   ‘I have to meet some professor or other. #He is the Head of the Philosophy Department.’

We see here that kapjos, algún (and its Catalan cognate) are not compatible with specific value (like kanenas/rato-NPI). 11 Giannakidou, Papadopoulou and Stavrou (to appear) show experimentally the behavior of kapjos as favoring narrow scope—as opposed to the unmarked Greek indefinite enas which has free scope. Crucially, the narrow scope is a preference, not a categorical behavior—and a reviewer reports that Spanish algún can have what appears to be ‘wide scope’, e.g., over a deontic modal. The sentence below can be interpreted as ‘there is a particular professor that Juan has to talk to’.

(54) a Juan tiene que hablar con algún profesor.
    b O Janis prepni na milisi me kapjon kathijiti.
   Juan/John must talk with algún /kapjon professor.
   There is a particular professor that Juan must talk to (but I don’t know who it is).

In this case, which is possible also in Greek with kapjon, the idea is that the speaker knows that Juan must talk to some particular professor, but she cannot identify who it is. So, despite the apparent de re reading that comes with the wide scope, the speaker is still in a state of epistemic uncertainty about who the professor is. This epistemic uncertainty, we argue, is at the core of referential vagueness; and correctly, it need not be collapsed with narrow scope. (We thank the reviewer for discussion of this point). Our NPIs will necessarily have narrow scope because they are NPIs, and cannot be used in the above context with wide scope. So, the narrow scope property is driven by the NPI-status and not referential vagueness per se.

So, irrespective of polarity, there is a class of indefinites which cannot be used when their value is known to the speaker. 12 We can think of these indefinites as manifesting the most

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11 Alonso-Ovalle and Menéndez-Benito 2013 present one example where algún is used when pointing in what they call “blurry vision” context: Maria and a boy are far away from P. P can see that Maria is kissing a boy, but she cannot make out clearly the boy’s features. In this context, P can utter (i) with algún. Notice however, that it is impossible to do that with kapjon or kanena, or rato-NPI:

(i) Mira! Maria esta besando a algún / chico!
    Look! Maria is kissing some boy!
(ii) Koita! I Maria filai #kapjo/*kanena/ena pedi!
    Look! Maria is kissing a boy!

The only good variant in Greek is with ena, the indefinite article. The NPI is not licensed because the context is veridical, and kapjon remains odd. We did find one speaker who accepted this sentence with kapjon, but her comment was that “I still don’t know who it is, I can’t see clearly. If I can see clearly, the sentence is very bad”. From this, we take it that the blurry vision situation is compatible with vagueness, and to the extent that vagueness is preserved, pointing can be fine (and maybe referring to the situation, not the person).

12 Referential vagueness appears to characterize many other polarity indefinites such as the genitive of negation in Russian (Partee 2008, Borchev et al. 2008, Partee et al. 2011, Kagan 2009), predicative NPIs in Norwegian (Julien 2011), ku-NPIs in Salish (Matthewson 1998), Middle Dutch enig (Hoeksema 2010), etc.; for more cases see the overview in Giannakidou 2011. The term ‘non-existence’ has also been used for Chinese NPIs (Lin 1996), and Mathewsso (1998: 179) says that the Salish NPI-determiners ku...a and kwel...a ‘represent the notion of ‘non-assertion of existence’. The distribution of Chinese NPIs and Salish ku-indefinites is almost identical to the Greek
basic case of anti-specificity (free choice being this, plus scalar structure). The vagueness of anti-specificity seems like true indeterminacy of reference, not knowing who. The evaluation of specific and anti-specific indefinites is driven by an epistemic constraint: a certainty (specificity) or vagueness, in the speaker’s mind, of what the value of the indefinite is; and this epistemic sensitivity is accepted in all accounts of this type of indefinite. Vagueness is typically discussed in the context of vague predicates (Lewis 1986, see Kennedy 2011 for a recent overview), and in the case of anti-specificity, it manifests itself as not knowing the identity of the indefinite. Vagueness relies on the availability of a choice of values, at least two. It is this choice of two that yields the inference of ignorance typical of this class.13

We give below the definition of referential vagueness from Giannakidou and Quer 2013:

(55) Referential vagueness: minimal variation and uncertainty
   (i) A sentence containing a referentially vague indefinite α will have a truth value iff:
      \[∃ w_1, w_2 ∈ W : [\llbracket α \rrbracket]^{w_1} \neq [\llbracket α \rrbracket]^{w_2}\] where α is the referentially vague indefinite.
   (ii) The worlds \( w_1, w_2 \) are epistemic alternatives of the speaker.
   (iii) The speaker does not know which value is the actual value. (Uncertainty)

Referential vagueness imposes an epistemic state for the speaker that there are at least two, and possibly more, differing values for the indefinite. The worlds in the definition above are (i)identity alternatives (Dayal 1997, Giannakidou 2001), i.e. worlds identical in everything but the value they assign to the indefinite. Clause (iii) is an inference derived from (i): if the speaker considers at least two possibilities, then she must be in a state of uncertainty and cannot know which value (if any at all; we consider in the end the case of negation), will verify the formula containing the referentially vague indefinite. The markers *kapjos, algún, algun, or-other*, and the Greek and Korean *kan* and *rato* NPIs can be used only if this condition is satisfied. We think of referential vagueness as a felicity condition, e.g. the dual of Ionin’s 2006 felicity condition of specificity which concerns only the speaker. This way we are consistent with the fact that referential vagueness relies on the speaker’s epistemic state and does not use the whole common ground. (For more discussion, see Giannakidou and Quer 2013). Importantly, the variation requirement seems to be an additive requirement, therefore the use of an additive particle such as EVEN makes sense. In other words, as an NPI marker, in the non-emphatic NPI, while losing scalarity, EVEN still retains some form of additivity.

Crucially, the variation requirement posits a minimal extension of two in the domain, and this needs to be understood as ‘at least two and possibly more’. It appears that with a domain of exactly two, speakers’ judgments vary:

(56) Greek
    Context: I am pointing to two rooms, and say:
    O Janis prepi na kriftike se {#kanena/ ena} domatio, ala den ime sigouri se pjo.
    ‘John must have hid in {#some room or other/} room, but I am not sure which one.’

(57) Spanish

and Korean non-emphatic NPIs, but they do not contain EVEN.

13 The use of disjunction, as in *some or other*, seems consistent with that. Korean has another anti-specific item, *wh-inka*, which contains disjunction (*inka*), and gives rise to the same vague, non-scalar reading as the *rato*-NPI (Kang, in prep.). Disjunction is typically associated with epistemic uncertainty, hence its use for referential vagueness is not unexpected (see more details in Kang in prep.).
If there is a choice of two only, speakers prefer to use the unmarked indefinite. This supports the idea that we are dealing with vagueness (for more discussion of this see Giannakidou and Quer 2013). At any rate, the case above makes the vagueness condition (at least two), more restrictive than Alonso-Ovalle and Menéndez-Benito’s 2010 anti-singleton constraint, where the requirement is more than one, and therefore we expect kanena/amwurato to be fine.

The worlds always come as epistemic alternatives of the speaker. As we said earlier, this is not just Giannakidou and Quer’s thesis, but is shared by a substantial part of the literature we cited here: almost all accounts assume that the distribution of antispecific indefinites “can be characterized across the board in terms of variation across the speaker's epistemic/doxastic alternatives. [...] Epistemic indefinites convey that the individual satisfying the existential claim is not the same in all of the speaker's epistemic/doxastic alternatives” (Alonso-Ovalle and Menendez-Benito: 2013: 35). We will assume in addition that the speaker’s epistemic state is always available as a parameter of evaluation, even in unembedded sentences (Giannakidou 1998). An individual’s epistemic state as a set of doxastic/epistemic alternatives relative to that individual, called an epistemic model (Giannakidou 1998, 2009).

(59)  \[
\text{DF1: Epistemic model of an individual} \quad \text{(Giannakidou 1999: (45))}
\]
Let \( c = <c(c), W(c), M, s, h, w_0, f, \ldots> \) be a context.

A model \( M_E(x) \in M \) is a set of worlds associated with an individual \( x \) representing worlds compatible with what \( x \) believes or knows.

Every sentence is interpreted with respect to an epistemic assessor (see also recent discussion in Harris and Potts 2010: e.g. 523-524), and referential vagueness depends exclusively on what the speaker knows or believes. So, in the absence of modality, i.e. in the unlicensed case, the doxastic alternatives will be what the speaker believes or knows.

In the non-veridical context, the truth conditions for the EVEN-NPI will come out as follows. The speaker chooses to use the NPI, which means that she is in a state of vagueness about who the linguist in question is. This means that her epistemic model includes worlds where the NPI receives differing values, and the referential vagueness condition is therefore satisfied.

(60)  \[
\text{[[ I Maria theli na dhi kanen} / rato \text{ glosologo ‘Mary wants to see } \text{kanen} / rato \text{ linguist’ }} \]
will be defined in \( c \), only if:

\( \exists w_1, w_2 \in M_E(s) : [[ \alpha ]]^1 \neq [[ \alpha ]]^2 \), where \( \alpha \) is the referentially vague variable;

if defined, [[ I Maria theli na idhi kanenan glosologo]] is true iff there is some world \( w \) consistent with Mary’s desires such that in \( w \): there will be a linguist which will be a value to \( \alpha \) that Maria sees.

(61)  \[
\text{Particular individual in mind= fixed value in } M_E(s):
\]
\( w_1 \rightarrow \text{Bill, } w_2 \rightarrow \text{Bill, } w_3 \rightarrow \text{Bill} \)
(62) No particular individual in mind = no fixed value in \( M_e(s) \):
\[ w_1 \rightarrow \text{Bill}, w_2 \rightarrow \text{Nicholas}, w_3 \rightarrow \text{John}, w_4 \rightarrow ? \]

The referential vagueness requirement will be satisfied in the structure in (62) but not in (61). Importantly, the alternative values we consider are correlated with the speaker’s epistemic state— and in Mary’s desire worlds she runs these values. Though admittedly a less salient possibility, it could be, just like with the deontic case we discussed earlier, that there is a particular linguist that Maria wants to see, but doesn’t know who it is. (This is admittedly a less salient possibility because of the nature of desire: if you want someone you probably want them because of what or who they are.) Maybe she wants to meet whoever is the linguistics chair right now. In this reading, we see again the dissociation of the epistemic dimension of referential vagueness from the other kinds of modality that may be available in the sentence.

Finally, a reviewer asks: How does the referential condition interact with negation? What is our prediction? In answering this question we want to point out two things. First, with negation, we again see a dissociation between the assertion (that there is no individual satisfying the existential claim) and the epistemic dimension: the speaker is considering at least two values. To see this, recall that negative sentences with non-emphatics are good answers to polar questions such as:

(63) Q: Did you see any linguists at the meeting?

A: Oxi, Dhen idha kanenan. “No, I didn’t see anybody’
A;: Oxi, Dhen idha kanenan fititi. “No, I didn’t see any students.’

In uttering Dhen idha kanenan/kanenan fititi, “I didn’t see anybody/any student(s)” (with non intensified any), the speaker— in considering the question— considers in fact a set of persons or students, relative to the context of the question, and makes claims with respect to these. For instance, Q is asked typically in a context where we have in mind people or students that typically go to meetings, or are expected to do so. In the context of this, the non-emphatic, referential vagueness will be satisfied because of implicit reference to these discourse domains.

Second, notice that logically the truth condition of the formula \( \neg \exists x. P(x) \) requires that there will be no assignment \( g \) to satisfy it, so we need to go through the values of \( x \) in our domain to confirm that under no \( g \) is the formula satisfied. So, referential vagueness is trivially satisfied under negation because of the truth condition. Given the absence of scalar structure, this is all the sentence says, and though alternative values are considered, these are not ordered in any way. A negation with at all, whatsoever, or the emphatic variant will induce ordering, as we said earlier, thereby producing a rhetorically stronger negative statement. Recall, finally, Arregui’s claim (2008: 46) that we mentioned earlier, namely that alternative generation “need not be tied to a domain-widening analysis”.

To sum up, we argued in this section that EVEN (kan/rato in Greek/Korean) in NPIs loses its scalar meaning and gets reanalyzed as a marker of referential vagueness. So, EVEN still contributes at the non-assertion level, only the contribution is weaker than the original scalar and additive use. Referential vagueness is consistent with the additivity of EVEN, but is a speaker oriented condition for variation, not EVEN’s additive presupposition. The shift from scalar EVEN to non-scalar EVEN-NPIs is a case of morphology ‘recycling’ and reanalysis. Crucially,
the presence of EVEN is not even required for referential vagueness: most of the indefinites we discussed here do not contain EVEN (including members of the Greek NPI-paradigm).

We move on finally to discuss concrete effects of referential vagueness vs. free choice with imperatives and other modals. These effects will also allow us to distinguish the NPI rato from its emphatic variant, which triggers, as expected because of emphasis, a scalar inference of exhaustivity rendering it akin to a free choice item.

5 Non-emphatic and emphatic rato: imperatives and modals

Consider first deontic universal modals:

(64) a. Ι Ariadne prepi na pandrefti kanena dikigoro.
   ‘Ariadne must marry some lawyer or other.’ (to get out of financial trouble, for instance)

b. Maria-nun {amwu/etten}-pyenhosa-hako-rato kyelhonhay-yahan-ta. [Korean]
   ‘Maria must marry some lawyer or other.’ (to get out of financial trouble)

Both EVEN-NPIs are fine here, and cannot be stressed. Referential vagueness produces the following reading:

(65) ∃w∈W-deo(w) [(C(w)) & marry (A, x, in w')]
   Vagueness: there will be at least two worlds w, w’ in the speaker’s epistemic model with differing values for x.

Here we have deontic necessity, and the worlds are such alternatives as indicated (though of course, we can think of deontic alternatives as circumstantial). The NPI variable is not unselectively bound by the modal (Giannakidou and Quer 2013), but existentially closed by ∃ in the scope of the modal. The sentence is true in a context such that the family is in dire financial situation, and Ariadne, as a good daughter, must save the family face by marrying a rich guy. Lawyers are rich guys, so she needs to marry some lawyer or other, a member of the set ‘lawyer’. In each world we consider there has to be a lawyer that Ariadne marries. At the same time, the speaker is in a state of vagueness, so she is considering varying values for kanena dikigoro, maybe actual values too—but crucially she needs to ensure that it won’t be the case that the value picked up in all worlds is the same. This is ensured by the variation condition. Importnatnly, vagueness isn’t an exhaustive condition: one doesn’t need to run all the values in the set. The result is a plausible and relatively weak statement (on a par with some or other).

But, as a reviewer points out to us (and we confirmed with a survey) rato-NPI can also be stressed, and when this happens, the sentence has the flavor of free choice, on a par with the canonical FCI amwu/etten-na. The free choice reading is implausible in the context. Notice the contrast with the FCIs and any:

(66) a. #Ariadne must marry ANY doctor.
    b. #I Ariadne prepi na pandrefti opjondhipote dikigoro
       the Ariadne must marry FC.any lawyer
c. #Maria-nun {AMWU/ETTEN}-uysa-hako-{rato/na} kyelhonhay-yahan-ta.\textsuperscript{14} Maria-Top any/some-doctor-with-even marry-must-Decl. ‘Maria must marry any doctor.’ (to get out of financial trouble)

The problem with FCIs in this context is that they convey domain exhaustification, and domain exhaustification is the product of scalar structure, as it has become obvious in the analyses of any we mentioned earlier (Krifka 1995, see also Beaver and Clark 2003, Chierchia 2006). The free choice requirement has been captured as a presupposition of exhaustive variation (Giannakidou 2001, Giannakidou and Cheng 2006, Giannakidou and Quer 2013), or explicitly universal quantification in the assertion (Kratzer and Shimoyama 2002, Aloni 2011, Menedez Benito 2010). We illustrate here with Giannakidou and Quer:

\begin{equation}
\text{(32) Free choice item}
\end{equation}

Let $W$ be a non-empty, non-singleton set of possible worlds. A sentence with a free choice item $[\text{[OP DET}_{FC} (P, Q)]]$ is true in $w_0$ with respect to $W$ iff:

- Presupposition of domain exhaustification: $\forall d \in D_{FC}. \exists w \in W. Q(d)(w)$, and no other member of the domain $d'$ is such that $Q(d')(w)$; where $D$ is the domain of the FCI, and $Q$ the VP predicate.
- Assertion: $[\text{OP}_{w,x} [P (x, w); Q (x, w)]] = 1$ where $x,w$ are the variables contributed by the FCI.

The exact implementation is not crucial for our purposes; the important thing is that FCIs, unlike referentially vague indefinites, require exhaustive variation. And exhaustive variation, with the universal modal, creates an implausible statement in all accounts of free choice. At the same time, because the domain needs to be exhausted in the free choice reading, exhaustification also creates an ordering: one has to reach all values, therefore looking also at the ‘edges’ of the predicate, producing thereby a sense of ‘not mattering’ or ‘arbitrariness’ (Jayez and Tovena 2005), typical of free choice statements. This ‘not mattering’ can come out as a negative depreciative reading (equivalent to just any; Horn 2000). In line with what we have been arguing so far, emphatic intonation again correlates with scalarity. Emphatic rato triggers free choice inference, and becomes odd just like FCIs, which are inherently exhaustive and emphatic.\textsuperscript{15}

With epistemic necessity modals, we get a similar effect. Prepi is the Greek universal necessity modal with an evidential component (Giannakidou and Mari 2012). The quantification

\textsuperscript{14} Note that the example with emphatic AMWU-N-{rato/na} is odd due to the derogatory sense, while the example with emphatic ETTEN-N-{rato/na} could be odd due to the universal force (Kim and Kaufmann 2006). We thank a reviewer for bringing this to our attention.

\textsuperscript{15} Importantly, we are not saying that emphatic rato is a FCI. Korean has FCIs, the na-indefinites (C. Lee 1999, Lee et al. 2000, Sells 2006, Choi 2007, a.o.). We are simply saying that emphasis brings in the scalar dimension, just like it does with the Greek emphatic KANENA, which also seems exhaustive, though not ‘free choice’, since it doesn’t appear in non-negative contexts. In a way, it is distracting to ask if emphatic rato is a FCI because free choice and NPI-exhaustification are the same thing, only in different contexts: e.g. in the negative context: Ariadne didn’t see anybody at all (NPI-any, emphatic), vs. non-veridical nonnegative Anybody whatsoever can solve this problem (FCI-any, emphatic).
now is over epistemic alternatives, the *Best* (Dox(w)) below, which are the worlds best conforming to current knowledge or evidence:

\[ (67) \text{ Epistemic modality} \]
Context: I am talking with John and I see that he is very informed about Mary’s illness and prognosis.
A: Prepi na milise me \{kanenan/#opjondhipote\} giatro.
‘He must have talked with some \{doctor or other/*any doctor\}.’

\[ (68) \forall \, w \, . \, \text{W-Best(Dox(w))} \, [ (C(w)) \, [ \, \exists \, x \, \text{doctor} \, (x \, \text{in} \, w') \, \& \, \text{talked-to} \, (J, \, x, \, \text{in} \, w') ] \] (kanenas)
Non-exhaustive variation: there will be at least two worlds \(w,w'\) in the speaker’s epistemic model with differing values for \(x\).

\[ (69) \forall \, w' \, . \, \text{W-Best(Dox(w))}, \, x: \, [ \, \text{doctor} \, (x \, \text{in} \, w') \, ] \, \text{[talked-to} \, (J, \, x, \, \text{in} \, w') \, ] \] (FCI)
Exhaustive variation: \(\forall d \in \text{D}_{\text{FCI}}. \, \exists \, w. \, \text{doctor}(d)(w)\) and John talks to \(d\) in \(w\).

We see a difference: the FCI creates a strong statement that forces John to have talked to every doctor. This is a highly implausible reading given that hospitals have many doctors, and that, in order to be informed about Mary’s illness you don’t need to talk with *all* doctors, only the ones involved in her care. Likewise in Korean, non-emphatic *rato*-NPI is good and has the interpretation of the Greek non-emphatic NPI, while the stressed versions of *rato*-NPIs are odd, triggering unintended domain exhaustification.

\[ (70) \text{ Epistemic modality: Context as previously} \]
Ku-nun \{amwu/etten\}uysa-hako-rato yaykiha-n-key pwunmyenghay.
he-Top any/some doctor-with-even talk-Pst-C must
‘He must have talked with some doctor or other.’

\[ (71) \text{ Ku-nun} \, \{#AMWU/#ETTEN\}uysa-hako-rato \, \text{yaykiha-n-key pwunmyenghay}. \]
he-Top any/some doctor-with-even talk-Pst-C must
‘He must have talked with *just any* doctor.’
‘#He must have talked with *any* doctor.’

Emphatic *rato*, triggers exhaustive variation as the FCI and becomes odd. We discuss, finally, two more cases: invitations and suggestions (with imperatives and main subjunctives). NPIs and FCIs impact the imperative in different ways. Consider first the vague indefinites:

\[ (72) \text{Context: A variety of delicious desserts are presented at the buffet in front of me. A says:} \]
\begin{enumerate}
\item a. Faec kanena gliko/kanena ap’ afa ta glika! \[\text{[Greek]}\]
\item b. Prueba algún dulce/alguno de estos dulces! \[\text{[Spanish]}\]
\item c. Tasta algun dolç/algun d’aquests dolços! \[\text{[Catalan]}\]
\end{enumerate}
‘Eat some (or other) of these sweets!’

The domain is specific, and constrained by the context and the partitive. The imperatives with the NPI are weak invitations to eat some cookie or other. An ideal context where they would be felicitous is one where the addressee is not showing much of an appetite, and the speaker invites her to try. In uttering the sentence, the speaker is not inviting the addressee to consider *all*
sweets—this is not a relevant goal in the context; she is merely inviting the addressee to consider some (maybe the ones she likes) and try. A similar effect is observed with the Korean counterpart NPI amwu-rato and nwuku/etten-rato (Giannakidou and Yoon 2011, C. Lee 1999):

(73) \{Amwu/etten\} \textit{kwaca-rato} \textit{(com)} \textit{mek-epo-ryem}. [Korean]
    any/some cookie-even please eat-try-\textit{Imp}
    ‘Eat some (or other) of these cookies!’

The speaker is inviting the addressee to try some unspecific cookie, not caring which one. Importantly, she is not inviting the addressee to consider all cookies. The sentence with \textit{rato} is an invitation, like the Greek one, to an addressee to eat some cookie or other. C. Lee (1999) characterizes this invitation plus reluctant addressee combination as a ‘settle for less’, begging situation: the addressee is not eating the cookies, the speaker is entitled to conclude that the cookies are not to her liking, and therefore by uttering the imperative with -\textit{rato}, she is invited to ‘settle for less’.

According to C. Lee, settle for less reveals a concessive component. We want to clarify here that we, and the speakers we checked of Greek and Korean, do not share a concessive flavor of sentences like the above. In asking other speakers, we did not find evidence that speakers are actively engaging in concessive reasoning when uttering the sentences. We also see next usages of \textit{kan/\textit{rato}-NPIs} in neutral suggestions that C. Lee would also agree do not contain settle for less interpretation at all. It appears then reasonable to say that though historically both \textit{rato} and \textit{kan} correlate with concessive marking (\textit{ke an}), as we said at the beginning, synchronically, neither \textit{kan} nor \textit{rato} seem to have concessive uses (alone or in the NPI). So, even if there may have been a concessive usage of these construals (something that needs to be confirmed), the synchronic use suggests that the concessive meaning is bleached.

Now, the FCI invitation creates a much stronger imperative; note the parallel with stressed \textit{rato}-item produces the FCI-imperative in the following example:

(74) Context as previously
    a. Fae \textit{opjodhipote} ghliko! [Greek]
    b. Prueba \textit{cualquier} dulce! [Spanish]
    c. Tasta \textit{qualsevol} dolç! [Catalan]
    d. \textit{Amwu} kwaca-na mek-ela! [Korean]

(75) \{AMWU/ETTEN\} \textit{kwaca-rato} mek-ela! [Korean]
    ‘Eat ANY of these cookies!’

C. Lee characterizes this as a ‘betting/challenge’ situation: the addressee is invited to consider every option. The context is now one where the addressee comes to the dessert table with a great appetite, and the speaker happily announces an invitation to try lots of options. The exhausting presupposition of considering all options is indeed relevant in this context. Importantly, we see that the choice of exhaustive vs. non-exhaustive variation affects the interpretation of the imperative—a command in the case of FCI, but a weaker suggestion/invitation in the case of the unstressed \textit{rato-NPI}—and the difference holds in all four languages we are considering, with very clear judgements. We will not consider at present the consequences this may have for the theories of imperatives (Portner 2007, Kaufmann 2011). At this initial stage, we simply want to point out the facts, which seem to support a view for the imperatives as having ‘flexible’ force.
Consider, finally, also the neutral suggestions below:

(76) Context: It's my dear friend John's birthday. What should I buy him as a present?
A: Na tou paris **kanena** vivlio. Tu aresoun ta vivlia.  
   ‘You should get him a book. He likes books.’

A: {**Amwu/etten**} chayk-**rato** (com) sacwu-ryem.  
   any/some book-even please buy-Imp.
   Ku-nun chayk-ul cohaha-y.
   he-Top book-Acc like-Decl
   ‘You should get him a book. He likes books.’

*Kanenas* is in a main subjunctive (*na*) which is used as a suggestion (see Giannakidou 2009 for such uses of main subjunctives). The suggestion is to buy for John some book or other, since he likes books. There is no derogatory flavor, no concession; this is a *positive*, encouraging suggestion that you should do book-buying for John. Exactly the same flavor is observed with Korean *amwu-*rato with no ordering or concessive effect.

The FCI and emphatic rato-NPI are odd (though not ungrammatical since it is found in a nonveridical context):

(77) Context: It’s my dear friend John’s birthday. What should I buy him as a present?
A: #Na tou paris **opjodhipote** vivlio. Tu aresoun ta vivlia.  
   ‘You should get him any book. He likes books.’

A: #{**Amwu/etten**} chayk-**ina** (com) sacwu-ryem.  
   any/some book-even please buy-Imp.
   Ku-nun chayk-ul cohaha-y.
   he-Top book-Acc like-Decl
   ‘You should get him any book. He likes books.’

A: #{**AMWU/ETTEN**} chayk-**rato** (com) sacwu-ryem.

The FCI, though licensed in this environment, ends up being odd, because the interpretation—with domain exhaustification—does not make sense in the context. In the case of *amwu-na* in Korean, such domain exhaustification of FCI gives rise to the depreciative reading by forcing to include any unsuitable book for a gift, which also doesn’t make sense. The vague indefinites are fine because they are weak, just showing no interest in identifying further what kind of book or which book.

To sum up, we showed in this section that referential vagueness predicts well-formed, non-scalar, and non-exhaustive readings of *kan* and rato-NPIs in modal contexts. Emphasis differentiates between the rato NPI and a domain exhaustifying version of it in Korean, akin to free choice. This pattern confirms our constant observation in this paper, i.e. that the NPIs can be prosodically manipulated, and that prosodic prominence, rather than EVEN-marking, correlates with scalar meaning.
6. Conclusions

In this paper, we asked the questions: what makes an NPI scalar? Is the presence of EVEN a sufficient condition for scalarity? The answer we gave to these questions is negative: the presence of the focus particle EVEN in Korean and Greek NPIs is not always an indicator of scalarity. In both languages, it was prosodic prominence—called here ‘emphasis’—not EVEN, that brought in the scalar structure. We remained agnostic as to what exactly this emphasis is, and future work will hopefully shed light on this very important question, possibly revealing emphasis to be a family of distinct patterns across languages. Is EVEN-marking at least a necessary condition for scalarity in the NPI? The answer we gave was also negative: any is not EVEN-marked, but it does have scalar uses. Hence, from the study of the three languages we considered here—Greek, Korean and English—EVEN emerges as neither a necessary nor a sufficient condition for scalarity in NPIs.

Emphasis, on the other hand, is always shown to correlate with scalarity, both in NPI as well as free choice uses. The non-scalar EVEN-NPIs are non-emphatic, and make rhetorically neutral statements (felt as ‘weak’, compared to the stronger, scalar, emphatic variants). We analyzed non-scalar NPIs as referentially vague indefinites. Referential vagueness (Giannakidou and Quer 2013) expresses the speaker’s epistemic indeterminacy about the value of the NPI, and we adopted its formulation as a combination of minimal variation and uncertainty, i.e. it requires that there be at least two values for the NPI, and the speaker is uncertain about which one fits best. As Giannakidou and Quer showed, referentially weak indefinites come in polarity and nonpolarity variants. If emphatic—as is possible in Korean—, the referentially vague indefinite triggers scalar structure, which produces an exhaustive inference similar to the one we observe with free choice items.

Regarding EVEN itself, then, we showed here that in the non-emphatic NPI its contribution is reduced: it loses its scalar meaning. Our analysis therefore adds EVEN to the polarity phenomena of weakening and reanalysis observed with polarity and negation (the Jespersen cycle). The fact that we find this process in two typologically distant languages makes the finding all the more remarkable, and allows us to suspect that EVEN’s recycling as a non-scalar marker of referential vagueness may actually not be uncommon.

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