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

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Abstract
This paper presents and discusses in detail two cases of EVEN-marked negative polarity items (NPIs) in Greek and Korean that are not scalar. This prima facie paradoxical finding suggests that EVEN-marking is not always an indicator of scalarity—and, at least in the case of Korean and Greek non-scalar NPIs, has been re-analyzed and grammaticalized as an NPI marker. We propose that such non-scalar NPIs are anti-specific indefinites with referential vagueness, which is a form of ignorance best captured as non-exhaustive variation in the potential values for the NPIs (Giannakidou and Quer 2013). Our second finding is that the difference in Greek and Korean between scalar and non-scalar NPIs is reflected in prosody: scalar NPIs are ‘emphatic’ and non-scalar NPIs are ‘non-emphatic’, and prosodic prominence signals scalar structure. The fact that not all NPIs are scalar or exhaustive falsifies theories claiming that exhaustivity is the source of all NPIs (Chierchia 2006, 2013). Further, non-scalar EVEN-NPIs pattern with other paths of meaning change involving semantic ‘restructuring’. We propose such restructuring for EVEN, whereby it loses its scalarity and becomes an NPI marker with a new meaning.

1 Introduction: EVEN, scalarity and negative polarity

There are a few assumptions about negative polarity items (NPIs) that current theories of polarity tend to accept as valid. One such assumption is that NPIs sensitive to negation are scalar, i.e., they trigger a scalar structure (Fauconnier 1978, Israel 1996, 2011, Krifka 1995 among others) and produce emphatic assertions. In the same spirit, one finds pronouncements that all NPIs are exhaustive: specifically, Chierchia 2013 claims that, in contrast to ‘ordinary’ indefinites, “with NPIs and FCIs [free choice items] we have to exhaustify” (Chierchia 2013:8, emphasis in the original). Another common assumption is that scalarity and exhaustification are due to the presence of EVEN, a view most prominently expressed in Lahiri (1998) on EVEN-NPIs in Hindi.

In the present paper, we challenge these claims by showing that, crosslinguistically, there is a class of NPIs that are not scalar, and that even EVEN-marked NPIs can be non-scalar. In other words, EVEN-marking does not necessitate scalar meaning. We discuss two classes of EVEN-marked NPIs in Greek and Korean that are not scalar and not exhaustive, and show that such NPIs can be distinguished both from NPIs that admit exhaustive readings (such as any), and from FCIs. The non-scalar NPIs are anti-specific indefinites that convey a form of ignorance identified as referential vagueness (Giannakidou and Quer 2013). Referentially vague indefinites

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1 We follow Giannakidou 2007 in using small capitals to indicate the family of linguistic forms across languages that are equivalent to English even in their primary or sole usages. We intend this nomenclature merely as a rough shorthand, and do not intend to imply that perfect translational equivalents exist.
impose a condition of non-exhaustive variation (unlike their free choice cousins, which require exhaustive variation). Referential vagueness requires at least two alternative values for the NPI, but the alternatives are not ordered and are not exhaustified.

The unquestionable existence of non-scalar, non-exhaustive NPIs necessitates abandoning the claim that all NPIs trigger scalar alternatives, and supports the view that an important source of polarity sensitivity crosslinguistically has to do with referential deficiency (Giannakidou 1997, 1998, 2011). Referentially deficient non-scalar NPIs exist in other languages besides Greek and Korean, as has been shown for Chinese (Lin 1996, Lin and Giannakidou 2014), Middle Dutch enig (Hoeksema 2010), and Salish (Matthewson 1998:179 writes that the Salish NPI-determiners ku...a and kwel...a “represent the notion of ‘non-assertion of existence’”). Although such data are well described (Haspelmath 1997; for a recent overview see Giannakidou 2011), there has been an unfortunate tendency in some strands of the literature to focus almost exclusively on the properties of English any and sometimes even to ignore observations about any’s non-scalar usages. One of our goals here is to remedy this narrow focus, and show that non-scalar, non-exhaustive NPIs observed crosslinguistically bear directly on the nature of polarity phenomena, and even on the question of any itself.

Non-scalar, non-exhaustive NPIs need not be even-marked; but when they do contain even, the question becomes how best to analyze its contribution. We will show that there exist asymmetries between even as a focus particle and even in NPIs, suggesting that even in the NPIs has been reanalyzed (or grammaticalized in the sense of Hopper and Traugott 1993) as an NPI marker whose contribution is not fully reducible to independent even. Our analysis implies a meaning change with ‘restructuring’ (in the term of Eckardt 2006) in the semantic composition: even undergoes a shift akin to the Jespersen cycle, where it loses its scalar meaning and is reanalyzed as an NPI marker with a concomitant shift in meaning. Such processes of semantic restructuring are the subject of great interest in the recent semantics literature (see e.g. a recent overview article by Deo 2015), and can yield insights into the relation between etymology and synchronic meaning, leading to a more refined view of compositionality that does not adhere to literal (but possibly inactive) meaning, but factors in potential meaning change. Besides negation itself (the Jespersen cycle), the area of negation and polarity presents a wealth of phenomena suggesting meaning change—e.g., ever (in free choice who-ever) and volitionality markers in FCLs have been reanalyzed as free choice markings, their original meanings being subsumed or lost (Giannakidou 2006, Giannakidou and Cheng 2006).

Finally, the non-scalar Greek and Korean NPIs that we study typically are prosodically deaccented. In both languages, the scalar and exhaustive NPI contains what has been described as ‘emphatic accent’, or ‘stress’. There have been voices in the literature before us to make this connection between scalar NPIs and prosodic prominence— notably Krifka 1995, who distinguishes ‘emphatic’ and ‘non-emphatic’ any, and Haspelmath 1997, who writes that in the

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2 There is in fact a substantial literature that has noted prosodic differentiations in NPIs in a variety of languages. Hoeksema 2010 discusses a change in the distribution of the Dutch NPI enig ‘any’ from a non-emphatic NPI to an emphatic NPI, accompanied by a change in meaning: from a non-scalar use (non-emphatic NPI) to a scalar one (emphatic). Hoeksema also discusses Sahlin’s 1979 study of a prosodically marked-up corpus of spoken English, with substantial differences between stressed and unstressed any. Hoeksema 1999 reports several prosodic differences between polarity-sensitive and nonsensitive ooit ‘ever’ in Dutch, possibly with emphatic lengthening of the vowel in ooit. Yoshimura 2007 argues for prosodic differentiation in Japanese NPIs, and Eckardt 2007 talks about emphatic/non-emphatic German irgend-indefinites.
cases of utterances with ‘stressed’ any a scale of alternative values is present but in those that contain an unstressed any “no such scale” is present.

The structure of our paper is as follows. First, we illustrate the main data in Greek (section 2) and Korean (section 4), with a brief discussion of even in section 3. Our data show that the prosodic difference between the two NPI paradigms is robust, and supported by syntactic and pragmatic tests. Hence we establish a pattern where prosody, not even, isolates the scalar NPI. In section 5, we show first, based on the usual diagnostics (subtrigging, supplementary uses, behaviors with universal modals) that non-emphatic NPIs are not exhaustive, and then offer our analysis of non-scalar NPIs as conveying referential vagueness. We conclude in section 6 with a more detailed discussion of Korean, where it is shown that the emphatic NPI triggers a scalar exhaustive inference akin to a free choice reading.

2 Greek NPIs: emphatic and non-emphatic variants

Since Veloudis 1982, it has been a common observation that Modern Greek exhibits a robust difference between the two variants of NPIs illustrated in (1), distinguished by ‘emphatic accent’ (Veloudis 1982, Giannakidou 1997 et seq., Tsimpli and Roussou 1996); upper-case indicates the obligatory presence of prosodic prominence in a phrasal context. As indicated in this initial gloss, the emphatic form seems to be interpreted as an n-word (Laka 1999, Giannakidou 1998, 2000, 2006a), receiving negative meaning in isolation (that we review later). In other words, with emphatics, but not with non-emphatics we have negative concord (Giannakidou 1998, 2000).

(1) a. kanenas/KANENAS ‘anyone, anybody/no-one, nobody’
b. tipota/TIPOTA ‘anything/nothing’
c. pote/POTE ‘ever/never’
d. puthena/PUTHENA ‘anywhere/nearby’
e. katholu/KATHOLU ‘at all/not at all’

The first element in the paradigm contains the morpheme kan, which, in its independent form, is one of the four even-words that Modern Greek possesses (Giannakidou 2007); enas is ‘a/one’. Hence kanenas could prima facie be thought as the equivalent of Hindi ek-bhii, which is also literally even-one. However, note that the rest of the paradigm does not contain even-one, but is quite variable in composition, comprising wh-source (pote), or universal morphology (katholu is literally at all). Confronted with this variation, one has no reason to believe that the contribution of the respective parts is fully literal—and conversely, one has no reason to posit a unified even for all cases. We will study the question of even in section 3. Our goal at present is to show that the difference between the two paradigms is quite robust in Greek. Apart from the prosodic contrast, there are important syntactic differences between the two variants (discussed in Giannakidou 1997, 1998, 2000) that render emphatic and non-emphatics lexically distinct. We describe first the prosodic and scalar differences, before turning to the syntactic differences.

2.1 Prosodic differences between emphatic and non-emphatic NPIs

include downward entailing and negative contexts. Emphatic and non-emphatic NPIs differ in their NPI status. Non-emphatic NPIs appear only in non-negative nonveridical contexts (Giannakidou 1998, 2011), they are therefore ‘broad’ (or ‘weak’) NPIs, but emphatic NPIs are strict (or ‘strong’) and appear only with negative (antiveridical) expressions. We revisit the more extended distribution later. Now we start by illustrating the basic fact that with negation and the antiveridical without, both variants of NPIs are possible. Truth-conditionally, the statements with emphatic and non-emphatic NPIs are equivalent, but they differ in that, as indicated below, the emphatic NPI is equivalent to emphatic (Krifka 1995) or intensified any (any-at-all):

(2)  
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.’

(3)  
 xoris na dhi \{kanenan/KANENAN\}.  
without subj see.3sg NPI.person/NPI.person  
‘without having seen anybody/ anybody at all.’

The non-emphatic NPI (which typically comes with a prosodic contour that involves focus in some other constituent, see also any) has been argued (in Giannakidou 1998) to be an existential in the scope of negation, making a neutral statement: it is not the case that the speaker saw somebody. There is no intensification in this statement, as opposed to John didn’t see anybody at all. Intensification is typically understood as relying on extremes of a scale, therefore the intensified any-at-all is scalar—and likewise, the Greek emphatic NPI, we will argue.

Regarding the prosodic distinction, Chatzikonstantinou (in progress) offers data from production experiments suggesting that it involves both higher pitch and lengthening. The following two graphs are representative of the contrast:
Sentential contours are distinct in the two paradigms. The **pitch** contour looks quite different: the emphatic is associated with a L+H* (the H* is aligned with the stressed syllable) and then a fall— but the non-emphatic has a flat intonation (and also the part before and after it). In terms of **duration**, the emphatic appears longer (0.44s) than the non-emphatic (0.39s), which is perhaps expected assuming that it is the former that is the focused item between the two. Hence phonetic investigation reveals robust prosodic differences between the two NPIs.

### 2.2 Differences in scalarity

There are two ways to distinguish sensitivity to scalar structure. For ease of exposition, we will continue using the analogy *any* (as equivalent to Greek non-emphatic NPI) and *any-at-all* (the emphatic NPI). The first difference is that only the non-emphatic NPI can answer a question with two alternatives. The answer to such a question will require contrastive focus on one of the asked alternatives, and as we can see, the emphatic NPI and *any-at-all* are infelicitous answers:

(4)  
\[ \begin{align*}
\text{a. Q: Who didn’t find any mistakes? Mary or Bill?} \\
\text{A: I MARIA dhen vrike \{kanena/ #KANENA\} lathos.} \\
\text{the Maria not found.3sg NPI.det / NPI.det mistake} \\
\text{MARY didn’t find any mistakes. .} & \quad \text{Neutral} \\
\text{b. # Mary didn’t find *any* mistakes *at all!*} & \quad \text{Emphatic *any*, odd}
\end{align*} \]

Because we have focus on another constituent, the non-emphatic NPI is the only option. Chatzikostantinou (in progress) examines such examples and finds that speakers uniformly produce and accept only non-emphatic NPIs. Importantly, such questions are non-scalar: they denote a closed set of two unordered alternative propositions \{Mary didn’t find any mistakes, Bill didn’t find any mistakes\}. The emphatic NPI, as we see, is out, and so is emphatic *any*.

In fact, the response with the non-emphatic NPI is equivalent to a response with a bare
nominal (singular or plural, both are allowed in Greek):

(5) Q: Who didn’t find mistakes? Mary or Bill?
   A: I MARIA dhen vrike lathl/lathos.
      the Maria not found.3sg mistakes/mistake
      MARY didn’t find mistakes.

As is well known, bare nominals produce narrow scope with negation (Carlson 1977) and are generally quite neutral, with no particular rhetorical strength or emphasis. Chierchia 2013, following Kadmon and Landman 1993, claims that when one compares ‘regular’ indefinites with “any/every, one clearly perceives a difference in strength/emphasis” (Chierchia 2013: 27). This is clearly not the case, as the Greek NPI and any in the context above are indistinguishable from the bare nominal, which as we said is quite neutral. (We cannot compare with indefinites with ena ‘a/one’, because it also has a numeral reading that produces undesired contrasts with negation).

The second scalarity difference manifests itself in questions that are biased towards scalar answers. Here, only the emphatic NPI is possible. Consider the following scenario:

(6) Context: Maria is supposed to read 3 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. 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!
      Ah, no! not read.1sg NPI.det article
   b. Ax, oxi! #Den dhiavasa kanena arthro!
      Ah, no! not read.1sg NPI.det article
      ‘I didn’t read any article at all!’

Here the non-emphatic NPI, in contrast to the emphatic one, is infelicitous. By using the at-least phrase, 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 this context.

   It is useful to reiterate the parallel with any: any intensified overtly by devices such as at all differs from bare any, which can be used in statements that are rather neutral. Recall our example, where any was equivalent to a bare minimal:

(7) a. Q: Who didn’t find any mistakes? Mary or Bill?
    MARY didn’t find any mistakes.
    No scalability, neutral
   b. # Mary didn’t find ANY mistakes at all!
    Scalar response, odd

Hence, any does not always convey ‘strength’. In recent literature more challenges are levelled towards the scalability of any (Duffley and Larivée 2012). Notice the difference in questions:

(8) a. Did you hear any noise?
   b. Did you hear even the slightest sound?
The *any* question is a neutral question, but the one with the, admittedly scalar, quantificational superlative has bias, thus strength. The contrast is not expected if *any/every always* have strength. 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”:

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

In these contexts, *any* is interpreted neutrally, making unavoidable the conclusion that *any* is not inherently scalar or biased.³

The negation with the intensified *any-at-all*, on the other hand, does indeed produce scalar structure (Fauconnier 1975, Israel 1996, 2011, Krifka 1995), with or without EVEN. Israel 2011 claims that scalar NPIs are ‘argumentative’ operators, triggering a scale structure where *all* alternatives are informationally ordered (Krifka 1995), and all stronger alternatives are negated. Krifka formalizes this in his notion of Scalar assert, given below:

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

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 negation. Non-stressed *any*, according to Krifka, does not trigger \( \text{scalar.assert} \). In contrast to Krifka, Chierchia 2006, 2013 assumes that *all* NPIs are scalar, and posits a syntactic feature \( +_{\Sigma} \) for all of them. However, this feature cannot be present in all instances of *any*, since *any* can be neutral too, as we just saw. Intensified NPIs, on the other hand, e.g. with *a single, at all, even*, or mere prosody (Greek NPIs) *are* indeed scalar and may be argued to contain the \( +_{\Sigma} \) feature:

(13) a. John didn’t see \{a single/ANY\} student at the meeting. (emphatic negation)

³ It is also important to note that Lahiri himself rejects the idea of *any* contains EVEN (pace Lee and Horn 1994), and offers specific arguments that his EVEN analysis of Hindi NPIs cannot apply to *any* (Lahiri 1998: section 11.4). Notice also that “the idea that *any* generates alternatives need not be tied to a domain-widening analysis”, as pointed out in Arregui (2008: 46).
b. John didn’t see *even one student* at the meeting.
c. John saw *no students at all*.
d. John didn’t *budge an inch*.

The Greek sentences with emphatic NPIs and the intensified English sentences above are all emphatic, strong, scalar; but non-stressed *any* and nonemphatic NPIs pattern together as non-intensified negation. With these NPIs, thus, the $+\Sigma$ feature is unmotivated. Chierchia fails to acknowledge empirically this class of nonscalar, non-emphatic NPIs—and in so doing, he fails to acknowledge a significant amount of data in English, Greek, and as we shall see soon, Korean.

To sum up, NPIs can be emphatic (scalar) and non-emphatic. In the non-emphatic case, we have no evidence for scalarity or exhaustification (which we discuss more in section 5). We did see here that in the scalar environment, i.e. as answers to biased questions, non-emphatic NPIs are odd; we conclude therefore that non-emphatic NPIs are not scalar, and address their meaning further in section 5. Another important conclusion from the above is that *any* also appears to have non-scalar uses.

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

The major syntactic differences between emphatic and non-emphatic NPIs have been discussed extensively in earlier literature (Giannakidou 1997, 1998, 2000, 2006), we thus offer only a very brief presentation here. These distinctions will be revisited in section 4, where we establish syntactic parallels with the Korean NPIs.

(i) *Fragment answers.* Only the emphatic NPI can occur as a fragment answer:

(14) 
- Pjon idjes xthes vradi? “Who did you see last night?”
- {KANENAN/*kanenan}.
  ‘Nobody/*Anybody.’

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, but the emphatic NPI can, thus earning the characterization ‘n-word’. Giannakidou 1998, 2000, 2006a treats the fragment n-word as the remnant of ellipsis (Merchant 2001), and “given that the remnants in fragment answers are accented, non-emphatics are excluded because they are not accented” (Giannakidou 2000: 469).

(ii) *Licensing in islands*

Another difference concerns locality. Non-emphatic NPIs, unlike emphatic NPIs, appear in islands with negation in the main clause. The example below illustrates with a relative clause:

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

In this respect, non-emphatics are again like *any* which also appears in islands. Importantly, non-
licensing of KANENAN in the island was one of the arguments in Giannakidou 1997, 1998) that set apart the emphatic NPI from focus in situ which is fine in islands (Tsimpli 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:

(16) 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 typical of negative concord, which is clause-bound. Greek emphatic NPIs are thus n-words in negative concord structures, but non-emphatic NPIs are like any. This is confirmed in our next point, namely that emphatic NPIs appear only with negation, but non-emphatic NPIs have a broader distribution.

(iv) Licensing in broader nonveridical contexts

Non-emphatic NPIs appear in non-negative nonveridical contexts (Giannakidou 1998, 2011), they are therefore ‘broad’ NPIs, but emphatic NPIs are strict NPIs appearing only within the negative (‘anti-veridical’) core. For the non-emphatic NPI, we use in the examples ‘some or other’ to indicate its meaning in these contexts:

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

(18) An dhis tin Ariadne {puthena/*PUTHENA}, na tis milisis.
    ‘If you see Ariadne anywhere, some place or other, talk to her.’

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

(20) Bori na bike {kanenas/*KANENAS} modal verb
    can.1sg subj entered.3sg NPI.person
    ‘It is possible that some guy or other came in. (That’s why the door is open).’

(21) I Ariadne theli na pji {*KAMIA/kamia} byra.
    the Ariadne wants.3sg subj drink.3pl NPI.det.fem. beer
    ‘Ariadne wants to have a beer, some beer or other.’

Here the NPI creates an ignorance reading (some or other), which is not free choice reading, and this is why in the last three examples, which trigger free choice on any, we do not use any; we will return to this contrast with any in section 5. The nonemphatic NPI is further licensed with modalities, and other nonveridical operators; the core distribution is 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>*</td>
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<tr>
<td>3. Conditional (if-clause)</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>4. Restriction of every/all</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>5. (Non-antiadditive) DE Q</td>
<td>OK</td>
<td>OK</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 (e.g. 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/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>*</td>
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<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>
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<tr>
<td>15. Affirmative existential structures</td>
<td>*</td>
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<td>*</td>
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<tr>
<td>16. Epistemic veridical attitudes (e.g. believe, imagine, dream)</td>
<td>*</td>
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</tbody>
</table>

This table shows that the emphatic version behaves like a strict NPI, but the non-emphatic and any are broader NPIs, with similar distributions in 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; we return to exhaustivity in sections 5 and 6.4

In sum, the overall conclusion one must draw from the prosodic, pragmatic and syntactic differences between emphatic and non-emphatic NPIs in Greek is that they behave as two lexically distinct paradigms—only, instead of being distinguished morphologically, they are distinguished prosodically. This reminds us of the role of tone in tonal languages. In other words, though the two NPIs are homophonous segmentally, they are nevertheless distinct at the suprasegmental level, and there is no ambiguity between the two. In Korean, as we see soon, the lexical distinction is done morphologically between to-NPI (corresponding to the emphatic NPI), and rato-NPI (corresponding to the non-emphatic NPI).

The emphatic NPI is scalar and a strict NPI akin to an n-word. Given its prosody, it seems reasonable to say that prosodic emphasis (which is both higher pitch and lengthening, as we showed) is the realization of lexical scalarity and exhaustivity. One could thus view the emphasis on the NPI as realizing Chierchia’s +∑. In contrast, the non-emphatic NPI lacks emphasis, therefore also lacks scalarity and exhaustivity (as we see further in section 5).5

We address next the question of EVEN.

4 Importantly, Hindi EVEN-NPIs according to Lahiri 1998 have the broad distribution observed in Table 1. It is possible that in the Hindi data prosody also play a role and that this escaped Lahiri’s attention.
5 Giannakidou 1998, 2000 offers additional arguments (almost/absolutely modification, donkey anaphora, predicate nominal use), and argues that the emphatic NPI is a universal quantifier—a position also argued for Korean to-NPIs (Sohn 1995, Kim 1999, Sells 2006 and Yoon 2008). If we adopt the universal analysis, then emphasis contributes scalarity only and exhaustivity comes from the universal property of the NPI.
3 The role of EVEN: semantic reanalysis

In the light of our conclusions above, one can ask the question: what role does \textit{EVEN} play in the NPIs? (This is a question relevant for Korean NPIs too, given that these too contain \textit{EVEN}.) Lahiri’s 1998 popular analysis of Hindi NPIs posits that the \textit{ek-bhii} NPI, ‘one- \textit{EVEN}’ is literally the sum of its parts; but our Greek findings point to a different direction. Apart from the fact that ‘\textit{EVEN} + \textit{ONE}’ characterizes only one of the NPI items, in the case of non-emphatic \textit{kanenas}, the word ‘\textit{kan}’ \textit{EVEN} appears to have no scalar contribution. And the \textit{KANENAN} NPI— which is indeed scalar—is not reducible to \textit{EVEN} plus one, as we show here. In both cases, it seems more coherent to assume that \textit{EVEN} undergoes semantic reanalysis and becomes grammaticalized as an NPI-marker with a different meaning than the original one.

It is first necessary to give some background on English \textit{even}. \textit{Even} is known to have two incarnations, a positive \textit{even} and an \textit{NPI-even} (Rooth 1985). Consider positive \textit{even} first:

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

\textit{Even}, a focus additive particle, does not affect the truth conditions of a positive sentence: the sentence asserts that the Dean invited Bill; \(^6\) but \textit{even} has two presuppositions: an additive one, and a scalar one (Karttunen and Peters 1979). Additivity requires that there is a set of alternative values to the \textit{even} phrase in the context \((C(x))\), and \textit{even} ranks the alternatives on a scale (Horn 1989, Kay 1990)— which can be likelihood (Karttunen and Peters), or noteworthiness (Herburger 2000), or it depend on the context (Giannakidou 2007). The \textit{even} phrase associates with the extremities of the scale: positive \textit{even} above associates with the lowest (or near-lowest) end, as shown above, but in the negative sentence, \textit{even} associates with the highest values:

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

\text{Bill is now the most likely person to have been invited. In English, we do not see a lexical alternation between high-value (NPI-\textit{EVEN}) and low-value \textit{EVEN}, but in many languages we do find a lexical difference (König 1991, Rullmann 1997, Giannakidou 2007, J.H. Lee 2010 for Korean, among many others). In Greek there are four words meaning \textit{EVEN}, and two of them—\textit{kan} and \textit{oute}— are NPIs (Giannakidou 2007).} \(^7\) Both \textit{oute} and \textit{kan} are NPI-\textit{EVEN}s, and contrast with positive \textit{EVEN} \textit{akomi ke}. They may also co-occur as \textit{oute kan}:

---

\(^6\) The alternatives are variables of type \(e\) because the focus of \textit{even} is the nominal argument, but \textit{even} can also target other constituents, e.g. adjectives, cardinality predicates, verbs, or clauses, generating in each case alternatives of the appropriate type. We simplify here because type details are not relevant.

\(^7\) Etymologically, \textit{kan} derives from the conjunction \textit{ke} ‘and’ and the conditional \textit{an} ‘if’. Greek \textit{EVEN}s contain some morpheme whose original meaning was ‘and’, e.g. \textit{ou-te} (< AGk ou ‘not’ + \textit{te} ‘and’), \textit{akomi ke} (lit. ‘still and’; positive \textit{EVEN}), \textit{kan} (< \textit{ke an}), a historical remnant reflecting their additive meaning. Importantly, and this needs to be emphasized as another point supporting semantic reanalysis, \textit{AND} in the NPIs does not have the literal contribution of conjunction.
In positive sentences, the NPI EVENS *oute* and *kan* are ungrammatical; in negative sentences, the positive EVEN *akomi ke* is excluded. Modern Greek is therefore a language that lexicalizes the positive vs. NPI EVEn distinction.

Both *oute* and *kan* are NPI-EVENS, but *kan* is a broader NPI that appears in non-negative polarity contexts. *Oute*, as can be seen, is a strict NPI appearing only with negation, and without:

Questions are a very common environment for *kan*, and as one can see, the presence of *kan* produces negative bias: an expectation of the speaker that the answer to the question will be negative. Giannakidou 2007 offers details of how exactly the biased reading is produced. For our purposes, what matters is that *kan* appears in a variety of polarity contexts, but it distribution doesn’t fully overlap with that of the two NPIs, as can be seen in Table 2 below:

---

8 *Kan* shares its distribution with yet another polarity sensitive EVEN which means ‘at least’—*esto*, also licensing negative bias. For the purposes of the discussion in this paper, and in order to avoid unnecessary complications, we consider *kan* and *esto* as equivalent (though the distribution of *kan* is more restricted, see Giannakidou 2007).
Table 2: Distribution of NPIs, kan ‘NPI-even’ in nonveridical contexts

<table>
<thead>
<tr>
<th>Environments</th>
<th>kan</th>
<th>Non-emphatic NPI</th>
<th>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>*</td>
</tr>
<tr>
<td>3. Conditional (if-clause)</td>
<td>OK</td>
<td>OK</td>
<td>*</td>
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<tr>
<td>4. Restriction of every/all</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>5. (Non-antiadditive) DE Q</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>6. Modal verbs</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>7. Directive attitudes (e.g. want)</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>8. Imperatives</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>9. Habituals</td>
<td>*</td>
<td>OK</td>
<td>*</td>
</tr>
<tr>
<td>10. Disjunctions</td>
<td>*</td>
<td>OK</td>
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<tr>
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<td>14. Episodic perfective past sentences</td>
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<td>*</td>
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<td>*</td>
</tr>
<tr>
<td>16. Epistemic veridical attitudes (e.g. believe, imagine, dream)</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

If we look at the distributions in Table 2, we cannot but notice a vast asymmetry between the polarity contexts where the NPIs are admitted, and kan. In ‘classic’ downward entailing environments the broad NPI is fine, but kan plus one (or by itself):

(29) a. Elaxistoi foitites ipan tipota.
    very few students said NPI.thing
    ‘Very few students said anything.’

b. *Elaxistoi foitites ipan (oute) kan ena pragma.
    very few students said 3pl even one thing
    ‘Very few students said even one thing.’

(30) a. Kathe foititis pou idhe tipota iopoto, prepei na milisi.
    every student that saw.3sg NPI.det suspicious must.3sg subj. talk.3sg
    ‘Every student that saw anything suspicious must speak.’

b. *Kathe foititis pou idhe (oute) kan mia ypopti kinisi, prepei na milisi.
    every student that saw.3sg even one suspicious movmeents must.3sg talk.3sg
    ‘Every student that saw even one suspicious movement must speak.’

Oute, of course is also unacceptable, since, as we said, it is a strict NPI and cannot appear in mere downward entailing contexts. Given the clear asymmetries we observe, we must conclude that kan is not the driving force behind the distribution of the two NPIs.

An additional argument showing that kan in the NPI is not reducible to independent kan comes from the emphatic NPI. Multiple kan-NPIs are fine, but multiple kans are not:

(31) a. I Maria den ipe TIPOTA se KANENAN!
    Mary didn’t say anything to anybody.

b. #I Maria dhen systise kan ton Jani kan ston Vassili.
   # Mary didn’t introduce even John to even Bill.
The sentence in (31) is a classic instance of negative concord, possibly necessitating a rule of absorption, though this is not our point here. Our point is that multiple instances of \( \text{EVEN} \), as we see in the b examples, are pretty bad—there is thus a clear asymmetry showing that \( \text{kan} \) in the emphatic NPI and independent \( \text{kan} \) are not equivalent.

In other words, the distribution of neither \( \text{EVEN}-\text{NPI} \) (scalar, non-scalar) is predictable from the distribution of NPI-\( \text{EVEN} \) itself. The Greek \( \text{EVEN}-\text{NPI} \) is not simply a collection of its parts (as has been argued for the Hindi NPI by Lahiri). Rather, the \( \text{EVEN}-\text{NPIs} \), in both emphatic and non-emphatic variants, seem to be grammaticalized as distinct formations, and they can be best be captured as cases of semantic reanalysis. One important implication of this idea for crosslinguistic study is that caution is required in how one handles an NPI containing \( \text{EVEN} \), and that we cannot, without showing, just assume that because we have \( \text{EVEN} \) we also interpret \( \text{kan} \).

We move on now to draw the parallel with Korean NPIs.

4 Korean \textsc{evens} and NPIs

Korean exhibits close equivalences to the Greek emphatic and non-emphatic NPIs, having two series of indeterminates \( \text{amwu}, \text{nwukwu} \), along with two \( \text{EVEN} \) markers -\( \text{to} \), -\( \text{rato} \) (Lee 1999, Lee, Chung & Nam 2000, Lee 2003, Choi 2007, J.H. Lee 2010, Lim 2015); the historical analysis of \( \text{rato} \) is similar to that of Greek \( \text{kan} \), deriving from \( \text{ra} \) ‘if’ and additive to.

\[
\begin{align*}
\text{a. amwu/nwukwu-to} & \quad \text{(emphatic/strong NPIs)} \\
\text{b. AMWU/NWUKWU-rato} & \quad \text{(emphatic rato-NPIs)} \\
\text{amwu/nwukwu-rato} & \quad \text{(non-emphatic/weak NPIs)} \\
\text{c. amwu/nwukwu-na} & \quad \text{(FCIs)}
\end{align*}
\]

Here we added the FCI paradigm, typically marked with the disjunction marker \( \text{na} \) ‘or’. We also see two variants of \( \text{rato} \)-NPIs, one emphatic, one non-emphatic, and we come back to this later.

4.1 Two \textsc{evens} with NPIs in Korean

J.H. Lee 2010 offers an analysis of the \( \text{to} \) vs. \( \text{rato} \) alternation paralleling the Greek \textsc{evens}. She argues that \( \text{to} \) is NPI-\( \text{EVEN} \) like \textit{oute}, i.e. with strict distribution in negative/antiveridical contexts. The \( \text{to}-\text{NPI} \) is just like emphatic NPIs/\textit{oute} in Greek, and does not appear in non-negative polarity contexts such as questions:

\[
\begin{align*}
\text{(33) } \{\text{Amwu/nwukwu}\}-\text{to} & \quad \text{oci-anh-ass-ta.} \\
\text{anyone-even} & \quad \text{come-Neg-Pst-Decl} \\
\text{‘No one came.’} & \quad \text{[Korean]} \\
\text{(34) } \{\text{Amwu/nwukwu}\}-\text{to} & \quad \text{o-ass-ni?} \\
\text{anyone-even} & \quad \text{come-Pst-Q} \\
\text{‘Did anyone come?’} & \quad \text{[Greek]} \\
\text{(35) a} & \quad \text{Irthe} \quad \text{KANENAS?} \\
\text{came.3sg} & \quad \text{even-NPI} \\
\text{[Greek]} \\
\text{b} & \quad \text{Irthe} \quad \text{kanenas?} \\
\text{‘Did anyone come?’} & \quad \text{[Greek]}
\end{align*}
\]
The parallel is clear here: *to*-NPIs are strict NPIs just like the Greek emphatic NPIs.

The *rato*-NPI, which is our main object of study in this paper, comes in two variants: stressed and unstressed (or ‘lengthened’ and ‘unlengthened’). The unstressed *rato* NPI creates the neutral, non-scalar statements we described for the Greek non-emphatic NPI, so we will be glossing it *some or other* too. The *rato*-NPI also appears in a variety of nonveridical contexts, including questions, imperatives, modal verbs, subjunctive clauses, disjunction, and some examples are given in 4.3 (see for more examples Lee, Chung & Nam 2000, Lee 2003, Choi 2007, Giannakidou and Yoon 2011). One crucial difference from Greek *kanenas* is that *rato* NPIs are blocked in the anti-veridical context:

(36)  ??/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, and the reason may be due to general properties of Greek and Korean—e.g. in Greek *EVEN* marking is partial, but in Korean it applies to the whole paradigm. That would render Korean, but not Greek, a case of morphological blocking; 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.9

4.2 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:

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

The *rato*-NPI is excluded, on a par with the non-emphatic NPI; the *to*-NPI is like an n-word.10

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

(38)  a. Ney-ka  [{amwu/nwukwu}-rato kwanryentoy-n] pimil-ul nwuselhan-tamyen…
     you-Nom anyone-even involve-Rel secret.Acc reveal-Cond

9 The difference between the {*amwu/nwukwu*} in the Korean grammar correlates with domain specificity (*nwukwu*) vs. open domain (*amwu*). We will not discuss this issue here, as it does not seem to be particularly relevant to the main topics of this paper (see Lee et al. 2000, Kim and Kaufmann 2006, Park 2009, Giannakidou and Quer 2013).

10 A reviewer question *amwu-to* as a fragment answer. The felicity of a fragment may be context sensitive, but the literature reports *amwu-to* as well-formed (Ahn and Cho 2011, Chung 2012); and its n-word status has been shown by additional diagnostics (clause-boundedness, *almost*-modification, in addition to elliptical answer (Yoon 2008c)).
‘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, just like in Greek, we note an asymmetry between multiple occurrences of EVEN which are problematic, and multiple occurrences of to and amwu/nwukwu which are fine:

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

(40)    Amwu-to amwukes-to mekci-anh-ass-ta.
        anyone-even anything-even eat-Neg-Pst-Decl
        ‘Nobody ate anything.’

Multiple to is odd, as we see, 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 to-NPI in Korean triggers negative concord (see Sells 2006, Yoon 2008 for more details).

4.3 Rato NPI: distribution in nonveridical contexts

Just like Greek, only rato NPIs are licensed in polarity contexts which are not negative, but simply nonveridical. We start with questions:

Question

(41)    Phari-ey hanpen-{irato/*to} kapo-ass-ni?    [Korean]
        Paris-Loc once-NPI visit-Pst-Q
        ‘Have you ever been to Paris?’

(42) a. Phathi-eyse *nwukwu-rato mannanke-ni?
        party-at person.NPI meet-Q
        ‘I met someone or other at the party.’

b. Phathi-eyse 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!”)

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

(43)    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 at some place or other, talk to her.’
Imperative

(44) amwu sakwa{-rato/*to} cipe-la.
    any apple.NPI take-Imp
    ‘Take some apple or other.’

Modal verb

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

Directive intensional verbs

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

For comparison, we give in Table 3 the distribution of Greek emphatic and non-emphatic NPIs and Korean rato-NPI. We see that the rato-NPI appears in nonveridical contexts pretty much like the Greek non-emphatic.

Table 3 Distribution of Korean and Greek NPIs in nonveridical contexts

<table>
<thead>
<tr>
<th>Environments</th>
<th>Emphatic NPI/to-NPI</th>
<th>Greek kanenas NPI</th>
<th>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>*</td>
<td>OK</td>
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<td>OK</td>
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<tr>
<td>7. Directive attitudes (e.g. want, insist)</td>
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<td>OK</td>
<td>OK</td>
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<td>*</td>
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</tbody>
</table>

Given the preceding discussion and the data in Table 3, we conclude the following:

(a) The Greek emphatic NPI has the Korean to-NPI as its counterpart.
(b) The Greek non-emphatic NPI, which is licensed broadly in nonveridical contexts, has the Korean rato-NPI, with similar distribution and non-scalar flavor, as its counterpart.
(c) The difference between the scalar and non-scalar NPI in Korean, unlike in Greek, is not simply prosodic but involves two lexically distinct Evens.
In the rato-NPI, as we see further in sections 5 and 6, Korean speakers can apply emphasis. When this happens, we get a scalar and exhaustive reading, reminiscent of free choice. Korean thus allows us to generalize the point about prosody bringing about scalar inferences with NPIs. But first, we want to offer an analysis of what the meaning is of the non-scalar NPI.\(^{11}\)

5 Non-scalar NPIs: anti-specific, ignorance indefinites with referential vagueness

If they are not scalar, then what is the meaning of non-emphatic NPIs? They appear to be existentials with narrow scope (this follows from their NPI property), and express indeterminacy or ignorance about their possible values (rendered into English by ‘some or other’ as translation). Consider now the following examples, from Giannakidou and Quer (2013):

Greek

(47) a. Thelo na miliso me kanena glosologo. #Ine aftos o kyrios eki.
   ‘I want to talk to a linguist, some linguist or other. #It’s that guy over there.’
   b. Thelo na miliso me kanenan kathijiti. #To onoma tu ine Veloudis.
   ‘I want to talk to some professor or other. #His name is Veloudis.’
   c. Thelo na miliso me kanenan kathijiti. #Ine o proedros tu tmimatos filosofias.
   ‘I want to talk to a professor, some professor or other. #He is the head of the Philosophy Department.’

Korean

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

In these contexts, the second sentence ascribes to the speaker prior knowledge of the value or identity of the referent of the NPI, via ostension, naming, and description (following the tests of Aloni and Port 2014). Kanenas and rato-NPIs, though licensed (by nonveridical want), appear to be incompatible with this context of prior knowledge. If, on the other hand, the speaker does not have someone particular in mind, the NPIs are fine:

(49) a. Thelo na miliso me kanena glosologo, dhen me noiazi me pjon.
   ‘I want to talk to some linguist or other. I don’t care with who.’
   b. Na-nun enehakca \{amwu/nwukwu\}-hako-rato yaykiha-ko sip-\(\text{ta}\).
   I-Top linguist anyone-with-even talk-C want-Decl
   Nwukwu-\(\text{tun}\) sangkwaneps-\(\text{ta}\).
   who-ever not.care-\(\text{Decl}\)

\(^{11}\) Morphologically, rato is concessive (C. Lee 1999; also Nam 1994, 1999, Lee et al. 2000, C. Lee 2003); and recall that Greek kan consists of ke an ‘and if’. However, synchronically, there is no concessiveness in the assertions with nonemphatic kan-NPIs; the examples we gave here are not concessive in any way.
‘I want to talk to some linguist or other. I don’t care with who.’

Here the speaker is simply not picky. She has no specific interest in who she meets; maybe she is curious to meet linguists, or she has a linguistic question, and some linguist or other would do. Non-emphatic NPIs thus behave like ignorance indefinites, which Giannakidou 2012, and Giannakidou and Quer 2013 call anti-specific. Well known such indefinites are the Greek kapjos, and Spanish algún, which are not NPIs but exhibit the same pattern:12

(50) Thelo na miliso me kapjon glosologo. #Ine aftos o kirisos eki. (Greek)
     ‘I want to talk to some linguist or other. ??It’s that guy over there.’

(51) Thelo na miliso me kapjon kathijiti. #To onoma tu ine Veloudis.
     ‘I want to talk to some professor or other. #His name is Veloudis.’

(52) Thelo na miliso me kapjon kathijiti. #I ne o proedros tu tmimatos filosofias.
     ‘I want to talk to some professor or other. #He is the head of the Philosophy Department.’

(53) Tengo que leer un artículo de algún profesor. (Spanish)
     #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.’

(54) Tengo que quedar con algún profesor. #Se llama Bill Ladusaw.
     ‘I have to meet with some professor or other. #His name is Bill Ladusaw.’

(55) 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 usable if the value is known to the speaker, just like the kanenas/rato-NPI.13 Giannakidou, Papadopoulou and Stavrou (2014) show experimentally the behavior of kapjos as favoring narrow scope—compared to the unmarked article enas ‘a’ which has free scope. Crucially, the narrow scope is a preference, not a

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

(i) a. Kapjos fititis telefonise. [Greek]
     Some student or other called.

b. Ha llamado algún estudiante. [Spanish]

13 Alonso-Ovalle and Menéndez-Benito 2013 present one example with algún 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 the contrast with kapjon, kanena, rato-NPI:

(i) Mira! Maria esta besando a algún chico!
     Look! Maria is kissing some boy!

(ii) Kita! #Marìa filai {#kapjon/*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. Kapjo remains odd. We did find one speaker who accepted this sentence with kapjo, 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 confirm that the blurry vision context is not compatible with ‘knowing who’. 
categorical behavior of these indefinites—though in the case of NPIs, we have unquestionably narrow scope because they are NPI.

Giannakidou and Quer 2013 call the indefinites that cannot be used when the value is known to the speaker anti-specific. The phenomenon is thus treated as the converse of specificity, which is driven by the opposite epistemic constraint (the speaker knows what the value of the indefinite is). Anti-specificity gives rise to ignorance effects that are usually talked about in the context of free choice, but free choice ignorance relies on exhaustive variation of a domain. Giannakidou and Quer, crucially, show that there is an instance of anti-specificity—referential vagueness—that pertains to partial variation in a domain, and our NPIs (and likewise kapjos, algún) belong to this category. We proceed to illustrate their non-exhaustivity first (5.1), and then move on to the analysis of referential vagueness (5.2).

5.1 Non-emphatic NPIs are not exhaustive

Exhaustive indefinites license universal-like readings, and there are three widely used diagnostics in the literature, all based on free choice any. The tests are: (a) the possibility of subtrigging, (b) the ‘supplementary’ use; (c) implausibility with universal modals (deontic as well as epistemic). FCIs and NPIs like any, receiving exhaustive readings, pass these tests—but our non-emphatic NPIs do not, as we shall see. In the discussion, we also include the Chinese NPI shenme which has also been shown to be non-exhaustive (Lin and Giannakidou 2014; our Chinese data are drawn from that work).

5.1.1. Subtrigging

The term ‘subtrigging’ is due to LeGrand 1975, and refers to the case where any becomes grammatical in a positive sentence, hence in an unlicensed position, apparently modified by a relative clause. The resulting reading is universal-like (Dayal 1998 used subtrigging as an argument for universality of any, but Giannakidou 2001 and Horn 2000, 2005 offer non-universal analyses that still derive universal readings). Here is the main paradigm:

    b. John bought any book that he found (=every book that he found).

In contrast to any, Greek, Korean rato-NPIs, and Chinese shenme cannot be subtrigged.

Greek

(57) *O Janis aghorase kanena vivlio pou vrike stin aghora.
    the John bought.3sg NPI book Rel found.3sg in-the market
    Intended: ‘John bought any book that he found on the market.’

Korean

(58) *Con-un etten-chayki-rato sa-ss-ta.
    John-Top NPI.book buy-Pst-Decl
    ‘John bought any book.’
(59)*Con-un ku-ka palkyenha-n etten-chayki-rato sa-ss-ta.  
John-Top he-Nom found-Rel NPI.book buy-Pst-Decl  
‘John bought any book that he found.’

Mandarin
(60)  
a. *Yuehan mai-le shenme shu.  
John buy-Perf NPI book  
Intended: ‘John bought a (=some or other) books.’

b. *Yuehan mai-le ta neng zhao-dao de shenme shu.  
John buy-Perf he can find-PE Rel NPI book  
‘John bought any book he could find.’

Unlike any, our NPIs and shenme do not license universal readings and can therefore not be subtrigged. FCIs, on the other hand, can be subtrigged:

Greek  
(62) O Janis aghorase opjodhipote vivlio vrike stin aghora.  
the John bought.3sg FCI book found.3sg in-the market  
‘John bought any book that he found on the market.’

Korean
(63) Con-un ku-ka palkyenha-n etten-chayki-na sa-ss-ta.  
John-Top he-Nom found-Rel FCI.book buy-Pst-Decl  
‘John bought any book that he found.’

Mandarin
(64) Yuehan mai-le ta neng zhao-dao de renhe shu.  
John buy-Perf he can find-Perf Rel FCI book  
‘John bought any book he could find.’

Hence, our rato/kanenas/shenme NPIs contrast with FCIs with respect to the subtrigging test. They consistently fail it and cannot trigger universal readings. Crucially, in Korean there is an option of applying emphasis to rato, and when this happens, the NPI can be subtrigged:

(65) Con-un ku-ka palkyenha-n ETTEN-chayki-rato sa-ss-ta.  
John-Top he-Nom found-Rel rato-NPI.book buy-Pst-Decl  
‘John bought any book that he could find.’

In Greek, application of emphasis would yield an unlicensed emphatic NPI. We come back to the Korean emphatic rato in section 6.

5.1.2 Supplementary any

Exhaustive NPIs exhibit supplementary use (Horn 2005), but non-exhaustive NPIs do not. Regardless of what the proper analysis of these data is, it suffices to see the empirical asymmetry between any and rato/shenme/kamia.
(66)  a. Pick a card, any card.
      b. If you have a question, any question, you can contact me.

Greek

(67) Pare mia karta, opjadhipote /#kamia karta!
    Take.imper.2sg one card, FCI /#NPI card
    Intended: ‘Take a card, any card!’

Mandarin

(68) Tiao yi-zhang ka ba, renhe /#shenme ka.
    pick one-CL card Par FCI /#NPI card
    Intended: ‘Pick a card, any card.’

Korean

(69) Khatu-lul hana kolla-la, etten-khatu-na/#etten-khatu-rato.
    card-Acc one pick-Imp FCI.card /NPI.card
    Intended: ‘Pick a card, any card!’

Emphatic ETTEN-khatu-rato can have the supplementary use, in agreement with the previous test, as we see:

(70) Khatu-lul hana kolla-la, ETTEN-khatu-rato.
    card-Acc one pick-Imp NPI.card
    ‘Pick a card, any card!’

Hence, with respect to this test, non-emphatic NPIs and shenme form a natural class, again in contrast to exhaustive NPIs such as free choice any, FCIs, and emphatic rato-NPI.

5.1.3 Implausibility with universal modals

FCIs are known to be implausible with universal modals (Menéndez-Benito 2010); but our Greek and Korean NPIs are fine with necessity modals, as we show below. The reason why FCIs are bad is that they license a universal reading which turns out to be implausible. Consider the following contrast with deontic necessity:

(71)  a. I Ariadne prepi na pandrefti kanena dikigoro.  [Greek]
      ‘Ariadne must marry some lawyer or other.’ (to get out of financial trouble, for instance)
      b. Maria-nun {amwu/etten}-pyenhosa-hako-rato kyelhonhay-yan-ta.  [Korean]
      Maria-Top NPI.lawyer marry-must-Decl
      ‘Maria must marry some lawyer or other.’ (to get out of financial trouble)

(72)  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-yan-ta. 14

14 The example with emphatic AMWU-N-{rato/na} also produces derogatory sense. The free choice na item has received universal treatment (Kim and Kaufmann 2006). We thank a reviewer for bringing this to our attention.
FCIs are unacceptable, but the non-scalar NPIs are good. The problem with FCIs is that they convey exhaustive variation (Giannakidou 2001, Giannakidou and Cheng 2006, Giannakidou and Quer 2013), or an overt universal quantifier (Menéndez-Benito 2010, Aloni 2011), depending on the analysis. The exact implementation is not crucial here, as both produce exhaustification with the ensuing implausible reading that Mary marries every doctor. In contrast, our NPIs are grammatical because they receive existential interpretation. The sentence with the NPI 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 some rich guy, a lawyer or a doctor.

The contrast can be reproduced with epistemic modals:

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

We see again an empirical and a meaning difference: the FCI creates a statement akin to John having talked to every doctor, which is highly implausible given that hospitals have many doctors and that, in order to be informed about someone’s illness, you don’t need to talk with all doctors, only one (or some) of those involved in her care. The NPI statement simply says that she talked to some doctor unspecified to the speaker.

In Korean, the non-emphatic rato-NPI is good and has the interpretation of the Greek non-emphatic NPI, while the stressed version of rato-NPI is odd:

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

(75) Epistemic modality: Context as previously
Ku-nun {#AMWU/#ETTEN}uysa-hako-rato yaykiha-n-key pwunmyenghay.
he-Top any/NPI.doctor-with talk-Pst-C must
‘He must have talked with just any doctor.’
‘#He must have talked with any doctor.’

We can safely conclude, then, that our non-emphatic Greek and Korean NPIs are not exhaustive according to the tests typically used in the literature. But when stressed, the Korean NPI behaves in the way expected from exhaustive items. We revisit this in section 6.

5.2. Referential vagueness: non-exhaustive variation

We showed that non-emphatic NPIs in both Greek and Korean are neither scalar nor exhaustive. Giannakidou 1997, 1998 argues for two lexical sources of NPI-hood: scalarity and referential deficiency. Referential deficiency is what we call now anti-specificity. Giannakidou and Quer 1993 distinguish two kinds of anti-specificity: exhaustive (leading to free choice) and referential vagueness, which is non-exhaustive. Our Korean and Greek NPIs exhibit the latter.
Other labels have been used in the literature to designate the anti-specific indefinites such as ‘low referential’ (Partee 2008), ‘epistemic’ (Jayez and Tovena 2006, Alonso-Ovalle and 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’ seems confusing. Similarly, the term ‘modal’ does not allow us to distinguish between referentially vague indefinites and FCIs, which are also modal (Giannakidou 2001, Giannakidou and Cheng 2006). It is thus preferable to use the term anti-specific indefinites as a more accurate and theory-neutral alternative.

FCIs are the exhaustive variants of anti-specific indefinites and referentially vague indefinites are the non-exhaustive variants. Referentially vague indefinites 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. As Alonso-Ovalle and Menéndez-Benito 2013 put it, the speaker is ignorant about ‘knowing who’, and 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 give below the definition of referential vagueness that we adopt from Giannakidou and Quer 2013:

(76) **Referential vagueness**

(i) A sentence containing a referentially vague indefinite \( \alpha \) will have a truth value iff:

\[ \exists w_1, w_2 \in W: \llbracket \alpha \rrbracket^{w_1} \neq \llbracket \alpha \rrbracket^{w_2}; \text{ where } \alpha \text{ is the referentially vague indefinite.} \]

(ii) The worlds \( w_1, w_2 \) are epistemic alternatives of the speaker: \( w_1, w_2 \in M(\text{speaker}), \) where \( M(\text{speaker}) \) is the speaker’s belief state, the worlds compatible with what she believes/knows.

(iii) The speaker does not know which value is the actual value. (vagueness, ignorance)

The epistemic state of the speaker is present in all sentences (Giannakidou 1998, 2003). As we see, referential vagueness imposes an epistemic state for the speaker of minimal variation: i.e. that she is considering 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. Not knowing which value is the actual one can be thought of as ‘ignorance’— to be in line with a common use in the literature, though it seems natural to understand it as indeterminacy or vagueness.

The markers *kapjos, algún, algun, or-other*, and the *kan* and *rato* NPIs can be used only if the referential vagueness condition is satisfied. Referential vagueness is a felicity condition that characterizes the speaker’s epistemic state (the dual of Ionin’s 2006 felicity condition of specificity). Importantly, the variation requirement seems to be an additive requirement, therefore the use of an additive particle such as *even* makes sense, though it is not necessitated.

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:

(77) **Greek**

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

(78) **Spanish**
Juan se ha escondido en {alguna/una} habitación, pero no estoy segura de cuál.

(79) **Korean**
John-i {amwu-pangey-rato/han pangey} swum-essultheyntey,
John-Nom NPI.room/a room hide-must
etin-ci molukeyss-ta.
where-Q not.know-Decl
‘John must have hid in {some room or other/a} room, but I am not sure which one.’

If there is a choice of two only, speakers prefer to use the unmarked indefinite (for more discussion of this see Giannakidou and Quer 2013). At any rate, the case above makes the vagueness condition (at least two), more appropriate than Alonso-Ovalle and Menéndez-Benito’s 2010 *anti-singleton constraint*, where the requirement is more than one, predicting kanena/amwurato to be fine, contrary to fact.

In the non-veridical context, the truth conditions for the EVEN-NPI will come out as follows. The speaker chooses to use the NPI, therefore her epistemic model includes worlds where the NPI receives differing values:

(80) \[
[[I Maria theli na dhi kanenan/-rato glosologo ‘Mary wants to see kanenan/-rato linguist’]] will be defined in c, only if:
\[
\exists w_1, w_2 \in M_E(s) : [[\alpha]]^{w_1} \neq [[\alpha]]^{w_2}, \text{where } \alpha \text{ is the referentially vague variable;}
\]
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.

(81) Partial individual in mind = fixed value in \(M_E(s)\):
\[
w_1 \rightarrow Bill, w_2 \rightarrow Bill, w_3 \rightarrow Bill
\]
(82) No particular individual in mind = no fixed value in \(M_E(s)\):
\[
w_1 \rightarrow Bill, w_2 \rightarrow Nicholas, w_3 \rightarrow John, w_4 \rightarrow ?
\]

The referential vagueness requirement will be satisfied in the structure in (82) but not in (81).

Finally, a reviewer asks: How does the referential condition interact with negation?

(83) **Q:** Did you see any linguists at the meeting?
**A:** Oxi, *dhen idha kanenan.* “No, I didn’t see anybody’

In uttering A, the speaker— in considering the question— considers a set of persons (professors or students), relative to the context of the question, and makes claims with respect to these. For instance, Q asks about linguists of our department, or linguists that promised to go to the meeting, etc. In other words, there is always an implicit contextual restriction, and it offers a set of possible values. Referential vagueness can thus be satisfied with differing values in the contextual domains. One must also remember that the NPIs contain dependent variables (Giannakidou 1998, Giannakidou and Quer 2013), and this renders them in need of being existentially closed under negation. This takes care of their grammaticality, licensing condition.
To sum up, one can interpret what we presented here as saying that the <i>EVENS kan/rato</i> in Greek/Korean NPIs lose their scalar meaning and get reanalyzed as markers of referential vagueness. But, crucially, the presence of <i>EVEN</i> is not required for referential vagueness: most of the indefinites we discussed here do not contain <i>EVEN</i> (<i>tipota, puthena</i>, etc., and <i>kapjos, algun</i>), and there are others that contain disjunction (<i>or other, inka-NPI</i> in Korean, Kang 2014). The use of disjunction is consistent with their being existential quantifiers expressing vagueness/ignorance. We move on now to discuss the effect of prosody on the Korean <i>rato</i>-NPI.

6 Non-empirical and emphatic <i>rato</i>: an empirical investigation

In this final section, we want to complete our analysis by revealing the role of intonation in triggering exhaustive structure with the <i>rato</i>-NPI. We already noted a number of asymmetries between exhaustive NPIs and referentially vague NPIs, and we also pointed out briefly that emphasis on the <i>rato</i>-NPI makes it akin to a FCI. In this section, we focus on cases where both exhaustive/scalar and non-exhaustive non-scalar NPIs appear—with the expected difference in the interpretation. We then present a survey we conducted to verify the role of prosody, and we want to thank one of the reviewers for urging us to examine this issue more extensively.

The imperative is a context where both exhaustive and non-exhaustive indefinites appear:

(84) Context: A variety of delicious desserts are presented at the buffet in front of me. A says:
   a. Fae kanena gliko/kanena ap’ afta ta glika! [Greek]
   b. Prueba algún dulce/alguno de estos dulces! [Spanish]
   c. Tasta algun dolç/algun d’aquests dolços! [Catalan]

   ‘Eat some (or other) of these sweets!’

The imperatives with the referentially vague indefinites are invitations to eat a cookie, 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 the items—she is merely inviting the addressee to consider some (maybe the ones she likes). Consider now Korean:

(85) {Amwu/etten}kwaca-rato (com) mek-epo-lyem. [Korean]
    cookie.NPI please eat-try-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. C. Lee (1999) characterizes this invitation as a ‘settle for less’, <i>begging</i> situation: the addressee is not eating the cookies, the speaker is entitled to conclude that the cookies are not to her liking, and by uttering the imperative with -<i>rato</i>, she is invited to settle for less. According to C. Lee, settle for less relates to concession. However, one of the authors and the Korean speakers we checked with do not find the Korean sentence concessive; and the Greek, Spanish and Catalan sentences are not concessive either. We also see next usages of <i>kan/rato</i>-NPIs in neutral suggestions that C. Lee would also agree do not contain concession. It appears thus reasonable to say that though historically <i>rato</i> may have correlated with concession, <i>synchronously</i>, neither <i>kan</i> nor <i>rato</i> have concessive meaning (at least in the NPI).
In contrast, the FCI invitation creates an imperative with an exhaustivity inference, as expected; stressed rato-NPI behaves similarly, as can be seen in the following examples:

(86) Context as previously
   a. Fae ojodhipote ghliko!  [Greek]
   b. Prueba cualquier dulce! [Spanish]
   c. Tasta qualsevol dolç!  [Catalan]
   d. Amwu kwaca-na mek-ela! [Korean]

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

C. Lee characterizes this as ‘betting/challenge’: the addressee is invited to consider every option. The context is now one where the addressee comes to the dessert table with great appetite, and the speaker is happy to announce that all options are open. Importantly, we see that the choice of exhaustive vs. non-exhaustive indefinite affects the interpretation of the imperative—a stronger force of the imperative in the case of FCI, but a weaker invitation in the case of the unstressed rato-NPI. The difference holds in all four languages considered, with very clear judgments.\textsuperscript{15}

Consider, finally, the neutral suggestions below:

(88) 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.  [Greek]
       ‘You should get him a book. He likes books.’
    A: {Amwu/etten} chayk-irato (com) sacwu-lyem.  [Korean]
       any/some book.NPI please buy-Imp.
       Ku-nun chayk-ul cohaha-y.
       he-Top book-Acc like-Decl
       ‘You should get him a book. He likes books.’

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

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

(89) Context: It’s my dear friend John’s birthday. What should I buy him as a present?
    A: #Na tou paris ojodhipote vivlio. Tu aresoun ta vivlia.  [Greek]
       ‘You should get him any book. He likes books.’
    A: #{Amwu/etten} chayk-ina (com) sacwu-lyem.  [Korean]
       any/some book.FCI please buy-Imp.
       Ku-nun chayk-ul cohaha-y.
       he-Top book-Acc like-Decl

\textsuperscript{15} The data here are relevant for theories of imperatives (Portner 2007, Kaufmann 2011); the facts seem to support a view for the imperatives as having ‘flexible’ force.
‘You should get him any book. He likes books.’
A: #\{AMWU/ETTEN\} chayk-rato (com) sacwu-lyem.

The FCI, though licensed, ends up odd because domain exhaustification does not make sense in the context. In the case of amwu-na, domain exhaustification gives rise to the deprecat ive reading by forcing to include any unsuitable book for a gift, which also doesn’t make sense. The vague indefinites are fine and simply show no interest in identifying further what kind of book or which book should be bought.

In order to strengthen empirically our initial intuition that emphatic prosody adds exhaustivity (‘free choiceness’) to the Korean rato-NPI, we decided to conduct an offline survey. 35 Korean speakers participated in the experiment, students at the Seoul National University, Seoul, Korea and the University of Texas, Arlington, USA. All were given informed consent and paid the equivalent of $5.00 as a compensation for their participation in the experiment, which (including fillers) lasted about 30 minutes.

We considered four items: (a) non-emphatic etten-N-rato, (b) amwu-N-rato, and (c) emphatic ETTEN-N-rato, (d) AMWU-N-rato. In order to ensure the subjects understand the intended prosodic difference in a written pen-and-pencil survey, we offered an instruction in parenthesis to ask them to pronounce the emphatic rato-items in a strong, lengthy, emphatic fashion, and the non-emphatic ones in a gentle, soft, non-emphatic way. Furthermore, since Hangul (Korean alphabet) lacks the upper/lower case letter distinction, we employed bold face, accent mark (*) on top of each syllable block, and length mark (~) for the emphatic ETTEN-N-rato and AMWU-N-rato as opposed to none of these for the non-emphatic etten-N-rato and amwu-N-rato.

The items were tested without time restriction (see Appendix for a sample survey written in Korean). The survey was designed to test our crucial examples with the four items in three different contexts: (i) Context 1: ex. (88/89) in the birthday-gift context; (ii) Context 2: ex. (71/72) in the lawyer-marriage context; and (iii) Context 3: ex. (85/87) in the dessert-on-the-table context. These examples were provided with slightly elaborated situations so that the subjects could clearly understand the contexts.

Each test began with the context. First, our target sentence was given with the instruction with etten/amwu pronounced in “a gentle, soft, non-emphatic way” for non-emphatic items, and we asked the subjects, between A (referentially vague meaning, glossed RV below) and B (exhaustive meaning, glossed FC), which is closer to the meaning of the sentence. In the birthday-gift context, for example, A says “You should get him etten/amwu-rato book” has the RV meaning such as “you can consider a few suitable options for a birthday present like best-seller novel or poetry”, while B says has the FC meaning like “you can consider every kind of book, even unsuitable ones for a birthday present like used books, adult magazines, or braille books”. Second, our target sentence was given with the instruction “(with ETTEN/AMWU pronounced in a strong, lengthy, emphatic fashion)” for emphatic items, and we again asked the subjects to choose between A (RV meaning) and B (FC meaning). These two questions were free selection tests in which the subjects were allowed to choose the preferred reading between referentially vague (RV) or FC reading in a given context. In these tests, no regulation was given so that overlapping choices (for instance, both non-emphatic and emphatic ones have RV meanings) were allowed. (see 2nd/3rd columns in Table 3-4 for results). Finally, in addition to the free selection tests, we conducted a pairing test which asked the subjects to pair the non-emphatic and emphatic versions to either RV or FC without overlap (i.e. either “etten: RV -
ETTEN: FC” or “etten: FC - ETTEN: RV”). (see 4th columns in Table 3-4 for results)

Table 3. Empirical tests of prosody and RV/FC in wh-N-rato item in Korean

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<tbody>
<tr>
<td>Context 1: birthday gift ex. (88), (89)</td>
<td>91.4%</td>
<td>60.0%</td>
<td>91.4%</td>
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</tr>
<tr>
<td>Context 2: lawyer-marriage ex. (71),(72)</td>
<td>85.7%</td>
<td>65.7%</td>
<td>97.1%</td>
<td></td>
</tr>
<tr>
<td>Context 3: table-dessert ex. (85), (87)</td>
<td>74.3%</td>
<td>71.4%</td>
<td>85.7%</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>83.8%</td>
<td>65.7%</td>
<td>91.4%</td>
<td></td>
</tr>
</tbody>
</table>

The percentage indicates the proportion of responses that are consistent with our proposal on the association of prosody and RV/FC meaning, i.e. non-emphatic: RV and Emphatic: FC.

Table 4. Empirical tests of prosody and RV/FC in amwu-N-rato item in Korean

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Context 1: birthday gift ex. (88), (89)</td>
<td>71.4%</td>
<td>77.1%</td>
<td>97.1%</td>
<td></td>
</tr>
<tr>
<td>Context 2: lawyer-marriage ex. (71),(72)</td>
<td>68.6%</td>
<td>91.4%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Context 3: table-dessert ex. (85), (87)</td>
<td>71.4%</td>
<td>74.3%</td>
<td>94.3%</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>70.5%</td>
<td>81.0%</td>
<td>97.1%</td>
<td></td>
</tr>
</tbody>
</table>

The results are extremely revealing in many respects. For one thing, the difference between Table 3 and 4 shows the lexical difference between amwu-rato and ettén-rato, which means that the choice of indefinite itself matters in Korean (see footnote 9 and 13). Amwu itself may have the potential of anti-specificity, which may lead to the variation among speakers on the non-emphatic amwu-rato between the predicted RV meaning (70.5%, non-emphatic RV NPI in Table 4) and the occasionally observed FC meaning (29.5%). This explains, for instance, the different judgment on our data with one reviewer.

The main divergence, however, seems to arise from the prosody: as summarized in the above tables, non-emphatic and emphatic amwu/etten-rato exhibit a systematic pattern of RV and FC reading in our survey with high predictability: 83.8% & 70.5% for non-emphatic items and 65.7% & 81.0% for emphatic items. Furthermore, the paring tests exhibit remarkably high predictability (91.4%, 97.1%) of the current proposal—non-emphatic: RV vs. emphatic: FC—than the free selection tests. We take this to argue that, despite the slight variation on judgment in an individual context, the prosody-based distinction between non-emphatic and emphatic rato-NPI becomes extremely clear to most native speakers (91.4% for etten/ETTEN-rato and 97.1% for amwu/AMWU-rato) in comparison to each other.

To sum up, referential vagueness predicts well-formed, non-scalar, and non-exhaustive readings of kan- and rato-NPIs in modal contexts. Emphasis, in accordance with what we concluded in
section 2 for Greek, adds the scalar and exhaustive dimension to the rato-NPI. Our survey showed that the empirical effect is robust. NPIs, like other words and phrases, can be prosodically manipulated, and prosodic prominence, rather than EVEN-marking per se, correlates with scalar meaning.

7 Conclusions

We have shown that not all NPIs are scalar or exhaustive, and that the presence of an EVEN element is not a sufficient condition for scalarity and exhaustivity in the NPI. The EVEN-marked Korean and Greek NPIs are non-scalar and non-exhaustive. In both languages, it is prosodic emphasis that brings in the scalar structure. Conversely, English any is not EVEN-marked, but it does have scalar uses. Hence, from the study of three languages—Greek, Korean and English—EVEN-marking emerges as neither a necessary nor a sufficient condition for scalarity in NPIs.

We analyzed non-scalar NPIs as referentially vague indefinites. Referential vagueness is non-exhaustive anti-specificity, i.e., a requirement for minimal variation (Giannakidou and Quer 2013). We revealed a significant number of asymmetries between exhaustive indefinites (free choice items, free choice any) and Greek/Korean non-emphatic NPIs to support their non-exhaustive, non-scalar nature. In Korean, prosodic emphasis renders the NPI scalar, producing the expected exhaustive reading.

There are two implications of our analysis that we would like to emphasize. First, it is possible that an EVEN-NPI is not merely the sum of its parts. EVEN in the Greek and Korean non-emphatic NPIs gets reanalyzed, or grammaticalized (in the sense of Hopper and Traugott 1993) as an NPI marker whose contribution is not fully reducible to independent EVEN. Our analysis implies a meaning change that involves ‘restructuring’ in the semantic composition, a Jespersen cycle for EVEN, where it loses its scalar meaning and is recycled as an NPI marker with a new meaning. Grammaticalization/semantic restructuring processes are currently the focus of much interest in formal semantics (see e.g. Eckardt 2006, Deo 2015), and we expect that studying phenomena such as EVEN in NPIs can offer fresh insight into the relation between etymology and synchronic meaning, leading to a more nuanced view of compositionality that considers potential meaning change.

Finally, our finding that not all NPIs are scalar challenges the claim that polarity sensitivity is simply due to scalarity and exhaustivity (Chierchia 2006, 2013). Our data show that this position is empirically untenable. On the contrary, the existence of non-scalar NPIs supports the view of variation that Giannakidou and others present: there are polarity items that relate to constraints that have to do with reference (such as anti-specificity). No sufficiently general understanding of polarity phenomena in language can be achieved if we ignore this class.

Acknowledgments.

We want to thank the two anonymous Language reviewers for their very helpful feedback, and Greg Carlson for his insights, suggestions, and overall guidance. Material related to this paper was presented on various occasions: the 47th meeting of the Chicago Linguistic Society, Linguistics colloquia at Seoul National University, Seoul, Korea, and the University of Texas, Arlington, and the Workshop on Negation, Autonomous University of Barcelona. We thank the audiences for their very helpful feedback. For discussion and suggestions we are grateful to Diane Brentari, Vivianne Déprez, Larry Horn, Chungmin Lee, Seungho Nam, and Hedde
Zeijlstra. Finally, special thanks to Jason Merchant for his many detailed and very helpful comments on this manuscript.

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Appendix: Sample survey: Prosody in Referentially vague rato-NPI vs. Free choice rato-NPI

CONTEXT 1: 당신은 평소에 나영이와 좀 더 친해지고 싶었는데, 이번 주말에 나영이의 생일파티에 초대를 받게 되었다. 나영이가 영문과인 것을 알지만, 그녀의 다른 취향에 대해 아직 잘 모른다는 당신은 생일선물을 될 사주지 고민이었다. 결국 나영이의 단식 친구 숙회에게 물어보니, 숙회가 말했다:

[1] etten-rato: (상당히 부드러운 어투로 아무런 강조없이)
   “어떤 책이라도 좀 사주렴. 개는 책을 좋아해.”
   [Q1] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
       A. 당신은 선물로 적당한 벤트 셀러 소설이나 시집 및 권중에서 사주면 된다.
       B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

   •
   • “어~ 편 책이라도 좀 사주렴. 개는 책을 좋아해.”
   [Q2] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
       A. 당신은 선물로 적당한 벤트 셀러 소설이나 시집 및 권중에서 사주면 된다.
       B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

[3] etten-rato vs. ETTEN-rato:

[4] amwu-rato: (상당히 부드러운 어투로 아무런 강조없이)
   “아무 책이라도 좀 사주렴. 개는 책을 좋아해.”
   [Q4] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
       A. 당신은 선물로 적당한 벤트 셀러 소설이나 시집 및 권중에서 사주면 된다.
       B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

   •
   • “아~ 무 책이라도 좀 사주렴. 개는 책을 좋아해.”
   [Q5] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
       A. 당신은 선물로 적당한 벤트 셀러 소설이나 시집 및 권중에서 사주면 된다.
       B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

[6] amwu-rato vs. AMWU-rato:

CONTEXT 2: 선영이네는 원래 무자였는데, 갑작스런 아버지의 사업실패로 가정형편이 어려워졌다. 선영이가 가족들을 걱정하자 친구 진희는 요즘 변호사들이 돈을 많이 벌다는 뉴스를 봤다며, 미모가 뛰어난 선영이가 변호사를 만난서 결혼하면 가족들을 도와줄 수 있을거라고 했다. 친구 진희가 선영이에게 말했다:

[1] etten-rato: (부드럽고 상당한 어투로 아무런 강조없이)
   “너는 어떤 변호사라도 만나서 결혼해야한다.”
   [Q1] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
       A. 너무 까다롭게 굽지말고 적당한 변호사 및 명을 만나보고 결혼해야한다.
       B. 변호사이기만 하면 못생기고 나아렇거나 순, 도박, 여자를 좋아하더라도 결혼해야한다.

   •
   • “너는 어~ 편 변호사라도 만나서 결혼해야한다.”
   [Q2] 위 문장의 뜻에 더 가까운 것은? A.____ B.____
A. 너무 까다롭게 굴지말고 적당한 변호사 및 면을 만나보고 결혼해야한다.
B. 변호사이기만 하면 못생기고 나이 많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

[3] etten-rato vs. ETTEN-rato:


[4] amwu-rato: (부드럽고 상냥한 여로로 아무런 강세없이)

“너는 아무 변호사라도 만나서 결혼해야한다.”

[Q4] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 너무 까다롭게 굴지말고 적당한 변호사 및 면을 만나보고 결혼해야한다.
B. 변호사이기만 하면 못생기고 나이 많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.


• •

“너는 아무 변호사라도 만나 결혼해야한다.”

[Q5] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 너무 까다롭게 굴지말고 적당한 변호사 및 면을 만나보고 결혼해야한다.
B. 변호사이기만 하면 못생기고 나이 많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

[6] amwu-rato vs. AMWU-rato:


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CONTEXT 3: 당신은 친구 생일파티에 와있다. 테이블 위에 다양한 과자가 종류별로 놓여 있다. 별로 입맛이 없는 듯 창백을 보며 뭐하케 서있는 당신에게 생일 파티의 주인공이 다가와 말한다:

[1] etten-rato: (당신에게 부드러운 여로로 아무런 강세없이)

“어떤 과자라도 좀 먹어보렴.”

[Q1] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 맛있어 보이는 것중에 몇 가지 정도 먹어봐.
B. 테이블 위에 있는 과자 종류를 전부 다 고려해보고 양껏 먹거나 다 먹어도 돼.


• •

“어떤 과자라도 좀 먹어보렴.”

[Q2] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 맛있어 보이는 것중에 몇 가지 정도 먹어봐.
B. 테이블 위에 있는 과자 종류를 전부 다 고려해보고 양껏 먹거나 다 먹어도 돼.

[3] etten-rato vs. ETTEN-rato:


[4] amwu-rato: (당신에게 부드러운 여로로 아무런 강세없이)

“아무 과자라도 좀 먹어보렴.”

[Q4] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 맛있어 보이는 것중에 몇 가지 정도 먹어봐.
B. 테이블 위에 있는 과자 종류를 전부 다 고려해보고 양껏 먹거나 다 먹어도 돼.


• •

“아무 과자라도 좀 먹어보렴.”

[Q5] 위 문장의 뜻에 더 가까운 것은? A.____  B.____

A. 맛있어 보이는 것중에 몇 가지 정도 먹어봐.
B. 테이블위에있는 과자 종류를 전부 다 고려해보고 양껏 먹거나 다 먹어도 됨.

[6] amwu-rato vs. AMWU-rato:
