Scalar marking without scalar meaning: Nonscalar, nonexhaustive *even*-marked NPIs in Greek and Korean

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SCALAR MARKING WITHOUT SCALAR MEANING: NONSCALAR, NONEXHAUSTIVE *EVEN*-MARKED NPIs IN GREEK AND KOREAN

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This article discusses in detail two cases of EVEN-marked negative polarity items (NPIs) in Greek and Korean that are NOT scalar or exhaustive. This prima facie paradoxical finding suggests that EVEN-marking is not always an indicator of scalarity—and, at least in the case of the Korean and Greek NPIs discussed, EVEN is grammaticalized as a nonscalar NPI marker. We propose that the nonscalar NPIs are antispecific indefinites with REFERENTIAL VAGUENESS, which is a form of ignorance best captured as NONEXHAUSTIVE variation in the potential values of the NPIs (Giannakidou & Quer 2013). We also show that the difference in Greek and Korean between scalar and nonscalar NPIs is reflected in prosody: scalar NPIs are 'emphatic', and nonscalar NPIs are 'non-emphatic'; we therefore conclude that prosodic prominence, not EVEN, 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).*

Keywords: *even*, (non)scalar NPIs, exhaustivity, antispecificity, referential vagueness, indefinites, semantic restructuring, compositionality, etymology

1. INTRODUCTION: *EVEN*, SCALARITY, AND NEGATIVE POLARITY.[1] Since the mid-1970s, there have been some assumptions about negative polarity items (NPIs) that theories of polarity tend to take for granted. One such assumption is that NPIs trigger scalar structure (Fauconnier 1978a,b, Israel 1996, 2011, Krifka 1995, among others), producing thereby emphatic assertions. Related to this, in more recent literature, one finds assertions that ALL polarity items (including free choice items (FCIs)) are exhaustive. For instance, Chierchia claims that, in contrast to 'ordinary' indefinites, 'with NPIs and FCIs we HAVE to exhaustify' (2013:8, emphasis in the original). Another related assumption is that scalarity and exhaustification are due to the presence of EVEN, a view most prominently expressed in Lahiri's (1998) paper on Hindi EVEN-NPIs.

In the present article, we challenge these claims by showing that, crosslinguistically, there is a class of NPIs that are NOT scalar or exhaustive, and that even EVEN-marked NPIs need not be scalar or exhaustive. In other words, EVEN-marking does not necessitate scalar meaning. We discuss two classes of nonscalar, nonexhaustive EVEN-marked NPIs in Greek and Korean, and we distinguish them from both NPIs that admit exhaustive readings (such as *any*) and FCIs. The nonscalar NPIs are antispecific indefinites that convey a form of indeterminacy identified as referential vagueness (Giannakidou & Quer 2013). Referentially vague indefinites impose a condition of nonexhaustive variation (unlike their free choice cousins, which require exhaustive variation). Refer-

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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.

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ential vagueness requires at least two alternative values for the NPI, but the alternatives are neither ordered nor exhaustified.

The unquestionable existence of nonscalar, nonexhaustive NPIs necessitates abandoning the claim that all NPIs induce scalar structure and supports the view that another important source of polarity sensitivity crosslinguistically has to do with referential deficiency (Giannakidou 1997, 1998, 2011). Referentially deficient NPIs exist in other languages besides Greek and Korean, as has been shown for Chinese (Lin 1996, Giannakidou & Lin 2016), Middle Dutch *enig* (Hoeksema 2010), Salish (Matthewson (1998:179) writes that the Salish NPI determiners *ku…a* and *kwel…a* 'represent the notion of NON-ASSERTION OF EXISTENCE'), and a number of other languages (Haspelmath 1997; for a recent overview see Giannakidou 2011). Although these data are well described and have been known for a while, there has been an unfortunate tendency in some strands of the literature to overlook them and to focus instead on English NPIs (minimizers, *any*), which indeed trigger scalar structure—though even *any* appears to have nonscalar uses; see Duffley & Larivée 2012, Giannakidou 2011, Krifka 1995. The literature often overlooks this fact, too. One of our goals in the present article is to remedy the narrow focus on scalar NPIs and show that nonscalar, nonexhaustive NPIs bear directly on the nature of polarity phenomena and even on the question of *any* itself.

Nonscalar, nonexhaustive 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 scalar focus particle and EVEN in NPIs, suggesting that EVEN in NPIs has been reanalyzed (or grammaticalized, in the sense of Hopper & Traugott 1993) as an NPI marker whose contribution is not fully reducible to the scalar particle EVEN. Our analysis implies a meaning change with 'restructuring' (to use 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 (referential vagueness). Such processes of semantic restructuring are the subject of great interest in the recent semantics literature (see e.g. the recent overview article Deo 2015)—and they 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 by acknowledging a stage of weakening or nontransparency of literal meaning.[2] Besides negation itself (the Jespersen cycle), the area of negation and polarity presents a wealth of phenomena suggesting nontransparency and meaning change: for example, *ever* (in free choice *whoever*) and volitionality markers in FCIs have been reanalyzed as free choice markings, their original meanings (temporal, volitional) being lost (Giannakidou 2006b, Giannakidou & Cheng 2006).

Finally, the nonscalar Greek and Korean NPIs that we study are typically prosodically deaccented. In both languages, the scalar and exhaustive NPI contains what has been described as 'emphatic accent' or 'stress'.[3] A prosodic distinction correlated with scalarity has even been made for *any*. Notably, Krifka (1995) distinguishes 'emphatic'

[2] Likewise, in a recent discussion, Carlson (2015) claims that the descriptive content of names may become opaque, therefore not fully retrievable from synchronic use.

[3] There is in fact a substantial literature noting prosodic differentiations in NPIs in a variety of languages. Besides the original observation about Greek NPIs (which goes back to Veloudis 1982 and Giannakidou 1997), Hoeksema (2010) discusses a change in the distribution of the Dutch NPI *enig* 'any' from a nonemphatic NPI to an emphatic NPI, accompanied by a change in meaning: from a nonscalar use (nonemphatic NPI) to a scalar one (emphatic). Hoeksema also mentions Sahlin 1979, a 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,

and 'nonemphatic' *any*, and Haspelmath (1997) writes that in the 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 article is as follows. First, we illustrate the main data in Greek (§2) and Korean (§4), with a brief discussion of EVEN in §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 §5, we first show, based on the usual diagnostics (subtrigging, supplementary uses, behaviors with universal modals), that nonemphatic NPIs are NOT exhaustive, and then offer our analysis of nonscalar NPIs as conveying referential vagueness. We conclude in §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 NONEMPHATIC 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; see also Giannakidou 1997 et seq., Tsimpli & Roussou 1996); small caps 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 (Giannakidou 1998, 2000, 2006a, Laka 1990), receiving negative meaning in isolation (which we review later). In other words, we have negative concord with emphatics but not with nonemphatics (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/nowhere'
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'. Note, however, that the rest of the forms do not contain 'EVEN-one', but are quite variable in composition, comprising WH-source (*pote*) or universal morphology (*kath-olu* 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 study the question of EVEN in §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 emphatics and nonemphatics lexically distinct. We first describe the prosodic and scalar differences, before turning to the syntactic differences.

2.1. PROSODIC DIFFERENCES BETWEEN EMPHATIC AND NONEMPHATIC NPIS. NPIs are sensitive to the property of nonveridicality and appear in nonveridical contexts (Bernardi 2002, Giannakidou 1997, 1998, 2011, Hoeksema 1999, Zwarts 1995, 1996). Nonveridical contexts need not be negative, but a big subset of them is. Negative contexts include MINIMALLY negative contexts (i.e. those that are merely downward-entailing; Zwarts 1996), as well as CLASSICALLY negative contexts (called antiveridical by Giannakidou,

possibly with emphatic lengthening of the vowel in *ooit*. Yoshimura (2007) argues for prosodic differentiation in Japanese NPIs, and Eckardt (2007) talks about emphatic/nonemphatic German *irgend*-indefinites.

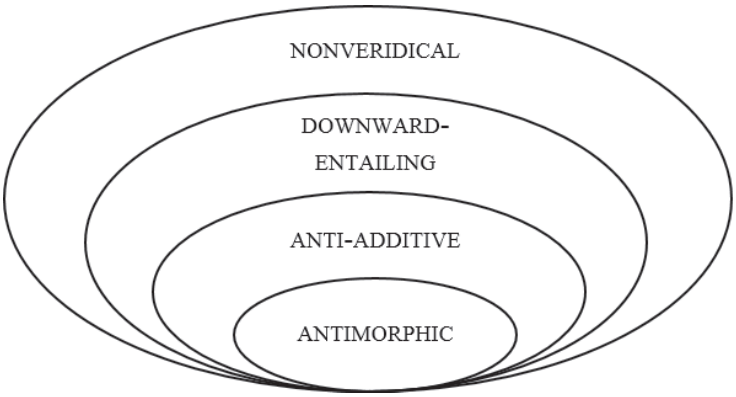

FIGURE 1. The nonveridicality hierarchy of polarity items.

and ANTI-ADDITIVE, ANTIMORPHIC by Zwarts 1996). The relations are summarized in Figure 1.

As we see, nonveridicality is a (conservative) extension of negation and downward entailment, and it unifies negative and nonnegative licensers of NPIs in one logical class. Emphatic and nonemphatic NPIs differ in their distributions within these contexts. Nonemphatic NPIs also appear in nonnegative, nonveridical contexts—for example, in questions, with modals, in imperatives—where FCIs appear. NPIs and FCIs are therefore 'broad' polarity items (see especially Giannakidou 1998, 2001, who first identified FCIs as polarity items), but there are differences between them in interpretation regarding the property of exhaustivity, as we discuss in §5. Emphatic NPIs, by contrast, are strict (or 'strong') NPIs and appear only with classically negative expressions. They are excluded everywhere else.

We start by illustrating the basic fact that with negation and antiveridical 'without', both variants of NPIs are possible. Truth-conditionally, the statements with emphatic and nonemphatic NPIs are equivalent, but they differ in that, as indicated below, the emphatic NPI is equivalent to emphatic (Krifka 1995) or intensified *any* (which we indicate here as *any-at-all*).[4]

(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 SBJV see.3SG NPI.person
'without having seen *anybody*/*anybody at all*.'

The nonemphatic NPI (which typically comes with a prosodic contour that involves focus in some other constituent; see also *any*) has been argued (in Giannakidou 1997, 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

[4] Abbreviations used in this article are: ACC: accusative, C: complementizer, CL: classifier, COND: conditional, DAT: dative, DECL: declarative, DET: determiner, FEM: feminine, IMP: imperative, NEG: negation, NEUT: neutral, NOM: nominative, PFV: perfective, PL: plural, PST: past, PTCL: particle, Q: question, REL: relative clause, SBJV: subjunctive, SG: singular, TOP: topic.

opposed to *John didn't see anybody at all*. Intensification is typically understood as relying on extremes of a scale, and therefore the intensified *any-at-all* is scalar—and likewise the Greek emphatic NPI, we argue.

Regarding the prosodic distinction, Chatzikonstantinou 2016 offers data from production experiments suggesting that it involves both higher pitch and lengthening. Figure 2 and Figure 3 (from that work, and reproduced here with permission) are representative of the contrast.

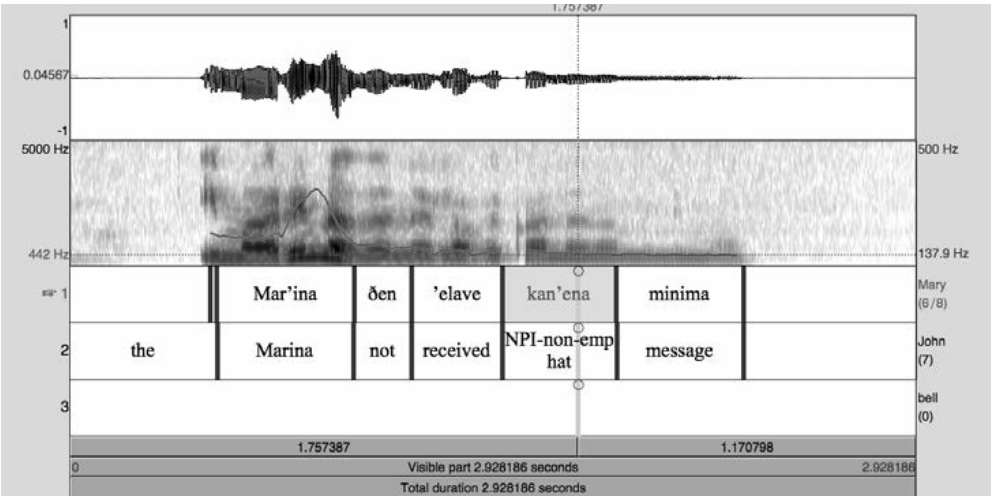

FIGURE 2. Nonemphatic NPI, flat intonation.

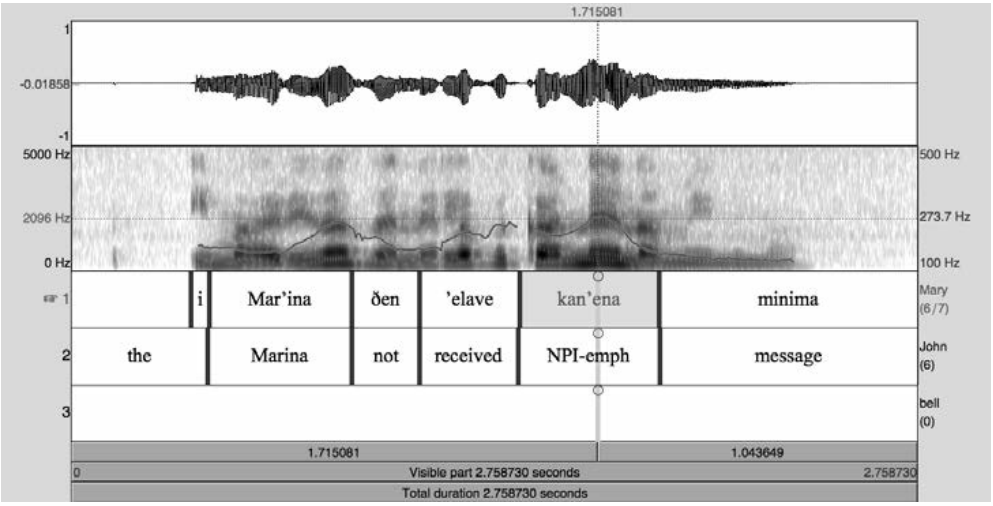

FIGURE 3. Emphatic NPI contour.

Sentential contours are distinct in the two paradigms. The pitch contour looks quite different: the emphatic is associated with an L+H* (the H* is aligned with the stressed syllable) and then a fall, but the nonemphatic has a flat intonation (and also the parts before and after it). In terms of duration, the emphatic appears to be longer (0.44 s) than the nonemphatic (0.39 s), which is expected if we assume that the former 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 continue using the analogy *any* (as equivalent to the Greek nonemphatic NPI) and *any-at-all* (the emphatic NPI). The first difference is that only the nonemphatic 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) Q: Who didn't find any mistakes? Mary or Bill?
A: I MARIA dhen vrike {kanena/#KANENA} lathos.
the Maria not found.3SG NPI.DET mistake
'MARY didn't find any mistakes.' (neutral)
#'MARY didn't find *any* mistakes *at all*!' (emphatic *any*, odd)

Because we have focus on another constituent, the nonemphatic NPI is the only option. Chatzikonstantinou (2016) examines such examples and finds that speakers uniformly produce and accept only nonemphatic NPIs. Importantly, these questions are not 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*.

The response with the nonemphatic NPI, by contrast, is fine and 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 *lathi*/*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*/*ever*, one clearly perceives a difference in strength/emphasis' (Chierchia 2013:27). This is clearly not the case, since the Greek NPI and *any* are indistinguishable from the bare nominal, which as we said is quite neutral. (We use the bare nominal because the judgment is clear, in contrast to the indefinite article *ena* 'a/one'. This has a numeral reading *one*, as is common with indefinite articles crosslinguistically (e.g. *un*, *ein*), and although *I MARIA dhen vrike ena lathos* is fine as a variant of 5A, it also allows for a reading such as 'Mary was the one who didn't find one mistake', with the numeral 'one mistake' scoping above negation. This reading is irrelevant to our discussion.)

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

(6) [Context: Maria is supposed to read some articles this week for Semantics 2, of which only one is required (the others are optional). Maria is notoriously late in doing her readings, usually doing 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! Dhen dhiavasa KANENA arthro!
ah no not read.1SG NPI.DET article
b. Ax, oxi! #Dhen dhiavasa kanena arthro!
ah no not read.1SG NPI.DET article
'Ah, no! I didn't read any article at all!'

Here the nonemphatic 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 one to read, or the least likely to ignore). The nonemphatic 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 from above, where *any* was equivalent to a bare nominal.

(7) Q: Who didn't find any mistakes? Mary or Bill?
   a. A: Mary didn't find any mistakes. (no scalarity, neutral)
   b. A: #MARY didn't find ANY mistakes at all! (scalar response, odd)

Hence, *any* does not always convey 'strength'. In recent literature more challenges have been leveled against the scalarity of *any* (Duffley & 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*/*ever* 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' (2012:30). 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.[5]

Negation with the intensified *any-at-all*, by contrast, does indeed produce scalar structure in the classical sense (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. ASSERT($\langle$B,F,A$\rangle$)(c) = c ∩ B(F) iff 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. ASSERT($\langle$B,F,A$\rangle$)(c) = SCALAR.ASSERT($\langle$B,F,A$\rangle$)(c) iff the alternatives are informationally ordered with respect to each other.
   c. SCALAR.ASSERT($\langle$B,F,A$\rangle$)(c) = {i ∈ c| B(F) holds in c and all stronger alternatives are negated}.

[5] It is also important to note that Lahiri himself rejects the idea that *any* contains EVEN (pace J. S. Lee & Horn 1994) and offers specific arguments that his EVEN analysis of Hindi NPIs cannot apply to *any* (Lahiri 1998:§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.

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. Nonstressed *any*, according to Krifka, does not trigger Scalar.assert. In contrast to Krifka, Chierchia (2006, 2013) posits a syntactic feature +Σ for all NPIs. This feature induces domain alternatives and exhaustivity, but it clearly cannot be present in all instances of *any*, since *any* can be neutral, too, as we just saw. By contrast, intensified NPIs—for example, with *a single*, *at all*, *even*, or mere prosody (Greek NPIs)—may indeed be argued to contain the +Σ feature.

(13) a. John didn't see {*a single*/*ANY*} *student* at the meeting. (emphatic negation)
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, and scalar, but nonstressed *any* and nonemphatic NPIs pattern together as nonintensified negation. With these NPIs, therefore, the +Σ feature is unmotivated. Chierchia fails to acknowledge empirically this case—and in so doing, he fails to acknowledge a significant amount of data in English, Greek, and, as we shall soon see, Korean.

To sum up, NPIs can be emphatic (scalar) and nonemphatic. In the nonemphatic case, we have no evidence for scalar structure or exhaustification, since we saw here that in the scalar environment, that is, as answers to biased questions, nonemphatic NPIs are odd. We conclude therefore that nonemphatic NPIs are not scalar, and we address their meaning and lack of exhaustivity further in §5. Another important conclusion is that *any* also appears to have nonscalar, nonemphatic uses.

2.3. SYNTACTIC DIFFERENCES BETWEEN EMPHATIC AND NONEMPHATIC NPIS. The major syntactic differences between emphatic and nonemphatic NPIs have been discussed extensively in earlier literature (Giannakidou 1997, 1998, 2000, 2006a,b); we thus offer only a very brief presentation here. These distinctions are revisited in §4, where we establish syntactic parallels with the Korean NPIs.

(i) FRAGMENT ANSWERS. Only the emphatic NPI can occur as a fragment answer.

(14) Q: Pjon idhes xthes vradi? 'Who did you see last night?'
A: {KANENAN/*Kanenan}. 'Nobody/*Anybody.'

The ability to answer negatively as a fragment is the hallmark property of NPIs known as N-WORDS (Giannakidou 2006a, Laka 1990, Zanuttini 1991). The nonemphatic 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. Nonemphatic 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, nonemphatics are again like *any*, which also appears in islands. Importantly, nonlicensing of KANENAN in the island was one of the arguments in Giannakidou

1997, 1998 that set the emphatic NPI apart from focus in situ, which is fine in islands (Tsimpli 1995).

(iii) LONG-DISTANCE LICENSING. Given that nonemphatic 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 nonemphatic NPIs are like *any*. This is confirmed in our next point, namely, that emphatic NPIs appear only with negation, but nonemphatic NPIs have a broader distribution.

(iv) LICENSING IN BROADER NONVERIDICAL CONTEXTS. Nonemphatic NPIs appear in nonnegative, nonveridical contexts (recall Fig. 1); they are therefore 'broad' NPIs. Emphatic NPIs, by contrast, are strict NPIs, appearing only within the negative ('anti-veridical') core. For the nonemphatic NPI, we use *some or other* in the examples to indicate its meaning in these contexts.

(17) Pijes {pote/*POTE} sto Parisi? (question)
went.2SG NPI.ever in.the Paris
'Have you *ever* been to Paris?'

(18) An dhis tin Ariadne {puthena/*PUTHENA}, na tis milisis. (conditional)
if see.2SG the Ariadne NPI.place SBJV her talk.2SG
'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. (imperative)
eat.IMP.2SG NPI.DET.NEUT apple
'Eat an apple, *some apple or other*.'

(20) Bori na bike {kanenas/*KANENAS}. (modal verb)
can.1SG SBJV 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} bira.
the Ariadne wants.3SG SBJV drink.3SG 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 a free choice reading, and this is why in the last four examples, which trigger free choice on *any*, we do not use *any*; we return to this contrast with *any* in §5. The nonemphatic NPI is further licensed with modalities and other nonveridical operators; the core distribution is summarized in Table 1.

This table summarizes our observation that the emphatic version behaves like a strict NPI, but the nonemphatic and *any* are broader NPIs, with similar distributions. 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 §§5 and 6.[6]

[6] Importantly, according to Lahiri 1998, Hindi EVEN-NPIs have the broad distribution observed in Table 1. It is possible that in the Hindi data prosody also plays a role and that this escaped Lahiri's attention.

ENVIRONMENTS	*any*	GREEK NONEMPHATIC NPI	GREEK EMPHATIC NPI
1. Negation/*without*	OK	OK	OK
2. Questions	OK	OK	*
3. Conditional (*if*-clause)	OK	OK	*
4. Restriction of *every*/*all*	OK	OK	*
5. Downward-entailing quantifier	OK	OK	*
6. Modal verbs	OK, with FC	OK	*
7. Directive attitudes (e.g. *want*)	OK, with FC	OK	*
8. Imperatives	OK, with FC	OK	*
9. Habituals	OK, with FC	OK	*
10. Disjunctions	OK	OK	*
11. *before*-clauses	OK	OK	*
12. Future	OK, with FC	OK	*
13. Progressives	*	*	*
14. Episodic perfective past sentences	*	*	*
15. Affirmative existential structures	*	*	*
16. Epistemic veridical attitudes (e.g. *believe*, *imagine*, *dream*)	*	*	*

TABLE 1. Distributions of *any* and NPIs in nonveridical contexts; exclusion in veridical contexts.

In sum, the overall conclusion one must draw from the prosodic, pragmatic, and syntactic differences between emphatic and nonemphatic 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 made morphologically between the *to*-NPI (corresponding to the emphatic NPI) and *rato*-NPI (corresponding to the nonemphatic NPI), and within the *rato*-NPI there is additional impact of prosody.

The emphatic NPI is scalar and a strict NPI akin to an n-word, as we said. Given its prosody, it seems reasonable to say that prosodic emphasis (which is both higher pitch and lengthening, as we have shown) is the realization of lexical scalarity and exhaustivity. One could thus view the emphasis on the NPI as realizing Chierchia's +Σ. In contrast, the nonemphatic NPI lacks emphasis; it therefore lacks the +Σ feature that is responsible for scalarity and exhaustivity (as we see further in §5).[7]

We address next the question of EVEN.

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

[7] Giannakidou 1998, 2000 offer additional arguments (*almost*/*absolutely* modification, donkey anaphora, predicate nominal use) and argue that the emphatic NPI is a universal quantifier—a position also argued for Korean *to*-NPIs (K. Kim 1999, Sells 2006, Sohn 1995, and Yoon 2008a,b). If we adopt the universal analysis, then emphasis contributes scalarity only, and exhaustivity comes from the universal meaning of the NPI.

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

(22) The Dean invited *even* Bill.

(23) i. $\exists x\ [x \neq \text{Bill} \wedge C(x) \wedge \text{invited (Dean, x)}]$, and
ii. $\forall x\ [x \neq \text{Bill} \rightarrow \text{likelihood (Dean inviting x)} > \text{likelihood (Dean inviting Bill)}]$

According to Karttunen and Peters (1979), *even* is a focus additive particle that does not affect the truth conditions of a sentence: the sentence asserts that the Dean invited Bill,[8] but *even* has two presuppositions: an additive one, and a scalar one. Additivity requires that there is a set of alternative values to the *even*-phrase in the context (C(x)), and *even* ranks the alternatives on a scale (Horn 1989, Kay 1990)—which can be likelihood (Karttunen & Peters 1979) or noteworthiness (Herburger 2000) or may depend on the context (Giannakidou 2007). The *even*-phrase associates with the extremes of the scale: positive *even* associates with the lowest (or near-lowest) end, as shown above, where '>' reads as 'higher' in the scale; but in the negative sentence, *even* associates with the highest values, appearing to the left of '>'.

(24) The Dean didn't invite even Bill.

(25) i. $\exists x\ [x \neq \text{Bill} \wedge \neg(\text{Dean invited x})]$
ii. $\forall x\ [x \neq \text{Bill} \rightarrow \text{likelihood (Dean inviting Bill)} > \text{likelihood (Dean inviting x)}]$

Bill is now the most likely person to have been invited. In English, we do not see a lexical alternation between high-value (NPI-EVEN) and low-value EVEN, but in many languages we do find a lexical difference (in German (König 1991, Rullmann 1997), Greek (Giannakidou 2007), Spanish (Herburger 2003, Alonso-Ovalle 2009), and Korean (J.-H. Lee 2010), among many others). In Greek there are four words meaning EVEN, and two of them—*kan* and *oute*—are NPIs (Giannakidou 2007) and contrast with positive EVEN *akomi ke*.[9] They may also cooccur as *oute kan*.

(26) a. ?#I Maria dhen efaje **akomi ke** to pagoto. (positive EVEN)
the Maria didn't eat even the ice.cream
b. I Maria dhen efaje **oute (kan)** to pagoto. (NPI-EVEN)
the Maria didn't eat even the ice.cream
c. I Maria dhen efaje **kan** to pagoto. (NPI-EVEN)
the Maria didn't eat even the ice.cream

(27) a. I Maria efaje **akomi ke** to pagoto. (positive EVEN)
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 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.

[8] The alternatives are variables of type *e* because the focus of *even* is the nominal argument, but *even* can also target other constituents, such as adjectives, cardinality predicates, verbs, or clauses, generating in each case alternatives of the appropriate type. We simplify here because type details are not relevant.

[9] Etymologically, *kan* derives from the conjunction *ke* 'and' and the conditional *an* 'if'. All Greek EVENS contain some morpheme whose original meaning was 'and', for example, *ou-te* (< Ancient Greek *ou* 'not' + *te* 'and'), *akomi ke* (lit. 'still and': positive EVEN), and *kan* (< *ke an*)—a historical remnant reflecting their additive meaning. Importantly, and this needs to be emphasized as another point supporting semantic reanalysis, 'and' in the NPIs does not have the literal contribution of conjunction but behaves itself as an additive particle.

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

(28) a. Metaniosa pu to skeftika {kan/*oute}!
regretted.1SG that it thought.1SG even
'I regret that I even thought of this!'
b. Anikses {kan/*oute} to vivlio?
opened.2SG even the book
'Did you even open the book?'

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.[10] For our purposes, what matters is that *kan* appears in a variety of polarity contexts, but its distribution does not fully overlap with the distribution of the two NPIs, as can be seen in Table 2.

ENVIRONMENTS	*kan*	NONEMPHATIC NPI	EMPHATIC NPI
1. Negation/*without*	OK	OK	OK
2. Questions	OK	OK	*
3. Conditional (*if*-clause)	OK	OK	*
4. Restriction of *every*/*all*	*	OK	*
5. Downward-entailing quantifier	*	OK	*
6. Modal verbs	*	OK	*
7. Directive attitudes (e.g. *want*)	*	OK	*
8. Imperatives	*	OK	*
9. Habituals	*	OK	*
10. Disjunctions	*	OK	*
11. *before*-clauses	OK	OK	*
12. Future	*	OK	*
13. Progressives	*	*	*
14. Episodic perfective past sentences	*	*	*
15. Affirmative existential structures	*	*	*
16. Epistemic veridical attitudes (e.g. *believe*, *imagine*, *dream*)	*	*	*

TABLE 2. Distribution of Greek *kan* 'NPI-EVEN' and nonemphatic and emphatic NPIs.

If we look at the distributions in Table 2, we cannot but notice an 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) is bad.

(29) a. Elaxisti fitites ipan *tipota*.
very.few students said.3PL NPI.thing
'Very few students said anything.'
b. *Elaxisti fitites ipan *kan ena* pragma.
very.few students said.3PL even one thing
'Very few students said even one thing.'

(30) a. Kathe fititis pu idhe *tipota* ipopto, prepi na milisi.
every student that saw.3SG NPI.DET suspicious must.3SG SBJV talk.3SG
'Every student that saw anything suspicious must speak.'

[10] *Kan* shares its distribution with yet another NPI-EVEN that means 'at least'—*esto*, which also licenses negative bias. For the purposes of the discussion in this article, and in order to avoid unnecessary complications, we consider *kan* and *esto* as equivalent (though the distributions of *kan* and *esto* are not completely identical; see Giannakidou 2007).

b. *Kathe fititis pu idhe *kan mia ypopti kinisi*, prepi
every student that saw.3SG even one suspicious movement must.3SG
na milisi.
SBJV talk.3SG
'Every student that saw even one (= any) suspicious movement must speak.'

Notice also the contrast with English, where 'even one' aligns with *any*. In Greek, we get a clear contrast, as we see, between the NPI and 'even one'. *Oute*, of course, is also unacceptable since, as we said, it is a strict NPI and cannot appear in mere downward-entailing contexts (see Giannakidou 2007 for these data). 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 emphatic NPIs are fine, but multiple *kan*s are not.

(31) a. I Maria dhen ipe TIPOTA se KANENAN!
'Mary didn't say anything to anybody!'
b. #I Maria dhen sistise *kan ton Jani kan ston Vassili*.
#'Mary didn't introduce even John to even Bill.'

The sentences in 31 are classic instances of negative concord, possibly necessitating a rule of absorption, though this is not our point here. Our point is that multiple instances of EVEN, as we see in 31b, are pretty bad, whereas multiple EVEN-NPIs are routine—there is thus a clear asymmetry showing that *kan* in the emphatic NPI and independent *kan* are not equivalent.

In sum, the distribution of neither EVEN-NPI (scalar, nonscalar) is predictable from the distribution of NPI-EVEN itself. Therefore the Greek EVEN-NPI is not simply a collection of its parts (as has been argued for the Hindi NPI by Lahiri); rather, the EVEN-NPIs, in both emphatic and nonemphatic variants, seem to be grammaticalized as distinct formations. The NPIs can be best 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 EVEN, and that we cannot, without showing evidence, assume that just because we have EVEN we also interpret EVEN. We move on now to draw the parallel with Korean NPIs.

4. KOREAN *EVEN*S AND NPIS. Korean exhibits close equivalences to the Greek emphatic and nonemphatic NPIs. It has two series of indeterminates—*amwu*, *nwukwu*—along with two EVEN markers *-to*, *-rato* (Choi 2007, C. Lee 1999, 2003, C. Lee et al. 2000, J.-H. Lee 2010, Lim 2015); the historical analysis of *rato* is similar to that of Greek *kan*, deriving from *ra* 'if' and additive *to*.

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

Here we add the FCI paradigm, typically marked with the disjunction marker *na* 'or'. We also see two variants of *rato*-NPIs, one emphatic, one nonemphatic, and we come back to this later.[11]

[11] Our discussion of the Korean data, and especially the significance of prosodic differentiation in the *rato*-NPI, benefited enormously from commentary by one of the referees. We wanted to thank the referee here for

4.1. TWO *EVEN*S WITH NPIS IN KOREAN. 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*, that is, with strict distribution in negative/antiveridical contexts. The *to*-NPI is just like emphatic NPIs/*oute* in Greek, and does not appear in nonnegative polarity contexts such as questions.

(33) {Amwu/nwukwu}-to oci-anh-ass-ta. (Korean)
anyone-even come-NEG-PST-DECL
'No one came.'

(34) *{Amwu/nwukwu}-to o-ass-ni?
anyone-even come-PST-Q
'Did anyone come?'

(35) a. *Irthe KANENAS? (Greek)
came.3SG NPI.person
b. Irthe *kanenas*?
'Did anyone come?'

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 article, comes in two variants: stressed and unstressed (or 'lengthened' and 'unlengthened'). The unstressed *rato*-NPI creates the neutral, nonscalar statements we described for the Greek nonemphatic NPI, so we gloss it *some or other* too. The *rato*-NPI also appears in a variety of nonveridical contexts, including questions, imperatives, modal verbs, subjunctive clauses, and disjunction; some examples are given in §4.3 below (see for more examples Choi 2007, Giannakidou & Yoon 2011, C. Lee 2003, C. Lee et al. 2000). One crucial difference from Greek *kanenas* is that *rato*-NPIs are blocked in the antiveridical 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 nonemphatic NPI, and the reason may be due to general properties of Greek and Korean—for example, 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. Our goal is rather to offer more concrete evidence that the unstressed *rato*-NPI patterns with the prosodically weak Greek NPI.[12]

4.2. DIFFERENCES BETWEEN *to*-NPIS AND *rato*-NPIS. The following properties confirm that the *rato*- and *to*-NPI series exhibit the systematic differences observed in §2 between nonemphatic and emphatic Greek NPIs, respectively.

(i) FRAGMENT ANSWERS. NPI *amwu-to* can give a successful fragment answer, while the nonemphatic *amwu-rato* cannot.

(37) Q: Nwukwu-lul po-ass-ni? 'Who did you see?'
A: {Amwu-to/*Amwu-rato}. 'Nobody/*Anybody.'

their overall contribution. The Korean data are further discussed in §6, where we hope to have addressed the referee's questions regarding the role of prosody in differentiating between scalar and nonscalar *rato*-NPI.

[12] The difference between *amwu* and *nwukwu* in Korean grammar correlates with domain specificity (*nwukwu*) vs. open domain (*amwu*). We do not discuss this issue here, since it does not seem to be particularly relevant to the main topics of this article (see Giannakidou & Quer 2013, M. Kim & Kaufmann 2006, C. Lee et al. 2000, Park 2009).

The *rato*-NPI is excluded, on a par with the nonemphatic NPI; the *to*-NPI is like an n-word.[13]

(ii) LICENSING IN ISLANDS. *Amwu-rato* appears in syntactic islands, such as a relative clause, but *amwu-to* is ungrammatical in these contexts.

(38) a. Ney-ka [{amwu/nwukwu}-rato kwanryentoy-n] pimil-ul
you-NOM anyone-even involve-REL secret-ACC
nwuselhan-tamyen
reveal-COND
'If you reveal secrets that involve anyone, … '

b. *Na-nun [{amwu/nwukwu}-**to** kwanryentoy-n] pimil-ul
I-TOP anyone-even involve-REL secret-ACC
nwuselhaci-anh-ass-ta.
reveal-NEG-PST-DECL
'I didn't reveal secrets that involved anyone.'

The *rato*-NPI behaves like the Greek nonemphatic 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 2008c for more details).

4.3. *rato*-NPI: DISTRIBUTION IN NONVERIDICAL CONTEXTS. Just like we saw with Greek, in Korean only *rato*-NPIs are licensed in polarity contexts that are not negative but simply nonveridical. We start with questions.

(41) QUESTION
Phari-ey hanpen-{irato/*to} kapo-ass-ni?
Paris-to once-NPI visit-PST-Q
'Have you ever been to Paris?'

(42) a. Phathi-eyse *nwukwu-rato manna-ss-ta.
party-at person-NPI meet-PST-DECL
'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!')

[13] A referee questions *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 & Cho 2011, Chung 2012), and its n-word status has been confirmed by additional diagnostics (clause-boundedness and *almost*-modification, in addition to elliptical answer in Yoon 2008c).

Example 42b 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.

(43) CONDITIONAL
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.'

(44) IMPERATIVE
amwu sakwa-{rato/*to} cipe-la.
any apple-NPI take-IMP
'Take *some apple or other*.'

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

(46) DIRECTIVE INTENSIONAL VERBS
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 nonemphatic NPIs and the Korean *rato*-NPI. We see that the *rato*-NPI appears in nonveridical contexts pretty much like the Greek nonemphatic.

ENVIRONMENTS	GRK EMPHATIC NPI/KOR *to*-NPI	GREEK *kanenas* NPI	KOREAN *rato*-NPI
1. Negation/*without*	OK	OK	*
2. Questions	*	OK	OK
3. Conditional (*if*-clause)	*	OK	OK
4. Restriction of *every*/*all*	*	OK	OK
5. Downward-entailing quantifier	*	OK	OK
6. Modal verbs	*	OK	OK
7. Directive attitudes (e.g. *want*, *insist*)	*	OK	OK
8. Imperatives	*	OK	OK
9. Habituals	*	OK	OK
10. Disjunctions	*	OK	OK
11. *prin*/*before*-clauses	*	OK	*
12. Future	*	OK	OK
13. Progressives	*	*	*
14. Episodic perfective past sentences	*	*	*
15. Affirmative existential structures	*	*	*
16. Epistemic attitudes (e.g. *believe*, *imagine*, *dream*, *say*)	*	*	*

TABLE 3. Distributions of Greek and Korean NPIs.

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

- The Greek emphatic NPI has the Korean *to*-NPI as its counterpart.
- The Greek nonemphatic NPI, which is licensed broadly in nonveridical contexts, has the Korean *rato*-NPI, with similar distribution and nonscalar flavor, as its counterpart.[14]

[14] Morphologically, *rato* is concessive (C. Lee 1999; also C. Lee 2003, C. Lee et al. 2000, Nam 1994, 1999), and recall that Greek *kan* consists of *ke an* 'and if'. Synchronically, however, there is no concessiveness in assertions with nonemphatic *kan*-NPIs; the examples we gave here are not concessive in any way.

- The difference between the scalar and nonscalar NPIs in Korean, unlike in Greek, is not simply prosodic but involves two lexically distinct EVENs.

In the *rato*-NPI, as we see further in §§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 the meaning of the nonscalar NPI, and how it differs from free choice.

5. NONSCALAR NPIS: ANTISPECIFIC, IGNORANCE INDEFINITES WITH REFERENTIAL VAGUENESS. If they are not scalar, then what is the meaning of nonemphatic 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). The tests below show that they belong to the class of ANTISPECIFIC indefinites (Giannakidou & Quer 2013). Consider now the following examples from that work.

(47) Greek
  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 a professor, *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.'

(48) Korean
  Na-nun enehak kyoswu {amwu/nwukwu}-rato manna-ko siph-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 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 & Port 2014). *Kanenas* and *rato*-NPIs, though licensed (by nonveridical 'want'), appear to be incompatible with this context of prior knowledge. If, by contrast, the speaker does not have someone particular in mind, the NPIs are fine, as shown below.

(49) a. Thelo na miliso me kanena glosologo, dhen exi simasia me pjon. (Greek)
     'I want to talk to *some linguist or other*; it doesn't matter who.'
  b. Na-nun enehakca {amwu/nwukwu}-hako-rato yaykiha-ko siph-ta.
     I-TOP linguist anyone-with-even talk-C want-DECL
     Nwukwu-tun sangkwaneps-ta.
     who-ever not.care-DECL (Korean)
     'I want to talk to *some linguist or other*; it doesn't matter who.'

Here the speaker is simply not picky. She has no specific interest in who she talks to; maybe she is curious to meet linguists, or she has a linguistic question, and some linguist or other would do. Nonemphatic NPIs thus behave like the indefinites called AN-

TISPECIFIC in Giannakidou 2012 and Giannakidou & Quer 2013. Well-known such indefinites are the Greek *kapjos* and Spanish *algún*, which are not NPIs but exhibit the same pattern—that is, they cannot be used if the speaker knows who/what the value of the indefinite is.[15]

(50) 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.'

(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. #Ine o proedros tu tmimatos filosofias.
'I want to talk to *some professor or other*. #He is the head of the Philosophy Department.'

(53) Spanish
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.'

(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* and *algún* (and its Catalan cognate) are not usable if the speaker knows who the professor is, just like the *kanenas*/*rato*-NPI. Giannakidou and colleagues (2011) 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 categorical behavior of these indefinites—though in the case of NPIs, we have unquestionably narrow scope because they are NPIs, and their variable is thus DEPENDENT (Giannakidou 1998, Giannakidou & Quer 2013).

By using the term 'antispecificity', Giannakidou and Quer treat the phenomenon as the converse of specificity, which is driven by the opposite epistemic constraint (the speaker knows what the value of the indefinite is).[16] Other labels have been used in the

[15] *Kapjos* and *algún* are not NPIs; that is, they occur with simple past positive sentences.

(i) a. *Kapjos* fititis tilefonise. (Greek)
b. Ha llamado *algún* estudiante. (Spanish)
'Some *student or other* called.'

[16] 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*, and the *rato*-NPI.

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

(ii) Kita! I Maria filai {#kapjo/*kanena/ena} agori! (Greek)
'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'.

literature for antispecific indefinites, such as 'low referential' (Partee 2008), 'epistemic' (Alonso-Ovalle & Menéndez-Benito 2013, Jayez & Tovena 2006), 'modal' (Alonso-Ovalle & Menéndez-Benito 2010), 'irreferential' (Jayez & Tovena 2006), 'epistemically nonspecific' (Haspelmath 1997), and 'extremely nonspecific' (Farkas 1998). The terms 'modal' and 'epistemic' were popular for a while, but given that specificity is also an epistemic constraint, the label 'epistemic' for antispecific indefinites seems confusing. Similarly, the term 'modal' does not allow us to distinguish between referentially vague indefinites and free choice items, which are also modal (Giannakidou 2001, Giannakidou & Cheng 2006). The term 'ignorance' indefinites has also been used informally in the literature, but when a speaker uses *kapjos*, *algún*, or *kanenas*, she does not mean to convey (i.e. assert) that she does not know who the referent is; rather, not knowing who is a precondition on the use of the item, just like knowing who is a precondition on the use of a specific indefinite. ANTISPECIFICITY therefore appears to be a more accurate and theory-neutral alternative to refer to the indeterminacy of reference of this class, and it captures nicely the converse relation to specificity.

Antispecificity gives effects that are usually talked about in reference to free choice, but free choice is exhaustive (as we know from all the work on free choice), whereas the effect of *kapjos*, *algún*, *kanenas*, and *rato*-NPIs is akin to REFERENTIAL VAGUENESS, which is not exhaustive, as shown in Giannakidou & Quer 2013, the theory we adopt in this article. We proceed first to illustrate the fact that there is no exhaustivity (§5.1), and then move on to the analysis of referential vagueness (§5.2).

5.1. NONEMPHATIC NPIS ARE NOT EXHAUSTIVE. Exhaustive indefinites such as FCIs and *any* license universal-like readings. There are three widely used diagnostics in the literature, all based on free choice *any*. The tests are: (i) the possibility of subtrigging, (ii) the 'supplementary' use, and (iii) the implausibility of exhaustive indefinites with universal modals (deontic, epistemic). FCIs and NPIs like *any*, receiving exhaustive readings, pass these tests—but our nonemphatic NPIs do not, as we shall see. In the discussion, we include the Mandarin NPI *shenme*, which has also been shown to be nonexhaustive (Giannakidou & Lin 2016; our Mandarin data are drawn from that work).

SUBTRIGGING. The term SUBTRIGGING is due to LeGrand 1975, and it refers to *any* becoming 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 the universality of *any*, but Giannakidou (2001) and Horn (2000, 2005) offer nonuniversal analyses that still derive universal reading via exhaustivity). Here is the main paradigm.

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

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

(57) Greek
*O Janis aghorase kanena vivlio pu vrike stin aghora.
the John bought.3SG NPI book REL.that found.3SG in.the market
intended: 'John bought any book that he found on the market.'

(58) Korean
*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.'

(60) Mandarin
a. *Yuehan mai-le shenme shu.
John buy-PFV NPI book
intended: 'John bought a (= some or other) book.'
b. *Yuehan mai-le ta neng zhao-dao de shenme shu.
John buy-PFV he can find-PFV REL NPI book

Unlike *any*, our NPIs and *shenme* cannot be subtrigged. FCIs, by contrast, can.

(61) Greek
O Janis aghorase opjodhipote vivlio vrike stin aghora.
the John bought.3SG FCI.DET book found.3SG in.the market
'John bought any book that he found on the market.'

(62) Korean
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.'

(63) Mandarin
Yuehan mai-le ta neng zhao-dao de renhe shu.
John buy-PFV he can find-PFV REL FCI book
'John bought any book he could find.' (from Giannakidou & Lin 2016)

Hence, our *rato*/*kanenas*/*shenme*-NPIs contrast with FCIs with respect to this exhaustivity 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 test succeeds.[17]

(64) 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.) The effect here supports our observation in this article that emphasis indicates scalar/exhaustive structure (§3). We substantiate this conclusion further in §6.

SUPPLEMENTARY *any*. Exhaustive NPIs exhibit supplementary use (Horn 2005), but nonexhaustive 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*.

(65) a. Pick a card, any card.
b. If you have a question, any question, you can contact me.

(66) Greek
Pare mia karta, opjadhipote /#kamia karta!
take.IMP.2SG one card FCI /#NPI card
intended: 'Take a card, any card!'

(67) Mandarin
Tiao yi-zhang ka ba, renhe /#shenme ka.
pick one-CL card PTCL FCI /#NPI card
intended: 'Pick a card, any card.' (Giannakidou & Lin 2016)

[17] We want to acknowledge the insight of a referee here with respect to the role of emphasis on the *rato*-NPI.

(68) Korean
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 in 69.

(69) 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 too, nonemphatic NPIs and *shenme* form a natural class, again in contrast to exhaustive NPIs such as free choice *any*, FCIs, and emphatic *rato*-NPI, which admit supplementary uses.

IMPLAUSIBILITY WITH UNIVERSAL MODALS. FCIs are known to be infelicitous (implausible) with universal modals (Menéndez-Benito 2010). Our Greek and Korean NPIs, however, are fine with necessity modals, as we show below. Consider first the following contrast with deontic necessity, and imagine a context where Mary is in a dire financial situation and needs to save herself from financial trouble. A lawyer is someone with money, who can also give her good advice.

(70) a. I Ariadne prepi na pandrefti kanena dikigoro. (Greek)
'Ariadne must marry some lawyer (or other).' (to get out of financial trouble)
b. Maria-nun {amwu/etten}-pyenhosa-hako-rato kyelhonhay-yahan-ta.
Maria-TOP NPI.lawyer marry-must-DECL (Korean)
'Maria must marry some lawyer (or other).' (to get out of financial trouble)

(71) a. #Ariadne must marry ANY doctor.
b. #I Ariadne prepi na pandrefti opjondhipote dikigoro.
the Ariadne must marry.3SG FC.any lawyer
c. #Maria-nun {AMWU/ETTEN}-uysa-hako-{rato/na}
Maria-TOP NPI.doctor/FCI.doctor
kyelhonhay-yahan-ta.[18]
marry-must-DECL
'#Maria must marry any doctor.' (to get out of financial trouble)

We see a clear contrast between FCIs, which are unacceptable, and NPIs, which are fine. The problem with FCIs is that they convey EXHAUSTIVE VARIATION (Giannakidou 2001, Giannakidou & Cheng 2006, Giannakidou & 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, which results in a strong and therefore implausible reading in this context. We present below the meaning given in Giannakidou & Quer: we have a deontic universal quantifier; 'W-deontic' is the deontic modal base, that is, the set of worlds consistent with obligations in w.

(72) a. $\forall w' \in \text{W-deontic(w)}$, x: [lawyer (x in w′)] [marry (Ariadne, x, in w′)]
(FCI-*opjondhipote*)

[18] The example with emphatic *AMWU*-N-{*rato*/*na*} also produces a derogatory sense. The free choice *na* item has received universal treatment (Kim & Kaufmann 2006). We thank a referee for bringing this to our attention.

b. Presupposition of **exhaustive variation**: $\forall d \in D_{FCI}$. $\exists w'$. lawyer(d)(w) and Ariadne marries d in w′.

Unselective binding by the universal modal and exhaustive variation produce a statement that is too strong: Mary needs to marry every doctor in every world in which she is in financial trouble. This reading is infelicitous in the context of what Mary needs to do in order to solve her problems, which is simply to find some lawyer to marry.

The NPIs are felicitous because they convey exactly this reading. They have existential interpretation; that is, they are existentially bound in the nuclear scope, with no exhaustivity.

(73) $\forall w' \in \text{W-deontic(w)}$ [(C(w′)] [$\exists$x lawyer (x in w′) & marry (Ariadne, x, in w′)]

The sentence with the NPI is consistent with our context where Ariadne must marry some rich guy or other. This is a weaker reading, and the NPIs, like the indefinite *some or other*, appear to be the perfect vehicles for it. Let us also note that the NPI statements are in no way marked (in contrast to *some or other*, which may be).

The contrast can be reproduced with epistemic modals.

(74) 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 is infelicitous because it creates a statement akin to John having talked to every doctor (in every world), which is highly implausible given that hospitals have many doctors and that, in order to be informed about someone's illness, you do not need to talk with ALL doctors, only one (or some) of those involved in her care. The NPI statement simply says that he talked to some doctor unspecified to the speaker; see Giannakidou & Quer 2013 for more comments on these points.

In Korean, the nonemphatic *rato*-NPI is good and has the interpretation of the Greek nonemphatic NPI, while the stressed version of that *rato*-NPI is odd.

(75) 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.'

(76) 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 *any* doctor.'

We can safely conclude, then, that our nonemphatic 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 §6.

5.2. REFERENTIAL VAGUENESS: NONEXHAUSTIVE VARIATION. We showed that nonemphatic NPIs in both Greek and Korean are neither scalar nor exhaustive. Giannakidou 1997 and 1998 argue for two lexical sources of NPI-hood: scalarity and referential deficiency. Referential deficiency is what we call now antispecificity. Two kinds of antispecificity are distinguished in Giannakidou & Quer 2013: exhaustive (leading to free choice) and REFERENTIAL VAGUENESS, which is nonexhaustive. Our Korean and Greek NPIs exhibit the latter.

As we said earlier, antispecific indefinites are used typically in contexts 'where the speaker does not have a particular individual in mind, is not sure about it' (Giannakidou et al. 2011:39), or if he simply feels that identity does not 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). All this is true for FCIs too, but in addition FCIs have exhaustive variation. With referential vagueness, we have a mere requirement that there be SOME variation, as indicated below in the definition of referential vagueness that we adopt from Giannakidou & Quer 2013.

(77) Referential vagueness: presupposition of variation
   a. A sentence containing a referentially vague indefinite α will have a truth value iff:
      $\exists\ w_1, w_2 \in W$: $[\![\alpha]\!]^{w1} \neq [\![\alpha]\!]^{w2}$, where α is the referentially vague indefinite.
   b. The worlds w_1, w_2 are epistemic alternatives of the speaker: $w_1, w_2 \in$ M(speaker), where M(speaker) is the speaker's belief state, the worlds compatible with what she believes/knows.
   c. The speaker does not know which value is the actual value. (vagueness, ignorance)

Referential vagueness, as we see, expresses the epistemic indeterminacy of the speaker regarding the value of α. The epistemic state of the speaker is modeled standardly as a set of worlds M(speaker) compatible with what the speaker knows or believes in the base world w. The speaker is in a state of referential vagueness if she has at least two possibilities in mind as values for α. In other words, the speaker has a choice between at least two, and possibly more, values for the indefinite. If she has this minimal choice, she cannot know which value is the actual one, which captures the 'ignorance' effect—though we do not, strictly speaking, talk about ignorance in this case, since speakers have choices between possibly known values. Referential vagueness is therefore more accurately understood as indeterminacy of reference rather than ignorance, which implies complete lack of knowledge.

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, as we see, is a presupposition that characterizes the speaker's epistemic state and can be treated as the dual of Ionin's (2006) condition of specificity, which imposes a singleton condition. Importantly, the variation requirement seems to be an ANTI-UNIQUENESS, ADDITIVE requirement; therefore the use of an additive particle such as EVEN or disjunction (*some or other*) makes sense.

Crucially, the variation requirement posits a minimal extension of two in the domain, and this may need to be strengthened to 'more than two'. It appears that with a domain of exactly two, speakers' judgments disprefer the NPI.

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

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

(80) 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 exactly two, speakers overwhelmingly prefer to use the unmarked indefinite article (Giannakidou & Quer 2013), and likewise in Korean. Alonso-Ovalle and Menéndez-Benito (2010) pose an ANTI-SINGLETON CONSTRAINT for the (similar) *algún* indefinite, but given the observed infelicity in the context of exactly two, it seems that a general strengthening of the variation condition may be at work, one that imposes a slightly broader (though not exhaustive) choice.

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

(81) ⟦I Maria theli na dhi *kanenan*/*-rato* glosologo 'Mary wants to see *kanenan*/*-rato* linguist'⟧ will be defined in *c*, only if:
$\exists w_1, w_2 \in M_E(s) : [\![\alpha]\!]^{w1} \neq [\![\alpha]\!]^{w2}$, where α is the referentially vague variable; if defined, ⟦I Maria theli na dhi kanenan glosologo⟧ is true iff there is some world w consistent with Mary's desires such that: there is a linguist in w who is a value to α that Maria sees.

(82) Particular linguist in mind = fixed value in $M_E(s)$:
$w_1 \rightarrow$ Bill, $w_2 \rightarrow$ Bill, $w_3 \rightarrow$ Bill

(83) No particular linguist 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 83 but not in 82.

Finally, a question worth asking is how the referential vagueness condition interacts with negation. Recall examples such as the following.

(84) 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, and so forth. In A, the speaker is not saying that there is some specific person that she did not see, but rather she negates seeing any of the values in the contextual domain. In other words, when there is an implicit contextual domain, the *kan*/*rato*-NPIs offer a set of possible values to satisfy referential vagueness.

To sum up, we have proposed here that the EVEN *kan*/*rato* in Greek/Korean NPIs belong to the class of referentially vague indefinites (which, as we said, also includes nonpolar indefinites).[19] Having lost their scalar meaning, *kan*/*rato* get reanalyzed as

[19] Hence, the property of referential vagueness itself is not responsible for the NPI status of the *kan*/*rato*-NPIs. Their status as NPIs is captured by the fact that the *kan*/*rato*-NPIs contain dependent variables, as argued in Giannakidou 1998, 2011, Giannakidou & Quer 2013. The presence of a dependent variable necessitates that the NPI be in the scope of or bound by a nonveridical operator.

markers of NPIs that convey referential vagueness. But it is also important to note that the presence of EVEN is not required for referential vagueness: most of the indefinites we discussed here do not contain EVEN (*tipota*, *puthena*, *kapjos*, *algun*), and there are also referentially vague indefinites that contain disjunction (*some or other*, *inka*-NPI in Korean; Kang 2014). It is therefore reasonable to conclude that it might be too strong to ascribe to EVEN alone the contribution of vagueness. Rather, the NPI as a whole seems to convey it.

We move on now to discuss the effect of prosody on the Korean *rato*-NPI.

6. NONEMPHATIC AND EMPHATIC *rato*: 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 *rato*-NPI. We already noted a number of asymmetries between exhaustive NPIs (such as *any*) and referentially vague NPIs, and we also pointed out briefly that emphasis on the *rato*-NPI makes it akin to an FCI. In this section, we focus on cases where both exhaustive/scalar items and nonexhaustive, nonscalar 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 referees for urging us to examine this issue more extensively.

The imperative is a context where both exhaustive and nonexhaustive indefinites appear.

(85) [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—he is merely inviting the addressee to consider some (maybe the ones she likes). Consider now Korean.

(86) {Amwu/etten}kwaca-rato (com) mek-epo-lyem. (Korean)
cookie.NPI please eat-try-IMP
'Eat some (or other) of these cookies.'

This imperative is similar to the ones just discussed. The speaker is inviting the addressee to try some unspecific cookie, not caring which one. Importantly, he is not inviting the addressee to consider all cookies. C. Lee (1999) characterizes this invitation 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 by uttering the imperative with *rato*, he invites her to settle for less. According to C. Lee, settle for less relates to concession. However, one of the authors of this article and our Korean speakers do not find the Korean sentence concessive; and the Greek, Spanish, and Catalan sentences are not concessive either. We also see next usages of *kan*/*rato*-NPIs in neutral suggestions that C. Lee would also agree do not contain concession. It thus appears reasonable to say that though historically *rato* may have correlated with concession, synchronically, neither *kan* nor *rato* has 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. (The Spanish and Catalan examples are from Giannakidou & Quer 2013.)

(87) Context as previously
  a. Fae opjodhipote gliko! (Greek)
  b. Prueba cualquier dulce! (Spanish)
  c. Tasta qualsevol dolç! (Catalan)
  d. Amwu kwaca-na mek-ela! (Korean)

(88) {AMWU/ETTEN} kwaca-rato mek-ela!
  'Eat ANY of these cookies!'

C. Lee would characterize 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 a great appetite, and the speaker is happy to announce that all options are open. Importantly, we see that the choice of exhaustive vs. nonexhaustive 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.[20]

Consider, finally, the neutral suggestions below.

(89) [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.'

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

The FCI and emphatic *rato*-NPI are infelicitous.

(90) [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. (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
    'You should get him any book. He likes books.'
  A: #{AMWU/ETTEN} chayk-irato (com) sacwu-lyem.

The FCI is odd because, just like in the case of the universal modal, it creates a strong, exhaustive reading—that you buy ANY book—and the reading does not make sense in the context of making a suggestion for something special to buy for your friend. The FCI additionally may give rise to a depreciative reading (*any book whatsoever*, *just any book*), thereby allowing it to include any unsuitable book for a gift, which is also at

[20] The data here are relevant for theories of imperatives (Kaufmann 2011, Portner 2007); the facts seem to support a view of the imperatives as having 'flexible' quantificational force.

odds with the context. The vague indefinites are fine and simply suggest book buying, without 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. Thirty-five Korean speakers participated in the experiment, students at the Seoul National University and the University of Texas, Arlington. All gave informed consent and were paid the equivalent of $5 as compensation for their participation in the experiment, which (including fillers) lasted about thirty minutes.

We considered four items: nonemphatic (i) *etten*-N-*rato* and (ii) *amwu*-N-*rato*, and emphatic (iii) *ETTEN*-N-*rato* and (iv) *AMWU*-N-*rato*. In order to ensure that the subjects understood the intended prosodic difference in a written pen-and-pencil survey, we offered an instruction in parentheses asking them to pronounce the emphatic *rato*-items in a strong, lengthy, emphatic fashion, and the nonemphatic ones in a gentle, soft, nonemphatic way. Furthermore, since Hangul (the Korean alphabet) lacks the upper/lower case letter distinction, we employed boldface, an accent mark (• on top of each syllable block), and a length mark (~) for the emphatic *ETTEN*-N-*rato* and *AMWU*-N-*rato*, as opposed to none of these for the nonemphatic *etten*-N-*rato* and *amwu*-N-*rato* (see the appendix for a sample survey written in Korean).

The items were tested without time restrictions. The survey was designed to test our crucial examples with the four items in three different contexts: (i) context 1: examples 89, 90 in the birthday-gift context; (ii) context 2: examples 70, 71 in the lawyer-marriage context; and (iii) context 3: examples 86, 88 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, along with the note that *etten*/*amwu* is pronounced in 'a gentle, soft, nonemphatic way' for nonemphatic items, and we asked the subjects to decide which of A (referentially vague meaning, glossed RV below) and B (exhaustive meaning, glossed FC) is closer to the meaning of the sentence. In the birthday-gift context, for example, A saying '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 a best-seller novel or poetry', while B 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 RV or FC in a given context. In these tests, no regulation was given so that overlapping choices (for instance, both nonemphatic and emphatic ones have RV meanings) were allowed (see the second and third columns in Tables 4 and 5 for results). Finally, in addition to the free-selection tests, we conducted a pairing test, which asked the subjects to pair the nonemphatic and emphatic versions to either RV or FC without overlap (i.e. either '*etten*: RV–*ETTEN*: FC' or '*etten*: FC–*ETTEN*: RV') (see the fourth columns in Tables 4 and 5 for results).

The percentage indicates the proportion of responses that are consistent with our proposal on the association of prosody and RV/FC meaning, that is, nonemphatic: RV, and emphatic: FC.

For each context in each test, we collected thirty-five responses and report a proportion of the responses consistent with our prediction as a percentage. The numbers in

etten-rato / CONTEXTS	FREE SELECTION TEST 1: **nonemphatic: RV** *etten*-N-*rato*		FREE SELECTION TEST 2: **emphatic: FC** *ETTEN*-N-*rato*		PAIRING TEST: *etten*: RV–*ETTEN*: FC	
context 1: birthday gift, ex. 89, 90	91.4%	($< 10^{-7}$)	60.0%	(.088)	91.4%	($< 10^{-7}$)
context 2: lawyer-marriage, ex. 70, 71	85.7%	($< 10^{-5}$)	65.7%	(.021)	97.1%	($< 10^{-10}$)
context 3: table-dessert, ex. 86, 88	74.3%	($< 10^{-3}$)	71.4%	(.003)	85.7%	($< 10^{-5}$)
AVERAGE	**83.8%**	($< 10^{-13}$)	**65.7%**	($< 10^{-3}$)	**91.4%**	($< 10^{-20}$)

TABLE 4. Empirical tests of prosody and RV/FC in *etten*-N-*rato* item in Korean.

amwu-rato / CONTEXTS	FREE SELECTION TEST 1: **nonemphatic: RV** *amwu*-N-*rato*		FREE SELECTION TEST 2: **emphatic: FC** *AMWU*-N-*rato*		PAIRING TEST: *amwu*: RV–*AMWU*: FC	
context 1: birthday gift, ex. 89, 90	71.4%	(.003)	77.1%	($< 10^{-3}$)	97.1%	($< 10^{-10}$)
context 2: lawyer-marriage, ex. 70, 71	68.6%	(.008)	91.4%	($< 10^{-7}$)	100.0%	(0)
context 3: table-dessert, ex. 86, 88	71.4%	(.003)	74.3%	($< 10^{-3}$)	94.3%	($< 10^{-8}$)
AVERAGE	**70.5%**	($< 10^{-5}$)	**81.0%**	($< 10^{-10}$)	**97.1%**	($< 10^{-27}$)

TABLE 5. Empirical tests of prosody and RV/FC in *amwu*-N-*rato* item in Korean.

parentheses are the *p*-values of the one-sided test of the null hypothesis, which is that the true proportion of the responses consistent with our prediction is 50% of the whole population, while the alternative hypothesis is that the proportion is larger than 50%; *p*-values are computed from a binomial distribution. Note that the *p*-value indicates the probability of having these high percentages in Tables 4 and 5 just by chance. Therefore, our experiment results are statistically significant and strongly support our theory, given extremely small *p*-values.

The results are very revealing in many respects. For one thing, the difference between Tables 4 and 5 shows the lexical difference between *amwu-rato* and *etten-rato*, which means that the choice of indefinite itself matters in Korean (see n. 12 and n. 18). *Amwu* itself may have the potential of antispecificity, which may lead to the variation among speakers on the nonemphatic *amwu-rato* between the predicted RV meaning (70.5%, nonemphatic RV in Table 5) and the occasionally observed FC meaning (29.5%). This explains, for instance, the different judgment on our data with one referee.

The main divergence, however, seems to arise from the prosody: as summarized in the tables above, nonemphatic and emphatic *amwu*/*etten-rato* exhibit a systematic pattern of RV and FC reading in our survey, with high predictability: 83.8% and 70.5% for nonemphatic items and 65.7% and 81.0% for emphatic items. Furthermore, the pairing tests exhibit remarkably high predictability (91.4%, 97.1%) for the current proposal—nonemphatic: RV vs. emphatic: FC—more 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 nonemphatic and emphatic *rato*-NPI becomes extremely clear to most native speakers (91.4% for *etten*/*ETTEN-rato* and 97.1% for *amwu*/*AWMU-rato*) when they are in comparison with each other.

To sum up, referential vagueness predicts well-formed, nonscalar, and nonexhaustive readings of *kan-* and *rato*-NPIs in modal contexts. Emphasis, in accordance with what we concluded in §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. In this article, we addressed the common claim in the literature that polarity items as a whole are scalar and exhaustive. We found this claim to be challenged by the data we presented: the EVEN-marked Korean and Greek NPIs we discussed here are nonscalar and nonexhaustive. In both languages, it is prosodic emphasis that brings in the scalar structure, not EVEN itself. Conversely, English *any* is not EVEN-marked, but does have scalar and exhaustive 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 nonscalar NPIs as referentially vague indefinites. Referential vagueness is nonexhaustive ANTISPECIFICITY, that is, a requirement for epistemic indeterminacy in possible values for the NPI that we captured as minimal variation, following Giannakidou & Quer 2013. We revealed a significant number of asymmetries between exhaustive indefinites (free choice items, free choice *any*) and Greek/Korean nonemphatic NPIs to support their nonexhaustive, nonscalar nature. In Korean, prosodic emphasis renders the NPI scalar, producing the expected exhaustive, FCI-like reading.

There are two implications of our analysis that we would like to emphasize. First, it suggests that it is possible that an EVEN-NPI is not merely the sum of its parts. EVEN in the Greek and Korean nonemphatic NPIs gets reanalyzed or grammaticalized (in the sense of Hopper & 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. Deo 2015, Eckardt 2006), 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 takes into account potential meaning change.

Second, our finding that not all NPIs are scalar challenges the monolithic claim that polarity sensitivity, as a phenomenon, is due to scalarity and exhaustivity (Chierchia 2006, 2013). Our data show that this no-variation position is empirically untenable. Rather, the existence of nonscalar, nonexhaustive NPIs supports the view of variation that Giannakidou 1997, 1998, 2011, and others cited here have been advocating: there are polarity items whose sensitivity has to do with antispecificity. These NPIs create no ordering and do not produce emphatic or exhaustive statements. No sufficiently general understanding of polarity phenomena in language can be achieved if we ignore this class.

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 것은 알지만, 그녀의 다른 취향에 대해 아직 잘 모르는 당신은 생일선물로 뭘 사줄지 고민이었다. 결국 나영이의 단짝 친구 숙희에게 물어보니, 숙희가 말했다:

[1] **etten-rato:** (상냥하고 부드러운 어투로 아무런 강세없이)
"어떤 책이라도 좀 사주렴. 걔는 책을 좋아해."

[Q1] 위 문장의 뜻에 더 가까운 것은? A.____ B.____

A. 당신은 선물로 적당한 베스트 셀러 소설이나 시집 몇 권 중에서 사주면 된다.

B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

[2] **ETTEN-rato:** ("어떤"을 강조해서 강하게 길게 발음하면서)

"**어~ 떤** 책이라도 좀 사주렴. 걔는 책을 좋아해."

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

A. 당신은 선물로 적당한 베스트 셀러 소설이나 시집 몇 권 중에서 사주면 된다.

B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

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

[Q3] 이번에는 위 문장 [1]과 [2]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?

[1]은 A를 [2]는B를 의미함 _____ [1]은B를 [2]는A를 의미함 _____

[4] **amwu-rato:** (상냥하고 부드러운 어투로 아무런 강세없이)

"아무 책이라도 좀 사주렴. 걔는 책을 좋아해."

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

A. 당신은 선물로 적당한 베스트 셀러 소설이나 시집 몇 권 중에서 사주면 된다.

B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

[5] **AMWU-rato:** ("아무"를 강조해서 강하게 길게 발음하면서)

"**아~ 무** 책이라도 좀 사주렴. 걔는 책을 좋아해."

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

A. 당신은 선물로 적당한 베스트 셀러 소설이나 시집 몇 권 중에서 사주면 된다.

B. 책이기만 하면 중고 서적이나 야한잡지, 영어 점자책 등 무엇이나 사주면 된다.

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

[Q6] 이번에는 위 문장 [4]과 [5]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?

[4]은 A를 [5]는B를 의미함 _____ [4]은B를 [5]는A를 의미함 _____

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

[1] **etten-rato:** (부드럽고 상냥한 어투로 아무런 강세없이)

"너는 어떤 변호사라도 만나서 결혼해야한다."

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

A. 너무 까다롭게 굴지말고 적당한 변호사 몇 명을 만나보고 결혼해야한다.

B. 변호사이기만 하면 못생기고 나이많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

[2] **ETTEN-rato:** ("어떤"을 강조해서 강하게 길게 발음하면서)

"너는 **어~ 떤** 변호사라도 만나서 결혼해야한다."

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

A. 너무 까다롭게 굴지말고 적당한 변호사 몇 명을 만나보고 결혼해야한다.

B. 변호사이기만 하면 못생기고 나이많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

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

[Q3] 이번에는 위 문장 [1]과 [2]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?

[1]은 A를 [2]는B를 의미함 _____ [1]은B를 [2]는A를 의미함 _____

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

"너는 아무 변호사라도 만나서 결혼해야한다."

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

A. 너무 까다롭게 굴지말고 적당한 변호사 몇 명을 만나보고 결혼해야한다.

B. 변호사이기만 하면 못생기고 나이많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

[5] **AMWU-rato:** ("아무"를 강조해서 강하게 길게 발음하면서)

"너는 **아~ 무** 변호사라도 만나 결혼해야한다."

[Q5] 위 문장의 뜻에 더 가까운 것은? A. ____ B. ____
A. 너무 까다롭게 굴지말고 적당한 변호사 몇 명을 만나보고 결혼해야한다.
B. 변호사이기만 하면 못생기고 나이많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

[6] **amwu-rato vs. AMWU-rato:**
[Q6] 이번에는 위 문장 [4]과 [5]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?
[4]은 A를 [5]는B를 의미함 _____ [4]은B를 [5]는A를 의미함 _____

CONTEXT 3: 당신은 친구 생일파티에 와있다. 테이블가득 먹음직스런 다양한 과자가 종류별로 놓여 있다. 별로 입맛이 없는 듯 창밖을 보며 멍하게 서있는 당신에게 생일 파티의 주인공이 다가와 말한다:

[1] **etten-rato:** (상냥하고 부드러운 어투로 아무런 강세없이)
"어떤 과자라도 좀 먹어보렴."
[Q1] 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 돼.

[2] **ETTEN-rato:** ("어떤"을 강조해서 강하게 길게 발음하면서)
• •
"**어~떤**과자라도 좀 먹어보렴."
[Q2] 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 돼.

[3] **etten-rato vs. ETTEN-rato:**
[Q3] 이번에는 위 문장 [1]과 [2]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?
[1]은 A를 [2]는B를 의미함 _____ [1]은B를 [2]는A를 의미함 _____

[4] **amwu-rato:** (상냥하고 부드러운 어투로 아무런 강세없이)
"아무 과자라도 좀 먹어보렴."
[Q4] 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 돼.

[5] **AMWU-rato:** ("아무"를 강조해서 강하게 길게 발음하면서)
• •
"**아~무** 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 돼.

[6] **amwu-rato vs. AMWU-rato:**
[Q 6] 이번에는 위 문장 [4]과 [5]를 A와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지, 다음 두 보기 중에서 하나만 선택한다면?
[4]은 A를 [5]는B를 의미함 _____ [4]은B를 [5]는A를 의미함 _____

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