

SCALAR MARKING WITHOUT SCALAR MEANING:
NON-SCALAR, NON-EXHAUSTIVE EVEN-MARKED NPIS IN GREEK AND KOREAN

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This paper 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 Korean and Greek NPIs discussed, *EVEN* is grammaticalized as a non-scalar NPI marker. We propose that these non-scalar NPIs are anti-specific indefinites with REFERENTIAL VAGUENESS, which is a form of ignorance best captured as NON-EXHAUSTIVE variation in the potential values of the NPIs (Giannakidou & Quer 2013). We also show that the difference in Greek and Korean between scalar and non-scalar NPIs is reflected in prosody: scalar NPIs are ‘emphatic’ and non-scalar NPIs are ‘non-emphatic’; we conclude therefore 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, anti-specificity, referential vagueness, indefinites, semantic restructuring, compositionality, etymology)

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1. INTRODUCTION: *EVEN*, SCALARITY AND NEGATIVE POLARITY.¹ Since the mid-70s, there are 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 1978, 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 (2013) claims that, in contrast to ‘ordinary’ indefinites, “with NPIs and FCIs we HAVE to exhaustify” (Chierchia 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 paper, 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 non-scalar, non-exhaustive *EVEN*-marked NPIs in Greek and Korean, and distinguish them both from NPIs that admit exhaustive readings (such as *any*), and from FCIs. The non-scalar NPIs are anti-specific indefinites that convey a form of indeterminacy identified as referential vagueness (Giannakidou & Quer 2013). Referentially vague indefinites impose a condition of non-exhaustive variation (unlike their free choice cousins, which require exhaustive variation). Referential vagueness requires at least two alternative values for the NPI, but the alternatives are neither ordered nor exhaustified.

The unquestionable existence of non-scalar, non-exhaustive 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, Lin & Giannakidou 2015), 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 focus instead on English NPIs (minimizers, *any*) which indeed trigger scalar structure— though even *any* appears to have non-scalar uses; see Krifka 1995, Duffley & Larivee 2012, Giannakidou 2011). The literature often overlooks this fact too. One of our goals in the present paper is to remedy the narrow focus on scalar NPIs, and show that non-scalar, non-exhaustive NPIs bear directly on the nature of polarity phenomena, and even on the question of *any* itself.

Non-scalar, non-exhaustive NPIs need not be EVEN-marked; but when they do contain EVEN, the question becomes how best to analyze its contribution. We will show that there exist asymmetries between EVEN as a scalar focus particle and EVEN in NPIs, suggesting that EVEN in the 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. a recent overview article by Deo 2015), and can yield insights into the relation between etymology and synchronic meaning, leading to a more refined view of compositionality that does not adhere to literal (but possibly inactive) meaning, but factors in potential meaning change by acknowledging a stage of weakening, or non-transparency of literal meaning.² Besides negation itself (the Jespersen cycle), the area of negation and polarity presents a wealth of phenomena suggesting non-transparency and meaning change: e.g. *ever* (in free choice *who-ever*) and volitionality markers in FCIs have been reanalyzed as free choice markings, their original meanings (temporal, volitional) being lost (Giannakidou 2006, Giannakidou & Cheng 2006).

Finally, the non-scalar Greek and Korean NPIs that we study typically are prosodically deaccented. In both languages, the scalar and exhaustive NPI contains what has been described as ‘emphatic accent’, or ‘stress’.³ A prosodic distinction correlated with scalarity has even been made for *any*. Notably, Krifka (1995) distinguishes ‘emphatic’ and ‘non-emphatic’ *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 paper is as follows. First, we illustrate the main data in Greek (section 2) and Korean (section 4), with a brief discussion of EVEN in section 3. Our data show that the prosodic difference between the two NPI paradigms is robust, and supported by syntactic and pragmatic tests. Hence we establish a pattern where prosody, not EVEN, isolates the scalar NPI. In section 5, we show first, based on the usual diagnostics (subtriggering, supplementary uses, behaviors with universal modals) that non-emphatic NPIs are NOT exhaustive, and then offer our analysis of non-scalar NPIs as conveying referential vagueness. We conclude in section 6 with a more detailed discussion of Korean, where it is shown that the emphatic NPI triggers a scalar exhaustive inference akin to a free choice reading.

2. GREEK NPIs: EMPHATIC AND NON-EMPHATIC VARIANTS. Since Veloudis 1982, it has been a common observation that Modern Greek exhibits a robust difference between the two variants of NPIs illustrated in 1, distinguished by ‘emphatic accent’ (Veloudis 1982, Giannakidou 1997 et seq., Tsimpli & Roussou 1996); upper-case indicates the obligatory presence of prosodic prominence in a phrasal context. As indicated in this initial gloss, the emphatic form seems to be interpreted as an n-word (Laka 1990, Giannakidou 1998, 2000, 2006a), receiving negative meaning in isolation (that we review later). In other words, with emphatics, but not with non-emphatics we have negative concord (Giannakidou 1998, 2000).

- | | | |
|-----|--------------------|----------------------------------|
| (1) | a. kanenas/KANENAS | ‘anyone, anybody/no-one, nobody’ |
| | b. tipota/TIPOTA | ‘anything/nothing’ |
| | c. pote/POTE | ‘ever/never’ |
| | d. puthena/PUTHENA | ‘anywhere/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. However, note that the rest of the paradigm does not contain EVEN-one, but is quite variable in composition, comprising wh-source (*pote*), or universal morphology (*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 will study the question of EVEN in section 3. Our goal at present is to show that the difference between the two paradigms is quite robust in Greek. Apart from the prosodic contrast, there are important syntactic differences between the two variants (discussed in Giannakidou 1997, 1998, 2000) that render emphatic and non-emphatics lexically distinct. We describe first the prosodic and scalar differences, before turning to the syntactic differences.

2.1. PROSODIC DIFFERENCES BETWEEN EMPHATIC AND NON-EMPHATIC NPIS. NPIS are sensitive to the property of nonveridicality, and appear in nonveridical contexts (Giannakidou 1997, 1998, 2011, Zwarts 1995, 1996, Hoeksema 1999, Bernardi 2002). Nonveridicality is a (conservative) extension of downward entailment: nonveridical contexts include downward entailing and negative (antiveridical, antimorphic) contexts, as illustrated in Figure 1.

<INSERT FIGURE 1 ABOUT HERE>

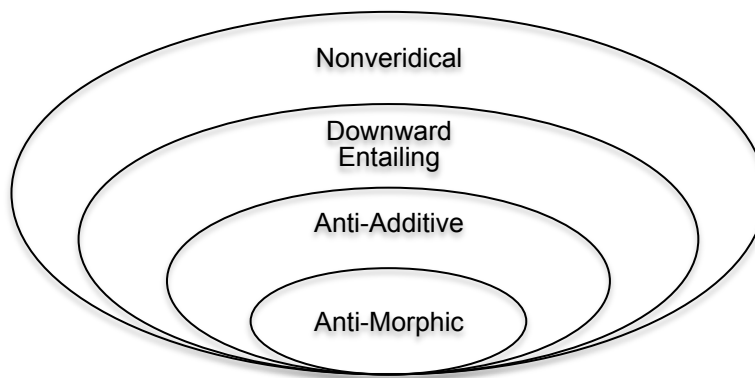


Figure 1: The non-veridicality hierarchy of polarity items

Emphatic and non-emphatic NPIS differ in their distribution within these contexts. Non-emphatic NPIS can also appear in non-negative nonveridical contexts (Giannakidou 1998, 2011), they are therefore ‘broad’ (or ‘weak’) NPIS; but emphatic NPIS are strict (or ‘strong’) NPIS, and appear only with negative (anti-additive, antiveridical) expressions. 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 non-emphatic NPIS are equivalent, but they

differ in that, as indicated below, the emphatic NPI is equivalent to emphatic (Krifka 1995) or intensified *any* (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 SUBJ see.3SG NPI.person/NPI.person
 ‘without having seen *anybody/anybody at all*.’

The non-emphatic NPI (which typically comes with a prosodic contour that involves focus in some other constituent, see also *any*) has been argued (in Giannakidou 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 opposed to *John didn’t see anybody at all*. Intensification is typically understood as relying on extremes of a scale, therefore the intensified *any-at-all* is scalar—and likewise, the Greek emphatic NPI, we will argue.

Regarding the prosodic distinction, Chatzikonstantinou (in progress) offers data from production experiments suggesting that it involves both higher pitch and lengthening. The following two graphs (from that work) are representative of the contrast.

<INSERT FIGURE 2 ABOUT HERE>

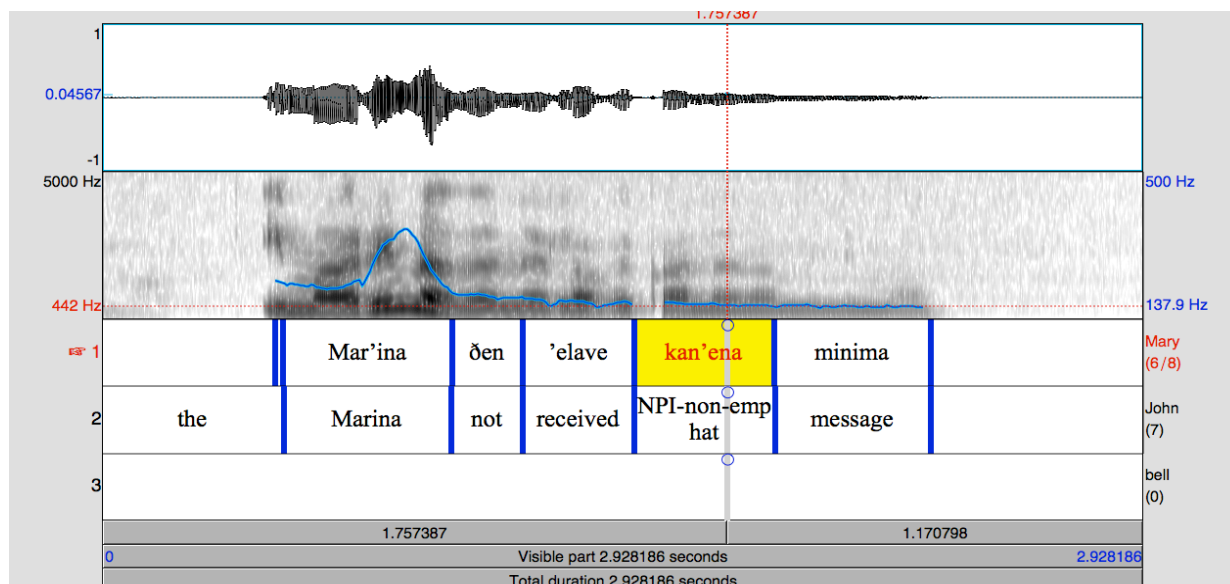


Figure 2: non-emphatic NPI, flat intonation

<INSERT FIGURE 3 ABOUT HERE>

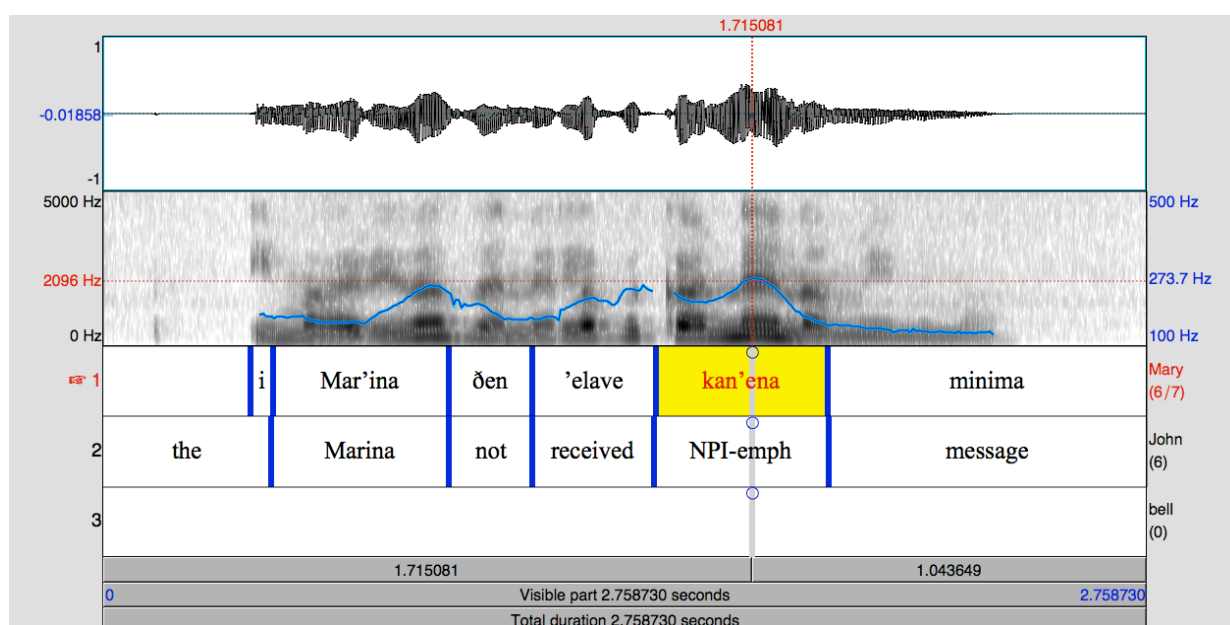


Figure 3: Emphatic NPI contour

Sentential contours are distinct in the two paradigms. The pitch contour looks quite different: the emphatic is associated with a L+H* (the H* is aligned with the stressed syllable) and then a

fall— but the non-emphatic has a flat intonation (and also the part before and after it). In terms of duration, the emphatic appears longer (0.44s) than the non-emphatic (0.39s), which is 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 SCALABILITY. There are two ways to distinguish sensitivity to scalar structure. For ease of exposition, we will continue using the analogy *any* (as equivalent to Greek non-emphatic NPI) and *any-at-all* (the emphatic NPI). The first difference is that only the non-emphatic NPI can answer a question with two alternatives. The answer to such a question will require contrastive focus on one of the asked alternatives, and as we can see, the emphatic NPI and *any-at-all* are infelicitous answers.

- (4) a. 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 / NPI.DET mistake
 'MARY didn't find any mistakes.' Neutral
 b. # 'MARY didn't find *any* mistakes *at all*!' Emphatic *any*, odd

Because we have focus on another constituent, the non-emphatic NPI is the only option. Chatzikonstantinou (in progress) examines such examples and finds that speakers uniformly produce and accept only non-emphatic 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 non-emphatic NPI, on the other hand, is fine and 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 cannot compare with indefinites with *ena* ‘a/one’, because *ena* also has a numeral reading that produces undesired contrasts with negation).

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

- (6) Context: Maria is supposed to read 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

‘I didn’t read any article at all!’

Here the non-emphatic NPI, in contrast to the emphatic one, is infelicitous. By using the *at-least* phrase, the question forces a scalar, biased reading (the required article is the most likely to read, or the least likely to ignore). The non-emphatic NPI is an odd device in this context.

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

- (7) a. Q: Who didn’t find any mistakes? Mary or Bill?

MARY didn’t find any mistakes.

No scalarity, neutral

- b. # MARY didn’t find ANY mistakes at all!

Scalar response, odd

Hence, *any* does not always convey ‘strength’. In recent literature more challenges are levelled towards the 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” (Duffley & Larivée 2012:30). And they continue: “a good number of common uses of *any* are not amenable to a scalar interpretation at all”, as in the examples below (from Duffley & Larivée) which indicate simply that “regardless of its particular identity one member of the nominal set concerned is as good as any other”.

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

In these contexts, *any* is interpreted neutrally, making unavoidable the conclusion that *any* is not inherently scalar or biased.⁵

The negation with the intensified *any-at-all*, on the other hand, 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. $\text{ASSERT}(\langle B, F, A \rangle)(c) = c \cap B(F)$ 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. $\text{ASSERT}(\langle B, F, A \rangle)(c) = \text{SCALAR.ASSERT}(\langle B, F, A \rangle)(c)$
iff the alternatives are informationally ordered with respect to each other
- c. $\text{SCALAR.ASSERT}(\langle B, F, A \rangle)(c) =$
 $\{i \in c \mid B(F) \text{ holds in } c \text{ and all stronger alternatives are negated}\}$

This schema is Krifka's rendition of Fauconnier's Scale Principle, and the gist is that a scalar NPI triggers informational ordering and exhaustification, thus producing an intensified negation. Non-stressed *any*, according to Krifka, does not trigger SCALAR.ASSERT. In contrast to Krifka, Chierchia (2006, 2013) posits a syntactic feature $+\Sigma$ for all NPIs. This feature induces domain alternatives and exhaustivity; but clearly, it cannot be present in all instances of *any*, since *any* can be neutral too, as we just saw. Intensified NPIs, on the other hand, e.g. with *a single*, *at all*, *even*, or mere prosody (Greek NPIs) may indeed be argued to contain the $+\Sigma$ 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, scalar; but non-stressed *any* and nonemphatic NPIs pattern together as non-intensified negation. With these NPIs, thus, the $+\Sigma$ feature is unmotivated. Chierchia fails to acknowledge empirically this class of non-scalar, non-emphatic NPIs—and in so doing, he fails to acknowledge a significant amount of data in English, Greek, and as we shall see soon, Korean.

To sum up, NPIs can be emphatic (scalar) and non-emphatic. In the non-emphatic case, we have no evidence for scalar structure or exhaustification, as we saw here that in the scalar environment, i.e. as answers to biased questions, non-emphatic NPIs are odd. We conclude therefore that non-emphatic NPIs are not scalar, and address their meaning and lack of

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

(III) LONG DISTANCE LICENSING. Given that non-emphatic NPIs appear in islands, it is not surprising that they also appear long-distance, again like *any*. Notice too the contrast with the emphatic NPI.

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

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

(IV) LICENSING IN BROADER NONVERIDICAL CONTEXTS. Non-emphatic NPIs appear in non-negative nonveridical contexts (recall Figure 1), they are therefore ‘broad’ NPIs; emphatic NPIs, on the other hand, are strict NPIs appearing only within the negative (‘anti-veridical’) core. For the non-emphatic NPI, we use in the examples ‘some or other’ to indicate its meaning in these contexts.

- (17) Pijes {pote/*POTE} sto Parisi? 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 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 SUBJ entered.3SG NPI.person
 ‘It is possible that *some guy or other* came in. (That’s why the door is open).’
- (21) I Ariadne theli na pji {*KAMIA/kamia} bira.
 the Ariadne wants.3SG SUBJ drink.3PL NPI.DET.FEM beer
 ‘Ariadne wants to have a beer, *some beer or other*.’

Here the NPI creates an ignorance reading (*some or other*), which is NOT free choice reading, and this is why in the last four examples, which trigger free choice on *any*, we do not use *any*; we will return to this contrast with *any* in section 5. The nonemphatic NPI is further licensed with modalities and other nonveridical operators; the core distribution is summarized in Table 1.

<INSERT TABLE 1 ABOUT HERE>

Table 1: *Distributions of NPIs and any in nonveridical contexts; exclusion in veridical contexts*

<i>Environments</i>	<i>Any</i>	<i>Greek non-emphatic NPI</i>	<i>Greek emphatic NPI</i>
1. Negation/ <i>without</i>	OK	OK	OK
2. Questions	OK	OK	*
3. Conditional (<i>if</i> -clause)	OK	OK	*
4. Restriction of <i>every/all</i>	OK	OK	*
5. Downward entailing quantifier	OK	OK	*
6. Modal verbs	OK, with FC	OK	*
7. Directive attitudes (e.g. <i>want</i>)	OK, with FC	OK	*
8. Imperatives	OK, with FC	OK	*
9. Habituals	OK, with FC	OK	*
10. Disjunctions	OK	OK	*
11. <i>Before</i> 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. <i>believe, imagine, dream</i>)	*	*	*

This table summarizes our observation that the emphatic version behaves like a strict NPI, but the non-emphatic 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 sections 5 and 6.⁶

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

lexical distinction is done morphologically between *to*-NPI (corresponding to the emphatic NPI), and *rato*-NPI (corresponding to the non-emphatic NPI), 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 showed) is the realization of lexical scalarity and exhaustivity. One could thus view the emphasis on the NPI as realizing Chierchia's $+\Sigma$. In contrast, the non-emphatic NPI lacks emphasis, therefore also lacks scalarity and exhaustivity (as we see further in section 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 the question: 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 non-emphatic 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 than the original *EVEN*.

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

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), or noteworthiness (Herburger 2000), or may depend on the context (Giannakidou 2007). The *even* phrase associates with the extremes of the scale: positive *even* above 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. $\forall x [x \neq \text{Bill} \rightarrow \text{likelihood}(\text{Dean inviting Bill}) > \text{likelihood}(\text{Dean inviting } x)]$

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), 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 co-occur 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.

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

- (28) a. Metaniosa pu to skeftika {kan/*oute}!
 regreted.1SG that it thought.1SG even
 ‘I regret that I even thought of this.’
- b. Anikses {kan/*oute} to vilvio?
 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 doesn’t fully overlap with the distribution of the two NPIs, as can be seen in Table 2 below.

<INSERT TABLE 2 ABOUT HERE>

Table 2: *Distribution of Greek emphatic and non-emphatic NPIs, and kan ‘NPI-even’*

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

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 (oute) kanena 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 SUBJ talk.3SG
 ‘Every student that saw anything suspicious must speak.’

- b. *Kathe fititis pu idhe (*oute*) *kan miaiypopti kinisi*, prepi na milisi.
 every student that saw.3SG even one suspicious movement must.3SG talk.3SG
 ‘Every student that saw even one suspicious (=any) 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 *kan*-NPIs are fine, but multiple *kans* 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 sentence in 31 is a classic instance of negative concord, possibly necessitating a rule of absorption, though this is not our point here. Our point is that multiple instances of EVEN, as we see in the *b* examples, 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, non-scalar) is predictable from the distribution of NPI-EVEN itself. Therefore the Greek EVEN-NPIs 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 non-emphatic 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, just assume that because we have EVEN we also interpret EVEN. We move on now to draw the parallel with Korean NPIs.

4. KOREAN *EVENS* AND NPIS. Korean exhibits close equivalences to the Greek emphatic and non-emphatic NPIS. It has two series of indeterminates—*amwu*, *nwukwu*— along with two EVEN markers *-to*, *-rato* (Lee 1999, Lee et al. 2000, Lee 2003, Choi 2007, 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. <i>amwu/nwukwu-to</i> | (emphatic/strong NPIS) |
| | b. <i>AMWU/NWUKWU-rato</i> | (emphatic rato-NPIS) |
| | <i>amwu/nwukwu-rato</i> | (non-emphatic/weak NPIS) |
| | c. <i>amwu/nwukwu-na</i> | (FCIS) |

Here we added the FCI paradigm, typically marked with the disjunction marker *na* ‘or’. We also see two variants of *rato*-NPIS, one emphatic, one non-emphatic, and we come back to this later.¹¹

4.1. TWO *EVENS* 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*, i.e. with strict distribution in negative/antiveridical contexts. The *to*-NPI is just like emphatic NPIS/*oute* in Greek, and does not appear in non-negative polarity contexts such as questions.

- | | | | |
|------|------------------------------------|------------------------|----------|
| (33) | { <i>Amwu/nwukwu</i> }- <i>to</i> | <i>oci-anh-ass-ta.</i> | [Korean] |
| | anyone-even | come-NEG-PST-DECL | |
| | ‘No one came.’ | | |
| (34) | *{ <i>Amwu/nwukwu</i> }- <i>to</i> | <i>o-ass-ni?</i> | |
| | anyone-even | come-PST-Q | |
| | ‘Did anyone come?’ | | |
| (35) | a. * <i>Irthe</i> | <i>KANENAS?</i> | [Greek] |
| | came.3SG | NPI.person | |
| | b. <i>Irthe kanenas?</i> | | |
| | ‘Did anyone come?’ | | |

The parallel is clear here: *to*-NPIS are strict NPIS just like the Greek emphatic NPIS.

(II) LICENSING IN ISLANDS. *Amwu-rato* appears in syntactic islands, e.g. a relative clause, but *amwu-to* is ungrammatical.

- (38) a. Ney-ka [{amwu/nwukwu}-rato kwanryentoy-n] pimil-ul nwuselhan-tamyen...
 you-NOM anyone-even involve-REL secret-ACC reveal-COND
 ‘If you reveal secrets that involves anyone, ...’
 b. *Na-nun [{amwu/nwukwu}-to kwanryentoy-n] pimil-ul nwuselhaci-anh-ass-ta.
 I-TOP anyone-even involve-REL secret-ACC reveal-NEG-PST-DECL
 ‘I didn’t reveal secrets that involved anyone.’

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

Regarding *to* in *amwu/nwukwu-to* NPIs, just like in Greek, we note an asymmetry between multiple occurrences of *EVEN* which are problematic, and multiple occurrences of *to* and *amwu/nwukwu* which are fine.

- (39) #Bill-to John-to chotayha-yss-ta.
 Bill-even John-even invite-PST-DECL
 ‘#Even Bill invited even John.’
 (40) Amwu-to amwukes-to mekci-anh-ass-ta.
 anyone-even anything-even eat-NEG-PST-DECL
 ‘Nobody ate anything.’

Multiple *to* is odd, as we see, but multiple occurrences of *to* with *amwu/nwukwu* are allowed, on a par with what we saw earlier with Greek. In other words, just like in Greek, the *to*-NPI in Korean triggers negative concord (see Sells 2006, Yoon 2008c for more details).

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

Question

(41) Phari-ey hanpen- {irato/*to} kapo-ass-ni? [Korean]

Paris-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!”)

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

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

Conditional

(43) Swuni-lul etise- {rato/*to} po-myen kunye-eykey yaykihay-la.
S.-ACC place.NPI see-if her-DAT talk-IMP

‘If you see Swuni at *some place or other*, talk to her.’

Imperative

(44) amwu sakwa- {rato/*to} cipe-la.
any apple.NPI take-IMP

‘Take *some apple or other*.’

Modal verb

(45) nwukwu- {rato/*to} oass ulswu iss-ta.
person.NPI came possible-DECL

‘It is possible that *some guy or other* came in.’

Directive intensional verbs

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

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

<INSERT TABLE 3 ABOUT HERE>

Table 3: *Distributions of Korean and Greek NPIs*

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

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

- (a) The Greek emphatic NPI has the Korean *to*-NPI as its counterpart.
- (b) The Greek non-emphatic NPI, which is licensed broadly in nonveridical contexts, has the

Korean *rato*-NPI, with similar distribution and non-scalar flavor, as its counterpart.¹⁴

- (c) The difference between the scalar and non-scalar NPI in Korean, unlike in Greek, is not simply prosodic but involves two lexically distinct EVENS.

In the *rato*-NPI, as we see further in sections 5 and 6, Korean speakers can apply emphasis. When this happens, we get a scalar and exhaustive reading, reminiscent of free choice. Korean thus allows us to generalize the point about prosody bringing about scalar inferences with NPIs. But first, we want to offer an analysis of the meaning of the non-scalar NPI, and how it differs from free choice.

5. NON-SCALAR NPIs: *ANTI-SPECIFIC*, IGNORANCE INDEFINITES WITH REFERENTIAL VAGUENESS. If they are not scalar, then what is the meaning of non-emphatic NPIs? They appear to be existentials with narrow scope (this follows from their NPI property), and express indeterminacy or ignorance about their possible values (rendered into English by ‘some or other’ as translation). The tests below show that they belong to the class of *ANTI-SPECIFIC* indefinites (Giannakidou & Quer 2013). Consider now the following examples from that work.

Greek

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

Korean

- (48) Na-nun enehak kyoswu {amwu/nwukwu}-rato manna-ko 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, on the other hand, 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.
 ‘I want to talk to *some* linguist or other, but 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
 ‘I want to talk to *some* linguist or other, but 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. Non-emphatic NPIs thus behave like the indefinites Giannakidou (2012) and Giannakidou and Quer (2013) call ANTI-SPECIFIC. Well known such indefinites are the Greek *kapjos*, and Spanish *algún*, which are not NPIs but exhibit the same pattern, i.e. they cannot be use if the speaker knows who/what the value of the indefinite is.¹⁵

- (50) Thelo na miliso me kapjon glosologo. #Ine aftos o kirios eki. [Greek]
 ‘I want to talk to *some linguist or other*. ??It’s that guy over there.’
 (51) Thelo na miliso me kapjon kathijiti. #To onoma tu ine Veloudis.
 ‘I want to talk to *some professor or other*. #His name is Veloudis.’
 (52) Thelo na miliso me kapjon kathijiti. #Ine o proedros tu tmimatos filosofias.
 ‘I want to talk to *some professor or other*. #He is the head of the Philosophy Department.’
 (53) Tengo que leer un artículo de algún profesor. [Spanish]

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

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

(54) Tengo que quedar con algún profesor. #Se llama Bill Ladusaw.

‘I have to meet with *some professor or other*. #His name is Bill Ladusaw.’

(55) Tengo que quedar con algún profesor. #Es el director del Departamento de Filosofía.

‘I have to meet *some professor or other*. #He is the Head of the Philosophy Department.’

We see here that *kapjos*, *algún* (and its Catalan cognate) are not usable if the speaker knows who the professor is, just like the *kanenas/rato*-NPI. Giannakidou and colleagues (2014) show experimentally the behavior of *kapjos* as favoring narrow scope—compared to the unmarked article *enas* ‘a’ which has free scope. Crucially, the narrow scope is a preference, not a 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 ‘anti-specificity’, 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 literature for anti-specific indefinites such as ‘low referential’ (Partee 2008), ‘epistemic’ (Jayez & Tovená 2006, Alonso-Ovalle & Menéndez-Benito 2013), ‘modal’ (Alonso-Ovalle & Menéndez-Benito 2010), ‘irreferential’ (Jayez & Tovená 2006), ‘epistemically non-specific’ (Haspelmath 1997), and ‘extremely non-specific’ (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 anti-specific 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*, *kanenas* she does not mean to convey (i.e. assert) that she doesn’t 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. ANTI-SPECIFICITY therefore appears to be a more accurate and theory-neutral

alternative to refer to the indeterminacy of reference of this class, and captures nicely the converse relation to specificity.

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

5.1. NON-EMPHATIC NPIS ARE NOT EXHAUSTIVE. Exhaustive indefinites such as free choice items (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: (a) the possibility of subtriggering; (b) the ‘supplementary’ use; and (c) implausibility of exhaustive indefinites with universal modals (deontic, epistemic). FCIs and NPIs like *any*, receiving exhaustive readings, pass these tests—but our non-emphatic NPIs do not, as we shall see. In the discussion, we include the Chinese NPI *shenme* which has also been shown to be non-exhaustive (Lin & Giannakidou 2015; our Chinese data are drawn from that work).

SUBTRIGGERING. The term SUBTRIGGERING is due to LeGrand 1975, and 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 subtriggering as an argument for universality of *any*, but Giannakidou (2001) and Horn (2000, 2005) offer non-universal 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 subtriggered.

Greek

- (57) *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.’

Korean

- (58) *Con-un etten-chayki-rato sa-ss-ta.
 John-TOP NPI.book buy-PST-DECL
 ‘John bought any book.’
- (59) *Con-un ku-ka palkyenha-n etten-chayki-rato sa-ss-ta.
 John-TOP he-NOM found-REL NPI.book buy-PST-DECL
 ‘John bought any book that he found.’

Mandarin

- (60) a. *Yuehan mai-le shenme shu.
 John buy-PERF NPI book
 Intended: ‘John bought a (=some or other) books.’
- b. *Yuehan mai-le ta neng zhao-dao de shenme shu.
 John buy-PERF he can find-PERF REL NPI book

Unlike *any*, our NPIs and *shenme* cannot not be subtrigged. FCIs, on the other hand, can.

Greek

- (61) 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.’

Korean

- (62) Con-un ku-ka palkyenha-n etten-chayki-na sa-ss-ta.
 John-TOP he-NOM found-REL FCI.book buy-PST-DECL
 ‘John bought any book that he found.’

Mandarin

- (63) Yuehan mai-le ta neng zhao-dao de renhe shu.
 John buy-PERF he can find-PERF REL FCI book
 ‘John bought any book he could find.’

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 with the ensuing implausible reading that Mary marries every doctor or lawyer in every world. We give below the meaning given in Giannakidou & Quer.

- (72) i. $\forall w' \in W_{\text{-deo}(w)}, x: [\text{lawyer}(x \text{ in } w')] [\text{marry}(\text{Ariadne}, x, \text{ in } w')]$ (FCI-*opjondhipote*)
 ii. Presupposition of **exhaustive variation**: $\forall d \in D_{\text{FCI}}. \exists w'. \text{lawyer}(d)(w) \text{ and Ariadne marries } d \text{ in } w'.$

The problem here is both unselective binding by the universal modal, and exhaustive variation. The two produce universal-like statements that are simply non-sensical.

In contrast, our NPIs are grammatical because they have no exhaustive variation (clause ii above) and receive existential interpretation, i.e. they are existentially bound in the nuclear scope of the modal quantifier.

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

The sentence with the NPI is true in a context such that the family is in dire financial situation, and Ariadne, as a good daughter, must save the family face by marrying some rich guy, a lawyer or a doctor. The contrast can be reproduced with epistemic modals.

- (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 unusable by creating 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 don't need to talk with ALL doctors, only one (or some) of those involved in her care. The NPI

statement simply says that she talked to some doctor unspecified to the speaker; see Giannakidou & Quer 2013 for more comments on these points.

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

(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 *just any* doctor.’

‘#He must have talked with *any* doctor.’

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

5.2. REFERENTIAL VAGUENESS: NON-EXHAUSTIVE VARIATION. We showed that non-emphatic NPIs in both Greek and Korean are neither scalar nor exhaustive. Giannakidou (1997, 1998) argues for two lexical sources of NPI-hood: scalarity and referential deficiency. Referential deficiency is what we call now anti-specificity. Giannakidou and Quer (2013) distinguish two kinds of anti-specificity: exhaustive (leading to free choice) and REFERENTIAL VAGUENESS, which is non-exhaustive. Our Korean and Greek NPIs exhibit the latter.

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. 2014:12), or if she simply feels that identity doesn’t matter. As Alonso-Ovalle and Menéndez-Benito (2013) put it, the speaker is ignorant about ‘knowing who’, and Haspelmath says that “with non-specific phrases, whose referents are not identifiable in principle, the question of identifiability by the speaker does not even arise.” (Haspelmath 1997:45). 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*

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

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

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

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

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 $M(\text{speaker})$ 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 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 needs to be understood as 'at least two and possibly more'. It appears that with a domain of exactly two, speakers' judgments vary.

(78) *Greek*

Context: I am pointing to two rooms, and say:

O Janis prepí na kriftíke se {#kanena/ena} domatío, ala dhén ime sigourí 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 molukeys-s-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 prefer to use the unmarked indefinite (for more discussion of this see Giannakidou & Quer 2013). At any rate, the case above makes the vagueness condition (at least two), more appropriate than Alonso-Ovalle and Menéndez-Benito’s (2010) ANTI-SINGLETON CONSTRAINT, where the requirement is more than one, predicting *kanena/amwurato* to be fine, contrary to fact.

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

(81) $\llbracket \text{I Maria theli na dhi kanenan/-rato glosologo ‘Mary wants to see kanenan/-rato linguist’} \rrbracket$ will be defined in c , only if:

$\exists w_1, w_2 \in M_E(s) : \llbracket \alpha \rrbracket^{w_1} \neq \llbracket \alpha \rrbracket^{w_2}$, where α is the referentially vague variable;

if defined, $\llbracket \text{I Maria theli na dhi kanenan glosologo} \rrbracket$ is true iff there is some world w consistent with Mary’s desires such that: there is a linguist in w which is a value to α that Maria sees.

(82) Particular linguist in mind = fixed value in $M_E(s)$:

$w1 \rightarrow \text{Bill}, w2 \rightarrow \text{Bill}, w3 \rightarrow \text{Bill}$

(83) No particular linguist in mind = no fixed value in $M_E(s)$:

$w1 \rightarrow \text{Bill}, w2 \rightarrow \text{Nicholas}, w3 \rightarrow \text{John}, w4 \rightarrow ?$

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.

(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, etc. In A, the speaker is not saying that there is some specific person that she didn’t 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 offers a set of possible values to satisfy referential vagueness.

To sum up, we have proposed here that the EVENS *kan/rato* in Greek/Korean NPIs belong to the class of referentially vague indefinites (which, as we said, includes non-polar indefinites too).¹⁹ Having lost their scalar meaning, *kan/rato* get reanalyzed as markers of NPIs that convey of 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 therefore 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. NON-EMPHATIC 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 and referentially vague NPIs, and we also pointed out briefly that emphasis on the *rato*-NPI makes it akin to a FCI. In this section, we focus on cases where both exhaustive/scalar and non-exhaustive non-scalar NPIs appear—with the expected difference in the interpretation. We then present a survey we conducted to verify the role of prosody, and we want to thank one of the reviewers for urging us to examine this issue more extensively.

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

(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— she 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, she 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*, she is invited to settle for less. According to C. Lee, settle for less relates to concession. However, one of the authors of this paper, 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 appears thus reasonable to say that though historically *rato* may have correlated with concession, SYNCHRONICALLY, neither *kan* nor *rato* have concessive meaning (at least in the NPI).

In contrast, the FCI invitation creates an imperative with an exhaustivity inference, as expected; stressed *rato*-NPI behaves similarly, as can be seen in the following examples.

(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 great appetite, and the speaker is happy to announce that all options are open. Importantly, we see that the choice of exhaustive vs. non-exhaustive indefinite affects the interpretation of the imperative—a stronger force of the imperative in the case of FCI, but a weaker invitation in the case of the unstressed *rato*-NPI. The difference holds in all four languages considered, with very clear judgments.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 odd (though not ungrammatical since they are found in a nonveridical context).

(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, though licensed, ends up odd because it creates an exhaustified reading—that you buy ANY book—, and this reading does not make sense in this context. Free choice additionally may give rise to a depreciative reading (*any book whatsoever, just any book*) thereby allowing to include any unsuitable book for a gift, which also doesn’t make sense. The vague indefinites are fine and simply show no interest in identifying further what kind of book or which book should be bought.

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

experiment, which (including fillers) lasted about 30 minutes.

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

The items were tested without time restriction (see Appendix for a sample survey written in Korean). The survey was designed to test our crucial examples with the four items in three different contexts: (i) Context 1: ex. 89, 90 in the birthday-gift context; (ii) Context 2: ex. 70, 71 in the lawyer-marriage context; and (iii) Context 3: ex. 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 with the instruction with *etten/amwu* pronounced in “a gentle, soft, non-emphatic way” for non-emphatic items, and we asked the subjects, between A (referentially vague meaning, glossed RV below) and B (exhaustive meaning, glossed FC), which is closer to the meaning of the sentence. In the birthday-gift context, for example, A says “You should get him *etten/amwu-rato* book” has the RV meaning such as “you can consider a few suitable options for a birthday present like best-seller novel or poetry”, while B says has the FC meaning like “you can consider every kind of book, even unsuitable ones for a birthday present like used books, adult magazines, or braille books”. Second, our target sentence was given with the instruction “with *ETTEN/AMWU* pronounced in a strong, lengthy, emphatic fashion” for emphatic items, and we again asked the subjects to choose between A (RV meaning) and B (FC meaning). These two questions were free selection tests in which the subjects were allowed to choose the preferred reading between referentially vague (RV) or FC reading in a given context. In these tests, no regulation was given so that overlapping choices (for instance, both non-emphatic and emphatic ones have RV meanings) were allowed. (see 2nd/3rd columns in Table 4-5 for results). Finally, in addition to the

free selection tests, we conducted a pairing test which asked the subjects to pair the non-emphatic and emphatic versions to either RV or FC without overlap (i.e. either “*etten*: RV - *ETTEN*: FC” or “*etten*: FC - *ETTEN*: RV”). (see 4th columns in Table 4-5 for results)

<INSERT TABLE 4 ABOUT HERE>

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

wh-rato contexts	Free selection test 1: Non-emphatic: RV <i>etten-N-rato</i>	Free selection test 2: Emphatic: FC <i>ETTEN-N-rato</i>	Pairing test: <i>etten</i> : RV - <i>ETTEN</i> : FC
Context 1: <i>birthday gift</i> ex. 89, 90	91.4%	60.0%	91.4%
Context 2: <i>lawyer-marriage</i> ex. 70, 71	85.7%	65.7%	97.1%
Context 3: <i>table-dessert</i> ex. 86, 88	74.3%	71.4%	85.7%
Average	83.8%	65.7%	91.4%

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

<INSERT TABLE 5 ABOUT HERE>

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

amwu-rato contexts	Free selection test 1: Non-emphatic: RV <i>amwu-N-rato</i>	Free selection test 2: Emphatic: FC <i>AMWU-N-rato</i>	Pairing test: <i>amwu</i> : RV- <i>AMWU</i> : FC
Context 1: <i>birthday gift</i> ex. 89, 90	71.4%	77.1%	97.1%
Context 2: <i>lawyer-marriage</i> ex. 70, 71	68.6%	91.4%	100.0%
Context 3: <i>table-dessert</i> ex. 86, 88	71.4%	74.3%	94.3%
Average	70.5%	81.0%	97.1%

The results are extremely revealing in many respects. For one thing, the difference between Table 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 footnote 12 and 18). *Amwu* itself may have

the potential of anti-specificity, which may lead to the variation among speakers on the non-emphatic *amwu-rato* between the predicted RV meaning (70.5%, non-emphatic RV NPI in Table 5) and the occasionally observed FC meaning (29.5%). This explains, for instance, the different judgment on our data with one reviewer.

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

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

7. CONCLUSIONS. In this paper, 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 unfounded: the EVEN-marked Korean and Greek NPIs we discussed here are non-scalar and non-exhaustive. 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 non-scalar NPIs as referentially vague indefinites. Referential vagueness is non-exhaustive ANTI-SPECIFICITY, i.e. 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 non-emphatic NPIs to support their non-exhaustive, non-scalar 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 non-emphatic 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. Eckardt 2006, Deo 2015), and we expect that studying phenomena such as EVEN in NPIs can offer fresh insight into the relation between etymology and synchronic meaning, leading to a more nuanced view of compositionality that takes into account potential meaning change.

Secondly, 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. The existence of non-scalar, non-exhaustive NPIs, rather, supports the view of variation that (Giannakidou (1997, 1998, 2011 and others cited in our paper) have been advocating: there are polarity items whose sensitivity has to do with anti-specificity. 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.

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APPENDIX: SAMPLE SURVEY: Prosody in Referentially vague *rato*-NPI vs. Free choice *rato*-NPI

CONTEXT 1: 당신은 평소에 나영이와 좀 더 친해지고 싶었는데, 이번 주말에 나영이의 생일파티에 초대를 받게 되었다. 나영이가 영문과인 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. 개는 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 서적이거나 야한잡지, 영어 점자책 등 무엇이든 사주면 된다.

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

• •

“어~ 떤 책이라도 좀 사주렴. 개는 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 서적이거나 야한잡지, 영어 점자책 등 무엇이든 사주면 된다.

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

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

[1]은 A 를 [2]는 B 를 의미함 _____ [1]은 B 를 [2]는 A 를 의미함 _____

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

“아무 책이라도 좀 사주렴. 개는 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 서적이거나 야한잡지, 영어 점자책 등 무엇이든 사주면 된다.

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

• •

“아~ 무 책이라도 좀 사주렴. 개는 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 서적이거나 야한잡지, 영어 점자책 등 무엇이든 사주면 된다.

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

[Q 6] 이번에는 위 문장 [4]과 [5]를 A 와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지,
다음 두 보기 중에서 하나만 선택한다면?

[4]은 A 를 [5]는 B 를 의미함 _____ [4]은 B 를 [5]는 A 를 의미함 _____

CONTEXT 2: 선영이네는 원래 부자였는데, 갑작스런 아버지의 사업실패로 가정형편이 어려워졌다.
선영이가 가족들을 걱정하자 친구 진희는 요즘 변호사들이 돈을 많이 번다는 뉴스를 봤다며, 미모가
빠어난 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 나이 많거나 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 나이 많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

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

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

[1]은 A 를 [2]는 B 를 의미함 _____ [1]은 B 를 [2]는 A 를 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 나이 많거나 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 나이 많거나 술, 도박, 여자를 좋아하더라도 결혼해야한다.

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

[Q 6] 이번에는 위 문장 [4]과 [5]를 A 와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지,
다음 두 보기 중에서 하나만 선택한다면?

[4]은 A 를 [5]는 B 를 의미함 _____ [4]은 B 를 [5]는 A 를 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~면과자라도 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 A 와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지,

다음 두 보기 중에서 하나만 선택한다면?

[1]은 A 를 [2]는 B 를 의미함 _____ [1]은 B 를 [2]는 A 를 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 A 와 B 중 하나씩만 연결시킨다면 어느것이 더 적합한지,
다음 두 보기 중에서 하나만 선택한다면?

[4]은 A 를 [5]는 B 를 의미함 _____ [4]은 B 를 [5]는 A 를 의미함 _____

¹ We follow Giannakidou 2007 in using small capitals to indicate the family of linguistic forms

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 (that goes back to Veloudis 1982 and Giannakidou 1997), Hoeksema (2010) discusses a change in the distribution of the Dutch NPI *enig* ‘any’ from a non-emphatic NPI to an emphatic NPI, accompanied by a change in meaning: from a non-scalar use (non-emphatic NPI) to a scalar one (emphatic). Hoeksema also 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, possibly with emphatic lengthening of the vowel in *ooit*. Yoshimura (2007) argues for prosodic differentiation in Japanese NPIs, and Eckardt (2007) talks about emphatic/non-emphatic German *irgend*-indefinites.

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

⁵ It is also important to note that Lahiri himself rejects the idea of *any* contains EVEN (*pace* Lee & Horn 1994), and offers specific arguments that his EVEN analysis of Hindi NPIs cannot apply to *any* (Lahiri 1998: section 11.4). Notice also that “the idea that *any* generates alternatives need not be tied to a domain-widening analysis”, as pointed out in Arregui 2008:46.

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

⁷ Giannakidou (1998, 2000) offers additional arguments (*almost/absolutely* modification, donkey

anaphora, predicate nominal use), and argues that the emphatic NPI is a universal quantifier—a position also argued for Korean *to*-NPIs (Sohn 1995, Kim 1999, Sells 2006, and Yoon 2008). If we adopt the universal analysis, then emphasis contributes scalarity only and exhaustivity comes from the universal property of the NPI.

⁸ The alternatives are variables of type *e* because the focus of *even* is the nominal argument, but *even* can also target other constituents, e.g. adjectives, cardinality predicates, verbs, or clauses, generating in each case alternatives of the appropriate type. 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’, e.g. *ou-te* (< AGk *ou* ‘not’ + *te* ‘and’), *akomi ke* (lit. ‘still and’: positive EVEN), *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.

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

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 reviewers. We wanted to thank the reviewer here for their overall contribution. The Korean data are further discussed in section 6, where we hope to have addressed the reviewer’s questions regarding the role of prosody in differentiating between scalar and non-scalar *rato*-NPI.

¹² The difference between the {*amwu/nwukwu*} in the Korean grammar correlates with domain specificity (*nwukwu*) vs. open domain (*amwu*). We will not discuss this issue here, as it does not seem to be particularly relevant to the main topics of this paper (see Lee et al. 2000, Kim & Kaufmann 2006, Park 2009, Giannakidou & Quer 2013).

¹³ A reviewer 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 shown by additional diagnostics (clause-boundedness, *almost*-modification, in addition to elliptical answer in Yoon 2008c).

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

¹⁵ *Kapjos* and *algun* are not NPIs, i.e. they occur with simple past positive sentences.

- (i) a. *Kapjos* fititis telefonise. [Greek]
Some *student or other* called.
- b. Ha llamado *algún* estudiante. [Spanish]

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*, *rato*-NPI.

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

The only good variant in Greek is with *ena*, the indefinite article. The NPI is not licensed because the context is veridical. *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’.

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

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

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.

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

Figure 1: The non-veridicality hierarchy of polarity items

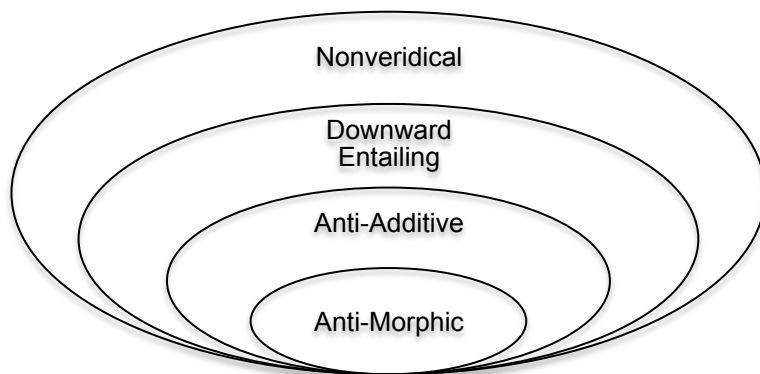


Figure 2: non-emphatic NPI, flat intonation

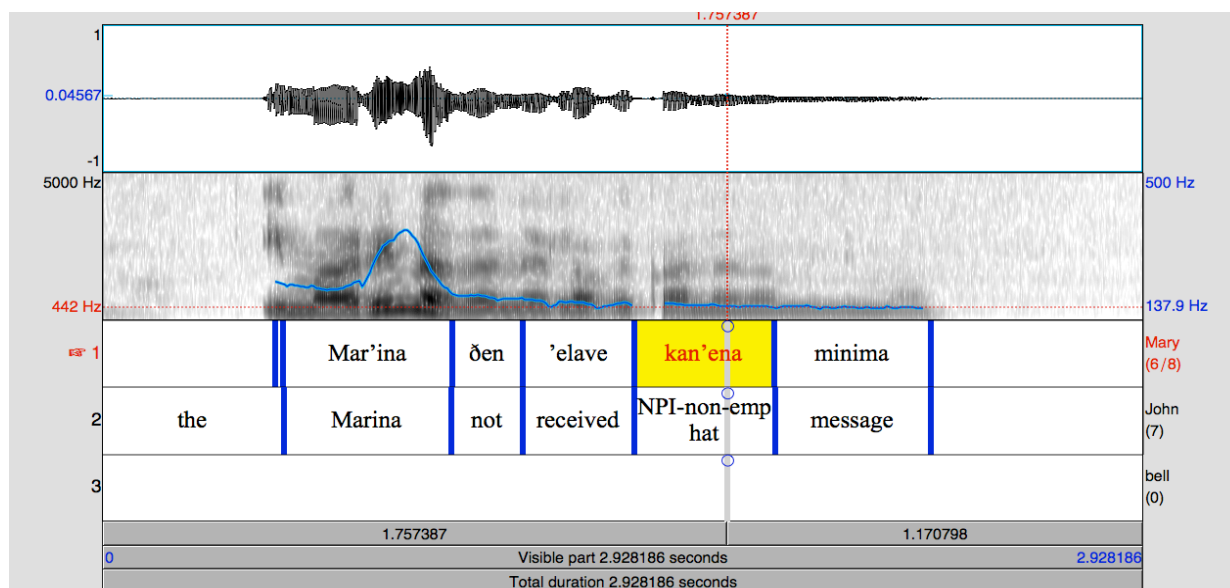


Figure 3: Emphatic NPI contour

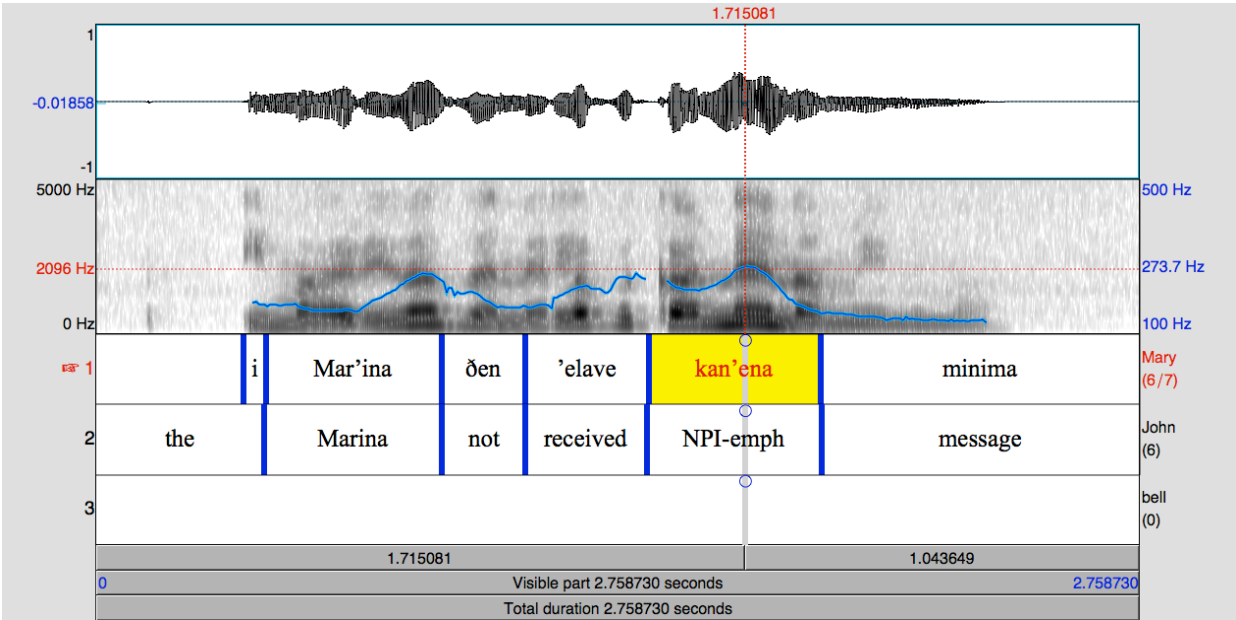


Table 1: *Distributions of NPIs and any in nonveridical contexts; exclusion in veridical contexts*

<i>Environments</i>	<i>Any</i>	<i>Greek non-emphatic NPI</i>	<i>Greek emphatic NPI</i>
1. Negation/ <i>without</i>	OK	OK	OK
2. Questions	OK	OK	*
3. Conditional (<i>if</i> -clause)	OK	OK	*
4. Restriction of <i>every/all</i>	OK	OK	*
5. Downward entailing quantifier	OK	OK	*
6. Modal verbs	OK, with FC	OK	*
7. Directive attitudes (e.g. <i>want</i>)	OK, with FC	OK	*
8. Imperatives	OK, with FC	OK	*
9. Habituals	OK, with FC	OK	*
10. Disjunctions	OK	OK	*
11. <i>Before</i> 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. <i>believe, imagine, dream</i>)	*	*	*

Table 2: *Distribution of Greek emphatic and non-emphatic NPIs, and kan ‘NPI-even’*

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

Table 3: *Distributions of Korean and Greek NPIs*

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

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

wh-rato contexts	Free selection test 1: Non-emphatic: RV <i>etten-N-rato</i>	Free selection test 2: Emphatic: FC <i>ETTEN-N-rato</i>	Pairing test: <i>etten: RV - ETTEN: FC</i>
Context 1: <i>birthday</i> <i>gift ex. 89, 90</i>	91.4%	60.0%	91.4%
Context 2: <i>lawyer-</i> <i>marriage ex. 70, 71</i>	85.7%	65.7%	97.1%
Context 3: <i>table-</i> <i>dessert ex. 86, 88</i>	74.3%	71.4%	85.7%
Average	83.8%	65.7%	91.4%

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

amwu-rato contexts	Free selection test 1: Non-emphatic: RV <i>amwu-N-rato</i>	Free selection test 2: Emphatic: FC <i>AMWU-N-rato</i>	Pairing test: <i>amwu: RV- AMWU: FC</i>
Context 1: <i>birthday</i> <i>gift ex. 89, 90</i>	71.4%	77.1%	97.1%
Context 2: <i>lawyer-</i> <i>marriage ex. 70, 71</i>	68.6%	91.4%	100.0%
Context 3: <i>table-</i> <i>dessert ex. 86, 88</i>	71.4%	74.3%	94.3%
Average	70.5%	81.0%	97.1%