
**Greek quantifiers**

*Anastasia Giannakidou*

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1 Introduction

In this article, we study the structures that the Greek language employs to express quantification. By Greek, I am referring to the contemporary Greek spoken in the countries of Greece and Cyprus (an estimated total of 14 million speakers), and Greeks in diaspora (an estimated 5-6 million). It has long been customary, especially in the study of classics, to use the term “Greek” to refer to the ancient language—and for a while, linguists referred to the modern language as “Modern Greek”, or *Koine* Modern Greek (*Κοινή Νεοελληνική*; Babiniotis and Kontos 1967). However, “as a living language, contemporary Greek does not need to be qualified by an adjective which implies that it is somehow secondary to the ancient language (Holton et al 1997: xiii)”. For this reason, it gradually became standard practice in linguistics to use *Greek* to refer to the modern language, adding the adjective *ancient* or *modern* only when these chronological stages need to be distinguished.

Greek is an Indo-European language, the sole descendant of Ancient Greek. Ancient Greek exhibited vast variation in its dialects, and until recent times Greek was divided into regional dialects; however, “the vast majority of Greek speakers now speak a common language with only relatively minor dialectal variations. The only exception to this is the Greek Cypriots, many of whom ordinarily speak a dialect which, although linguistically close to standard Greek, presents some significant differences” (Holton et al 1997: xiii).

Until 1976, two versions of Greek co-existed: *demotic* (δημοτική), which was the actual spoken language at least since the turn of the 20th century; and *katharévousa* (καθαρεύουσα), “a hybrid made up of lexical, morphological, and syntactic feature of Ancient and Modern Greek. Katharévousa was used not only on most official occasions, but it was also the language of secondary and college education, the law, medicine, the church, armed forces, most newspapers, and even to a certain extent radio and TV broadcasting (Holton et al. 1997: xv). The title of the most authoritative earlier grammar of Greek—*Νεοελληνική Γραμματική* (της Δημοτικής) [Modern Greek Grammar (of Demotic), Athens 1941]—reflects precisely this context. Demotic became the official language in 1976, and since then, the Greek language “has come closer to developing a set of universally accepted norms than at any other stage in its history” (Holton et al 1997: xv). The grammar I will be using as reference in this chapter is Holton, Joseph, and Philippaki-Warburton 1997, which describes what can be thought of as standard modern Greek, spoken at urban centers in Greece and Cyprus, which is based on demotic vocabulary, morphology and syntax, but does display a significant influence from katharévousa.

Greek is a highly inflected language. The nominal system displays four cases (nominative, genitive, accusative, vocative), and there is agreement within the nominal, so all constituents are typically marked for case, number and gender. The verbal system is inflected for voice (active, medio-passive), tense (past, non-past), aspect (perfective-imperfective), and person, so verbal forms can be quite complex. We will not emphasize the morphological matters in this article, and recall them only when necessary. First, I briefly consider some basic facts about clause structure (1.1), and then I give some necessary background information about the DP structure (1.2). D plays an important role in the formation of quantifiers in Greek, as we will see.
1.1 Basic facts about Greek clause structure

Alexiadou and Angnostopoulou 1998 and others have cited Greek as underlingly VSO, but I think that the most defining feature of Greek is that there is extensive word order freedom. In practice, the subject dominantly occurs sentence initially in affirmative declarative sentences, but the flexibility in word order allows constituent displacements such as topicalizations, focus, and wh-movement. Another distinctive property of modern Greek is that it does not have an infinitive, and therefore complementation is always finite.

We have three mood paradigms: subjunctive, indicative, and imperative. The imperative is used in main contexts only, and is marked with specific morphology on the verb (Mackridge 1985, Holton et al. 1997).

(1) Pés to.
    say.IMP.2sg it
    ‘Say it.’

For the imperative, a special verb suffix is employed (-s in (1)), and a pattern of enclisis arises. In the indicative and subjunctive, mood marking does not happen with verbal inflection (as was the case in ancient Greek), but with sentential particles: the complementizers oti and pu mark the indicative in embedded clauses (but nothing special is used for indicative in main clauses); and the subjunctive is indicated with the particle na. As a particle, na does not inflect and can be used in embedded as well as main clauses, preceding the inflected verb and clitic pronouns:

(2) Na to pis.
    subj it say.perfective.nonpast.2sg
    ‘You may say it.’

These main subjunctives are used as requests, wishes, desires or orders. Na, in embedded clauses, is the typical subordinator after nonveridical verbs of volition, permissives, and the like—whereas indicative oti, pu follow veridical verbs (see Giannakidou 1998, 1999, 2009, 2010 for extensive description of mood choice in Greek). The verbal form employed with na in (2) is in the perfective nonpast, as indicated in the gloss, and it cannot occur without na or as:

(3) * To pis. (perfective nonpast: * on its own)

Holton et al. characterize this form as dependent, and besides na and as, it is licensed also after tha (future), the conditional an, and other nonveridical and future oriented connectives such as prin ‘before’ (Giannakidou and Zwarts 1999, Giannakidou 1998, 2009).

(4) {Tha/an} to pis.
    Tha/if it say.PNP.2sg
    You will say it./ If you say it.
(5) Prin to pis,....

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1 In the examples, I use standard transcription practice, and do not follow the orthographical conventions. I do designate stress, though, in words with more than one syllable, to increase readability.
Giannakidou 2009, 2010 argues that the function of the particles, including the subjunctive *na*, is that of a present tense: they introduce the variable *now* in the syntax, and *na* is generated as a Mood head (Philippaki-Warburton 1993).

Greek diachronically possess negations that are heads (Ancient Greek *οὐ, μὴ*, Modern Greek *dhen, min*, and they head their own projections NegP (Giannakidou 1998, see also Veloudis 1981). *Dhen* is used to negate indicative clauses, and *min* negates subjunctive clauses and gerunds. The correlation between negation and mood has been diachronically stable in the history of Greek (see Chatzopoulos, forthcoming).

(6) Na  *min*  to pis.
    subj  not  it say.1sg
    Don't say this.

(7) Dhen to ipa.
    not it said1sg
    I did not say this.

Now let’s look at the basic pieces in the Greek DP.

1.2 The DP: uses of D, differences with English, and genericity

Greek has a DP (Stavrou 1986, Stavrou and Horrocks 1989), headed by the definite article. Like the noun and adjective, the article in Greek is fully inflected for gender, case, and number: *o* is masculine, *i* feminine and *to* neuter (in singular nominative). I will be using *o* in this chapter as the label for the definite article. The definite article is usually designated as D (Abney 1987; see Alexiadou, Haegeman, and Stavrou 2008 for a recent overview), and the demonstrative is generated in English also as D (thus *this the book*). The English DP has the structure below; it produces typically a referential expression, a (maximal or unique) individual indicated with *iota:*

(8) \[
\text{DP, } e: \lambda x. \text{ woman (x)}
\]
\[\text{D} \quad \text{NP}
\]
\[\langle\langle e, t\rangle, e\rangle \quad \langle e, t\rangle \quad \{\text{the/this}\} \quad \text{woman : } \lambda x. \text{ woman (x)}\]

Demonstratives are generally thought of as definites that come with additional presuppositions of maximal salience or proximity (see Roberts 2003 for a comparison between definite descriptions and demonstratives in English). The DP produces the most basic argument *e*—which can be lifted up to the GQ type when necessary (*modulo* Partee’s 1987 type shifting rules).

The Greek article *o* is a D too, but it has a number of additional uses that are not observed in English, and which make it quite interesting. One is the so-called definite reduplication:

(9) \[
a \quad o \quad \text{kókinos} \quad o \quad \text{tíxos}
\]
\[\text{the.nom.sg} \quad \text{red.nom.sg} \quad \text{the.nom.sg} \quad \text{wall.nom.sg} \quad \text{‘the wall that is red’}\]
posite o kókinos
the wall  the red

These serial [DP plus DP] structures are extremely common in Greek, and the structures are also known as *polydefinites* (after Kolliakou 2004; see also Alexiadou and Wilder 1998, Campos and Stavrou 2004, Ioannidou and den Dikken 2009, Lekakou and Szendroi 2009). Often, they are thought to express a predication relation between the two DPs, as indicated above (*the wall that is red*). The details are not crucial here, but it is important to note the possible permutation of noun and adjective. Also, there is no limit in how many DPs can be serialized. Consider the example below (ignoring agreement in the gloss):

(10) to palió  to spíti  to megálo  to patrikó
the old  the house  the big  the paternal
‘the big old family house’

Possessive pronouns (*mas* ‘ours’ below) can be added at any point:

(11) a. to spíti mas
the house ours

b. to palió mas  to spíti  to megálo  to patrikó
the old  ours  the house  the big  the paternal

c. to palió to spíti mas  to megálo  to patrikó

 d. to palió to spíti ours  to megálo  mas  to patrikó

e. to palió to spíti  to megálo  to patrikó  mas

‘our big old family house’

We see here that the possessive is also a DP in Greek, again a major difference with English.

Another use of Greek D which differs from English is when it appears to attach not to an NP, as is expected, but to a quantificational determiner (Giannakidou 2004). This is illustrated with the universal quantifier *káthe* ‘every’:

(12) a. o  káthe fititís
D.masc  every  student.masc  (Giannakidou 2004: (32b))
* the every student

b. * káthe o fititís
every  D student

(13) i  káthe fitítria
D.fem.  every  student.fem

Giannakidou 2004 and Etxeberria and Giannakidou 2010 gloss D *káthe* lit. “the every”, as *each*. This use of D is observed in other languages too, e.g. Basque (Etxeberria 2005, 2009, this volume) and Hungarian. The works cited propose that D in this use modifies syntactically the quantificational determiner and *not* the NP. We come back to these uses of D when we discuss universal quantifiers later on. We will also find D to interact with wh-quantifiers in section 7, more specifically in the formation of free relatives and free choice items.

There are two additional important facts about the Greek definite article. One is that it obligatory with proper names:

(14) a  o Nikólas; i Ariánde  
the Nicholas; the Ariadne  
b  * Nikólas; *Ariánde  

The article is dropped only with the vocative: *Nikóla! Ariánde!*, but *o Nikóla! i Ariánde!*. Otherwise, the Greek proper name looks like DP.

Second, the Greek DP is the typical vehicle of genericity. Bare singular count nominals are not allowed in the language as arguments:

(15) a  *(I) Patáta íne laxanikó.  
the potato is vegetable  
{Potato/the potato} is a vegetable.  
b  *(I) Patátes íne laxaniká.  
The potatoes are vegetables  

(16) a  *(I) Patáta itan sápia.  
The potato was rotten  
b  *Patátes itan sápies.  
potatoes were rotten.  

The first sentence is generic, and the second is episodic. We see that bare singular and plural count nouns are excluded in both cases. Generic reference is done via the definite determiner, in singular and plural. Compare the plural version to *The potatoes are vegetables* in English, which has a multiple kind reading (Krifka et al. 1995, Chierchia 1998). In Greek this sentence also has the kind denoting bare plural reading that the English definite plural lacks. Even singular mass nouns, which in English can be bare, cannot appear bare as generic arguments:

(17)  *(I) Záxari íne glikiá.  
The sugar is sweet  
Sugar is sweet.  

So, Greek is very restricted in its use of bare nominals. Bare singulars are allowed only as predicate nominals as we see, in the existential structure (to be examined in section 4), and in the object position, where it is has been argued that they contain a null D (Sioupi 1998, 2002, following Longobardi 1994, Chierchia 1998).

(18) a  Xríázome záxari.  
I need sugar.  
b  O Jánis aftí ti stigmí diavázi {efimerída/periodiká}.  
the John this the moment read.imperf.3sg newspaper/magazines  
John is reading {the newspaper/magazines} right now.  
c  O Jánis éxtise {spíti/spítia}.  
the John built house/houses  
John built a house.
I mamá éftiakse {kéik/pítes}.
the mom made cake/pies
Mom made {a cake/pies}.

The bare arguments in the object position are all narrow scope indefinites, equivalent to existential bare plurals in English, and the singulars to a indefinites (see Sioupi’s work for more details). Bare singulars are also employed in minimizer negative polarity items (e.g. didn’t say a word), as we see in section 6 (Giannakidou 1997).

In subject position, bare singular existentials are out, but bare plurals are marginally allowed:

(19) (Káti) Gátes niaourízoun.
(Some) Cats are meowing.

As indicated, the bare plural is equivalent to the indefinite plural article káti NP (which we examine in section 2). The point I want to make here is that bare arguments, to the extent that they are allowed, are equivalent to narrow scope indefinite existentials, and are never used generically. Generic reference in Greek is always via DP, regardless of mass/count differences.

Finally, Greek possesses two demonstrative pronouns aftós, aftí, aftó ‘this’, ekínos, ekíni, ekíno ‘that’—which, unlike English, must embed DPs (Stavrou 1986; Stavrou and Horrocks 1989, Alexiadou et al. 2008):

(20) a. aftós *(o) fititís
this the student
‘this student’
b. ekínos *(o) fititís
that the student
‘that student’

Horrocks and Stavrou argue that the demonstratives are not D heads in Greek, but phrases in Spec, DP. Other demonstratives in Greek are: the qualitative demonstrative tétjos ‘such’, and the quantitative tósos ‘that much’ (the latter related to the wh-word ósos ‘as much as’):

(21) a Thélo éna tétjo. (perhaps accompanied by a pointing gesture; Holton et al: 327) want. 1sg one such
I want one of these.
b Dhen thélume tétja.
We don’t want such things.
C Íne tósó psilós!
He is that tall!

The word ‘self’ also appears as definite in Greek: o eafíos mu ‘myself’. This background on the Greek DP will suffice for our discussion of quantificational expressions. More details regarding the use of D will be pointed out as we move on.

1.3 Roadmap
Traditional grammars use the terms “pronouns” as in definite (he, she, it) and indefinite (someone, something) pronouns, determiners, and quantifiers to refer to what can collectively be understood as “quantificational expressions”. In this context, the word ‘determiner’ is understood descriptively as “a word that is not an adjective or a numeral but which accompanies a noun (e.g. ‘every’, ‘other’, ‘same’)” (Holton et al 1997: 303), hence quite differently from the way the term is used in the theoretical discussion in the syntax-semantics interface.

The background of our discussion here will be the generalized quantifier (GQ) theory (Montague 1974, Barwise & Cooper 1981, Zwarts 1986, Westerståhl 1985, Partee 1987, Keenan 1987, 1996, Keenan & Westerståhl 1997; for more recent works see Giannakidou and Rathert 2009, Szabolcsi 2009), which posits that there is a natural class of expressions in language, called quantificational determiners (designated as Qs), which combine with a nominal (NP) constituent (of type et, a first order predicate) to form a quantificational argumental nominal (QP). This QP denotes a GQ, a set of sets. In a language like English, the syntax of a QP like every woman is as follows:

(22) a. \[\lambda P. \forall x. \text{woman} (x) \to P(x)\]
   b. \[\lambda P. \lambda Q. \forall x. P(x) \to Q(x)\]
   c. \[\text{QP. } \langle(e, t), t\rangle\]

\[
Q \quad \text{NP}
\]

\[
\langle(e, t), \langle(e, t), t\rangle\rangle \langle e, t\rangle
\]

every woman : \lambda x. \text{woman} (x)

The quantificational determiner Q every combines first with the NP argument woman, and this is what we have come to think of as the standard QP-internal syntax. The NP argument gives the domain of the Q, and the Q expresses a relation between this domain and the set denoted by the VP. QPs like every woman, most women, etc. are known as ‘strong’ (Milsark 1977), and they contrast with the weak Qs like some, few, three, many, etc., in that the latter but not the former are admitted in the existential construction. Another element that combines with a domain set to give a nominal argument is the definite determiner D that we saw earlier. In Greek, like in English, the DP and the QP are the two argumental nominals—bare nominals are generally not allowed as arguments, as we saw, or if they do, they are thought to contain a null D.

The structure of this chapter will unfold as follows. We start first with existential QPs in section 2. We present first the quantity denoting existentials such as numerals—including modified numerals (2.2) and distributive numerals, and we also examine the indefinite QPs preceded by the Greek equivalent to some and those preceded by the indefinite article (2.3). Then, I present the so-called value judgements existentials, i.e. those that express a subjective assessment of their quantity (equivalents to few, many, several, etc). We will notice an interaction there between intonation and determiner, a pattern that we observe again later in our discussion of scope and negative polarity quantifiers in section 6. We discuss further partitive structures, and in section 2.6, the adverbial variants of existentials are presented.

In section 3, we move on to expressions of universal quantification and other strong quantifiers, where we observe the systematic interaction between D and Q mentioned earlier. Here we also discuss binominal each, floating quantifiers, and distributivity. In section 4, we zoom in on the existential structure, and ask what kinds of quantifiers can appear there. It is hard
to draw clear conclusions about the definiteness effect in Greek; also there is more than one variant of the existential structure in Greek. In section 5, we discuss morphologically complex quantifiers such as comparative quantifiers, those created via boolean compounding (and, or, neither...nor..., and not), exception phrases (all but ten students), and bounding phrases (He exercised twice a day, six days a week for one year).

In section 6, we discuss negative polarity quantifiers and negative concord in Greek, and consider some more general questions of scope in a bit more detail. We notice an interaction between scope and intonation in Greek that has been observed in the literature (Giannakidou 1998, 2000). In section 7, finally, we focus on wh-based quantification. There are three paradigms of wh-words in Greek: interrogative wh-words, relative wh-words, and a special wh-form for free relatives that employs the definite article. The form is also the one used as the basis for the formation of free choice quantifiers (Giannakidou and Cheng 2006), so we find again an interaction of D with quantifiers in free choice, suggesting the relevance of definiteness for the semantics of free choice rather than interrogative semantics (contra Kratzer and Shimoyama 2002), or universal quantification (Dayal 1998, Menéndez-Benito 2010).

My goal is to offer an accurate description of the Greek quantificational system, and I will make connections to current theoretical positions (a) when they help the description, and (b) when there is significance for the theory of quantification of certain phenomena of Greek. We distinguish between D-quantifiers, i.e. those that we call QPs (formed by using the determiner Q), and A-quantifiers which are adverbial. The latter are mathematically less well understood, and morphosyntactically and semantically more variable than D-quantifiers.

Finally, it is important to emphasize that, as just described, we take the basic semantic type of quantifiers to be a relation between two sets. Our classification is thus meaning based. Logically equivalent expressions in different languages may be syntactically non-isomorphic: e.g. each student in Greek appears as o káthe fititis, i.e. as a definite as mentioned earlier, but it will be classified as a universal based on its meaning.

2. Expressions of existential quantification

We start with the examination of generalized existential (intersective) quantifiers (Keenan 1987, 1996). This is the class known as weak quantifiers, the Q expressing the intersection of their domain argument (NP) and the VP.

Often, existential Qs have been treated in the literature as “adjectival”, and therefore are not always considered syntactically Qs of type et,ett (cf. Link 1984, Partee 1988, Kamp & Reyle 1993, Krifka 1999, van Geenhoven 1998, Landman 2002). Ionin and Matushansky (2006) more recently argue that weak numerals, at least, are modifiers. Greek weak Qs are also argued to be adjectival as a class in Giannakidou and Merchant (1997), Stavrou and Terzi (2010). In what follows, I will generally refrain from syntactic questions, and consider primarily the semantic classification. So, what are called existential quantifiers below are simply relational expressions that are used in Greek to express existential quantification.

2.1 Indefinite article and numerals

A numeral is a word that expresses a number. Numerals are typically divided into cardinals (one, two, three) and ordinals (first, second, etc). Ordinals in Greek typically behave like predicative adjectives typically and will not be considered here. Holton et al. state that “from the
 morphological point of view, Greek cardinal numerals may be divided into three categories: (a) indeclinable cardinals, (b) declinable cardinals, and (c) cardinals behaving like nouns” (Holton et al 1997: 294). Examples of declinable numerals are énas mia éna ‘one’, tris tria ‘three’, tésseris (masc, fem) téssera (neut.) ‘four’, diakósì diakósiés diakósia ‘two hundreds’, xilji xiljes xilja ‘one thousand’. Ekatomírio “million” behaves like a noun, and thus also declines (like all nouns in Greek). Indeclinable are the words designating the numbers 2, 4, 5, 6, 7, 8, 9, 10, 11, 12 and the tens. Some examples are given below:

(23) I María agórase ÉNA vivlío, ke óxi pénde.
Mary bought one book, and not five [books]

(24) a Tris ánthropi diamparíthinikan.
Three people complained.

b To tmíma mas tha dextí fétos xílius diakósius
our department will admit this year thousand.masc.acc.pl two-hundred.masc.acc.pl

nèus fítites.
new. masc.acc.pl students. masc.acc.pl

c Ekremún i apózimíosis enós ekatomíriu agrotón.
Pend.3pl the compensations.nom one.gen.masc million. gen.sg farmers.msc.gen

The compensations of one million farmers are still pending.

d i xóra ton xílion limnón
the country the.pl.gen. thousand.gen.pl lake.gen.pl

The bracketed part in the example (23) illustrates NP ellipsis which is generally available in Greek (Giannakidou and Stavrou 1999), and depends on contrastive focus. In the example, the numeral in stressed for this reason. Unstressed, the numeral is used as the indefinite article:

(25) Skéftome na agoráso éna spíti.
I am thinking of buying a house.

The use of numeral one as an indefinite article is very common in many European languages. The indefinite éna is in the singular. The plural form of the indefinite article in Greek is káti, which we will discuss later in this section.

Greek numerals have been treated in the literature as adjectival (Giannakidou and Merchant 1997, Stavrou and Terzi 2010). Giannakidou and Merchant also show that Greek numerals license null arguments:

(26) I Éléna agórase tria vivlía, álá I María dhen agórase [e].
Eléna bought three books, but María didn’t buy [any].

Giannakidou and Merchant call this ‘indefinite object drop’, and show that only indefinite existential quantifiers can serve as antecedents for indefinite object drop in Greek.²

² This is one of the reasons, Giannakidou and Merchant argue, why indefinite object drop is a phenomenon distinct from VP ellipsis or null arguments in Japanese, Chinese, Portuguese.

Numerals can also be used in the so-called pseudopartitive structure which seems to be equivalent to a classifier structure:

(27) a Xriazómate ἀριθ. ὕδ. ὕδ. ὕδ.
need.1pl three bottles.acc wine.acc
We need three bottles of wine.

b Dío potiría ἁξ. ἕν. ἑκτά.
two glasses.nom juice.nom is enough
Two glasses of juice is enough.

c ἀριθ. ἱμ. ἱμ.
three meters cloth

Like English, Greek is not a classifier language and uses containers and measure phrases to count units of mass nouns. We see here that no preposition is used—hence, pseudopartitive—but the two nominals agree in case (though not number, as the mass noun appears typically in the singular), and the case is determined by their grammatical function (object or subject).

2.2 Modified numerals

Numerals can be modified by the following kinds of modifiers:

2.2.1 Quantity bounding modifiers

Quantity bounding modifiers are: *tuláxiston* ‘at least’, *to polí* ‘at most’, *óxi parapáno apó* ‘no more than’, *exactly* *akrivos*:

(28) Ἰρθαν {tuláxiston/to polí/óxi parapáno apó} ὁδὸν Ἁλίτος.
came.3pl at least/at most/no more than two hundred students

{At least/at most/no more than} two hundred students came.

(29) Το κέικ xriázete {akrivos} ὡδ. ἀλλ. ἱμ. ἱμ. ἱμ. ἱμ. ἱμ. ἱμ. ἱμ.
The cake needs (exactly) two hundred grams butter (exactly).

We see here that the modifier *akrivos* ‘exactly’, can float, and appear at the right or the left edge of the QP. *Tuláxiston* and *to polí* (lit. ‘the much’) typically precede the numeral but can also appear to the right: *tria avgá to polí* “three eggs at most”, *tria avgá tuláxiston* “three eggs at least” but *tria avgá óxi parapáno apó* “*three eggs no more than*”— notice the parallel with English. Importantly, the modifier can also “split” the QP and appear to the right of the numeral, between the number word and the noun:

(30) a Evgalá dhío akrivos fotografies.
Let: I took two exactly pictures.

b Na vgális dhío {to polí/tuláxiston} fotografies
Take two {at least/at most} pictures.
As I mentioned at the beginning, Greek has great flexibility in its word order, and obviously this carries over to the QP. This flexibility in the positioning of modifiers suggests that they don’t just function as Q modifiers, but they have flexible syntactic specification as Q or QP modifiers, something which is expected given that they are adverbial. Holton et al. 1997 discuss some of these modifiers as ‘adverbials within the noun phrase’ (1997: 337), along with the approximative and evaluative modifiers that we discuss next.

Another bounding modifier is móno(n) ‘only’. (N is added before a vowel for euphonic reasons only.) Móno shows exactly the same flexibility:

\[(31)\] Evgala (móno) tris (móno) fotografies (móno).
  took.1sg (only) three (only) pictures (only)
  I took (only) three (only) pictures (only).

Tuláxiston, to poli and mónon do not exclusively modify numerals, they can also modify e.g. proper nouns:

\[(32)\] Tha milís {tuláxiston me ton Jání/ móno me ton Jání/ to pol} me ton Jání.
  I will talk at least with John/only with John/ at most with John.

### 2.2. Approximative modifiers

Typical approximative modifiers are perípu “around”, sxedhón “almost”:

\[(33)\] Simetísan stis diadilósis {perípu/sxedhón} tris xiliades fitités.
  {Approximately/ almost} three thousand students participate at the demonstrations.

Like the bounding quantifiers, perípu and sxedhón may also appear at the right edge of the QP:

\[(34)\] Simetísan stis diadilósis tris xiliades fitités {perípu/ sxedhón}.
  Three thousand students approximately participated at the demonstrations.
  *[Three thousand students almost] participated at the demonstrations.

Notice the contrast with English *almost* that cannot be parsed as a constituent with the QP in this position. The intermediate position is also available: tris xiliades {perípu/ sxedhón} fitités ‘three thousand {approximately/almost} students.

Another class of approximative quantifiers is kamía and kána. These are related to the NPI kamía ‘NPI.any.fem.’ that we will discuss in section 6. Kamía is the feminine form with a stress shift, as indicated, and kána is related to the masculine and neuter kanéna. As approximatives, kamía and kána are used uninflected. Kamía appears with a numeral that does not agree in gender/number, or with nouns ending in –ariá, which are classifying:

\[(35)\] Tha prépi na ixes {kamía/kána} déka teflonimata (oso elipes).
  You must have had about ten phone calls.neuter (while you were gone).
  You must have had about 10 phone calls while you were gone.

\[(36)\] a Ídha {kamía/kána} dekariá fitités.
  I saw about ten students.
Dekariá is a noun like “dozen”; - ariá and - ádha are two very productive endings in Greek that create such classifying nouns: eksádha ‘six-piece’, ekatodádha ‘a mass of hundred’, penindaríá ‘a mass of fifty’ (for a recent discussion see Stavrou and Terzi 2010). The kamiá is not an NPI—given that it can be used in positive veridical sentences in the past tense (36a). As for kána, we see that it cannot be used with the classifying nouns, but rather with a bare NP, or with the numeral ‘two’ (dhio), and with the bare noun, thus creating an indefinite noun phrase.

(37) Tha agora só {kána dio vivlía/ kána vivlíó}.
I will buy about two books/ a book.

Importantly, both kamiá and kána are not polarity sensitive, unlike their cognate kanénas, since they can be used in the veridical context of the simple past.

2.3 Indefinite QPs and referential vagueness

An indefinite QP with the article éna can have specific or non-specific usages, just like in English and many other languages. Roughly, specificity means that the speaker has a particular individual in mind (in the ‘epistemic’ approach to specificity; Groenendijk and Stokhof 1981, Farkas 2002, Ionin 2006; for the choice function analysis see Reinhart 1997, Winter 1997). Specific indefinites refer to objects that are speaker identifiable but not part of the common ground. (Definiteness, on the other hand has to do with speaker and hearer reference, part of the common ground.). Ionin 2006 argues that the QP is associated with a felicity condition that requires that the speaker be in position to identify the referent. This felicity condition is distinct from the presupposition of existence that a definite DP carries.

Indefinite NPs sensitive to ‘knowledge of the speaker’ exist in various languages, as noted by Haspelmath (1997), and there exists a class of indefinites that appear to be the opposite of specific: they can only be used when the speaker does not know what their referent is. Examples of such indefinites are French un quelconque (Jayez and Tovena 2006), and Spanish singular algún. Jayez and Tovena call them epistemic, Alonso-Ovalle and Menéndez-Benito (2010) call them modal, but they do not really involve modality (Giannakidou and Quer 2010). It is more felicitous to think of them as anti-specific, and, as Giannakidou and Quer 2010 suggest, referentially vague.

Greek has two such determiners: the negative polarity kanenas series that we discuss in section 6, and the non-polarity determiner that translates in English as some: káppios, kápja, kápjo ‘some, someone, somebody’—inflecting fully for φ-features (case, number, gender), and which can be used both as determiner and as full QP, as indicated.

(38) káppios, kápja, kápjo ‘someone, some N’
káti ‘something’
kápu ‘somewhere’
kápote ‘sometime, once’
kápos ‘in some way, in a certain way’
kámboso ‘a certain amount’

This ká-series is composed morphologically by adding ká to a wh-word (the p-part and ti; see section 7). The ká-indefinites, however, do not have wh- or interrogative uses in Greek. Some examples are given below:

(39)  
a. Idha kápjon na trexi sta skotiná.
I saw someone run in the dark.
b. Kápja nosokoma tha ton kálmarì.
Some nurse will calm him down.
c. Fáe káti.
Eat something.

(An older form, katití, also exists, but its usage is in decline). The ká-indefinite is typically used when the speaker does not have a specific referent in mind, or in situations where the speaker doesn’t know the identity of the referent; empirical evidence for this comes from an experiment (Giannakidou, Papadopoulou and Stavrou 2010) showing that énas is preferred with specific reference, and kápjos in situations with indeterminacy). Giannakidou 1997, 1998 claims that the ká-indefinite also has a positive polarity use (like some: I didn’t see some student), but the facts are not so clear, because speakers do accept the ká-indefinite inside the scope of local negation, or non-local negation. The category of positive polarity indefinites is generally very illusive (see Giannakidou in press), and even in English, there may be two incarnations of some, the positive polarity one being distinguished as more emphatic, as suggested in Giannakidou in press. For more on intonation, quantifiers, and scope, see section 6.

Another word expressing indefinite reference is énas ‘someone’ from the indefinite article, as an independent QP. The example below is from Holton et al 1997: 320):

(40)  
Iręte {énas/kápios} ke se zituse.
Someone came looking for you.

This use of énas is equivalent to someone, as we see. For arbitrary reference ‘one’, Greek employs kanís (a cognate of the polarity kanénas that we examine later, Giannakidou 1994); kanénas itself can also, more markedly, be used in this context):

(41)  
Anarotiete kanís an…
One wonders whether….

It must also be noted here that káti, which means literally “something” when used as a QP, has a use as the plural indefinite article. It combines with a plural NP and creates a plural indefinite:

(42)  
Píran tiléfono káti studen. Nomízo oti itan o Pétros ke i Maria.
Called telephone káti students. Think.1sg that be.3pl the Peter and the Mary
Some students called. I think it was Peter and Mary.
The singular *káti fitítis is impossible. As a plural indefinite, káti appears invariant (not inflected for φ-features). Languages tend to not have a morphological plural indefinite article (a notable exception is Spanish unos), and supplement it with other forms, hence the use of káti in Greek—English weak sm has a similar use as in I saw sm students. As a plural indefinite, the káti NP need convey complete ignorance of reference, as is shown in the example above. It is indeterminacy that is crucial. There are cases where káti imposes anti-specificity in the sense that it cannot refer back to a discourse given set. Consider the following scenario (modeled after Martí’s 2009 example (1)):

(43) {Teachers A and B are on an excursion with [a group of children]K. Teacher A comes to teacher B running:}
       Did you hear? Some children were- lost in the forest
       Eftíxos pu ta díká mas ta krátisame edo! “Thank God we kept ours here!”
       Did you hear? Some children were- lost in the forest

Káti pedhiá here cannot refer back to the discourse given set of children the teachers A, B were in charge of; Spanish unos has been claimed to have the same property (Gutiérrez-Rexach (2001), and this supports further a parallel between the Greek káti NP.plural and the plural indefinite article unos in Spanish, which remains non-specific in the plural. The b example with the plural kápja needs to refer to the previously introduced set, just like Spanish plural algunos (Martí 2008, 2009). So, unlike English, Spanish and Greek employ two indefinite paradigms in the plural: [A+NP.plural], and [SOME+NP.plural]— and these come with distinct patterns of context dependence: the former isn’t context dependent, but the latter is. The mystery is that in the singular we tend to have the opposite pattern, and this somehow needs to be explained.

Finally, in support of the equivalence of káti NP.plural to a plural SOME consider the following exclamative sentence:

(44) Exi káti kunímata!
    She’s got some moves!

2.4. Value judgement quantifiers, and the role of intonation

Value judgement quantifiers are those that that come with some kind of judgement on the quantity they denote. Typical such examples in English are few, many, several, etc. I give below some examples with their Greek equivalents, all inflected for case number and gender. We start with those expressing a positive judgment on the quantity:

(45) Idhame {poléts/arkéts/káboses} teníes fétos to kálokéri.
    Saw.1pl many/several/several movies this summer
    We saw many/several movies this summer.

There are variants of MANY NP like [plíthos NP.genitive], as in plíthos tenión ‘crowd movies.pl.gen.’, and “ápires NP” lit. “infinite.pl NP.pl”, as in ápires teníes ‘tons of movies’— both designating quantities judged as very large. Polí is an adjective: the word for many and
much in Greek, and it inflects, as above, where we find it as poles ‘many.fem.pl.acc’; the uninflected variant polí ‘many.neuter.sg’ is an adverb—using the neuter of the adjective is a common strategy for adverb formation in Greek; polí is used as equivalent to English ‘very’, ‘very much’ and ‘a lot’:

(46)  To podílato aftó  mu arési  polí.
The bicycle this  me.gen like.3sg  much
I like this bicycle a lot/very much.

(47)  I María íne polí kourasméni.
María  is very tired

As the English many and very, polí is generally emphatic, but in construals like polí kourasméni ‘very tired’ polí need not bear the main stress; stress could be on the adjective. If stressed, the emphatic variant of polí, which I will designate as POLI, delivers equivalence to English ‘too’ (Giannakidou 1997, 2000:465-466). An important diagnostic employed in Giannakidou was that emphatic POLI can license NPIs such as kanénan, but the unstressed polí cannot:

(48)  a  I María íne POLI kourasméni  ja na milísí me kanénan.
  María  is too tired  to talk to anybody.
  a  * I María íne polí kourasméni  ja na milísí me kanénan.
    * María  is very tired  to talk to anybody.

Hence, intonation realizes in Greek an otherwise lexical difference in English. This we find again on the other end of QPs expressing negative judgement such as líji, and emphatic LIJI. The adjective lígos(masc) líji(fem) lígo(neuter) means literally ‘small, little in size or quantity’ as is Thelo líji zaxari  ‘ I would like {a little bit of, some} sugar’. The examples and glosses below concerning intonation are from Giannakidou 2000, and the NPI típota serves as a diagnostic:

(49)  a  LIJI fitítés  ípan  típota.
    few students  said.3pl  anything
    Few students said anything.
  b.  *Líji fitítés  ípan  típota.
    a few students  said anything
    *A few students said anything.

Non-emphatic líji carries a more neutral judgement on the quantity like a few, and does not license the NPI. But the emphatic LIJI designates a quantity judged negatively as not much, or less than expected, like few, thereby allowing the NPI. Emphatic accent, then, again, in Greek marks an otherwise lexical distinction in English. Using suprasegmental features to perform morphological distinctions is a common strategy across languages – for instance, stress is systematically employed (e.g., pérmit vs. permít for the noun vs. verb distinction in English), and tone, and the Greek facts (there will be more) should be seen in this light.

Another negative judgement value quantifier is eláxisti, lit. the superlative of lígos, meaning ‘very few’:
Eláxisti allows for NPIs, as we see. More on the NPI facts in section 6.

2.5 Existential quantifiers in the partitive structure

All existentials mentioned in this section occur in the partitive—which in Greek involves using the ‘light’ proposition apó ‘of’, or ‘from’, plus a plural DP as is typically the case. When the existentials are used in the partitive, they receive proportional readings, as expected:

(51) a  
Idha {tris/kápjus/lígous/merikús/polús} apó tus fitités.  
saw.1sg three/some/a few/several/many of the students

b  
Idha {to polí/tuláxiston} pénde apó tus fitités.  
saw.1sg at most/at least five of the students

2.6 Existential A-quantifiers

Adverbial expressions with existential force come in two basic varieties: quantificational adverbs (Q-adverbs) along with adverbials which typically denote frequency, and iterative adverbials (I-adverbials) that denote iteration.

A. Q-adverbs and adverbials with ∃-force

(52) O Jánis kapnízi {sixná/spánia/póte- póte /káthe tris ke lígo}.  
the John smoke.imperf.3sg often/rarely/when-when/every three and little  
John smokes {often/rarely/every now and then/very often}.

Notice the two idiomatic expressions: (a) the reduplication póte- póte (of the wh-word meaning when) meaning ‘every now and then’ or ‘occasionally’; and káthe tris ke lígo which involves a universal quantifier and a coordinate structure. These are perceived as petrified expressions, noncompositionally—reduplication, however, often creates distributive expressions in Greek as we will see soon. As indicated, the verb with Q-adverbs appears in the imperfective, since these sentences are habitual/generic statements and involve quantification of events (Krifka et al 1995; Giannakidou 1995, 1997, 2009 for Greek). The Greek imperfective also has progressive usages that we will not be relevant here.

Another group of frequency adverbials is those that are expressed in English with the prepositions on, in, at (on Monday, in the winter, at noon), or a bare plural naming a day of the week: On Monday, Mondays and Wednesdays. In Greek, these all appear as bare accusative DPs:

(53) O Jánis érxete {tis kyriakés/ ta vrádia}.  
the John comes.imperf.3sg the.fem.pl.acc Sundays.pl.acc/the.nt.pl.acc evening.pl.acc  
John comes {on Sundays/at night}.

(54) To xióni péfti ton xímóna.  
The snow falls.imperf.3sg the.sg.masc.acc winter.masc.sg.acc
The snow falls in the winter.

(55) O pyretós anevéní ti níxta.
The fever rises.imperf.3sg the.sg.acc night.fem.sg.acc.
The fever rises at night.

(56) Ti níxta, ta pedhiá kimünde.
At night, the children are asleep.

Finally, another group denoting frequency appears in the form n forés + accusative ‘three times a week/a month’, etc.:

(57) Ton vlépo tris forés tin endomáda/ to mína.
Him see.imperf.1sg three times the.acc week.acc/the.acc. month.acc
I see him three times {a week/a month}.

So, we see a systematic use of DP in frequency adverbials where English uses an indefinite QP.

B. Iteration adverbials

These are: tris forés, pénde forés, etc:

(58) Milísame pénde forés fētos to kálokéri.
talked.perfective.1pl five times.acc this-year the.summer.acc
We talked five times this summer.

The iterative sentence contains a verb in the perfective, as we see in the gloss. Also noteworthy is the deictic word fētos ‘this year’—a constant meaning ‘the year of utterance’. Greek employs likewise pēr(i)si for the year prior to the year of utterance, and tu xrónu for the year after. Crucially, these are not indexicals, unlike next year, last year in English which can be anchored to the year of the clause and not necessarily the utterance:

(59) I Maríá ípe to 2007 oti tha édine eksetásis tu xrónu.
Mary said in 2007 that she would take the exam in 2011. (utterance year: 2010)
Not: Mary said in 2007 that she would take the exam in 2008.

This concludes our presentation of existential structures in Greek. We move on now to universal quantifiers.

3 Universal quantifiers, distributivity, and interaction with D

In this section, we discuss strong quantifiers in Greek: universals, and the quantifiers equivalent to both, most. Greek has two expressions of universal quantification: ólos (óli, ólo) ‘all’, and káthe ‘every’—a distributive universal, variants of which appear with the definite article, e.g. o káthe ‘each’. D is also involved in the formation of both, most. We discuss the two major groupings in turn.

3.1 Ólos
Ólos fully inflects for φ-features, but I will be referring to the whole paradigm as ólos following the grammars. Ólos means both ‘all’ and ‘whole’ in Greek. Like in English, it appears in the periphery of a DP, and cannot follow the D:

(60) a  Psífisan óli i fitités.
    voted.3pl all.pl the.pl. students
    All the students voted.

b *i óli fitités

c Éfage óli tin túrta.
    Ate.3sg all.acc.fem the.fem.acc.sg cake
    He ate all the cake/the whole cake.

(61) a {i óli / óli i} sizitis
    the whole/whole the discussion
    the whole discussion

b olókliro i sizitis
    whole the discussion

In the use as “whole”, ólos can in fact follow the D, and seems to be equivalent to the adjective olókliros (i, o) ‘whole’.

(62) óla *(ta) pediá i xe xarímoína.
    all children are cute
    All children are cute.

Unlike English, ólos cannot appear with a bare NP:

(63) a I fitités éfigan óli norís.
    The students left all early.

b I fitités éfigan noris óli.

c I fitités óli éfigan norís.

d Ta pediá ta ida na fégun óla norís.
    The children, I saw them all leaving early.
We see here that the óli can appear in various places: in the periphery of the DP to the right, after the verb, at the right edge of the sentence. These are all unacceptable positions for the existential quantifiers we discussed in the previous section which all appear pre-NP, like higher adjectives. These seem to form a constituent with the NP, and can only be separated via split topicalization, which is marked by intonation breaks, indicated here with comma:\(^3\):

(65)  Vivía, agorasa polá. Periodiká, polí líga.
Books, I bought many; magazines, very few.

Hence, the mobility of ólos, in conjunction with its extraordinary behavior of combining with a DP allows us to think of it as an adverbial modifier of the DP, maybe a kind of exhaustivity marker designating _good fit_, as suggested in Brisson 2003 for English _all_.

Finally, ólos, does not occur in partitives:

(66)  a  * óli apó tus fitités
      all of the students
      * káthe fitités (masc)
      every student.sg.nom; every student.sg.gen; student.sg.nom.pl
   b  (o) káthe énas apó tus fitités
      each one /every one of the students
   c  o kathénas apó tus fitités
      everyone of the students

From the universals, the variants of (o) káthe énas (discussed next) occur in the partitive. ‘Most’ is fine too— _i perisoteri apó tus fitités_ ‘most of the students’, but ‘both’ is not so good (but still usable): ? _ke i dhio apó tus fitités_ ‘both of the students’.

### 3.2 Káthe, kathénas: distributivity, and D-universals

_Káthe_ appears to be a real universal distributive quantificational determiner in Greek (Holton et al. 1997: 313 characterize it as a distributive determiner too)— like _every_. It appears to be a singular uninflcted determiner, combining only with a singular argument:

(67)  a  káthe fititís; káthe fititi; * káthe fititéis (masc)
      every student.sg.nom; every student.sg.gen; student.sg.nom.pl
   b  káthe fitírias(fem); káthe fitírias(fem.gen)
   c  káthe pedhí (neuter); káthe pedhiú

---

3 I think it is also worth noting here that Greek has the so called _Genus species topicalization:_

(i)  Kréas, mu arési móno to xirinó.
Meat, me.gen like.3sg only the pork
As for meat, I only like (the) pork.
So, unlike *oolos*, the definite and indefinite article, the demonstrative, and the existential quantifiers we discussed earlier which appear to inflect fully (with the exception of a few numerals), *káthe* is morphologically set apart from adjectives and D in the language. But *káthe* can combine with *énas*, and in this case it inflects:

\[
\begin{array}{ccc}
(68) & \text{a} & \text{b} & \text{c} \\
& kathénas; & kathemía; & kathéná; \\
& \text{every-one.nom.sg.masc} & \text{every-one.gen.sg.masc} & \text{every-one.nom.sg.fem} \\
& kathénas; & kathemías & kathéná; \\
& \text{every-one.gen.sg.masc} & \text{every-one.gen.sg.fem} & \text{every-one.gen.sg.fem} \\
& kathémías & \text{every-one.gen.sg.masc} & \text{every-one.gen.sg.fem} \\
& kathémias & \text{every-one.gen.sg.masc} & \text{every-one.gen.sg.fem} \\
\end{array}
\]

It seems natural to think of *káthe* as ‘every’ and *kathénas* as ‘everyone’. However, there are certain things that set *kathénas* apart from ‘everyone’. I discuss them in detail next.

### 3.2.1 The presence of D and context dependence

The first difference is that *kathénas* is always construed with the D. I give below examples in a generic and episodic context:

\[
\begin{array}{ccc}
(69) & \text{a} & \text{b} \\
& O kathénas gnorízi oti i ji ine strogili. & ?? Kathénas gnorízi oti i ji ine strogili. \\
& \text{Everyone knows that the earth is round.} & \text{Everyone knows that the earth is round.} \\
\end{array}
\]

\[
\begin{array}{ccc}
(70) & \text{a} & \text{b} \\
& O kathénas ýfere apó éna vivlío. & /* Káthe fititís = [(C) káthe] (student) \\
& \text{Everyone brought of one book} & \text{‘each student’}
\end{array}
\]

We see here that *o kathénas* recieves both generic and episodic uses—in the latter referring to a discourse specific set of entities which renders the D-*káthe* QP context dependent. Giannakidou 2004 and Etxeberria and Giannakidou 2010 claim that D in this case does not function as e-forming, but as a modifier that does not saturate (in the sense of Chung and Ladusaw 2003) the NP: it composes with Q, via an operation called D-domain restriction (DR), designated in \(d\) below. D-DR can be thought of as a morphological or lexical operation on the Q, and semantically it contributes the context set variable C (Westerståhl 1984, 1985 claimed that the definite article contributes C anyway). C renders the QP anaphoric to a salient discourse property. So, for laguages that employ D-restriction, contextual restriction is grammaticalized, and is not merely a matter of pragmatics (see among others Recanati 2002).

\[
\begin{array}{ccc}
(71) & \text{a. } [QP_D + káthe_Q [NP fititís_N]] \\
& \text{b. } o káthe fititís = [(C) káthe] (student) \\
\end{array}
\]
The context dependent nature of D-universals means first that these QPs will not be able to quantify over empty sets. This is indeed what we observe. Notice the contrasts below, and the parallel of D- *káthe* and *each* (the examples are from Etxeberria and Giannakidou 2010):

(73)  
#An vris *káthe* láthos, tha su dhóso bonus; but there may be no mistakes at all.  
#If you find each mistake, I’ll give you a bonus; but there may be no mistakes at all.

(74)  
If you find *every* mistake, I’ll give you a bonus; but there may be no mistakes at all.  
An vris *káthe* láthos tha su dhóso bonus; but there may be no mistakes at all.

(75)  
If you find *all* (*the*) mistakes, I’ll give you a bonus; but there may be no mistakes at all.  
An vris óla ta láthi tha su doso bonus; but there may be no mistakes at all.

Unlike *óla* and bare *káthe*, *o káthe* and *each* presuppose the existence of mistakes, and Giannakidou 1997, 1999 characterizes *o káthe* as veridical for this reason.

Second, D-universals cannot refer to non-existing kinds:

(76)  
a. *Káthe* monókeros éxi éna kerato.  
   Every unicorn has one horn.  
   (Etxeberria and Giannakidou 2010)

b. # *O káthe* monókeros éxi éna kerato.  
   # Each unicorn has one horn.

Again, notice the parallel with *o káthe* and *each*: they both cannot refer to non-existing kinds— but *káthe* ‘every’ can be used routinely for non-existing kind reference (for *each*, see Beghelli and Stowell 1997). However, D-universals are fine in characterizing sentences:

(77)  
a. Sto programá mas, *o káthe* fititís prépi na epiléksi dhío mathimata simasiologías.

b. In our program, *each student* must choose two semantics classes.
What is crucial is the restriction ‘in our program’, which renders the example not a predication of a kind, but a characterizing sentence that expresses a generalization about a particular set of students in our program. O káthe and each can be used here.

This section ends with two more points supporting the composition of D and Q. First, D is used to form other presuppositional determiners in Greek: those equivalent to both, and most:

(78) Xriázone ke ta dhío vivlíá.
Need.1sg and the two books
I need both books.
(79) Agórasa ta perisótera vivlíá.
Bought.1sg the more books
I bought most books.

‘Both’ in Greek is literally ‘and the two’—and likewise, we can build presuppositional partives of the form “all n of the NP” (e.g. all three of the books) in a parallel fashion: ke ta tría vivlíá “all three books”, ke ta íkosi vivlíá ‘all twenty books’, etc. These QPs presuppose their quantity, and the use of ke ‘and’ can be seen as a join operation, along with the use of D. Likewise, ‘most’ is decomposed in Greek into D and the comparative of polí ‘many, much’—perisótera. So Greek appears to use D systematically in the formation of strong quantificational determiners, and not just universal ones. The same pattern is observed in Basque, see Etxeberria (this volume).

Second, D plus Q really results in a complex Q, rather than a DP. The competing DP structure is also available, typically with weak quantifiers, in Greek:

(80) [I [tris fíti[s pu írthan sto parti]], ítan endelos methisméní.
[The [three students that came to the party]] were completely drunk

These structures are DPs, as indicated in the brackets, and are interpreted like regular definite descriptions: the denotation of three students will be a familiar and unique set of three students. The output of these structures is then of type e, and not a GQ. Giannakidou and Etxeberria offer two arguments that the D_{DR} structure is not a DP of this kind. First, [o káthe NP] cannot co-occur with the demonstrative pronoun (aftós ‘this’, ekínos ‘that’)—which in Greek must embed DPs as we noted at the beginning:

(81) a. aftós *(o) fíti[s
this the student
‘this student’

b. ekiños *(o) fíti[s
that the student

4 Notice that non-quantity denoting weak quantifiers, are not easily compatible with D in Greek:

(i) I {poli/ líji/ *kápjii} fíti[s pu írthan sto parti, ekanan poli fasaria. (Greek)
[The [many/few/*some students]] that came to the party made a lot of noise.

Weak Qs as a class, then, do not generally embed under D. I am not going to address the contrasts here, but I think it suggests that non-quantity weak Qs introduce ∃ (inherently, or via existential closure), thus preventing combination with a definite D.
The demonstratives *aftos/ekinos* require a DP. Since the demonstrative cannot occur with *o káthe*, we must conclude that the *o káthe* constituent doesn’t count as a DP.

The second piece of evidence that [*o káthe NP*] does not behave syntactically as a DP comes from the fact that it cannot be used in the polydefinite structure that we mentioned at the beginning; a numeral under D is no problem:

(84)  

\[
\begin{align*}
\text{o kókinos} & \quad \text{o tíxos} \\
\text{the red.nom} & \quad \text{the wall.nom} \\
\text{‘the wall that is red”} \\
\end{align*}
\]

(85)  

\[
\begin{align*}
a. & \quad * \text{o káthe o fititís} \\
b. & \quad \text{o énas o fititís} \quad \text{‘the one the student’} \\
c. & \quad \text{i tris i fitités} \quad \text{‘the three students’} \\
\end{align*}
\]

In a language where DPs duplicate easily and routinely, the impossibility of D-spread with *o káthe* suggests again that *o káthe* does not create a DP.

3.2.2 D-universals, distributivity, and distributivity markers

D-universals are distributive. Although the DP with *oli* can have collective or distributive readings, the *káthe* QP, with or without D, does not have collective readings. We see below that all variants of *o káthe* are incompatible with a collective predicate like ‘meet’:

(86)  

\[
\begin{align*}
a. & \quad \text{Oli i fititís sigendróthikan.} \quad \text{(collective)} \\
& \quad \text{All the students gathered.} \\
b. & \quad *\{\text{Káthe fititís / o káthe fititís / o kathénas}\} \text{ sigendrothike.} \quad \text{(distributive)} \\
& \quad \text{every student/each student/everyone gathered.} \\
\end{align*}
\]

There are, however, degrees of distributivity. For instance, unlike *everyone*, *o kathénas* is awkward without an overt distributor. In our example earlier which I repeat here, we had *apó éna vivlio*, a typical distributive PP formed with the preposition *apó*; without the proposition, with a simple accusative, the reading strongly preferred is the collective one, which renders the sentence odd again:

(87)  

\[
\begin{align*}
a & \quad \text{O kathénas éfere apó éna vivlio.} \\
& \quad \text{Everyone brought of one book} \\
b & \quad # \text{O kathénas éfere éna vivlio.} \\
& \quad \text{Everyone brought one book} \\
\end{align*}
\]
So, *o kathénas* really needs a distributive phrase to be well-formed. In the absence of an explicit phrase, e.g. when we use an intransitive verb, or an individual level predicate (that cannot distribute over events) as in the next examples, the result is problematic for *o kathénas* — but not for *káthe* NP and ‘everyone’:

(88)  a. #*O kathénas* íne 7 xronón.
     Everyone is 7 years old.
   c. # *O kathénas* kimíthike.
     Everyone slept.
     #Each one slept.

(89)  a. *Káthe* fitítís íne 20 xronón.
     Every student is 20 years old.
   b. *Káthe* fitítís kimíthike.
     Every student slept.

This contrast suggests that *o kathénas* is strongly distributive, and cannot be used without a distributive phrase. In English, *each* has been claimed to be so (Beghelli and Stowell 1997)— notice the parallel ill-formedness of #*Each one slept*. If *each* is also a D-universal, then the distributivity property must related to the use of D. *Káthe*, on the other hand, and *everyone*, seem to have no sensitivity to the presence of a distributive phrase and they do not contain D. We can think of them as weakly distributive.

Support for both (a) strong distributivity of *o kathénas* and (b) the parallel between D-universals and *each* comes from the fact that *o kathénas* itself is used as a distributive phrase, quite like binominal *each* in English:

(90)  Fagame (apó) tría míla o kathénas.
     Ate.1pl three apples each
     We ate three apples each.

We see here that *o kathénas* is used as a distributor of the object QP (with only optional addition of *apó*; recall that *apó* is necessary for distributivity otherwise), just like *each*.

Interestingly, another distributive construal with *káthe* involves *káthe énas*, and no D, which I think can be best thought as ‘each one’.

(91)  Context: I met with a group of students.
     a. *Káthe énas* ixe káti endiaferon na mu pi.
        Each one had something interesting to say.
     b. *O kathénas* ixe káti endiaferon na mu pi.
        Each one had something interesting to say.

The presence of *énas* renders both construals anaphoric in the sense that they need an antecedent, hence the string requirement that there be a context with explicit mention of students. This requirement of explicit previous mention is not present with *káthe* or *o káthe*, since these can either not be context sensitive (*káthe*), or their domain extension can be accomodated (*o káthe*).

With indefinites, the way to create distributivity markers is by reduplicating:
Reduplicated numerals and indefinites in Greek are distributivity markers. Such reduplication seems to be a strategy for distributivity crosslingustically—e.g. the Hungarian reduplicated egy-egy indefinites mentioned by Farkas 1998 are likewise distributive (though Farkas never capitalizes on their distributive nature). Distributive indefinites obviously depend on a plurality to be able to distribute, so they are out with singulars, as we see above in c.

3.2.3 **D-universals and indiscriminative free choice readings**

We discuss free choice phenomena in detail in section 7, but here it is important to note that the Greek D-universal, but not káthe, has the so-called indiscriminative reading (Horn 2000) that appears in English with just any. The Greek free choice item opjosdhípote (Giannakidou 2001) can also co-occur with o (Lazaridou-Chatzigoga 2007, see also examples in Vlachou 2007). Giannakidou and Etxeberria are the first to note the indiscriminative reading with o káthe:

(93) a. Tin períodho ton eksetaseon erxete o káthe fititis ke me enoxlím me anoites erotísis.  
    b. Tin períodho ton eksetaseon erxete o opjosdhípote fititis ke me enoxlím me anoites erotísis.  
    During the exam period, just about any student may come by and bother me with silly questions.

Here o káthe does make reference to a salient set in the discourse—the students of the speaker—and expresses a generalization about this set, while also being indiscriminative (in the sense of Horn 2000, 2006): o káthe fititis is read like any random student of the speaker, as suggested above by using just about any in the translation. We have thus restriction to a particular set (my students), and an arbitrary/pejorative reading at the same time, a reading that often arises with free choice items. Importantly, the pejorative reading does not arise with bare káthe:

(94) a (Stis meres mas), o kathénas borí na vgali dhiploma odhígisis.  
    (Nowadays), just anyone can get driver’s license  
    b (Stis meres mas), káthe enlíkas borí na vgali dhiploma odhígisis.  
    (Nowadays), every adult can get a driver’s license.

The a example, with o kathénas, creates a context in which the driving test is simply too easy, and even not good drivers can pass it. But the b sentence with káthe is simply a statement that it is possible for every adult to take the exam and get a license. More on the role of D in free choice in section 7.

3.3 **Universal A-quantifiers**
The word for the Q-adverb ‘always’ in Greek in pánda:

(95) a I Ariadne pánda ksexnái na fái.
    Ariadne always forgets to eat.
    b I Ariadne pánda kimate noris.
    Ariadne always sleeps early.

Pánda belongs to the Ancient Greek adjectival paradigm pas (masc), pása (fem), pan (neuter) glossed in Holton et al. as “each, all” (1997: 312). In Modern Greek, the paradigm is still used, again in combination with the D:

(96) a Irtan i pándes. (*pándes)
    came the.masc.pl all.masc.pl
    Everybody came.
    b Kséri ta pánda. (*pánda)
    Knows the.neut.pl all.neut.pl
    He knows everything.
    c Ise to pan ja ména. (*pan)
    Be the.neut.sg all.neut.sg for me
    You are everything to me.

The expressions i pándes, to pan, ta pánda are perceived as abstract nouns meaning everybody and everything—the word for universe is synpan (syn- ‘con’). Notice that unlike káthe, pas actually declines. The adverb panda is the plural neuter, following a common strategy for creating adverbs from adjectives in Greek.

Other adverbial expressions of universal quantification are formed with káthe: káthe kyriaki ‘every Sunday’, káthe mina ‘every month’, káthe xrono ‘every year, etc.

(97) (Káthe Kyriaki) Páme stin ekliá (káthe kyriaki).
    Every Sunday we go to church.
(98) Káthe mina prépi na plironume tus logharismus.
    Every month we have to pay the bills.

Káthe can also combine with a clause introduced by the complementizer pu, and it means ‘every time that’:

(99) Sinxízome káthe (forá) pu ton vlépo.
    I get upset every time I see him.

The verb contains imperfective aspect, since these are habitual sentences. We see also that káthe can also be followed by the word forá ‘time, course’, which allows us to think that it is dropped when not present. Adverbs of nonuniversal habitual reference are: siníthos ‘usually’, sixná ‘often’, and the lower frequencies we discussed earlier with existentials. D never appears in adverbial use with káthe: tin káthe kyriaki would be impossible:
This concludes our discussion of universal quantifiers in Greek. Now that we have the basics nailed down, we move on to see what kinds of quantifiers occur in existential structures.

4. Existential structures in Greek

Existential structures in English appear in the form \textit{There BE in XP}, where \textit{in XP} is a locative phrase. The study of these structures has a long and venerable tradition in English (Milsark 1977, 1979, Keenan 1987, more recently McNally 1992, Francez 2007, 2009). A main claim has been that the existential structure exhibits the so-called definiteness effect, i.e. it excludes definite DPs, universal and other strong quantifiers, and allows only the (weak) intersective quantifiers. Recent literature on existential structures, however, has made it clear that we need to reconsider the so-called definiteness effect. Here are some examples with definites, \textit{each}, and a proper name in the English existential:

\begin{enumerate}
\item There is Fred in the garden. \hfill (McNally 1992: (8))
\item There was the table in the garden.
\item There was each faculty member at the meeting.
\end{enumerate}

At the worst, these may be slightly unnatural, and at best, they are fine sentences of English. These and similar examples make clear that the definiteness effect may not be so robust. Francez (2009), for example, does not even consider it as part of the existential structure that one needs to account for. Crosslinguistically too, we observe definites in the existential:

\begin{enumerate}
\item ..seit es das Kind gibt. \hfill (Herta Muller, 1994, \textit{Herztier}, p. 72). German
\end{enumerate}

\begin{flushleft}
\textit{Since the child exists}
\end{flushleft}

In Greek, the picture is a bit more blurred because there appear to be three structures that can be thought of as equivalent to the English existential: one that involves the verb \textit{BE} (\textit{ínē} ‘be.3sg/pl); one that involves the verb \textit{HAVE} (\textit{éxi} ‘have.3sg) and which seems to be the one exhibiting the strongest definiteness effect; and one that employs the verb \textit{exist} (\textit{iparxi} ‘exist.3sg). I will present the data with each one.

4.1 \textbf{BE}-existential

The BE-existential accepts intersective quantifiers, but also definites, demonstratives, and names—though not universals, including D-universals. This again can serve as an argument for the non DP nature of the D-universal:

\begin{enumerate}
\item There are \{tría/polá/káti/meriká/ LIGA/ ∅\} \textit{vivlía páno sto trapezi} \hfill (103a)
\item \{tuláxiston/to poli/móno\} \textit{tría vivlia} \hfill (103b)
\end{enumerate}

\begin{flushleft}
\textit{There are three many/a plural/several/few books on the table}
\end{flushleft}

\begin{flushleft}
\textit{At least/at most/only three books on the table.}
\end{flushleft}
(104) a  Íne ta pedhí sto grafío ke se periménun.
There are the kids at the office, and they are waiting for you.
b  Íne ola ta pedhí sto grafío ke se periménoun.
There are all the kids at the office, and are waiting for you.
c  # Íne káthe pedhí sto grafío ke se periméni.
d  # Íne to káthe pedhí sto grafío ke se periméni.

(105) a  Íne o Jánis sto grafío ke se periméni.
There is John in the office waiting for you.
b  Íne aftos o enoxilitikos typos eki.
There is this annoying guy over there.

The BE-existential is dispreferred with mass nouns, even when combined with plausible quantifiers:

(106) a  #Íne záxari ston kafé.
be sugar in the coffee
There is sugar in the coffee.
b  #(Dhen) íne polí záxari.
(not) is much sugar
There is much sugar. There isn’t much sugar.

4.2 HAVE-existential

In the éti structure, the quantifier is in the accusative case, so it does not function as the subject of the sentence (as with the BE existential), but as the object. I am not going to indicate case marking in the examples below to keep the glosses simple. The éti structure is by far preferred with mass nouns:

(107) a  Èxi zaxari ston kafé.
Has sugar in the coffee
There is sugar in the coffee.
b  (Dhen) èxi polí záxari.
(not) have.3sgis much sugar
There is (isn’t) much sugar.

More examples with intersective quantifiers:

(108) a  Èxi {tría/polá/káti/meriká/ LIGA/ ∅} vivlía páno sto trapezi.
There are three.many/a.plural/several /few/∅ books on the table
b  Èxi {tuláxiston/to polí/móno} pende vivlía páno sto trapezi.
There are at least/at most/only five books on the table.

Definites, again, are not impossible with éti—though they are very marginal. But names, universals, and MOST can’t be used:
The judgments here are subtle, and one may expect considerable speaker variation.

4.3 **EXIST-existential**

This is a personal structure: the XP is the subject of the verb and there is agreement (unlike with *exi* where the XP is syntactically the object), and *ine* where the 3sg and 3pl are the same form). Here are some examples, first with mass nouns:

(111) a  Ipárxi záxari sto spiti.
has sugar in the house
There is sugar in house. (No need to buy more).
b  (Dhen) ipárxi arketi záxari.
(not) have.3sgis much sugar
There is enough sugar. There is not enough sugar.

More examples with intersective quantifiers:

(112) a  Ipárxun {tría/polá/káti/meriká/ LIGA/∅} vivlía páno sto trapézi.
exist.3pl three.many/a.plural/several /few/∅ books on the table
b  Ipárxi {tulaxiston éna/to polí/mono} éna vivlío páno sto trapézi.
Exist.3sg at least/at most/only one books on the table.

Definites, names, universals, and MOST are impossible:

(113) a  #Ipárxun ta pedhiá sto grafio ke se periménun.
Exist.3pl the kids at the office, and they are waiting for you.
b  #Ipárxi afto to pedhí sto grafio ke se periméni.
Exist.3sg this boy in the office waiting for you.
c  #Ipárxun ola ta pedhiá sto grafio ke se periménoun.
Exist.3pl all the children at the office
d  # Ipárxi káthe pedhí sto grafio ke se periméni.
e  # Ipárxi to káthe pedhí sto grafio ke se periméni.
To appear in: In the Handbook of Quantifiers in Natural Language, edited by

\( \# \text{Ipárxi o Jánis ton grafío.} \)

(114) \# Ipárxun ta perisotera vivlia páno sto trapezi.

exist.3pl. MOST books on the table

With *ipárxi*, the judgments are clearer and there seems to be a definiteness effect, but there is a question here to what extent this structure is a true existential, and not simply an existence predication.

Finally, all three variants exclude the weak QP with the partitive:

(115) a \#Èxi tria apo ta pedhiá sto grafio ke se periménun.

has.3pl three of the kids at the office, and they are waiting for you.

b \#Ine tria apo ta pedhiá sto grafio ke se periménun.

be.3pl three of the kids at the office, and they are waiting for you.

c \# Ipárxun tria apo ta pedhiá sto grafio ke se periménun.

has.3pl three of the kids at the office, and they are waiting for you.

The contrast of the partitive with the simple cardinal *tría pedhiá* or the modified existentials, which are all good, is really striking—and a question worth examining.

5 \( \text{(More) morphologically complex quantifiers} \)

We have already seen that morphological complexity is involved in the formation of presuppositional and distributive universals in Greek (D-universals), and in the formation of other strong quantifiers meaning ‘both’ (ke i dhío), and ‘most’ (i perisóteri). This overt D-deployment for strong quantifiers is a specific property of Greek (and Basque, see Etxeberria this volume); but the complexity we are going to examine now concerns more ‘expected’ complex quantifiers such as comparative quantifiers, those created via boolean compounding (and, or, neither...nor..., and not), exception phrases (*all but ten students*), and bounding phrases (*He exercised twice a day, six days a week for one year*). I present each in turn.

5.1 Comparative quantifiers

‘More than’ in Greek is typically formed with *parapáno*, an adverb meaning ‘further, above’, as in *Meni dhío tetragona parapáno* ‘He lives two blocks further’, or plain *páno* ‘above’, plus the preposition *apó* ‘of’ (used also in the partitive and in phrasal comparatives). Greek, therefore, unlike English, does not simply employ the comparative MORE (*pio, perisótero*) for the more-than quantifier—though *perisótero* can also be used, as we shall see. Another difference from English is that the NP appears typically in the plural. This suggests that ‘more than ONE’ forms a plural determiner:

(116) a Aghorasa parapáno apó éna vivliá/?vivlio.
bought.1sg more than one books/book

I bought more than one book/*books.

b Parapáno apó énas fitités irthan.
More than one student came.

The contrast with English, which does not allow the plural, is sharp, and suggests that in Greek ‘more than n’ is treated in the grammar as a plural determiner. The singular improves typically with temporal expressions, or if we replace *parapáno* with *páno*:

(117) Perimena páno apó mia ora/??ores.
I was waiting more than one hour.

With numbers larger than one, as expected, only the plural becomes possible.

The MORE *perisotero* variant is also possible, and when used there is strong preference for the plural. Notice below that the singular is indeed ungrammatical:

(118) a Aghorasa perisotera apó éna vivlía.
bought.1sg more.plural than one books

b *Aghorasas perisotero apó éna vivlio.
bought.1sg more.sing than one book

I bought more than one book/*books.

Here we see that the MORE part also shows plural morphology, agreeing with the NP. In this structure we find a strong pattern with the plural.

Another kind of comparative quantifier is ‘more girls than boys”. In Greek this appears as {pio polá/perisótera} koritsia apóti agória, lit. ‘{more much/more} girls than boys—*apóti* being one of the words for THAN that Greek employs (there is a bunch of them: *apó* for phrasal comparatives, *apóti* for clausal comparatives, and *pará* for metalinguistic comparatives; see Giannakidou and Stavrou 2009, Giannakidou and Yoon to appear, Merchant 2009 for more details). *Apó* is strongly dispreferred, and the comparative clause can separate, as in English:

(119) a Irihan perisótera koritsia {apóti/*apóti} agória.
came more girls than.clausal/of boys
More girls came than boys.

b Perisótera koritsia irthan apóti agória.
more girls came than.clausal boys
More girls came than boys.

The fact that the QP is discontinuous, and the use of clausal than *apóti*, suggests that maybe the [perisótera NP apóti NP] is not a constituent— and the comparative part is clausal comparative with TP ellipsis (which is the standard analysis of the *apóti* clause in Greek, Merchant 2009).  

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5 Non-constuency is also suggested the fact that we can have agreement mismatch between the arguments. Notice below the feminine gender on *perisoteres*, which is recycled for the ellipsis on the second clause which is masculine:

(i) Perisoteres jinekes irthan apoti andres.
More.fem.pl. women.fem.pl came than men
More women came than men.
The comparative quantifiers occur uneventfully in the existential structure:

(120) Exi/Ine perisotera koritsia apóti agória stin taksi mas.
    Has/is more girls than boys in-the class ours
    There are more girls than boys in our class.

(121) a  {Exi/Ine} parapáno apó 1 {vivlía/??vivlío} sto trapezi.
        has/is more than one books/book in-the table
        There is more than 1 book on the table.
    b  {Exi/Ine} parapáno apó 1 {óra/??óres} pu se periméno.
        has/is more than one hour/hours that you.acc wait.1sg
        There is more than 1 hour that I am waiting for you!

Again, the plural is the expected form, with the exception of the temporal expression where the singular is preferred.

5.2  Boolean compounding

Boolean compounding is generally possible. Here is some examples:

(122) a  Parapáno apó 5 alá to polí 10 fitités tha jinun dektí.
        More than 5 but at most 10 students will be admitted
    b  Parapáno apó 5 alá óxi páno apó 10 fitités tha jinun dektí.
        More than 5 but no more than 10 students will be admitted

Notice again the use of páno apó instead of a comparative. In the negative (‘no more than’) version, we see the use of óxi which is constituent negation in Greek (Giannakidou 1998, Veloudis 1981). 6 This is also used in other but-compounds, as well as constituent negations of quantifiers:

(123) a  o Jánis alá óxi i María ‘John but not Mary’
    b  Irthan óxi óli i fitités.
        came.3pl not all the students
        Not all the students came.
(124) Efharistíthikan poli alá óxi óli i kalesmeni.
        enjoyed.3pl many but not all the guests
        Many but not all the guests had a good time.

Neither…nor construals are formed by oute…oute. Oúte is the NPI-EVEN in Greek (Giannakidou 2007; Greek also has a positive EVEN akomi ke). In addition to being a focus

6 Veloudis 1981 and Giannakidou 1997, 1998, in their studies of negation, identify four negative morphemes in Greek: dhen/mi(n), for sentential negation (mentioned in section 1.1), but also lexical negation mi as in mi-simetoxí ‘non-participation’, and oxi which is used as constituent negation, metalinguistic negation, and external negation as in Oxi, dhen írthe o Jánis ‘No, John didn’t come’.
particle, the lexical item *oute* is also used as cross categorial coordinator. The examples below are from Giannakidou 2007: (45):

\[(125)\]

a. Sto párti o Jánis *oute* efage *oute* ipje.
   at-the parti the John neither ate.3sg neither drank.3sg
   At the party John neither ate nor drank anything.

b. *(Dhen) milisa *oute* me to Jání *oute* me ti María.
   not talked.1sg neither with the John neither with the María.
   I talked to neither John nor María.

c. *Oúte* i María *(dhen) írthe.
   even the María didn't come
   Mary didn't come either.

In the last example, *oute* (*dhen*) is used as *not either* (for more details see Giannakidou 2007).

### 5.3 Exception phrases

Typical exception phrases in Greek are formed with *ektós*, which is an adverb meaning literally *out/outside*, or *besides*, as in *Afio ine ektós thematos* ‘This is beside the topic’, plus our familiar preposition *apó*:

\[(126)\]

Irthan óli *ektós* apó to Jáni.
   came oli apart from the John
   {All/everyone} came but John.

\[(127)\]

Irthe káthe fititís *ektós* apó to Jáni.
   came every student apart from the John
   Every student but John came.

There is also a more formal version with the genitive: *ektós tu Jáni*. As in English, the *ektós* constituent can be separated:

\[(128)\]

Káthe fititis írthe *ektós* {apó to Jáni/tu Jáni}.
   Came every student apart from the John/John. gen
   Every student came but John.

Another way to form the exceptive phrase is via *alá óxi* ‘but not John’: *óli i fitítis alá óxi o Jánis* ‘all the students but not John’. Again, separation is possible:

\[(129)\]

a. Idha ólus tus fitités alá óxi ton Jáni.

b. Olus tus fitités idha alá óxi to Jáni.
   I saw all the students but not John.

### 5.3 Bounding phrases

These are adverbal phrases like ‘twice a day’, ‘six days a month’. In Greek these appear with accusative DPs:
Notice that there is no special word for twice, *dhío forés* is ‘two times’. There is a more archaic paradigm ending in –*is*: *dhis* (twice, from *dhío*), *tris* (thrice, from *tría*), *tetrákis* (four times, from *tessera*), and also *polákh* ‘many times’; this paradigm, however, is not very productive in Standard Greek, and used only in very high registers.

We move on now to polarity quantifiers.

### 6 (Negative) polarity quantifiers

In this section we discuss quantifiers that depend on negation and non-veridicality for their occurrence. We call such quantifiers *polarity sensitive*, and they are known also as *negative polarity items* (NPIs). Some of these appear only in negative contexts, but others have a broader distribution in non-veridical contexts, i.e. they are sensitive to whether a truth or existence inference is available (Giannakidou 1997 et sequel; Zwarts 1995). The examples here are mostly from my previous work on Greek NPIs.

In the literature on English, *any* is often quoted as a typical NPI, though *any* is known to have two readings, the NPI reading and the free choice reading.

(131)  
(a) I didn’t buy any books.  
(b) Any book can be useful.  
(c) Press any key.

The NPI reading is an existential quantifier in the scope of negation, but the free choice reading conveys *freedom of choice* (Vendler 1967), and it may look like it involves universal quantification—but look at the *c* example (from Giannakidou 2001; see also Horn 2000, 2006 for arguments against the universal analysis of *any*). Greek, like many other languages, employs distinct lexical items for the NPI-existential and the free choice quantifier (for more data from other languages, see Haspelmath 1997). We discuss free choice in section 7, along with wh-quantifiers because the free choice quantifier (but not the NPI) is wh-based in Greek.

With negation, Greek employs what appears to be one lexical NPI, but it comes in two intonational variants: an emphatic and a non-emphatic version (Veloudis 1981, Giannakidou 1994, 1997, 1999, 2000). The emphatic one seems to be a strict NPI, licensed only in the scope of negation and antiveridical expressions such as *without*, but the non-emphatic appears in the whole range of non-veridical environments which include, but are not limited to, some (but not all) downward entailing quantifiers. I will start by describing the NPIs with negation. I also discuss minimizers and negative concord in this context. Then, I illustrate the difference in distribution between the emphatic and non-emphatic NPIs. I also compare the non-emphatic NPI to *any*, and show empirical differences suggesting that *any* is not always licensed but can be rescued in semantically non-licit environments such as *only*, the complements of factive verbs,
and comparatives (Giannakidou 2006; Giannakidou and Yoon 2010). Finally, there will be some observations showing a correlation between intonation and quantifier scope in Greek.

6.1 Emphatic and non-emphatic NPIs in negative contexts, and negative concord

Greek has two paradigms of NPIs illustrated below. The glosses are suggestive only:

(132) kanénas/KANÉNAS ‘anyone, anybody/no-one, nobody’
kanénas N/KANÉNAS N ‘any N/no N’
típota/TÍPOTA ‘anything/no thing’
poté/PÔTE ‘ever/never’
puthéná/PUTHENA ‘anywhere/nowhere’
kathólu/KATHOLU ‘at all/not at all’

Upper-case letters indicate emphatic accent. Kanénas is the masculine, kámia is the feminine, kanéna is the neuter. The accent is not related to focus for reasons that have been discussed elsewhere (Giannakidou 1997, and 1998, pp. 227–231). Given the quantifiers poli and liji, which also come in emphatic and non-emphatic variants, I suggest that it is best to handle emphatic n-words as lexically distinct from non-emphatic ones, so emphatic accent is envisioned as a kind of morphological marking that Greek appears to employ systematically.

The NPI series uses a variety of morphological sources including existential quantifiers (énas), universals (ólù), and wh- (pu, poté, with stress shift from pòte ‘when’). Under negation and antiveridical without both paradigms are licensed:

(133)  a. Dhen íde {típota/TÍPOTA} o Jánis. Greek
not saw anything the Johh
John didn’t see anything.

b. *Idhe {típota/TÍPOTA} o Jánis.
John saw anything.

(134)  *xoris na dhi {kanénan/KANÉNAN}.
without subj see.3sg n-person
without having seen anybody.

So both paradigms are NPIs and need negation. The version with the emphatic can be thought of as a negative concord structure, i.e. since it contains negation plus an NPI that itself appears to be negative—i.e. it can answer negatively as a fragment:

(135)  Pjon idjes? “Who did you see?”
{KANÉNAN/#kanénan}
Nobody/#Anybody.

The ability to answer negatively while participating in negative concord is the hallmark property of NPIs known as n-words (Laka 1990; Giannakidou 2006). Two things are important to note here. First, the emphatic gives a negative answer, and second, the non-emphatic NPI cannot do that. In Giannakidou 1997, 1998, 2000 I argued that the fragment NPI is the remnant of an elliptical answer that has undergone NegP ellipsis, and “given that the remnants in fragment
answers are accented, non-emphatics are excluded because they are not accented. Considering that utterances with non-emphatics typically involve pitch accent on negation, we may argue alternatively that ellipsis excludes non-emphatics because the accented negation itself must be deleted.” (Giannakidou 2000: 469).

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

(136) Dhen prodhosa mistiká [pu ekséthesan {kanénan/*KANÉNAN}]
    betrayed.1st secrets that exposed.3pl n-person
    I didn’t reveal secrets that exposed anybody.

In this respect, non-emphatics are like any, which is also licensed in islands as we see in the translations. Given that non-emphatics appear in islands, it is not surprising that they also appear long-distance, again like for any. Notice too the contrast with the emphatic NPI:

(137) I Ariadne dhen ípe oti ídhe {típota/*TÍPOTA}.
    the Ariadne not said.3sg that saw.3sg n-thing
    Ariadne didn’t say that she saw anything.

The observed locality of the emphatic NPI is again typical of negative concord, and is reminiscent of universal quantifier dependencies, which are also clause bound (for Greek, see Farkas and Giannakidou 1996). Three things are additionally important to note here. First, Greek exhibits what I called strict negative concord, i.e. it always requires the presence of negation for the licensing of the emphatic NPI:

(138) a. KANÉNAS *(dhen) ípe TÍPOTA. Greek
    n-person not said.3sg n-thing
    Nobody said anything.’

b. Nikt *(nie) uderzyl nigogo. Polish
    n-person not hit.3sg n-person
    Nobody hit anybody.’

c. Balázs *(nem) beszélt senkivel semmiről. Hungarian
    Balázs not spoke.3sg n-person n-thing
    'Balázs didn’t talk about anything with anybody.’

Greek, Hungarian, Japanese (Watanabe 2004), and Slavic languages form a natural class in terms of strict negative concord, and require sentential negation (SNeg) even when more than one n-word occurs in a sentence. In some Romance languages, the presence of SNeg is not obligatory, and two n-words may co-occur without it:

(139) a. Nessuno haletto niente. Italian
    n-person have.3sg read
    'Nobody read anything.’

b. Nadie dijo nada. Spanish
So negative concord in Romance is not strict (Giannakidou 1998, 2000, 2006). Given examples like the above, it is conceivable that these Romance n-words form branching negative quantifiers (de Swart and Sag 2001), but it is implausible to argue this for Greek or other strict negative concord varieties, where the NPI n-words alone do not suffice for negative meaning.

Another piece of evidence against negativity of n-words in Greek is that emphatics do not give rise to double negation readings (Giannakidou 2000, 2006):

(140) KANÉNAS dhen ípe TÍPOTA.

* n-person not said n-thing

Nobody said anything.

# It is not the case that nobody said anything.

The sentence does not have a double negative reading, as we would expect under the hypothesis that the n-words are negative (e.g. *Nobody said nothing*). The strict concord property, locality, and the absence of double negation readings, along with a number of other diagnostics employed in my earlier work, led me to the conclusion that Greek emphatics are not negative quantifiers, but rather, universal quantifiers that need to be interpreted outside the scope of negation (Giannakidou 1998: chapter 4, 2000). Such universal NPI n-words have since then identified in Korean (Yoon 2008), Japanese (Yoshimura 2007), and one variety of Hungarian n-words (Suranyi 2006). These n-words, crucially, also have emphatic intonation. Puskás 1998 in particular argues for Hungarian that “This stress [i.e., the accent observed in Hungarian n-words] cannot be assimilated with the stress assigned in FP [Focus Phrase] which has strong emphatic or identificational reading. Therefore it cannot be argued that Hungarian negative phrases carry the feature [+f]” (Puskás 1998, p. 199). Szabolcsi (1981, pp. 530–532) also observes that Hungarian n-words, on a par with universal quantifiers, “may not fill the F-position”. If these n-words are universal quantifiers, the fact that the accent is not focus ties in with their semantic function as universals.

### 6.2 Negation, intonation, and scope in Greek

Since we are talking about emphatic NPIs scoping above negation, it is relevant to note here the following generalization:

(141) Giannakidou’s scope-negation generalization

In Greek, a pitch-accented quantifier takes wide scope over negation.


This is a general observation about quantifier and negation interaction, and I am quoting here discussion from Giannakidou (2000: 480–481). “Consider the sentences below:

(48) I Cleo dhen parakolúthise PARAPÁNO apó tría mathímata

* the Cleo not attended.3sg more from three classes

Cleo didn’t attend more than three classes.

“The English version of this sentence has two possible readings, depending on whether *more than three classes* scopes over negation or not. The first possibility is illustrated in the LF in

(49a): more than three classes has adjoined to IP, and takes wide scope over negation. [...] The second possibility is given in (49b): more than three classes is adjoined to VP, below negation.

(49a). [IP more than three classes1 Cleo didn’t [VP attend t1]]
  b. [IP Cleo didn’t [VP more than three classes1 [VP attend t1]]

Under the reading in (49a) we know that there were more than three classes from which Cleo was absent, and we have no idea how many classes she actually attended. Under the reading in (49b), on the other hand, with negation taking wide scope, Cleo attended no more than three classes, and we don’t know how many classes Cleo was absent from; there could be three, twenty, or none (if, for instance, only three classes were taught that trimester). Hence, the two readings are true under distinct circumstances.

The Greek sentence, with the accented QP, has only the wide scope QP reading in (49a). Neutral intonation would give us both possibilities. Accent on negation dhen permits only the wide scope negation reading in (49b). The disambiguating effect of accent seems more general: it indicates that the element so marked takes wide scope. The point can be further illustrated in the following pair, which involves interaction between negation and kápjon fititi ‘some student’:

(50a). DHEN idha kápjon fititi.
    not saw.lsg some student
    I didn’t see any student.
  b. Dhen idha KÁPJON fiti.
    not saw.lsg some student
    There was some student that I didn’t see.

The sentence (50a) has only the reading in (50a’) and the sentence in (50b) can only be interpreted as in (50b’):

(50a’). ¬∃x[student(x) & saw(l, x)]
(50b’). ∃x[student(x) & ¬saw(l, x)]

In a context containing, say, 20 students, the reading in (50a’) says that none of these 20 students was seen. But under the reading in (50b’), only one student was not seen; the other 19 were indeed seen. This is the positive polarity use of some.” And we see that the wide scope correlates again with pitch accent on the quantifier.

A final point before closing this discussion is that another NPI, the minimizer, is formed in Greek with an emphatic bare singular. Bare arguments (singulars and plurals as we see) are generally allowed under negation and their interpretation is a narrow scope existential (as Carlson 1977 observed for English bare arguments under negation). This is an interpretation akin to that of the non-emphatic NPI-existential:

(142) a  Dhen efaje BUKIA.
    Not ate bite
    He didn’t eat a bite.
  b  Dhen agorasa vivría.
    I didn’t buy books.
Minimizers, interestingly, also bear accent (see the a example above)—but cannot be argued to scope above negation. Notice however, that the bare argument is not a quantifier; so, we can still maintain Giannakidou’s generalization that pitch accent on the quantifier indicates wide scope. The accent on the minimizer can be taken to constitute a marking of the conventionalization of the bare singular as a minimizer NPI—maybe an overt reflex of NPI-EVEN ute, which can also be used in the minimizer NPI (Giannakidou 2007). Notice that the bare plural in the b example does not bear accent and is not conventionalized as an NPI.

6.3 Nonveridical contexts: only existential non-deictic NPIs

As mentioned earlier, the non-emphatic NPI is a narrow scope existential inside the scope of negation, so it is the Greek counterpart to NPI any—and just like any, its distribution is not limited to the scope of negation. The existential NPI appears in a broad variety of non-veridical contexts including questions, conditionals, modal verbs, imperatives, subjunctive complements of non-veridical verbs. The emphatic NPI in these environments is systematically ruled out:

(143) Píjes {poté/*POTE} sto Parísí?  
went.2sg ever in-the Paris
Have you ever been to Paris?

(144) An dhis tin Eléna {puthená/*PUTHENA}, na tis milísís.  
If you see Eléna anywhere, talk to her.

(145) Elpízo na emíne {kanéna/*KANÉNA} komati.  
hope.1sg subj left.3sg any piece
I hope there is a piece left.

(146) Pare {kanéna/*KANÉNA} mílo.  
take.imp.2sg any apple
Take any apple.

(147) Borí na írthe {kanénas/*KANÉNAS}  
can.1sg subj left.3sg n- komati.  
It is possible that anyone/someone came. (epistemic modal)

The nonemphatic NPI is further licensed in disjunctions, with various modalities, and habitual sentences. With a few exceptions (noted in the literature), these are also licensing contexts for any, though the free choice reading is considerably preferred. The Greek NPI does not have a free choice reading, and it is also non-scalar (Giannakidou 1997, 1998, 2009). Rather, it seems to be a narrow scope indefinite that contains a non-deictic variable. i.e. one that can never be interpreted as a free variable (Giannakidou 2009), and which therefore needs to be licensed via binding (either via Θ-closure under negation and nonveridical operators, or via binding by a Q-operator). Additionally, kanénas brings in a condition of referential vagueness (Holton et al. 1997 characterize it as “non-specific”). Referential vagueness is a felicity condition that the speaker cannot identify a value for kanénas, or is not certain that there will be a value (Giannakidou and Quer 2010). Giannakidou and Quer argue further that the indefinites called anti-specific in section 2—e.g. algún, irgendein in German—carry the same condition of referential vagueness which explains their characterizations in the literature as “modal”, or “epistemic”. Referentially vague and non-deictic indefinites are referentially deficient, I argued, and when an item has both properties, it will be polarity sensitive (algun, irgendein aren’t).
Besides *kanénas*, another good candidate for being both is Romanian *vreun* whose distribution is very similar to *kanénas* (see the data in Falauš 2009).

As far as downward entailing (DE) contexts go, NPIs are OK with negative value judgement quantifiers, e.g. emphatic LIJI or *eláxisti* ‘very few’, but not with something more neutral (in terms of judgement) as at most *n*:

\[(148)\]
\[
\begin{align*}
a. & \{\text{Eláxisti/?LIJI}\} \text{ ánthropi ídhan típota.} \\
& \text{Very few/Few people saw anything.} \\
b. & \text{* To poli 5 ánthropi ídhan típota.} \\
& \text{At most five people saw anything.} 
\end{align*}
\]

Notice the relative awkwardness of *LIJI* “few”—the judgements I have collected through the years vary a lot with this quantifier. Given the impossibility of AT MOST, we must conjecture that the availability of a negative judgement is important for licensing, and not DE per se.

Finally, it is important to add that there are environments where *any* is fine, but the Greek NPI cannot occur. Some such environments are *only*, the complements of emotive factive verbs, and comparatives. We review these next, in connection with minimizer NPIs.

### 6.4 Non-licensing environments for Greek NPIs:

In English, *any* and minimizers like *say a word* are cited as appearing in the complement of emotive factive verbs (positive and negative), with *only*, and in comparatives:

\[(149)\]
\[
\begin{align*}
a. & \text{I am glad he said a word!} \\
b. & \text{I’m glad we got any tickets.} \\
c. & \text{Mary regrets that she lifted a finger.} \\
d. & \text{Only Mary \{gives a damn/said anything\}.} 
\end{align*}
\]

Comparatives
\[(150)\]
\[
\begin{align*}
a. & \text{Roxy is prettier than any\text{one} of us.} \\
b. & \text{Roxy ran faster than any\text{one} had expected.} \\
c. & \text{He said the sky would sooner fall than he would budge an inch.} 
\end{align*}
\]

The Greek non-deictic NPI and the minimizer—formed with a bare nominal, as must be recalled—are excluded from these contexts (see especially Giannakidou 2006, and Giannakidou and Yoon 2010, where the comparative examples are drawn from):

\[(151)\]
\[
\begin{align*}
a. & \text{*Xérome pu dhinis dhekára.} \\
& \text{I am glad you give a damn.} \\
b. & \text{* Metániosa pu ipa típota.} \\
& \text{I regret that I said anything.} \\
b. & \text*/# Móno i María \{dhini dhekára/idhe típota\}.} \\
& \text{Only Mary dives a damn.} \\
c. & \text#I María metániose pu ipe leksi.} \\
& \text{Mary regrets that she said a word.} 
\end{align*}
\]

(152) I María tréxi grigorótera apó {opjondhípote/*KANÉNAN/*kanénan}.  
Mary runs faster than anybody.

(153) *I María diavase perísótera arthra apóti tis ixe protini kanénas kathijítis.  
Mary read more articles than any professor suggested.

So we see this asymmetry between Greek NPIs and minimizers, on the one hand, and English any and minimizers, on the other, as regards the possibility of rescuing (Giannakidou 2006), i.e. sanctioning not at the LF (licensing), but by global pragmatic inferencing. Rescuing is a secondary sanctioning mechanism, which legitimates NPI in violation of LF licensing, that is, in a veridical context without an ‘official’ licenser—as is the case with only, factive verbs and comparatives (all veridical contexts). Greek is much stricter in employing rescuing, but English employs it quite extensively (see Giannakidou 2006, Giannakidou and Yoon 2010). Finally, notice that in the comparative, only the free choice item opjondhípote is possible, which makes it plausible to suspect that the literature on “NPIs” in comparatives, by looking almost exclusively at any, has confused free choice items with NPIs.

This concludes our discussion of NPIs. We move now to wh-quantifiers, our final topic.

7 Wh-based quantifiers and free choice

Greek has three paradigms of wh-quantifiers: one for interrogatives, one for relative clauses, and one for free relatives (called “correlative” quantifiers in Holton et al. 1997). In the relative clause paradigms, we see again the workings of the definite article o, since it appears on top of the wh-component, either as forming a unit with the wh-word (free relatives), or in addition to it (relative clauses). The free relative construal is the source for free choice quantifiers (Giannakidou 2001, Giannakidou and Cheng 2006). So, overall we observe a manipulation of wh-forms (and meaning) by definiteness that challenges recent assumptions, e.g. Kratzer and Shimoyama 2002, who claim interrogative semantics as the source of quantification. The Greek wh-patterns suggest a richer interaction between wh-words and definiteness that fits better models where the wh-words are set denoting (Cooper 1983). Then operations like exhaustification can be done on those sets.

7.1 The morphological paradigms

The interrogative wh-paradigm is given below, followed by examples. I give the labels in the nominative, but bear in mind that wh-words, like the other quantifiers in Greek, also inflect for gender, number, case. I am also giving the variants in the Greek alphabet to see the relations with the paradigm that will follow. We can think of the interrogative paradigm as the p-paradigm:

<table>
<thead>
<tr>
<th>Greek</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ποίος, ποιά, ποιό</td>
<td>‘who’</td>
</tr>
<tr>
<td>ποίο, ποιά, ποιό</td>
<td>‘which N’</td>
</tr>
<tr>
<td>τί</td>
<td>‘what’</td>
</tr>
<tr>
<td>τι N</td>
<td>‘what kind’</td>
</tr>
<tr>
<td>πότε</td>
<td>‘when’</td>
</tr>
<tr>
<td>πό</td>
<td>‘where’</td>
</tr>
<tr>
<td>πος</td>
<td>‘how’</td>
</tr>
<tr>
<td>πόσο</td>
<td>‘how much’</td>
</tr>
</tbody>
</table>

(154) pjos, pja, pjo  
Διαβάζω περισσότερα αρθρα από την πρώτη έργο της."  
Mary read more articles than any professor suggested.

(155) *Διαβάζω περισσότερα αρθρα από την πρώτη έργο του."  
Mary read more articles than any professor suggested.

This concludes our discussion of NPIs. We move now to wh-quantifiers, our final topic.
The p-paradigm is used only with interrogative meaning. For relative pronoun use, the definiteness marker (Giannakidou and Cheng 2006) \( o \) applies—it is the definite article, but in invariant form as a bound morpheme—on the p-part: \( \text{opios, opia, opio} \) etc. This relative pronoun then is used with the definite article \( o \). From the Greek orthography, we see clearly the relation to the p-paradigm. In the adverbial uses, the article \( o \) is not used.

(158) \begin{align*}
\text{opios, opia, opio} & \quad \text{‘who.Rel.’} \\
opios \text{ N} & \\
opote & \quad \text{‘when.Rel.’} \\
opos & \quad \text{‘how.Rel.’} \\
opou & \quad \text{‘where.Rel.’} \\
\end{align*}

Greek: \( \text{οποίος, οποία, οποίο} \)

(159) \begin{align*}
a & \quad \text{to meros opu sinandithíkame} \\
\text{the place where we met} & \\
b & \quad \text{to meros opu sinandithíkame} \\
\text{(We agreed to meet at 9 pm), opoite ke pigame} & \\
\text{We agreed to meet at 9, which is when we went} & \\
\end{align*}

Greek also has an uninflected relative pronoun \( pu \) (που) which is used in more colloquial speech as a relative \textit{that}:

(161) \begin{align*}
a & \quad \text{o ándras pu} \\
\text{the man.nom that} & \\
\text{agapa i Maria} & \\
\end{align*}
Greek employs yet a separate paradigm for free relative and correlative structures, which consists of the definite marker \( o \) plus the interrogative \( p \)-word—and a stress shift to \( ó \), as indicated. \( O \) appears again as a bound morpheme on the \( p \)-word and remains invariant. I am using below the (ever) paraphrase as a handy way to show that this is free relative use, i.e. the complement of this pronoun is always a clause, just like with the wh-ever paradigm in English:

\[
\begin{align*}
\text{(162) } & \text{ópjos, ópja, ópjo} & \text{‘who(ever)’} & \text{Greek: ópɔioς, ópɔia, ópɔio} \\
& \text{óti} & \text{‘what(ever)’} & \text{ó, ti} \\
& \text{óti N} & \text{‘what(ever) N’} & \\
& \text{ópote} & \text{‘whenever’} & \text{ópote (vs. Rel: ópote)} \\
& \text{ópu} & \text{‘wherever’} & \text{ópou} \\
& \text{ópos} & \text{‘whichever way’} & \text{ópøς} \\
& \text{óso} & \text{‘as much as’} & \text{όso}
\end{align*}
\]

Some examples:

\[
\begin{align*}
\text{(163) } & \text{a. Parigila óti parigile o Jánis.} \\
& \text{ordered what ordered John} \\
& \text{‘I ordered what John ordered’.} \\
& \text{b. Káne óti su pi i mitera su.} \\
& \text{do what you tell the mother your} \\
& \text{‘Do what your mother tells you’} \\
& \text{c. ópjos irthe sto parti efxaristithike.} \\
& \text{Whoever came to the party had a great time.} \\
& \text{d. Kάndo opos thelis} \\
& \text{Do it whichever way you want.} \\
& \text{e. Ópu pao, me akoluthi.} \\
& \text{Wherever I go he follows me.} \\
& \text{f. Fae óso thelis.} \\
& \text{Eat as much as you want.}
\end{align*}
\]

\[
\begin{align*}
\text{(164) } & \text{* Dhiavase ópja efimerida.} \\
& \text{read wh-ever newspaper} \\
& \text{*Read whichever newspaper. OK: Read any paper.}
\end{align*}
\]

Note the inability of the free relative \( p \)-word to take an NP complement—it always requires a clause. Free relatives in English have been analyzed as definite descriptions by Jacobson 1995, who argues for a covert iota operator on top of the wh-set. In Greek, Alexiadou and Giannakidou 1998 argue that \( o \) is the overt counterpart of this iota and that the Greek free relative is also interpreted as a definite description. This forms the basis of the analysis of Greek FC free relatives in Giannakidou and Cheng 2006.

In English —ever is obligatory for free relative use—\textit{whoever came to the party}, but not \textit{*who came to the party}—but in Greek flain free relatives are possible, as we saw in the examples
above. A free choice variant of the free relative $p$-word can be formed by adding the free choice marker –dhípote (Giannakidou 1997, 2001), which then bears the main stress in the word. The addition of free choice marking to a wh-form for free choice is a common strategy cross linguistically (see Giannakidou and Cheng 2006 for data, references, and details):

\[(165)\]  
\[
\text{opjosdhípote, opjadhípote, opjodhípote 'whoever'} \quad \text{opioσοδήποτε}
\]
\[
\text{opjosdhípote, opjadhípote, opjodhípote N 'whichever'} \quad \text{οποιοσδήποτε}
\]
\[
\text{otidhípote 'whatever'} \quad \text{οτιδήποτε}
\]
\[
\text{otidhípote N 'whatever N'} \quad \text{οτιδήποτε}
\]
\[
\text{ópotedhípote 'whenever'} \quad \text{οποτεδήποτε}
\]
\[
\text{ópudhípote 'wherever'} \quad \text{οπουδήποτε}
\]
\[
\text{óposdhípote 'definitely'} \quad \text{οπωσδήποτε}
\]
\[
\text{ópsodhípote 'no matter how much'} \quad \text{οσοδήποτε}
\]

There is a long-standing debate on whether free choice quantifiers are variants of universal quantifiers or not. Giannakidou (1998, 2001) argue that Greek FCIs are best analyzed as variable contributing elements without force of their own—i.e. indefinites (see Horn 2000, 2006 for a similar analysis of English *any*). Giannakidou and Cheng (2006) further identify free choice free relatives as *definite* FCIs, relying on the analysis of free relatives as the plural definites of Jacobson. So jointly, the universal effect of FCIs, when it arises, can be accounted for by (in)definiteness and there is no need to recourse to a universal analysis. Giannakidou and Quer 2010 show that the same is the case for Spanish and Catalan FCIs, offering an alternative to Menendez-Benito 2010.

### 7.2 Distribution of FCIs: polarity and variation

Greek FCIs appear to have limited distribution too, and are excluded from positive veridical sentences (in the simple past). So FCIs are polarity items in this broad sense. Unlike NPIs, however, FCIs do not improve with negation, as long as the sentence remains episodic (Giannakidou 1997, 1998, 2001). I give below examples from Greek and Spanish, Catalan:

\[(166)\]  
\[
a. \exists ! e \phi(e) \quad \text{(Giannakidou 2001: 662, (5))}
\]
\[
b. \quad \text{Episodicity understood here: } \exists ! e \exists ! t [\phi(e) \land e \subseteq t]
\]

\[(167)\]  
\[
a. \quad * \text{Idha opjondhipote. (Greek; Giannakidou 2001)}
\]
\[
\text{saw.perf.1sg FC-person}
\]
\[
\text{‘*I saw anybody.’}
\]
\[
\text{b. *Dhen idha opjondhipote.}
\]
\[
\text{not saw.perf.1sg FC-person}
\]
\[
\text{Intended: ‘I didn’t see anybody.’}
\]

\[(168)\]  
\[
* (Non) Expulsaron del partido a cualquier disidente. (Spanish; Quer 1999)
\]
\[
\text{not expel.3pl from-the party ACC FC dissident}
\]
\[
\text{Intended: ‘They didn’t expel any dissident from the party.’}
\]
\[
* (Non) They expelled any dissident from the party.
\]

\[(169)\]  
\[
* (No) Li va comprar qualsevol ram (Catalan; Quer 1998)
\]
Rather, FCIs are licensed via binding; they contain a world variable that needs to be bound, so they must be found in the scope of intensional and modal operators (all nonveridical). This is why FCIs cannot be used in an episodic context, but prefer the nonveridical contexts, where their distribution overlaps to a great extent with the NPIs. I give some examples here with both. Notice that I am using the –or other paraphrase to get the difference between the FCI and the NPI, which, as we said, is referentially deficient but not scalar:

**Protasis of conditionals**

(170) An kimi th is me **{opjondhípote/kanénan}** tha se skotoso.

If sleep.2sg with FC-person/AP-person fut you kill.1sg

‘If you sleep with anybody, I’ll kill you.’

**Directive intensional verbs (selecting subjunctive)**

(171) I Ariadne epémine na afisoume **{opjondhípote/kanénan}** na perasi mé sa.

the Ariadne insisted.3sg subj let.1pl FC-person/IP-person subj come.3sg in

‘Ariadne insisted that we allow anyone in.’

With kanénan: ‘Ariadne insisted that we allow someone or other to come in.’

(172) Borí na án aps e **{opj osdhípote/kanénas}** to fos.

can.3sg subj lit.3sg FC-person/API-person the light

‘Anyone may have turned on the light.’

With kanénas: ‘Someone or other must have turned on the light.’ (Notice the need to change to epistemic must in the case of someone or other.)

(173) Borís na dhanistis **{opjodhípote/kanéna}** vivlío.

can. 2sg subj borrow.2sg FCI/API book

‘You may borrow any book.’

With kanéna vivlío: ‘You may borrow some book or other.’

(174) Dhiálekse **{opjodhipote/kanéna}** vivlío.

choose.2sg FCI/API book

‘Choose any book.’

With kanéna vivlío: ‘Choose some book or other.’

**Generics**

(175) **Opjadhípote ghata** kinigai pondikia.

Any cat hunts mice.

So, in the non-veridical contexts, the FCI triggers the FC effect and exhausts the domain of quantification (Giannakidou’s presupposition of exhaustive variation), but the NPI remains a narrow scope existential, whose value remains vague. An interesting task would be to identify
the precise contribution of English or other in this structure, something that has not been done, to my knowledge.

8 Epilogue

Greek and English, both Indo-European languages, obey the basic GQ syntax and employ quantificational determiners that select NP arguments. The two languages, however, were found to exhibit some interesting differences in the morphological make-up of determiners that, if adequately appreciated, can be instructive for uncovering what we can think of as the finer structure of quantification. One fact that needs to be singled out, and which impacts a number of areas, is the systematic employment of the definite article in quantifier composition. The involvement of the definite article in wh-formation, and with universal quantifiers, has been a constant in the diachrony of Greek (Tzartzanos 1945). Regarding D-universals, if the suggestion that D expresses domain restriction (Giannakidou 2004, Etxeberria and Giannakidou 2009) is correct, then Greek grammaticalizes the contextual domain restriction argument, so domain restriction is not merely a factor in pragmatics. Concerning wh-words, the involvement of D can offer valuable guidance in assessing current ideas about the nature of quantification, especially when it comes to proposals that seek to replace standard GQ theory with interrogative semantics, i.e. propositional Hamblin semantics, as the basic syntax of quantification. Any such attempt would be challenged by a language like Greek, where we see overtly operations on the wh-words, suggesting that the wh-word is a domain of individuals that can be operated upon, and that there is no primacy of question semantics.

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