Aspectual adverbs of quantification in Modern Greek

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ABSTRACT

‘Adverbs of frequency’ is a term used to refer to a rather heterogeneous group of adverbials, whose role is to quantify the event denoted by the verb predicate. In Modern Greek, frequency adverbials are licensed in certain aspectual environments. Despite this similarity, however, they also display differences with respect to their semantic properties. In this study I set out to explore the feature make-up of aspectual quantifiers and of the functional category of Aspect, responsible for licensing them. The semantic behaviour of three specific adverbs will be investigated through the application of a battery of tests and a syntactic account of their distribution will be given in terms of Feature Checking Theory.

1. INTRODUCTION

According to the variable-binding theory of McConnell-Ginet (1982), frequency adverbials such as *always, frequently, often, sometimes* behave as quantifying-type operators, which bind a time variable. These adverbs can be further divided on the basis of the ‘strong’ versus ‘weak’ properties of quantifiers (Partee 1991). A strong quantifier, such as the universal quantifier *all*, is uniquely referring, in the sense that it denotes the whole of a universal or a contextually given set. On the other hand, weak quantifiers, such as the existential *some*, do not help the speaker/hearer define the referent in the set introduced by them. Along these lines, *always* is a universal quantifier, as it includes all the times at which a proposition holds true. Adverbs such as *often, sometimes* belong to the class of existential quantifiers, as they do not specify the number of times at which the proposition they modify holds true. Thus, if $x$ is times, $y$ the verb argument and $e$
the event variable introduced by the verb, the logical representations of sentences (1a, 2a) containing such temporal quantifiers are (1b, 2b):

(1) a. John always runs.
   b. \(\forall x \ (\text{run (John, } e \ at \ x))\) paraphrased as ‘for all \(x\), it is the case that \(y\) runs at \(x\)’

(2) a. John often runs.
   b. \(\exists x \ (\text{run (John, } e \ at \ x))\) paraphrased as ‘there exists an indefinite number of times such that \(y\) runs at \(x\)’

According to recent syntactic analyses, on the other hand, aspectual adverbs are licensed in different functional projections in the clause, according to their distributional and semantic properties and feature specification. Thus, according to Cinque (1999), \textit{usually} occurs in an Asp\textsubscript{habitudal} projection located in the Infl domain just below Tense while \textit{often} can be base-generated either in the Infl or VP domain, in either case in a projection lower than the one hosting \textit{usually}. \textit{Always} is a positive adverb for Belletti (1994) and Laenzlingier (1999), who both observe its similarity to the class of assertive adverbs, such as \textit{indeed}. For the former, both adverbs occupy the spec of a PositiveP located between AGRP and TP and in complementary distribution with a NegP.

In Modern Greek (MG), among the aspectual quantifiers are the adverbs \textit{panta} ‘always’, \textit{sihma} ‘often’ and \textit{sinithos} ‘usually’. They are all sensitive to the imperfective/perfective aspectual distinction, while their presence in the clause induces habitual readings. In what follows, I will first discuss the aspectual system of MG and then look into the semantic behaviour of the three particular adverbs in specific syntactic environments in order to arrive at a classification of them.

2. ASPECT AND HABITUALITY IN MODERN GREEK

In the clausal domain, semantic notions such as \textit{uniqueness}, \textit{definiteness} and \textit{specificity} are an inherent part of functional categories. Thus, uniqueness or, otherwise genericity, is located in the CP domain, where, according to Roussou (forthcoming), the generic operator is located. The higher part of the Infl domain, and in particular the Tense projection, is correlated with definiteness and specificity while the lower part, where the Aspect projection is located, could be associated with cardinality, namely the quantification of events or, otherwise, the enumeration of particular instances of a specific event. Assuming that verbs, similarly to nouns, are lexically specified for a ‘mass’ or ‘count’ reading in their
lexical structure, stage-level predicates should be able to be interpreted as having a single or series reading (similar to the ‘singular’ versus ‘plural’ distinction of nouns) at the relevant functional projection, the Asp projection.

Events can (a) be presented as bounded, i.e. with both their initial and final endpoint or unbounded, i.e. without visible endpoints, and (b) when bounded, they can have either a single or a series reading. Grammatically speaking, responsible for both presentations is ‘viewpoint aspect’ (Smith 1991), that is, grammatical aspect. This is morphologically expressed in MG through an affix next to the verb stem to signal the perfective aspect of Past. As can be seen from the forms of the verb _lin_ (verb stem _lin_−) in (3), there is no morphological distinction of grammatical aspect when the verb is in Present Indicative. However, in Past bounded readings are available through the morpheme _−s−_ next to the verb stem.

(3) Indicative Present/Active: _lin-o_  
Indicative Past Imperfective: _e-lin-a_ (Paratatikos)  
Indicative Past Perfective: _e-li-s-a_ (Aoristos)

We can observe from this that, firstly, the Present Tense is underspecified for aspect, while Past Imperfective is ambiguous between the bounded and unbounded reading of events.² Assuming that, at least in MG, Aspect heads its own separate projection, I propose that it has the features [+/-bounded], and [+/-nonspecific] and is responsible for the quantification of events. The former refers to the way the event is presented, namely with or without its endpoints, while the latter denotes the times of its occurrence. More specifically, a positive value of the feature [bounded] and a negative value for [nonspecific] will induce a single event reading (similar to the notion of ‘singular’ in count nouns) while the positive value for [nonspecific] gives rise to an iterative/series reading of an event presented as bounded. Some possible readings that arise through the interaction of the above mentioned features are presented in the table below together with examples (4):

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1. States are ‘homogeneous continua without implied boundaries’ (Lyons 1968) in the sense that they do not have any obvious endpoints and are not made up of distinct stages. In contrast, events are individuated on a per with count nouns.

2. It is worth noting that states in Greek do not have perfective forms.

3. As Vangsness (ms) points out, non-specificity is ‘not the negation of specificity’. It could be assumed, then, that this is something like unspecified cardinality, which is expressed, for example, by weak determiners, such as ‘much’. Furthermore, cardinality includes the three grammatical features ‘singular’, ‘plural’, mass’, the latter being weak determiners such as ‘much’.

(4) a. +bounded -nonspecific Past Perfactive/Aorist
    b. - bounded -nonspecific Past Imperfective (single occurrence)
    c. +bounded +nonspecific Past Imperfective (iterative/habitual)

a. elisa ta kordonia ki evgala ta papoutsia
   untied-1st the laces and took-1st off the shoes
   ‘I untied the laces and took off the shoes’

b. elina ta kordonia mou ekini ti stigmi
   untie-imperf-1st the laces- my that the moment
   ‘I was untwining my laces at that moment’

c. elina efkola ta kordonia mou palia
   untie-imperf-easy the laces- my in the past
   ‘I untied my laces easily in the past’

It is quite possible that states, on the other hand, do not give rise to an Asp projection as, firstly, they can have no visible endpoints and, secondly, the mass reading they have is inherent in their lexical specification. Thus, they do not need to check this feature grammatically in order to be interpreted.

The grammatical ambiguity between the series and single event reading in the Past and Present tenses can be resolved with the help of frequency adverbials, which are lexically specified for non-specificity and boundedness. Thus, they are licensed in habitual environments created by the combination of the values [+bounded], [+nonspecific] of the aspectual head, which stage-level predicates project. In contrast, real states, which lack the features licensing grammatical aspect, are not compatible with aspectual adverbs:

(5) *Simithas/ sithna/ spania ikseres aglika
    usually/ often/ rarely knew-imperf-2nd English
    ‘You usually/often/rarely knew English’

On the other hand, panta is compatible with states. This could be due to the fact that, unlike the other aspectual adverbials which denote an unspecified time of occurrences, this adverb is the spell-out of the generic operator (Alexiadou 1997) in C and genericity is compatible with states.

3. SYNTACTIC AND SEMANTIC BEHAVIOUR OF ASPECTUAL QUANTIFIERS

Having discussed the intrinsic features of aspectual quantifiers responsible for the appearance of the latter in habitual/generic environments I will go on to examine further similarities and differences of three very frequently used adverbs,
namely panta ‘always’, sinithos ‘usually’ and sithna ‘often’, using the following battery of tests:

- contrastive focus
- interaction with negation
- behaviour in environments with embedded clauses
- restrictions on their co-occurrence with other frequency adverbials.

3.1. Contrastive focus

3.1.1. Panta

Panta asserts the truth value of the proposition. If the truth value of the proposition $p$ ‘visit his mother’ in sentences (6)-(7) is positive, the adverb reinforces it. Whether its distribution affects the implications of the sentence can be tested through the use of contrastive phrases/clauses:

(6) O Yianis vlepi panta tin mitera tou (ala ohi tous filous tou) the John sees always the mother-his (but not the friends-his) ‘John always sees his mother (but not his friends)’

(7) O Yianis panta vlepi ti mitera tou (ala den tis tilefoni) the John always sees the mother-his (but not her-calls-3rd_mse) (3rd_mse)

(8) O Yianis vlepi ti mitera tou panta (ala den tis tilefoni/ ? ala ohi tous filous tou) the John sees the mother-his always (but not her-calls-3rd_mse but not the friends-his)

In (6) the adverb has scope over the object and the sentences reads as ‘his mother is a person whom John sees at all times’. When it is preverbal, though, the whole verb phrase seems to be included in the scope of the adverb and the sentence reads as ‘what John does at all times is seeing his mother’. In this case, the adverb clearly asserts the truth of the whole proposition and could be replaced by the assertive adverb pragmati ‘indeed’. At final position (8), panta is markedly accentuated. It denies the event taking place at times fewer than all and can be paraphrased into ‘it is never the case that John does not see his mother’. It has the same VP scope as when in preverbal position but differs with respect to the placement of emphasis. Thus, when sentence-final the adverb itself is focussed.

In brief, although different positions of the adverb do not affect the truth value conditions of the sentence, panta exhibits variation with regard to the implications which arise. More specifically, it behaves similarly to individual operators, such as mono ‘only’, which, according to Tsimpli (1995), have the following characteristics: they have a [+focus] feature, which they check when raised to FocusP, a syntactically active projection in the CP domain in MG, at-
tracted by the focus operator. Also, focus phrases bear heavy stress. Indeed, *panta* seems to be the most stressed element in the clause and imposes an individual reading on the phrase it modifies. In (6) the adverb c-commands the object DP and, therefore, restricts the number of people the subject sees to one at all times. In (7) in which the verbal predicate is focussed, the adverb limits the number of events which hold true for the subject at all times to one.

3.1.2. Sinithos

*Sinithos* denotes the habituality of the event and in this respect differs from the aspectual adverbs whose role is to contribute to the truth value of just one proposition. Semantically, it bears resemblance to sentence adverbs, which, as Laenzlinger proposes (1999:55), function as predicates, the arguments of which are the event and the sentence. So, the sentence in (9) containing two propositions ‘John sees his mother’ and ‘this is a habit of John’ is analysed into ‘it is a habit of John to do something’.

(9) *Sinithos* o Yianis vlepi ti mitera tou

‘John usually sees his mother’

In the following sentences the adverb is in various positions, however no scope variation is exhibited:

(10) O Yianis *sinithos* vlepi ti mitera tou (ala den tis tilefoni/
       ala ohi tous filous tou)

    the John usually sees the mother-his (but not her-calls-3rd
       but not the friends-his)

(11) O Yianis vlepi *sinithos* ti mitera tou (ala den tis- tilefoni/
       ala ohi tous filous tou)

    the John sees usually the mother-his (but not her-calls-3rd
       but not the friends-his)

(12) O Yianis vlepi ti mitera tou *sinithos* (ala den tis tilefoni/
       ala ohi tous filous tou)

    the John sees the mother-his usually (but not her-calls-3rd
       but not the friends-his)

In all the above examples the adverb (a) retains its sentential scope, (b) does not receive any special accentuation. Furthermore, the contrastive clauses/ phrases are acceptable only when the corresponding constituent which is contrasted in the main clause receives phrasal accent. As can be seen, the interpretation of the adverb is not dependent on its Spell-Out position. Rather, in all cases the adverb has scope over the whole proposition, which is expected if *sinithos* is a peripheral adverb.
3.1.3. Sihna

Being an existential quantifier, *sihna* is paraphrased into ‘there is an indefinite number of times at which the proposition *p* holds true’. It too can be found in various positions in the clause, which affect its semantic properties:

(13) O Yanis vlepi *sihna* ti mitera tou (ala den tis tilefon/ 
    ala ohj tous filous tou) 
    the John sees often the mother-his (but not her-calls-3rd
    but not the friends-his)

(14) O Yanis *sihna* vlepi ti mitera tou (ala den tis tilefon/ 
    ?ala ohj tous filous tou) 
    the John often sees the mother-his (but not her-calls-3rd/
    but not the friends-his)

(15) O Yanis vlepi ti mitera tou *sihna* (ala den tis tilefon/
    ?ala ohj tous filous tou) 
    the John sees the mother-his often (but not her-calls-3rd/
    but not the friends-his)

Although the adverb is a quantifier, such as *panta*, it does not behave like it when it follows the verb, namely, it does not function as an individual operator. It has scope either over the DP object following it or over the whole verb phrase, as can be seen in example (13). This could be attributed to the fact that its surface position is an outcome of two different derivations. It can either be generated inside the VP or in AspP, in which case it quantifies over the event. The postverbal position is the result of the verb moving past it in MG.

It seems that the preverbal position in (14) is acceptable only when *sihna* receives special stress, in which case it is in focus position, or if it is used parenthetically. In the former case, the adverb c-commands all the IP and clearly quantifies the event. Furthermore, when sentence-final (15), the adverb assumes wide scope while the sentence with the contrastive object DP sounds acceptable only if the object DP of the main clause is focussed. Barring the possibility of right adjunction or right extrapolation (Kayne 1994), the adverb can appear at such position after the movement of the whole VP to the specifier of a projection higher than AspP. It has been argued that such movement is a PF phenomenon, motivated for reasons of information structure (Zubizaretta 1998). Indeed, in this case the adverb constitutes new information and is prosodically stressed.

3.2. Interaction with negation

As negation is semantically a sentential logical operator, and syntactically appears high in the clause in MG (above the Tense Phrase), the (im)possibility for
the adverb to escape its scope would bear evidence regarding its peripheral or IP/VP status.

3.2.1. Panta

Clause-initially as in example (16) *penta sounds unnatural, as the antonym pote ‘never’ is available in the language instead.

(16) *Panta o Yianis den vlepi ti mitera tou
    always the John not sees the mother-his

The adverb cannot escape the scope of negation, which is a higher operator. The only case when such a possibility could be available is if panta is used metalinguistically in an echo sentence, as the one in the made-up context in (17), in which the speaker uses it to assert the fact of the event not happening. At the same time, the adverb bears focal stress. Even this case, though, is marginal and not acceptable by some speakers.

(17) Speaker A: O Yianis den vlepi sithna ti mitera tou
    the John not sees often the mother-his
    ‘John does not often see his mother’

Speaker B: Ohi sithna, PANTA den vlepi ti mitera tou
    not often, ALWAYS not sees-3rd the mother-his
    ‘It is always and not often that he does not see his mother’

On the other hand, when in mid-position (18), the adverb is in the scope of negation and two reading arise:

(18) O Yianis den vlepi penta ti mitera tou
    the John not sees always the mother-his

Reading (1): ‘It is the case that John sees his mother but not always.’ The adverb has amalgamated with negation, hence the interpretation according to which negation does not cancel the truth value of the proposition. This seems to be a case of constituent negation.

Reading (2): ‘It is not the case that the person John always sees is his mother’. In this reading negation affects the verb phrase while the adverb seems unaffected by it.

In final position as in (19), only one reading is available, namely, not+panta.

(19) O Yianis den vlepi ti mitera tou panta
    the John not sees the mother-his always
In all the sentences in which the adverb falls in the scope of negation, it is structurally in a position lower than the negative element. The second reading in (18) arises when the adverb has narrow scope over the object DP and is used as an individual operator. In this case it raises at LF to the Focus position, which is higher than the Neg projection. The same mechanism seems to be at work in example (17), in which the adverb bears focal stress.

3.2.2. Sinithos

In all the examples below (20)-(23), the adverb is not affected by negation, irrespective of its position, and the following reading comes about: 'it is usually the case that John does not see his mother'. This is expected if sinithos is a peripheral adjunct.

(20) Sinithos, o Yianis den vlepi ti mitera tou
usually the John not sees the mother-his
'Usually, John does not see his mother'

(21) O Yianis sinithos den vlepi ti mitera tou
John does not usually see his mother'

(22) O Yianis den vlepi sinithos ti mitera tou
John does not usually see his mother'

(23) O Yianis den vlepi ti mitera tou sinithos
'John does not see his mother usually'

3.2.3. Sihna

Sihna has different semantic properties depending on the position at which it is spelled out and on its derivation, as has already been discussed. In view of this, we should expect it to display a varied behavior in negative contexts. In (24) it can escape the scope of negation, similarly to sinithos, and the sentence reads as 'it is often the case that not + p'.

(24) Sihna o Yianis den vlepi ti mitera tou
often the John not sees the mother-his
'Often, John does not see his mother'

The adverb can either be in a Topic (if there is an intonational break separating it from the rest of the sentence) or Focus position (when stressed) in this example. In either case, it has scope over the whole proposition, negation included. However, in mid or final position it is in the scope of negation and can yield the reading 'not often'.
(25) O Yianis den vlepi (sihna) ti mitera tou (sihna) the John not sees (often) the mother-his (often) ‘John does not (often) see his mother (often)’

Thus, the combination of the two operators (negation and the quantifier) in this case restricts the number of times the proposition holds true.

3.3. Embedded clauses

It has been brought to my attention by Tsimpli (personal communication) that in contexts in which an initial adverb has to obligatorily refer to the embedded clause, it is only peripheral adverbs, i.e. adverbs that are merged outside the IP domain, which should give rise to ungrammaticality. On the other hand, acceptance of adverbs in the matrix clause, in a derived position as a result of movement to a Focus Phrase, bears evidence to the IP character of the adverb. In this test the tense in the matrix clause is Past Specific, which is never compatible with aspectual quantifiers while the embedded clause is of Imperfective habitual aspect. As a result, the only clause over which the adverb at initial position can have scope is the embedded one.

3.3.1. Panta

(26) Panta ipe o Yianis na stelno gramata always said the John SUBJ send-1st_impref letters ‘John said to always send letters’

The adverb clearly modifies the embedded clause. Its surface position must be the result of movement from the embedded clause to a Focus projection in the matrix one.

3.3.2. Sinithos

(27) *Sinithos ipe o Yianis na stelno gramata usually said the John SUBJ send-1st_impref letters ‘John said to usually send letters’

Raising out of an embedded clause to the Focus projection of the matrix CP is not possible for sinithos, which is to be expected if the adverb is generated in the CP domain.

3.3.3. Sihna

Sihna behaves like panta, giving grammatical results. As it is an IP/VP adverb, raising to a Focus position is possible.

(28) Sihna ipe o Yianis na stelno gramata often said the John SUBJ send-1st_impref letters ‘John said to often send letters’
3.4. Co-occurrence of aspecual quantifiers

In the next part, the possibility of the occurrence of the adverbs in question with other adverbs of the same class is examined.

3.4.1. Panta

(29) *Panta vlepi sinithos/sihna tous filous tou always sees-3rd masc usually/often the friends-his ‘He always sees his friends usually/often’

Panta cannot co-occur with other aspecual adverbs of indefinite frequency and cannot have sinithos in its scope, either. Furthermore, it does not accept spania unless it modifies it, acting as a focus element:

(30) Panta spania vlepi ti mitera tou always rarely sees-3rd masc the mother-his ‘He always rarely sees his mother’

3.4.2. Sinithos

(31) a. Sinithos vlepi spania/sihna ti mitera tou usually sees-3rd masc rarely/often the mother-his ‘He usually sees his mother rarely/often’

b. *Sinithos vlepi panta ti mitera tou usually sees-3rd masc always the mother-his ‘He usually always sees his mother’

Although it can accept the frequency adverbials in its scope, sinithos is incompatible with the universal quantifier panta.

3.4.3. Sihna

(32) a. *Sihna vlepi spania ti mitera tou often sees-3rd masc rarely the mother-his ‘He often sees his mother rarely’

b. *Sihna vlepi sinithos/panta ti mitera tou often sees-3rd masc usually/always the mother-his ‘He often sees his mother usually/always’

Being a lower adverb and a weak quantifier at the same time sihna cannot co-occur with other aspecual adverbials of the kind.

4. SYNTACTIC DERIVATION

In the light of the tests applied in the previous section it becomes evident that the adverbs under examination differ crucially with regard to their properties. Sini-
thos seems to be an adverb that is not affected by sentential operators and cannot be found in a syntactically focussed position. Its scope position is in the CP domain although it appears in many positions in the clause. In order to retain its scope properties, though, it must raise to its scope position at some point (at LF the latest).

On the other hand, panta is an operator and has the ability to create tripartite structures (Partee 1991). Its scope properties depend on the position of merge in the clause. However, because of its inherent focus feature, it has to raise to the Focus position, at LF at the latest, so that the latter is checked. Thus, a chain is created between its phonological spell-out and its position at the Focus projection.

Sihna has narrower scope. Its interpretation is also dependent on the point of merge so that it has scope over the constituents it c-commands. However, it does not give rise to tripartite structures, as it is a weak quantifier (Partee: ibid) and does not act as an individual operator as it is not lexically specified for [+focus] features. Due to its aspectual features it is licensed through spec-head agreement at the spec position of the Asp phrase or at the spec of the VP if it has narrow scope.

5. CONCLUSION
In sum, it was found that the three aspectual adverbs panta, sinithos, sihna, thought to belong to the broad group of frequency adverbials, differ greatly with regard to their feature specification. As a result, their semantic properties and syntactic behaviour are also at variance. The table below contains the different features and status of the three adverbs which became apparent after the use of the battery of tests in section 3. The latter could also be used for further classification of other adverbials belonging to the non-homogenous group of frequency adverb. However, an attempt like that was beyond the scope of the present paper.

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