Participles and Voice

Elena Anagnostopoulou


1. Introduction

Kratzer’s (1994, 2000) research on participles has shown that the properties of adjectival-stative and verbal-eventive passives are more transparent in languages like German where the two constructions differ in form than in languages like English where the two are homophonous. While it is widely assumed in the literature that adjectival participles are lexical/built in the lexicon and verbal ones phrasal/built in syntax, Kratzer (1994) argues that German adjectival participles are either lexical or phrasal. Phrasal adjectival participles introduce states resulting from prior events; lexical ones have no event implications. Phrasal adjectival participles differ from verbal passive participles along the following dimensions. (i) Adjectival participles describe a state and do not contain an implicit agent. (ii) Verbal participles describe an event and must include an agent. Kratzer’s observations give rise to a new typology of participles which results from the following choices: (i) eventive vs. stative semantics, (ii) lexical vs. phrasal status, and (iii) inclusion vs. exclusion of an implicit external argument. Kratzer (2000) furthermore argues that adjectival participles introduce two different types of states, target and resultant states (Parsons 1990). Resultant state participles express the Perfect of Result, a meaning also conveyed by the Present Perfect in one of its uses (the other uses of the Present Perfect in English are the universal, the experiential and the perfect of recent past, see Comrie 1976; Binnick 1991, and for recent discussions see Iatridou et al 2001; von Stechow 2002).

In this paper, I investigate Greek participles in light of Kratzer’s typology. Similarly to German, Greek distinguishes verbal-eventive from adjectival-stative passive constructions. Eventive verbal passives are
Elena Anagnostopoulou

synthetic consisting of the verb stem to which a non-active voice suffix attaches. Stative adjectival passives are analytic / periphrastic: they consist of an auxiliary and a participle. I argue that Greek stative participles surface with two different suffixes depending on whether they have event implications or not. This provides morphological evidence for the lexical vs. phrasal dichotomy of adjectival participles. I furthermore investigate more closely the properties and architecture of phrasal adjectival participles in German and Greek taking as a starting point the target vs. resultant state dichotomy introduced by Kratzer (2000). I demonstrate that Greek phrasal adjectival participles may include an implicit external argument when they denote resultant states (see von Stechow 2001 for relevant semantic discussion) while the external argument is absent from target state participles. German participles never include an implicit agent, whether they introduce target or resultant states. I argue that the properties of phrasal participles in the two languages can be best accommodated in a theory that decomposes the VP domain into (at least) three layers (Pylkkänen 2002; Marantz 2002): the projection of a category-neutral Root (RootP), a vP headed by a little v that verbalizes the Root (vP) (Marantz 1997; Alexiadou 2001; Embick 2002) and the projection of Voice (VoiceP) in which the external argument is introduced (Kratzer 1994, 1996; von Stechow 1995; Chomsky 1995).

The paper is organized as follows. After introducing some background on adjectival and verbal passives in section 2, I provide an overview of Greek verbal-eventive and adjectival-stative passives in section 3. In section 4, I argue that stative participles show different morphology depending on whether they implicate a prior event or not. This provides morphological evidence for the lexical vs. phrasal dichotomy of participles (Kratzer 1994; Embick 2002). In section 5, I investigate the properties of phrasal stative participles in Greek and German and I argue that their similarities and differences follow straightforwardly from the postulation of two different stativizing morphemes, one yielding resultant states and one yielding target states (Kratzer 2000) which attach to different structural positions in the verbal domain (Marantz 2002).
2. Background

2.1. The traditional view

As is well known, English and other languages have three kinds of participles which surface with the same form, namely perfect, passive and adjectival passive participles:

(1) a. *I have written three poems* \[\text{perfect}\]

b. *Three poems were written by me* \[\text{passive}\]

c. *The poems are well-written* \[\text{adjectival passive}\]

In order to account for the similarity of the participles in (1), Lieber (1980) proposed that adjectival passives are formed from verbal (perfect and passive) participles by affixation of a null adjectival morpheme. Bresnan (1982) pointed out, though, that adjectival participles systematically have a passive meaning. An expression like *the eaten dog* means *the dog that was* eaten and not *the dog that has* eaten, i.e. adjectival participles are closer to passive than to perfect participles. Bresnan (1982) concluded that the passive participle only, and not the perfect participle (contra Lieber 1980), constitutes the input to the adjectival passive formation rule. On this view, passive participles are ambiguous: they are either adjectival or verbal.

Some criteria taken in the literature to disambiguate participles include the following (Wasow 1977, Williams 1981, Bresnan 1982, Levin & Rapaport 1986 and many others):

a) Only adjectival participles may appear in a prenominal adjective position:

(2) *The broken/filled/painted/cherished box sat on the table*

b) Only adjectival participles may appear as complements of *act, become, look, remain, seem, sound:*

(3) a. *John acted happy/ annoyed at us*
b. *John became angry at the world/ convinced to run

c) Only adjectival participles permit prefixation of the negative prefix un-, as illustrated in (4). Verbs and verbal participles do not permit un-prefixation, as shown in (5). Whenever un-prefixation is permitted with verbs, as in zip/unzip, the meaning is that of a reversal of an action.

(4) a. Our products are untouched by human hands
    b. The island was uninhabited by humans
    c. All his claims have been unsupported by the data

(5) a. *Human hands untouch our products
    b. *Humans uninhabited the island
    c. *Data have unsupported all his claims

Since Wasow (1977), it has been often assumed that adjectival passive participles are built in the lexicon and verbal passives are built in syntax. In Jackendoff (1977) and Abney (1987) it is proposed that the adjectival passive affix is a sister of V, as schematized in (6), while in verbal passives participial morphology adjoins to the whole VP, as shown in (7).

(6) Lexical Affixes

    V
    \_ Z
    \_ participle affix

(7) Phrasal Affixes

    VP
    \_ Z
    \_ participle affix

Behind this proposal is the view that the derivation of the two types of participles is exclusively syntactic; the differences between the two types of participles do not stem from the different components in which their formed (lexicon vs. syntax) but rather from the different positions in which participial morphology occurs in the syntactic tree. In what follows, I will follow this line of approach
Participles and Voice


2.2. Kratzer's (1994) revisions: not always lexical, not passive

In German, adjectival passives are formed with the auxiliary *sein* 'be' as in (8a) and verbal passives with the auxiliary *werden* 'become' as in (8b):

(8) a. *Das Kind war gekämmt*
    The child was combed
    'The child was combed'

  b. *Das Kind wurde gekämmt*
    The child became combed
    'The child was combed'

Kratzer (1994) argues that adjectival participles in constructions like (8a) are (i) not always lexical (contra e.g. Jackendoff 1977; Abney 1987) and (ii) not passive (contra e.g. Bresnan 1982). Below I briefly summarize her arguments.

(i) *Not always lexical.* Kratzer points out that adverbs are permitted with adjectival passives (see [9a]), while they are disallowed with adjectives (see [9b]):

(9) a. *Das Haar war ziemlich schlampig gekämmt*
    The hair was rather sloppily combed
    'The hair was rather sloppily combed'

  b. *Das Haar war ziemlich schlampig fettig*
    The hair was rather sloppily greasy
    '*The hair was rather sloppily greasy'

In order to account for the contrast in (9), Kratzer proposes that adverbs adjoin to a verbal projection embedded within the adjectival passive morpheme:
(10) **Phrasal Adjectival Participles**

```
A'
   /
  VP
   /
Adv  carelessly
   /
  VP
    /
   V  NP
    /
  comb - the hair
```

Kratzer furthermore points out that negated adjectival passives are incompatible with adverbial modification:

(11) *Das Haar war hässlich ungekämmt*

   The hair was ugly uncombed

   *The hair was ugly uncombed*

   Since modification is impossible, 'un' is attached to an adjectival category not embedding a VP:

(12) **Lexical Adjectival Participles**

```
un
   /
   A
   /
  A
  /
participleaffix
```

Thus, the presence of ‘un’ signals a lexical adjectival participle.

(ii) **Not passive.** Kratzer notes that an implicit agent is obligatory in German verbal passives, unlike adjectival passives. The adjectival passive in e.g. (13a) is compatible with a reflexive action, while the verbal passive in (13b) requires an agent:
(13) a. *Das Kind war gekämmt*
   The child was combed
   'The child was combed'
b. *Das Kind wurde gekämmt*
   The child became combed
   'The child was combed (by someone)'

Kratzer views the absence of an agent in (13a) as evidence that adjectival passives are based on bare VPs, as in (10) above. On the other hand, the presence of an agent in the passive (13b) provides evidence for the presence of the functional head Voice:

(14)

\[ \text{Verbal Passives} \]
\[ \text{participleaffix} \rightarrow \text{VoiceP} \]
\[ \text{Voice} \rightarrow \text{agent} \rightarrow \text{VP} \rightarrow \text{NP} \]

The above considerations lead to a revised typology of participles according to which, adjectival passives are (a) lexical (V-A) or (b) phrasal (VP-A). Verbal and phrasal adjectival passives differ with respect to (a) Voice and (b) Category. This is summarized in table 1.

\[ \begin{array}{ccc}
\text{Passive} & \text{Lexical Adjectival} & \text{Phrasal Adjectival} \\
\text{Category} & \text{Verb} & \text{Adjective} & \text{Adjective} \\
\text{Voice} & + & - & - \\
\text{Phrasal status} & + & - & + \\
\end{array} \]

3. Verbal and adjectival passives in Greek

As is German, verbal and adjectival passives are distinct in Greek. Verbal passives consist of the verb stem which combines with non-active voice
morphology, perfective or imperfective aspect, tense and subject agreement (see Lascaratou and Philippaki-Warburton 1984):

(15) a. To grama graf-et-e
    The letter-NOM write-NActive IMP-3sg Non Past
    'The letter is being written now'

b. To grama graf-tik-e
    The letter-NOM write-NActive PERF-3sg Past
    'The letter was written'

Unlike English and German and like many other languages, Greek verbal passives do not have specialized morphology. The same non-active morphology occurs in passives, inherent reflexives, reflexives prefixed with *afto* 'self' and some unaccusatives (see Alexiadou and Anagnostopoulou 1999a, to appear, for discussion and references). Passives can be identified with the assistance of an optional prepositional phrase denoting the agent (Lascaratou 1991; Alexiadou and Anagnostopoulou 1999a, to appear; Mavromanolaki 2002). The preposition *apo* 'from' when it introduces an animate agentive DP is licit only in passives (see [16a]) and not in e.g. unaccusatives (see [16b]):

(16) a. to vivlio diavastike apo ton Petro
    The book-NOM read-Nact by the Peter
    'The book was read by Peter'

b. *I supa kaike apo to Jani
    The soup-NOM burnt-Nact by the John
    *'The soup burnt by John'

Greek furthermore has a periphrastic construction which shares relevant properties with adjectival passives in e.g. German and English. This is exemplified in (17). It is formed with the auxiliary 'be' which inflects for person, number and tense and a participle which agrees with the subject in Case, gender and number. Note that the agreement pattern in (17) is identical to the one shown by predicative adjectives in e.g. (18).
The periphrastic construction in (17) is stative, i.e. the letter is in a written state. Moreover, the participle in (17) meets the tests for adjectivehood discussed in the literature (see section 2 above). For example, it can occur in a pre-nominal position, as in (19), and can occur as a complement of *miazo* 'look', *parameno* 'remain', *akugome* 'sound', *fenome* 'seem', as in (20)-(27):

(19)  *To spas-meno/ gemis-meno/ zografismeno kuti*
    The broken/ filled/ painted box
    'The glass looks broken'

(20)  *O Jianis miazi etimos na kerdisi Adjective*
    The John looks ready to win
    'John looks ready to win'

(21)  *To giali miazi spasmeno Participle*
    The glass looks broken
    'The glass looks broken'

(22)  *O uranos parameni skotinos Adjective*
    The sky remains dark
    'The sky remains dark'

(23)  *O uranos parameni skotiniasmenos Participle*
    The sky remains darkened
    'The sky remains darkened'
I therefore conclude that the periphrastic construction in (17) is an adjectival passive construction.

4. Lexical and phrasal adjectival passive constructions

Recall from section 2.2 that phrasal adjectival participles in English and German permit adverbial modification, unlike lexical adjectival participles. Negated participles are lexical since they do not license adverbs. Interestingly, negated participles in Greek employ a different suffix than their non-negated counterparts (Anastasiadi-Simeonidi 1994, Markantonatou et al 1996, Alexiadou, Anagnostopoulou and Stavrou 2000, Georgala 2001). The former surface with the suffix –tos ([b] examples in [28]-[31]), the latter take –menos ([a] examples in [28]-[31]):

(28) a. gra-menos  b. a-graf-tos
    written       unwritten
(29) a. pli-menos  b. a-pli-tos
    washed       unwashed
Participles and Voice

(30) a. diavas-menos
    read
b. a-diavas-tos
    unread

(31) a. fago-menos
    eaten
b. a-fago-tos
    uneaten

Participles with -menos license adverbs (see [32a]), while negated tos-participles are incompatible with them (see [32b]):

(32) a. I Maria ine prosektika xtenismeni
    The Maria is carefully combed
    'Mary is carefully combed'
b. *I Maria ine afrontista axtensiti
    The Maria is sloppily uncombed
    '*Mary is sloppily uncombed'

Following Kratzer (1994) I will assume, for the time being, that in (32a) the adverb adjoins to a VP embedded under the adjectival passive morpheme, i.e. menos-participles have the syntax shown in (10) above. (In section 5 I will revise this analysis and I will argue that there are, in fact, two types of phrasal participles based on two different stativizing operators which combine either with RootP or with vP/ VoiceP.) On the other hand, tos-participles are formed according to the schema (12) for lexical participles. (Though see footnote 10 in section 5 below for some more discussion.)

A further difference between –tos and –menos participles is their compatibility with prepositional phrases introducing agents. Agentive PPs are licit with –menos participles and illicit with –tos participles:

(33) a. To vivlio ine gra-meno apo tin Maria
    The book is writted by the Mary
    'The book is written by Mary'
b. *To vivlio ine a-graf-to apo tin Maria
    The book is unwritte n by the Mary
    '*The book is unwritten by Mary'
The contrast in (33) can be accounted for in terms of the structures (10) and (12). In (33a), the agent PP is contained in the VP-shell embedded under *menos. (33b) is ruled out because *tos attaches to V rather than VP and, therefore, there is no room available for the agentive PP.\(^2\)

Another group of participles which surface with *tos are illustrated in (34). These consist of the verb and the prefix *aksio- ‘worth-’:

(34) a. aksi-agapi-tos : worth loving
b. aksi-thavmas-tos: worth admiring
c. aksi-meleti-tos worth studying
d. aksi-katafroni-tos worth despising

I propose that these participles have a structure similar to that of negated ones (compare [35] to [12] above):

(35)

\[
\begin{array}{c}
aksio- \\
\rightarrow V \\
\rightarrow A \\
\rightarrow A \\
\rightarrow tos
\end{array}
\]

The prefix *aksio- attaches to an adjectival category consisting of the verb and the adjectival suffix *tos. This analysis correctly predicts that *aksio-participles are incompatible with adverbial manner modification (36a), and agentive PPs (36b):

(36) a. To arthro ine aksiomeletito (*prosektika)
   The article is worth-studying carefully
   ‘The article should be studied carefully’

b. To arthro ine aksiomeletito (*apo ton kathena)
   The article is worth-studying by the everyone
   ‘The article should be studied by everyone’
Finally, many non-prefixed participles surface either with –menos or with –tos:

(37) a. *vras-menos* vras-tos “boiled”
    b. *psi-menos* psi-tos “grilled”
    c. *zografis-menos* zografis-tos “painted”
    d. *skalis-menos* skalis-tos “carved”
    e. *gram-menos* grap-tos “written”
    f. *anig-menos* anix-tos “opened”, “open”
    g. *klis-menos* klis-tos “closed”, “close”

In (37) the participles with –menos are interpreted as resulting from prior events while the ones with –tos denote what has been referred to by Markantonatou et al. (1996) by the term “characteristic state” (see also Georgala 2001). In (38a) below – which contains a menos-participle - the meatballs are fried as a result of a frying event. On the other hand, there is no event implication in (38b) which merely states that the meatballs are fried (and not e.g. boiled).

(38) a. *Ta keftedakia ine tiganis-mena*
    The keftedakia are fried
    ‘The meatballs are fried’
    b. *Ta keftedakia ine tigan-ita*
    The keftedakia are fried
    ‘The meatballs are fried’

The difference in event entailments between the two participles is highlighted by contexts like (39). The menos-participle in the first conjunct of (39a) denotes that the boat is in a state resulting from a pumping event. Negating this event in the second conjunct of (39a) results in a contradiction. On the other hand, the tos-participle in (39b) does not entail the existence of a prior event. Therefore, the negation of the event in the second conjunct does not lead to a contradiction.
(39) a. #Afti i varka ine fusko-men/ alla den
   This the boat is pumped but not
   tin exi fusko kanis akoma
   it has pumped noone yet
   'This boat is pumped up but noone has pumped it up yet'

b. Afti i varka ine fusko-ti alla den
   This the boat is pumped but not
   tin exi fusko kanis akoma
   it have pumped noone yet
   'This boat is of the type that can be pumped up but noone has pumped it up yet'

Similar effects are detected with the pairs anix-tos/ anig-menos
'open/opened' and klis-tos/klism-menos 'closed/ closed' in examples like
(40):

(40) a. I porta itan anix-ti/ klis-ti
   The door was open/ closed
   'The door was open/closed'

b. I porta itan anig-men/ klis-men
   The door was opened/ closed
   'The door was opened/closed'

In (40a) there is no implication of an opening/closing event while in (40b)
the door is open or closed as the result of an opening/ closing of the door.

Change of state verbs like the unaccusative ginome 'become' and
transitive verbs of creation kano, ftiaxno 'make' only take tos-participles as
their complements (see Embick 2002 for extensive discussion):³

(41) a. To kotopoulo egine vras-to
   The chicken became boiled
   'The chicken was made boiled'

b. Ekan/ etiaksa to kotopoulo vras-to
   Did-1sg/made-1sg the chicken boiled
'I made the chicken boiled'

(42) a. *To kotopoulo egine vras-meno
    The chicken became boiled

b. *Ekana/ eftiaksa to kotopoulo vras-meno
    Did-1sg/ made-1sg the chicken boiled

The contrast between (41) and (42) suggests that these verbs select for underived states, not states resulting from prior events.4

Adverbials and agentive PPs are licit with menos-participles and illicit with tos-participles, as exemplified in (43) and (44), respectively (see also Markantonatou et al 1996; Georgala 2001):

(43) a. Ta keftedakia ine prosektika tiganis-mena
    The meatballs are carefully fried
    'The meatballs are fried carefully'

b. *Ta keftedakia ine prosektika tigan-ita
    The meatballs are carefully fried

(44) a. Ta keftedakia ine tiganis-mena apo tin Maria
    The meatballs are fried by the Mary
    'The meatballs are fried by Mary'

b. *Ta keftedakia ine tigan-ita apo tin Maria
    The meatballs are fried by the Mary

The above differences follow from the proposal that –menos attaches to VP and –tos to V (see [10] as opposed to [12] above).

To summarize, in this section I have argued that Greek has morphologically distinct lexical and phrasal adjectival participles. Lexical participles surface with –tos. They do not have event implications and are incompatible with adverbials and agentive PPs. Phrasal participles surface with the suffix –menos. They introduce states resulting from prior events and can combine with adverbs and agentive PPs. In the next section, I will investigate more closely the properties of phrasal participles.
5. Types of phrasal participles

5.1. Target state and resultant state phrasal adjectival participles

Phrasal adjectival participles in German are based on telic verbs which can be decomposed into an eventive and a stative component. Activity verbs, as in (45), are marginal, and statives, as in (46), are ungrammatical (Kratzer 1994, 2000):

(45) a. #Die Katze ist schon gestreichelt
    The cat is already petted
b. #Der Kinderwagen ist schon geschoben
    This baby carriage is already pushed

(46) a. *Dieses Haus ist besessen
    This house is owned
b. *Die Antwort is gewusst
    The answer is known

Examples like (45) are licit only if they can be interpreted as tasks that have been carried out. For example, (45b) would be licit when uttered in a factory that produces baby carriages and the workers' job is to push baby carriages to test their wheels. Participles based on stative verbs are absolutely ungrammatical.

Exactly the same restrictions apply in Greek. Activity participles as in (47) are marginally acceptable under conditions similar to the ones licensing e.g. (45b) above.

(47) a. #Ta karotsia ine idhi sprog-mena
    The baby carriages are already pushed
b. #I gata ine idhi xaidhemeni
    The cat is already petted

Stative verbs either cannot form participles at all, as in (48a,b), or they only yield well-formed lexical –tos participles, as in (49a,b):
Participles and Voice

(48) a. *O Janis kseri tin apantisi
   The Janis knows the answer
   ‘John knows the answer’
   b. No participle related to the verb ksero ‘know’.

(49) a. *O Janis gnorizi tin apantisi
   The Janis knows the answer
   ‘John knows the answer’
   b. *I apantisi ine gnos-ti
   The answer is known
   ‘The answer is known’

Kratzer (2000) argues that stative participles do not form a homogeneous class from a semantic point of view. They are divided into two subclasses: target and resultant state participles (Parsons 1990: 234-235). The former describe states that are in principle reversible; the latter introduce states that hold forever after the event that brings them about. The adverbial immer noch ‘still’ modifies reversible states and is compatible only with target state participles:

(50) **Target state passives: compatible with ‘immer noch’**
   a. Die Geisslein sind immer noch versteckt
      The little goats are still hidden
   b. Die Reifen sind immer noch aufgepumpt
      The tires are still pumped up

Resultant state participles do not tolerate immer noch:

(51) **Resultant state passives: incompatible with ‘immer noch’**
   a. Das Theorem ist (*immer noch) bewiesen
      The theorem is (*still) proven
   b. Der Kinder sind (*immer noch) gewaschen
      The children are (*still) washed
Greek participles are similarly divided into two classes, target and resultant states. Target state participles in (52) are compatible with the adverbial *akoma* 'still', while resultant state participles in (53) are incompatible with it:

(52)  
a. *Ta pedhia ine akoma krimena*  
The children are still hidden  
b. *Ta lasticha ine akoma fuskomena*  
The tires are still pumped up  
c. *To psigio ine akoma ksepagomeno*  
The refrigerator is still defrosted

(53)  
 a. *To theorima ine (*akoma) apodedigmeno*  
The theorem is (still) proven  
b. *Ta ruxa ine (*akoma) stegomena*  
The clothes are (still) dried  
c. *O kiklos ine (*akoma) sximatismenos*  
The circle is (still) drawn

Both types are phrasal, as evidenced by the presence of the suffix –*menos*, as well as the fact that they are compatible with adverbs which have been argued in section 4 to provide a diagnostic for phrasal participles:

(54)  
 a. *Ta pedhia ine akoma kala krimena*  
The children are still well hidden  
b. *To theorima ine methodhika apodedigmeno*  
The theorem is systematically proven

In German and Greek, target state participles are related to telic verbs whose target state can modified by *for-adverbials*. Resultant state participles are related to telic verbs that disallow modification by *for-adverbials*. This contrast is illustrated in (55) vs. (56) for German (examples from Kratzer 2000) and (60) vs. (61) for Greek (see Mavromanolaki 2002 for discussion and for a list of such verbs):
(55) *Wir werden das Boot für ein paar Stunden aufpumpen
   We will the boat for a few hours up-pump
   ‘We will inflate the boat for a few hours’
   Implies: the boat will remain inflated for a few hours

(56) *Wir werden den Briefkasten für drei Tage leeren
   We will the mailbox for three days empty
   ‘We will empty the mailbox for three days’

(57) a. Ekripsa ta pedhia gia dhio ores
   Hid-1sg the children for two hours
   ‘I hid the children for two hours’
   Implies: the children were hidden for two hours

b. Tha fuskosume tin varka jia liges ores
   FUT pump-up the boat for few hours
   ‘We will inflate the boat for a few hours’
   Implies: the boat will remain inflated for a few hours

(58) a. *Apedikse to theorima gia deka xronia
   Proved-3sg the theorem for ten years
   ‘He proved the theorem for ten years’

b. *Stegnosa ta ruxa gia dio ores
   Dried-1sg the clothes for two hours
   ‘I dried the clothes for two hours’

The for-adverbials in the German example (55) and the Greek examples in (57) describe the length of the target state characterized by the verb. Verbs that cannot form target state participles do not have target states that can be modified by "for-adverbials" and, therefore, (56) and (58) are ruled out.

Kratzer (2000) proposes that phrasal target state participles are built by stativizing a phrase consisting of a stem with a target state argument and an object (cf. Kratzer 1994). Their logical representation is derived as in (59):
(59) **Stem + object**: $\lambda s \lambda e \text{[pump}(e) \& \text{event } (e) \text{ and inflated (the boat)}$

(s) $\&$ cause (s) (e) 

**Stativizer**: $\lambda R \lambda s \exists e R(s) (e)$

**Output after applying the stativizer to stem+object**: $\lambda s \exists e \text{[pump } (e) \& \text{ event } (e) \& \text{ inflated (the boat) (s) } \& \text{ cause } (s) (e)\]$ 

Resultant state participles are built on an aspectual perfect operator (see Klein's 1994 PERFECT aspect) which maps properties of eventualities into properties of times:

(60) **Stem + object**: $\lambda e \text{[prove (the theorem) } (e) ]$

**Stativizer**: $\lambda P \lambda t \exists e [P(e) \& \tau(e) \leq t]$

**Output after applying the stativizer to stem+object**: $\lambda t \exists e \text{[prove (the theorem) } (e) \& \tau(e) \leq t]$

The output of the stativization operation is a property of times that is true of any time $t$ that is preceded by the running time $\tau(e)$ of an event $e$ that is a completed event of e.g. proving the theorem. Whenever a time has this property, any later time has this property as well, capturing the fact that resultant state phrasal constructions describe irreversible states. Resultant state participles are marginally acceptable with activity verbs under the "job is over" interpretation discussed above on the basis of examples (45), (47).

5.2. Differences between German and Greek phrasal adjectival participles

So far I have focused on the similarities of Greek and German phrasal adjectival participles. In this section I discuss their differences.

Greek phrasal adjectival participles differ from their German counterparts in four respects:

(i) As mentioned in section 4, adjectival participles productively employ agentive PPs in Greek (see also Lascaratou 1991: 93-94, Markantonatou et al 1996: 200, examples (34)-(36), Georgala 2001). In German this option
is limited (see Rapp 1996). The minimal pairs in (61) and (62) illustrate this difference (German data due to Winfried Lechner, p.c.):

\[(61)\]
\[a. \quad \text{To } \text{psari itan tiganismeno apo } \text{tin } \text{Maria}\]
\[\quad \text{The fish was fried by the Mary}\]
\[\quad \text{‘The fish was fried by Mary’}\]
\[b. \quad *\text{Der Fisch war von Maria gebraten}\]
\[\quad \text{The fish was by Mary fried}\]
\[\quad \text{‘The fish was fried by Mary’}\]

\[(62)\]
\[a. \quad I \text{ porta itan anigmeni apo } \text{tus astinomikus}\]
\[\quad \text{The door was opened by the policemen}\]
\[\quad \text{‘The door was opened by the policemen’}\]
\[b. \quad *\text{Die Tür war von den Polizisten geöffnet}\]
\[\quad \text{The door was by the policemen opened}\]
\[\quad \text{‘The door was opened by the policemen’}\]

(ii) German phrasal adjectival constructions do not have an implicit agent that can control PRO in purpose clauses, and, therefore, the purpose clause in (63a) is ungrammatical (see Rapp 1996: 256). In Greek, purpose clauses are licit, as exemplified by (63b) (see fn 7 for discussion of a complication). This suggests that an implicit agent is present.

\[(63)\]
\[a. \quad \text{Das Kind ist schlampig gekämmt}\]
\[\quad \text{The child is sloppily combed}\]
\[\quad (*\text{um die Großmutter zu schockieren})\]
\[\quad \text{(in order the grandmother to shock)}\]
\[\quad \text{‘The child is sloppily combed in order to shock the grandmother’}\]
\[b. \quad \text{Aftos } \text{o } \text{pinakas ine zografismenos apo mia}\]
\[\quad \text{This the painting is painted by a}\]
\[\quad \text{omadha aktiviston gia na sokarun tus anthropus}\]
\[\quad \text{group activists-GEN for to shock-pl the people}\]
\[\quad \text{‘This painting is painted by a group of activists in order to shock the people’}\]
(iii) As pointed out by Rapp (1996) and Alexiadou & von Stechow (2001), it is not the case that all adverbs are licit in German phrasal adjectival constructions. Only adverbs referring to the result of an event are permitted. Agent-oriented adverbs are excluded, as illustrated in (64) (see Alexiadou, Rathert, von Stechow, this volume, and sections 5.3. and 5.4. below for a more precise characterization of the adverbs that are licit and those that are illicit in German):

(64) a. *Der Safe war vorsichtig/vorsätzlich geöffnet
   The safe was cautiously/on purpose opened
   ‘The safe was cautiously opened/ opened on purpose’
b. *Ihre Haare sind mit einem goldenen Kamm gekämmt
   Her hair are with a golden comb
   ‘Her hair is combed with a golden comb’

In Greek, all kinds of adverbs are permitted:

(65) a. To thisavrolakio itan prosektika anigmeno
   The safe was cautiously opened
   /skopima paraviasmeno
   /deliberately violated
   ‘The safe was cautiously opened/ deliberately opened’
b. Ta malia tis basilisas ine xtenisma
   The hair the queen-GEN are combed
   me xrisi xena
   with golden comb
   ‘The hair of the queen is combed with a golden comb’

(iv) Finally, agentive verbs can yield either synthetic or periphrastic constructions with the same interpretation in Greek, namely passive:
(66) a. *Ta pedhia dolofoni-thik-an
   The children murder-Nact-3pl-Past
   ‘The children were murdered’
b. Afta ta pedhia ine dolofoni-mena
   These the children are murdered
   ‘The children are violently murdered’

In German such verbs yield the passive and cannot form the adjectival passive (Winfried Lechner, personal communication):

(67) a. Die Kinder wurden vorsätzlich ermordet
   The children were on purpose killed
   ‘The children were killed on purpose’
b. *Die Kinder sind vorsätzlich ermordet
   The children are on purpose killed
   ‘The children are killed on purpose’

Similarly for bombardierte 'bomb', geschlagen 'hit', erschossen 'shoot', erstochen 'stub', betreten 'occupy', which cannot form adjectival passives in German, while in Greek they can.

5.3. First approximation: different attachment sites for adjectival passive stativizers

I will take as a starting point the proposal that the external argument is introduced by a functional category Voice (Kratzer 1994, 1996 and many others following her). In passives, Voice is present carrying agentive features (see tree [14] above). I will furthermore assume that phrasal adjectival passives are formed with a stativizing operator. I will return to the properties of this operator in the next section.

In order to account for the differences between German and Greek phrasal adjectival passives listed in the previous section, I propose that in Greek, the stativizing operator yielding adjectival passives attaches to a
(passive) VoiceP (see [68]). In German adjectival passives, it attaches to VP (see [69]):

(68) The Greek Adjectival Passive

\[
\begin{array}{c}
\text{StativeP} \\
\text{Stativizer} \\
\text{Voice} \\
\text{non-active agent} \\
\text{VP} \\
V \\
\text{open} \\
\text{NP} \\
\text{the door}
\end{array}
\]

(69) The German Adjectival Passive

\[
\begin{array}{c}
\text{StativeP} \\
\text{Stativizer} \\
\text{VP} \\
\text{NP} \\
\text{die Tuer} \\
\text{oeffnen}
\end{array}
\]

All differences between Greek and German identified in section 5.2 can be explained in terms of this difference in attachment sites. Specifically:

(i) An implicit agent is present in Greek, but not in German, as evidenced by the purpose clauses in (63), because implicit agents are hosted in Voice, and Voice is present only in Greek, not in German adjectival passives.

(ii) Agentive PPs are productively employed in Greek but not in German (see [61], [62] above) because they modify Voice which is present in (68) and not in (69).

(iii) Agentive verbs may form adjectival passives in Greek but not in German presumably because these verbs must combine with Voice obligatorily. Hence, they are licit in Greek where the stativizer selects for VoiceP but not in German where it selects for VP.
(iv) Turning, finally, to differences in modification, recall that adverbs in Greek adjectival passives do not necessarily refer to the result but they can also be agent oriented. I propose that agent-oriented adverbs attach to a projection of Voice and hence, are licit in Greek adjectival passives. Agent-oriented adverbs are illicit in German because the participial stativizer combines with VP in this language. Only result-referring adverbs are licit as they adjoin to VP.

I conclude that stative-adjectival participles in Greek are (or can be) passive since they include Voice. Greek adjectival participles differ from verbal synthetic passives only with respect to eventiveness/stativity and not with respect to the presence/absence of an implicit external argument. By contrast, German stative participles do not include Voice and are based on bare VPs, unlike verbal participles which are eventive and passive (see the discussion of Kratzer 1994 in section 2 above).

5.4 Second approximation: target vs. resultant states and Voice

A closer look into the properties of Greek adjectival participles shows that the above picture needs to be refined. The participles that have been concluded to include Voice on the basis of the criteria listed in section 5.2 do not denote target states but rather resultant states. There are two pieces of evidence for this.

First, as shown in (70)-(73) below, participles that contain agents or Voice-modification are incompatible with the adverbial *akoma* "still/immer noch" which modifies reversible states:

(a) By-phrases are incompatible with *akoma*:

(70) *Ta lastixa itan (*akoma) fuskomena*
    The tires were (still) inflated

      *apo tin Maria*
      by the Mary

    ‘The tires were still inflated by Mary’
(b) Voice modifiers are incompatible with akoma (71) while result denoting adverbs are compatible with it (72):

(71) a. To thisavrofilakio itan (*akoma) prosektika anignmeno
   The safe was (still) cautiously opened
   ‘The safe was still cautiously opened’

   b. Ta malia tis basilisas ine (*akoma)
      The hair the queen-GEN are (still)
      xtenismena me chrisi chtena
      combed with golden comb
      ‘The hair of the queen is still combed with a golden comb’

(72) a. Ta malia mu ine (akoma) aftontista xtenismena
      The hair my is still sloppily combed
      ‘My hair is still sloppily combed’

   b. I varka ine (akoma) poli fuskomeni
      The boat is (still) very pumped up
      ‘The boat is still very much inflated’

(c) Participles based on agentive verbs do not tolerate akoma:

(73) a. Afta ta pedhia ine (*akoma) dolofoni-men
      These the children are (still) murdered
      ‘These children are still murdered’

   b. I poli ine (*akoma) bombardhismeni
      The city is (still) bombed
      ‘The city is still bombed’

Second, adjectival participles containing Voice cannot be complements of the verb parameno ‘remain’ which selects for reversible states:

(a) Participles modified by agentive by-phrases cannot be complements of parameno:
Participles and Voice

(74) I varka paremine fuskomeni (*apo tin Maria)
The boat remained pumped up (*by the Mary)
'The boat remained inflated (*by Mary)'

(b) Particinal phrases featuring Voice modifiers are incompatible with parameno (75) while when they contain result-adverbs they can be complements of it (76):

(75) a. Ta malia mu pareminan xtenismena (*me chrisi xtena)
The hair my remained combed (with golden comb)
'My hair remained combed (with a golden comb)'
b. I varka paremine (*prosextika) fuskomeni
The boat remained (carefully) pumbed up
'The boat remained (carefully) inflated'

(76) a. Ta malia mu pareminan (afrontista) xtenismena
The hair my remained (sloppily) combed
'My hair remained sloppily combed'
b. I varka paremine (poli) fuskomeni
The boat remained (very much) pumbed up
'The boat remained (very much) inflated'

(c) Participles based on agentive verbs cannot be complements of parameno:

(77) a. *Afta ta pedhia pareminan dolofoni-mena
These the children remained murdered
'These children remained murdered'
b. *I poli paremine bombardhismeni
The city remained bombed
'The city remained bombed'

The above facts suggest that the stativizing operator that attaches to VoiceP in Greek (68) is not the operator TARG that introduces target states. Rather it is the resultant state operator RES which yields irreversible states. The target state operator TARG is attached below Voice in Greek, as in the structure (69)
proposed above for German. The question that arises is whether the different size of the complements of the two stativizing operators \textsc{res} and \textsc{targ} in Greek is arbitrary or whether there is a principled explanation for this difference. A different question concerns the proper representation of adjectival participles in German. It is evident that (69) cannot be the correct structure for all German phrasal participles given that the target vs. result state distinction exists in this language as well, as has been shown in section 5.1 above.

In the next section, I will argue that these questions can be answered in a principled manner once we assume a more articulated structure below Voice. The right distinctions can be drawn if what has been inaccurately labelled "VP" in (68)/(69) is decomposed into the projections of a category-neutral Root and a verbalizing head \textsc{v}.

5.5. Participles and the verbal architecture

The discussion in the preceding section has led to two related questions:

(a) First, is there a principled explanation for the fact that the resultant state operator \textsc{res} attaches high (above Voice) while the target state operator \textsc{targ} attaches low (below Voice) in Greek?

(b) Second, what is the proper representation for target and resultant state participles in German? Both \textsc{targ} and \textsc{res} attach below Voice (since the external argument and Voice modification are excluded), but is their complement the same?

As will be discussed in this section, the answers to these questions follow directly from the architecture of the verbal system. In the discussion below I adopt the semantic analysis proposed in Alexiadou, Rathert von Stechow, this volume.

Recall from section 5.1 that Kratzer distinguishes between two kinds of accomplishments: (i) Properties of events (type \textsc{vt}).\textsuperscript{5} They have a resultant state but no target state. (ii) Relations between events and states (type \textsc{v(st)}); they have a target state. Kratzer (2000) and von Stechow (2002) propose that the latter are projections of category-neutral stems, i.e. they have no lexical category. They can either be modified by \textsc{targ}, which gives target states, or they can be
converted to the type vt (property of events), which can be modified by RES, by means of an eventualizer EVENT. This semantic proposal can be straightforwardly implemented in terms of the morpho-syntactic theory of Marantz (1997, 2002) who argues that (i) verbs, nouns and adjectives all decompose into a category-neutral root and a category defining functional head v, n and a, as depicted in (78), and that (ii) the verbalizer v is distinct from Voice.

\[(78)\]
\[
\begin{array}{c}
a / n / vP \\
a / n / v \\ RootP
\end{array}
\]

TARG must select a RootP of type v(st) in order to yield a target state participle, as shown in (79):  

\[(79)\]  
\[
\text{Target State Participles} \\
AP \\
st \\
A \\
(v(st))(st) \\
TARG \\
RootP \\
v(st) \\
Root \\
e(v(st)) \\
open \\
NP e \\
the safe
\]

Since (79) is the only possible structure for target state participles, it must be concluded that TARG attaches directly to RootP in both German and Greek, providing a partial answer to the two questions formulated in the beginning of this section. TARG attaches low in Greek for reasons of interpretation. Moreover, the proper representation of target state participles in German is (79), i.e. the stativizer TARG does not attach to VP but rather to RootP.

Recall now that the stativizer RES can only combine with the type vt. Assuming that the functional head v in (78) is the eventualizer EVENT which converts the RootP of type v(st) to a property of events (vt), we obtain the
following structure for resultant state adjectival participles based on roots with a target state argument:

(80)  

Resultant State Participles based on Roots with Target States

For reasons of interpretation RES cannot combine with a RootP of type v(st) but requires a vP as its complement. This provides a partial explanation for why Resultant State participles provide evidence for high attachment of the stativizing operator, as shown by Greek in section 5.4. See also Marantz (2002) for morphosyntactic evidence supporting an analysis in terms of high (above v) attachment of the participle morphemes in English resultant state participles.

We have seen that accomplishments that are properties of events (type vt) can only combine with RES yielding resultant state participles. Kratzer (2000: 11) points out, though, that certain manner adverbs contribute the target state property not provided by the verbs themselves. Consider (81). The verb cut does not have a target state argument, and a target state participle based on cut is illicit, unless the manner adverb sloppily is present:

(81)  

Meine Haare waren immer noch *(schlampig) geschnitten

My hairs were still (sloppily) cut

'My hair was still cut sloppily'
This entails that the result-denoting adverbs found in German phrasal adjectival participles (see sections 2.2 and 5.2 above) are type shifters that change properties of events into relations between events and target states:

(82) Result-Adverbs as type-shifters

On the other hand, degree modifiers are licit with gradable adjective-like target state participles (83) and illicit with verbal resultant state ones (84) in both Greek and German:

(83) a. Die Reifen sind zu sehr aufgepumpt
   The tires are too much pumped up
   b. Ta lasticha ine ipervolika/ poli fuskomena
   The tires are too much/ very pumped up

(84) a. Die Töpfe sind (*zu sehr) abgespült
   The pots are too much washed up
   b. I katsarolesine (*ipervolika/ poli) plimenes
   The pots are too much/ very washed up

Degree modifiers attach to a phrase that contains a state argument. They cannot modify resultant state participles.10

Recall, finally, that Voice is present in Greek participial constructions and absent from their German counterparts. This cross-linguistic difference can be expressed if it is assumed that the size of the verbal complement of \( RES \)
(similarly to the size of the complement of the causative operator CAUSE, see Pylkkänen 2002: 76-77) is a source of cross-linguistic variation. \textit{RES} selects for \textit{VoiceP} in Greek (see [83] below) and for \textit{vP} in German (see [80] above). Since \textit{VoiceP} is of type \textit{vt} (see Alexiadou, Rathert, von Stechow, this volume), the stativizer combining with it is correctly predicted to be \textit{RES} and not \textit{TARG}, as extensively discussed in section 5.4 above. Agent-oriented modifiers and by-phrases modify Voice, and therefore they are licit in Greek resultant state participles. German resultant state participles do not include Voice and therefore such modifiers (by-phrases, agent oriented adverbs) are illicit.

(85) \textit{Greek Resultant State Participles}

\begin{center}
\begin{tikzpicture}

\node (AP) at (0,0) {\textit{it}};
\node (A) at (-2,-3) {\textit{it}};
\node (RES) at (-4,-6) {\textit{RES}};
\node (VoiceP) at (-1,-5) {\textit{vt}};
\node (Voice) at (1,-5) {\textit{e(vt)}};
\node (Adv) at (-3,-7) {\textit{prosektika}};
\node (agent) at (-1,-8) {\textit{agent}};
\node (NP) at (2,-10) {\textit{thisavrofilakio}};
\node (V) at (1,-9) {\textit{vt}};

\draw[->] (AP) -- (A);
\draw[->] (A) -- (RES);
\draw[->] (RES) -- (VoiceP);
\draw[->] (VoiceP) -- (Voice);
\draw[->] (Adv) -- (Voice);
\draw[->] (agent) -- (V);
\draw[->] (V) -- (NP);
\end{tikzpicture}
\end{center}
See von Stechow (2002) for arguments that the Result operator can, in principle, stativize a phrase that contains the external argument. In German, this is possible in the Present Perfect which denotes the Perfect of Result (Comrie 1976). Greek adjectival passives systematically show this type of stativization.

In conclusion, target state participles do not have an external argument position in both Greek and German because the target state operator must combine with a category neutral root (Kratzer 2000; Marantz 2002), i.e. it selects for RootP. On the other hand, the resultant state operator combines with VoiceP in Greek and vP in German. As a result of the different selection options in the two languages, resultant state participles contain an implicit agent in Greek but not in German.

6. Conclusions

In this paper, I have investigated Greek participles which, similarly to German, split into three classes: (i) lexical without event implications, (ii) phrasal target state and (iii) phrasal resultant state participles. The special properties of Greek participles, when compared to their German (and English) counterparts, are two: First, the lexical vs. phrasal split is signified by different morphology in Greek. In German and English phrasal and lexical participles show the same allomorphy (though see Embick 2002 for a qualification of this claim for English; see the discussion in fn 3). Second, there is extensive evidence that the external argument is present in Greek resultant state participial constructions which are as passive as synthetic verbal passives are in this language. By contrast, German (and English) resultant state participles lack an implicit external argument which is licensed in verbal eventive passives and in Perfect constructions denoting the "Perfect of Result". Target state participles are similar in all three languages: they systematically lack an external argument. Even in Greek where stative participial morphology may, in principle, attach high (above VoiceP, the position in which the external argument is introduced), target state participles provide evidence for low attachment of the participial operator. I argued that the properties of target and resultant state participles
in the languages I have investigated can be satisfactorily accounted for in an analysis that combines the semantics proposed by Kratzer (2000) and von Stechow (2002) with the morpho-syntax of Marantz (2002). In target state participles, the participial operator is introduced at the Root-level. In resultant state participles, the participial operator attaches after the verbalizing head v is introduced. The hypotheses that (i) the verbalizing head v is separate from Voice and (ii) the size of the verbal complement of the Result participial operator is parametrized (see Pylkkänen 2002 for CAUSE) furthermore accounts for the fact that German resultant state participles lack Voice while in their Greek counterparts Voice is present. Result selects vP in German and VoiceP in Greek.

The present analysis differs in various ways from a class of approaches developed within a general non-Lexicalist framework which also rely on decomposition, but decompose participles into a BECOME operator and a category neutral root denoting the end-state of an event (see von Stechow 1996, 1998; Alexiadou, Anagnostopoulou and Stavrou 2000; Embick 2002; based on Dowty 1979). To mention just one difference between these approaches, Embick (2002) does not distinguish target from resultant state participles and takes the event implications underlying all phrasal participles to result from the presence of a light v with the meaning of BECOME. In the present analysis - which distinguishes target state participles from resultant state ones (as do Kratzer 2000 and Marantz 2002) - target state participles do not contain a little v; they are built on a bare RootP. Only resultant state participles contain a light v which makes them verbal (as opposed to target state ones that are adjective-like since they contain a state argument). An explicit comparison of the two classes of approaches, though, awaits further research, as it requires more careful investigation of their similarities and differences at a theoretical and empirical level.

Acknowledgements

Many thanks to Artemis Alexiadou, Sabine Iatridou, Winfried Lechner, Irene Rapp, and especially Alec Marantz for helpful discussion on the material
presented in this paper. I wish to thank the editors of this volume, especially Monika Rathert, for their patience. I am grateful to Arnim von Stechow for his careful reading and correcting an earlier draft. Section 5.5. has been entirely re-written on the basis of his comments.

Notes
1 Note that the prefix –kse attaches to verbs and denotes the reversal of an action (like –un in English zip, un-zip):
(i)
- Kurazo kse-kurazo tire, un-tire
- Skepazo kse-skepazo cover, un-cover
- Koumpono kse-koumpono button, un-button
- Fuskono kse-fuskono pump up, make flat
- Diplono kse-diplono fold, un-fold
- Zalizome kse-zalizome become dizzy, stop being dizzy
2 Note, at this point, that the compatibility of agentive PPs with phrasal adjectival passives points to an interesting difference between Greek and German/English adjectival passives that will be taken up later on. Agentive PPs are well-formed in Greek phrasal adjectival passives, unlike German (Rapp 1996) and English (see e.g. Borer and Wexler 1987; Grimshaw 1990; Fox and Grodzinsky 1998; Embick 2002 for relevant discussion) where by-phrases are in most cases ungrammatical. This issue will be discussed in detail in section 5. What is relevant for the purposes of the discussion in the present section is the availability of agentive PPs which constitutes a diagnostic criterion distinguishing lexical from phrasal adjectival participles, along with adverbial modification.
3 Embick (2002) is the one to introduce this test for English:
(i) a. The door was built open
   b. *The door was built opened
He argues that (i)b is ruled out as a contradiction. The fact that The door was built closed is acceptable in English, leads him to conclude that “closed” is ambiguous and corresponds to both “open” and “opened”, i.e. the form “closed” qualifies as a lexical and phrasal stative participle. By contrast, “opened” is only phrasal.
4 Recall that ‘become’ belongs to the class of verbs that are assumed in the literature to take adjectival participles as their complements. The relevant example is repeated here from section 2:
(3) b. John became angry at the world/ convinced to run
If English 'become' is like Greek ginoμе 'become' then participles embedded under become are lexical and not phrasal.

5 Some speakers do not accept the by-phrase in (61a) (Katerina Zobolou, p.c.). The same speakers, though, do not accept the by-phrase in the synthetic passive formed with verbs like tiganizo 'fry' and magirevo 'cook'.

6 Rapp (1996: 233) provides the following German example with a by-phrase:

(i) das Beet ist von Maja gepflanzt
   the bed is by Maja planted

However, Arnim von Stechow (personal communication) points out that this sentence is very odd.

7 Greek lacks infinitives and uses subjunctive clauses instead in which verbs are inflected for agreement. Despite the presence of agreement, tenseless subjunctive clauses have been argued to display Control (Iatridou 1993; Terzi 1992; Varlokosta 1994) and Raising (Alexiadou & Anagnostopoulou 1999b).

In the absence of by-phrases in the matrix clause which determine the reference of PRO, purpose clauses do not display Control in Greek, presumably because this language lacks PROarb. An example without Control is provided in (i) below. Note though that Control-less purpose clauses are licensed only by passive matrix verbs as in (i). Unaccusative lacking an agent do not license purpose clauses, as shown by the ungrammaticality of (ii). Given the contrast between (i) and (ii), the fact that the adjectival passive in (iii) licenses a purpose clause provides evidence that it includes an implicit agent:

(i) To plio vitistike gia na ispaхthi i asfalía
   The ship was sunk for SUBJ collect-3sg the insurance-NOM
   'The ship was sunk in order for the insurance to be collected'

(ii) To plio vуliakse (*gia na ispaхthi i asfalía)
   The ship was sunk (*for SUBJ collect-3sg the insurance-NOM)
   'The ship was sunk in order for the insurance to be collected'

(iii) To plio ine skopima vitismeno
    The ship is deliberately sunk
    gia na ispaхthi i asfalía
    for SUBJ collect-3sg the insurance-NOM
    *'The ship is deliberately sunk in order for the insurance to be collected'

Logical types:
e individual
v event
s state
I time
t truth value

9 These can be assumed to be of category V from the very start, or they can be represented as Roots of type vt. In tree (82), I follow the latter notation following Marantz (1997, 2002). A question that arises in the Root-analysis is whether RootPs of type vt need to combine with v (which would be semantically vacuous)
or they combine directly with VoiceP. As present, I do not have an answer to this question.

10A question that arises within the approach developed in section 5 concerns the representation of lexical participles. I do not have a definitive answer to this question. According to Kratzer (2000), they are structurally exactly like phrasal target state participles, except that the Davidsonian argument of the Root ranges over states rather than events. Therefore, they do not have event implications. A different possibility is that they involve a morpheme that attaches directly to the Root (see Embick 2002), unlike phrasal target state participles that attach to RootP.

References

Abney, Steven

Alexiadou, Artemis

Alexiadou, Artemis and Elena Anagnostopoulou

Alexiadou, Artemis, Elena Anagnostopoulou and Melita Stavrou

Alexiadou, Artemis and Arnim von Stechow

Anastasiadi-Simeonidi, Anna
38 Elena Anagnostopoulou


Georgala, Effi 2001 The translational correspondence between the Modern Greek formations ending in –tos and –menos and their equivalent forms in German. Ms. Institute for Natural Language Processing of the University of Stuttgart.


Jackendoff, Ray

Klein, Wolfgang

Kratzer, Angelika

Lascaratou, Chryssoula
1991 How "adjectival" are adjectival passive participles in Modern Greek and English? *Glossologia* 7-8: 87-97.

Lascaratou, Chryssoula and Irene Philippaki-Warburton

Levin, Beth and Malka Rappaport

Lieber, Rochelle

Marantz, Alec
2002 Words and Things. Handout on Derivational Morphology. MIT.

Markantonatou, Stella, A. Kaliakostas, V. Bouboureka, E. Kordoni and V. Stavrakaki

Mavromanolaki, Georgia

Parsons, Terence
Pylkkänen, Liina

Rapp, Irene

Stechow, Arnim von

Terzi, Arhonto

Varlokostou, Spyridoula

Wasow, Thomas

Williams, Edwin