

## Agent, causer and instrument PPs in Greek: implications for verbal structure\*

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In this paper we investigate the distribution of PPs related to external arguments (agent, causer, instrument, causing event) in Greek. We argue that their distribution supports an analysis, according to which agentive/instrument and causer PPs are licensed by distinct functional heads, respectively. We argue against a conceivable alternative analysis, which links agentivity and causation to the prepositions themselves. We furthermore identify a particular type of Voice head in Greek anticausative realised by non-active Voice morphology.

### 1. Introduction

As is well known, change of state verbs participate in the causative/anticausative alternation in (1). The transitive (1a) means roughly ‘cause to V-intransitive’.

- (1) a. John broke the window    b. The window broke

The intransitive (1b) is contrasted to the passive (2). According to a widely held view, the passive has an implicit external argument, while the anticausative not.

- (2) The window was broken

In Alexiadou, Anagnostopoulou & Schäfer (2006), henceforth AAS (2006), we argued against this view. One piece of evidence was provided by the distribution of PPs in these constructions which we will briefly review here for English.

In English, causatives license all types of external arguments, namely agents, causers (both realized as subjects (3)), causing events (realized as subjects or PPs (4a,b)) as well as instruments (subjects or PPs (5a,b)):

- (3) John/The earthquake broke the vase  
(4) a. Will’s banging shattered the window  
      b. I cooled the soup by lowering the temperature

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\*We are grateful to Beth Levin and to the audience of the Greek Workshop on Syntax and Semantics at MIT, especially Asaf Bachrach, Rajesh Bhatt, Cleo Condoravdi, Winfried Lechner, Sabine Iatridou and Masha Polinsky. Special thanks are due to Edit Doron and Florian Schäfer for ongoing discussions and collaboration on this topic.

- (5) a. A stone broke the window  
 b. I broke the window with a stone

In the passive, PPs denoting agents but also instruments, causers/natural forces and causing events are licit.

- (6) a. The window was broken by John/by the storm/with a stone  
 b. The window was shattered by Will's banging

English anticausatives do not license agents and instruments, but license causers and causing events. While causers/ causing events are illicit when they are introduced by the preposition *by* in (8), they are licit when they are introduced by *from*, as shown in (9); see Piñon (2001a), Kallulli (2006). By contrast, agents and instruments are ruled out in anticausatives, regardless of whether they are introduced by *by*, *from* or *with* (see (7) and (9b)).

- (7) \*The window broke by John/with a stone  
 (8) \*The window broke by the storm/by Will's banging  
 (9) a. The window cracked/broke from the pressure  
 b. \*The door opened from Mary/from the key

Finally, the phrase “by itself” is licensed in the interpretation “without outside help”. Chierchia (1989/2004) and Levin & Rappaport Hovav (1995) argue that this reflects the presence of a cause component in the Lexical Semantic Representation (LSR) of anticausatives.

- (10) The plate broke by itself

On the widely accepted view that passives contain an implicit external argument, it is correctly expected that this implicit external argument can be modified by PPs denoting the three theta-roles licensed in the corresponding causatives. On the other hand, on the view that anticausatives lack an implicit argument external argument PPs are not expected to be licit. This prediction appears to be borne out if one concentrates on *by*-PPs, but it is incorrect for *from*-PPs. (9a) are incorrectly predicted to be ungrammatical. Similar facts hold in German and Greek (discussed in AAS 2006) and Hebrew (Doron 2003).

On the basis of these considerations, AAS (2006) have concluded that *from*-phrases signify the presence of an *implicit causer* in anticausatives. In turn, the difference between passives and anticausatives can no longer be expressed in terms of implicit arguments. The fact that agents are licensed only in passives suggests that the difference between the two constructions has to do with agentivity. To express the difference between passives and anticausatives, we proposed that implicit *agent* and *causer arguments* are licensed by two distinct functional heads Voice and CAUS (cf. also Pylkkänen 2002). Change-of-state verbs are syntactically decomposed into a Voice and a vCAUS

component (see Kratzer 2005), which we take to be the core structure of all (i.e., causative, anticausative and passive) change-of-state verbs (cf. Marantz 2005):<sup>1</sup>

(11) [Voice [vCAUS [ Root ]]]

In (11), Voice introduces the external argument and bears features relating to agentivity. vCAUS introduces a *causal relation* between a causing event (the implicit argument of CAUS) and the resultant state denoted by the verbal root + theme. PPs related to agents/instruments are licensed by Voice. PPs related to causers (causers, causing events, by itself) are licensed by vCaus.

Roots fall into different classes depending on their Encyclopedic semantics (cf. Harley & Noyer 2000, Bhatt & Embick in progress): (a)  $\sqrt{\text{agentive}}$ , i.e. the event is necessarily brought about by an Agent (murder, assassinate); (b)  $\sqrt{\text{externally caused}}$ , i.e. can be brought about by an external cause or an Agent (destroy, kill, hit); (c)  $\sqrt{\text{internally caused}}$ , i.e. the cause of the change-of-state event is linked to properties inherent to the argument undergoing change (blossom, wilt);<sup>2</sup> (d)  $\sqrt{\text{cause unspecified}}$  (break, open), i.e. not specified for external or internal causation.

We argued that all of these roots combine with vCAUS. Internal and external causation features of the root influence the combinations of roots with particular types of Voice heads. Specifically, cause unspecified verbs alternate in all languages. Agentive and internally caused verbs don't alternate. The former only form transitive-passive constructions, the latter are generally<sup>3</sup> intransitive. But languages differ as to the behavior of externally caused verbs. In Greek they form anticausatives, in English only passives. Here we illustrate this difference with 'kill' (similarly for *hit* and *destroy*). Intransitive *kill* in Greek forms the anticausative (compatible with cause-PP) but not the passive (incompatible with agent-PP), see (12b), unlike English (12d). Section 2 below further discusses anticausativization of externally caused verbs in Greek.

- (12) a. O Janis/ o sismos/i vovma skotose  
The John-nom/the earthquake-nom/the bomb-nom killed  
ti Maria  
the Mary-acc
- b. I Maria skotothike \*apo to Jani/apo to sismo/apo ti vomva  
The Mary-nom killed-non-act from the John/from the  
earthquake/from the bomb
- c. John killed Mary d. Mary was killed/\*Mary killed

<sup>1</sup> Marantz argues that the causative semantics are not directly encoded on any verbal head but results from the combination of an activity v and its stative complement (see Ramchand 2006 and others for related ideas). Cf. Kalluli (2006) for a different analysis of the English data.

<sup>2</sup> For us unergative predicates are not causatives, and hence are not classified as internally caused, contra Levin & Rappaport Hovav (1995), and in line with Marantz (1997). See Beth Levin's commentary for a discussion of this difference in classification.

<sup>3</sup> Cf. Levin's commentary according to which, internally caused verbs in English have causative uses with natural force causers, especially when used with an intensifying adjective (McKoon and Macfarland 2000, Wright 2002). These causers are interpreted as facilitating the change of state.

To explain this crosslinguistic difference, we proposed that externally caused verbs in Greek form anticausatives by having access to a structure that contains Voice, i.e. it looks like a passive, but unlike the passive, it lacks agentivity. This Voice head is vacuous. English does not have this head, and for this reason externally caused verbs can only form the passive. See also section 6.<sup>4</sup>

In our analysis, the distribution of PPs reveals the presence of semi-functional heads in verbal structure. However, there is a conceivable alternative analysis, according to which agentivity and causation are contributed by the prepositions themselves. Under such a view, the presence of an agentive or causer PP does not necessarily indicate the presence of an implicit argument and/or a head Voice or vCAUS. In what follows, we investigate the distribution of PPs related to external arguments in Greek. We will see how the behavior of these PPs supports the proposal in AAS (2006) and not the alternative analysis.

## 2. The distribution of PPs in Greek anticausatives and passives

### 2.1 Prepositions introducing agents, causers and instruments

In Greek, different prepositions introduce different thematic roles. Agents are introduced by *apo* 'from', instruments are introduced by *me* 'with', and causers/natural forces as well as causing events are introduced by *apo* or *me*:

- (13)
- agent*
    - a. O Jianis dolofonithike *apo ti Maria*/\**me ti Maria*  
The Janis murder-**Nact** from the Mary/with the Mary  
'John was murdered by Mary'
  - instrument*
    - b. O Jianis anikse tin porta *\*apo to klidi*/*me to klidi*  
The Jianis opened-**Act** the door from the key/with the key  
'John opened the door with the key'
  - causer*
    - c. Ta ruxa stegnosan *apo ton ilio* / *me ton ilio*  
The clothes dried-**Act** from the sun / with the sun
  - causing event*
    - d. i porta espase *apo/me to apotomo klisimo*  
the door broke-**Act** from/with the abrupt closing  
'The door broke by closing it abruptly'

This means that both prepositions have a double function: *apo* can introduce agents and causers, while *me* can introduce instruments and causers. When *apo* combines with an animate DP, the interpretation is necessarily agentive.

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<sup>4</sup> On approaches that treat the anticausative variant as an instance of de-transitivization, it is a mystery why certain externally caused verbs cannot form anticausatives. Note that Levin & Rappaport Hovav include our class d verbs (cause unspecified) in the class of externally caused verbs. See Harley & Noyer (2000) for an approach similar to ours.

## 2.2 Greek anticausative and passive formation

Greek has two morphologically distinct types of anticausatives (see Alexiadou & Anagnostopoulou 2004, Embick 2004, Theophanopoulou-Kontou 1999, Zombolou 2004 among others). There are verbs, mainly de-adjectival ones, which form anticausatives with active morphology, and verbs which form anticausatives by using non-active morphology. In the former class the transitive and intransitive counterpart are morphologically non-distinct. In the latter, the passive and the anticausative are non-distinct:

- (14) *Causative*  
 a. O Janis katharise ton spiti  
 the John-nom cleaned-**Act** the house  
 John cleaned the house  
*Anticausative*  
 b. To spiti katharise *me to skupisma*  
 the house cleaned-**Act** with the sweeping  
*Passive*  
 c. To spiti katharistike *apo to Jani*  
 the house cleaned-**Nact** from the John
- (15) *Causative*  
 a. o Janis katestrepse to hirografo  
 the John-nom destroyed-**Act** the manuscript-acc  
 'John destroyed the manuscript'  
*Anticausative*  
 b. to hirografo katastrafike *me ti dinati fotia*  
 the manuscript-nom destroyed-**Nact** with the strong fire  
*Passive*  
 c. to hirografo katastrafike *apo to Jani*  
 the manuscript destroyed-**Nact** from the John

Verbs forming anticausatives on the basis of **active** fall into two groups: 1) Those that take non-active morphology in the passive (16b), admitting only an agent *apo*-phrase or an instrument but not a causer. 2) Those that cannot form a passive, e.g. break (*\*spaz-ome* break-**Nact** 'be broken').

- (16) a. Ta mallia mu stegnothikan *apo tin komotria /*  
 The hair my dried-**Nact** from the hairdresser /  
*me to pistolaki*  
 with the hair-dryer  
 'My hair was dried by the hairdresser / with the hair dryer'  
 b. ?\*Ta ruxa stegnothikan *apo ton ilio / me ton ilio*  
 The clothes dried-**Nact** from the sun / with the sun  
 'The clothes were dried by the sun'

Verbs with **non-active** in anticausatives also fall into of two groups: 1) Verbs that can only form the anticausative, e.g. *burn*:

- (17) a. O Janis ekapse ti supa

- the John-nom burnt-**Act** the soup  
 b. I supa kaike *me ti dinati fotia/\*apo to Jani*  
 the soup burnt-**Nact** with the strong fire/from the John

As shown by (17b), agentive *apo*-phrases are not tolerated with such verbs.

2) Verbs that are ambiguous: they can form both the passive and the anticausative, e.g. *destroy*:

- (18) a. O Janis/ i fotia katestrepse to spiti  
 The John-nom / the fire-nom destroyed-**Act** the house  
 b. To spiti katastrafike *me tin fotia/ apo ton Jani*  
 The house destroyed-**Nact** with the fire/ from the John

In (18b) both the causer *me*-PP and the agentive *apo*-PP are well-formed.<sup>5</sup>

Finally, there are verbs that only form the passive with **non-active** morphology. Strongly agentive ones prototypically fall under this category:

- (19) a. O Janis dolofonise ti Maria  
 The John murdered-**Act** the Mary-Acc  
 John murdered Mary  
 b. I Maria dolofonithike *apo to Jani/*  
 The Mary-nom murdered-**Nact** from the John/  
*\*apo to sismo*  
 from the earthquake

Given the complexity of the paradigm described so far and in view of the fact that there is no designated morphology for the Greek passive as opposed to the anticausative, it is impossible to study the anticausative vs. passive distinction in Greek without taking into account the distribution of PPs.

### 2.3 PPs in passives and anticausatives

#### 2.3.1 Agent and causer PPs

Like English, Greek freely allows causers, causing events and the *by itself* phrase in anticausatives (20b-c). Unlike English, however, Greek disallows causers and causing events in passives (20a) (see also Zombolou 2004).

- (20) a. I porta anixtike *apo ton filaka / \*apo ton aera /*  
 The door opened-**Nact** from the guard / \*by the wind /  
*\*me tin thiela*  
 \*by the storm  
 b. I porta anikse *\*apo ton filaka / apo ton aera /*  
 The door opened-**Act** \*from the guard / by the wind /  
*me tin thiela*  
 by the storm /

<sup>5</sup> At present we do not have an understanding of the gaps (lack of full productivity) in the passive, i.e. why verbs like *break* and *burn* can't form passives, while verbs like *dry* and *destroy* can.

The two morphologically distinct types of anticausatives in Greek ( $\pm$  active morphology) do not differ with respect to the distribution of PPs:

- (21) a. Ta ruxa stegnosan *apo / me ton ilio*/\**apo to Jani*  
 The clothes dried-**Act** from/ with the sun/from the John-acc  
 ‘\*The clothes dried by the sun’
- b. I supa kaike *apo / me ti dinati fotia*/\**apo to Jani*  
 The burnt-**Nact** from / with the strong fire/by the John-acc  
 ‘The soup got burnt by the strong fire’

Verbs like *katastrefo* ‘destroy’, are ambiguous between the two interpretations. For these verbs, modification by an agent PP yields a passive interpretation, while modification by a causer PP yields an anticausative interpretation. Finally, causer but not agent PPs are licensed with internally caused roots:

- (22) Ta luludia anthisan *me ti kalokeria*/\**apo to kipuro*  
 the flowers blossomed-**Act** with the good weather/from the gardener

### 2.3.2 Instruments

Turning to instruments, as in English, instrument PPs are licensed in the passive:

- (23) Ta mallia mu stegnothikan *me to pistolaki*  
 The hair my dried-**Nact** with the hair-dryer  
 ‘My hair was dried with the hair dryer’

However, Greek anticausatives seem to license instruments, unlike English:

- (24) a. Ta mallia mu stegnosan *me to pistolaki*  
 The hair my dried-**Act** with the hair-dryer  
 ‘\*My hair dried with the hair dryer.’
- b. To pani skistike *me to psalidi*  
 The cloth tore-**Nact** with the scissors  
 ‘\*The clothes tore with the scissors.’

Note that instruments are licensed regardless of the morphology of the anticausative. The active (24a) and the non-active (24b) equally license instruments. Agent *apo* PPs may co-occur with instruments in the passive, but *apo* and *me* PPs cannot co-occur in anticausatives:

- (25) a. O Janis dolofonithike *apo ti Maria*  
 the-John-nom murdered-**Nact** from the Mary-acc  
*m’ena sfiri*  
 with a hammer
- b. \*Ta malia mu stegnosan *apo ton aera me to pistolaki*  
 the hair my dried-**Act** from the wind with the hair-dryer

As AAS (2006) note, not all anticausatives allow instruments, although instruments are always acceptable as PPs in the transitive counterpart:

- (26) a. \*O tixos asprise *me to pinelo*  
 The wall whitened-**Act** with the paint-brush  
 b. O Janis asprise *ton tiho me to pinelo*  
 John whitened-**Act** the wall with the paint-brush

It seems that instruments are only licensed when they can surface as subjects in the corresponding transitives but not otherwise:

- (27) a. To pistolaki stegnose ta mallia  
 The hair-dryer dried-**Act** the hair  
 b. \*To pinelo asprise *ton tixo*  
 The paint-brush whitened-**Act** the wall

The well-formed anticausative with an instrument PP (24a) has the transitive counterpart (27a) where the instrument surfaces as subject. On the other hand, the ill-formedness of (26a) with an instrument PP correlates with the ungrammaticality of the instrument as subject in (27b).

### 3. Accounting for the distribution of PPs

In our representation of change-of-state verbs, two functional heads come into play as far as the licensing of PPs is concerned, namely Voice and vCAUS.

- (28) [Voice [vCAUS [ Root ]]]

Since all anticausatives, irrespectively of whether they contain Voice or not, license Causer PPs, we propose that Causer PPs are licensed by vCAUS. Concerning the licensing of agent PPs and true instrument PPs, we propose that these are licensed only by passive Voice, which in Greek is necessarily [+AG] (as only agents and instruments are licensed, not causers).<sup>6</sup>

This leads to the expectation that the prepositions have a different meaning where such heads are not available (e.g. in noun phrases or in unergatives). If, alternatively, agentivity and causation are contributed by *apo* and *me* and do not need to be licensed by Voice and vCAUS, then we expect these prepositions to retain their meaning when Voice and vCAUS are unavailable. In what follows, we present evidence that *apo/me* phrases in the relevant interpretation are crucially linked to Voice and vCAUS.

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<sup>6</sup> As shown in examples (30) below, the Greek passive is also possible in constructions in which the external argument receives a variety of non-agentive theta-roles such as ‘recipient’, ‘goal’, ‘experiencer’. We assume that constructions like (30) below are passive even though the type of Voice they contain can’t be characterized as [+AG]. Thus, they do not straightforwardly fall under our description here. The key to their analysis seems to be that they are non-causative. A fuller treatment of such verbs awaits further research.



### 3.1 PPs in other contexts

*Apo*-PPs with nouns are often interpreted as sources (29a,b) or materials/content (29c). Other interpretations are possible such as partitivity (29d), but *apo*, unlike *by*, is never associated with interpretations like e.g. actor. The Greek counterpart of the English *a book by Chomsky* is expressed via the genitive (see (29e vs. f)):

- (29)
- |  |                                    |
|--|------------------------------------|
| a. Ena vivlio <i>apo tin Germania</i>      | b. O fititis <i>apo tin Gallia</i> |
| A book from Germany                        | The student from France            |
| c. Ena vivlio <i>apo xarti</i>             | d. tris <i>apo tus stratiotes</i>  |
| A book from paper                          | three of the soldiers              |
| e. Ena vivlio <i>apo ton Chomsky</i>       | f. Ena vivlio <i>tu Chomsky</i>    |
| A book from Chomsky                        | A book the-gen Chomsky-gen         |
| [ <i>Chomsky</i> is interpreted as source] | ‘A book by Chomsky’                |

On the other hand, *apo*-PPs receive a wide range of interpretations in the verbal structure, as expected if they modify implicit external arguments (which may have a variety of roles):<sup>7</sup>

- (30)
- |    |   |   |
|----|---|---|
| a. | To doro paralifhike <i>apo ton Janni</i>      | ‘The present was received from Jannis’ (recipient)        |
| b. | O kathigitis latrevete <i>apo tus fitites</i> | ‘The professor is adored from the students’ (experiencer) |

*Apo*+animate DPs are in only in passives, not in anticausatives; this means that they are only compatible with Voice [+AG]. This is the case of de-adjectival verbs, where the passive is morphologically distinct from the anticausative:

- (31)
- |    |   |
|----|---|
| a. | *O tixos asprise <i>apo ton Petro</i> ‘         |
|    | *The wall whitened- <b>Act</b> from Peter’      |
| b. | O tixos aspristike <i>apo ton Petro</i>         |
|    | ‘The wall whitened- <b>Nact</b> from the Peter’ |

Similar considerations apply to *me*-PPs. They are never interpreted as causers or instruments unless they combine with anticausatives and passives, respectively. *Me*-PPs can be interpreted as manners, contents, comitatives.

- (32)
- |                               |                          |                             |
|-------------------------------|--------------------------|-----------------------------|
| a. ton agapa <i>me pathos</i> | b. potiri <i>me nero</i> | c. irthe <i>me ti Maria</i> |
| him loves-3sg with passion    | glass with water         | came with the Mary-acc      |

### 3.2 A complication with unergatives

With unergatives verbs, *me*-PPs cannot be interpreted as causers:

- (33)
- |   |
|---|
| I Maria xoropidikse <i>me hara</i>            |
| ‘Mary jumped with happiness’ (manner reading) |

<sup>7</sup> Note here that these verbs are called by Alexiadou & Doron (2007) medio-passive. Here the root determines the semantics of the external argument. Because of this, Alexiadou & Doron claim that the external argument can be an Agent, but also an Experiencer or Location. The medio-passive can be modified by agentive or non-agentive *by*-phrases, but not by *by-itself*.

As mentioned earlier on (in fn 2), for us unergatives do not contain a causative component. So in principle, we would not expect to find *apo/me* phrases with such verbs. This is borne out in the case of *me*, but not always in the case of *apo-PPs*: as (34) shows; these can introduce causers with unergatives, in the absence of a causative component:

- (34) I Maria xoropidikse *apo hara*  
 ‘Mary jumped from happiness’

This could be taken to suggest that *apo* may introduce a cause without having to be licensed by vCAUS. However, the following considerations suggest that this is not the case. Note, first, that not all unergative verbs are acceptable (Florian Schäfer (pc) and Andrew Koontz-Garboden (pc)):

- (35) \*I stratiotes perpatisan *apo fovo*  
 the soldiers marched from fear

Second, as Beth Levin (pc) points out, while causer PPs are found with at least one group of unergatives, they cannot be used as transitive subjects; they cannot even be used as subjects in periphrastic causatives involving unergatives:<sup>8</sup>

- (36) a. \*I hara horopidikse ti Maria  
 the joy jumped-3sg the Mary-acc  
 b. \*?I hara ekane ti Maria na horopidiksi  
 the joy made the-Mary-acc subj jump-3sg  
 c. O skilos ekane ti Maria na klapsi  
 the dog made the Mary-acc subj cry-3sg  
 The dog made Mary cry

Third, while PPs involving emotions are grammatical, PPs involving natural forces or causing events are often ruled out:<sup>9</sup>

- (37) a. \*I Maria horopidikse *apo to sismo*  
 The-Mary nom jumped-3sg from the earthquake  
 b. \*I Maria eklapse *apo to spasimo ton piaton*  
 The Mary-nom cried from the breaking the dishes-gen

We conclude that in (34) we are not dealing with a causer interpretation of the preposition but rather with a source/locative one. For this reason, emotions

<sup>8</sup> However, cf. Beth Levin’s commentary on the presence of *from*-PPs with unergatives and the presence of ‘facilitating causers’ even as subjects of periphrastic causatives and the potential implications for the analysis of *from*-licensing.

<sup>9</sup> The issue requires further research. Rarely, we find examples like the following:

- (i) Idha anthropous pu kutsenan apo to poli ksilo  
 Saw-I people that limped from the much hitting  
 ‘I saw people that limped from the torture’

which seem to be functioning as the starting point of some particular action are fine, while natural forces generally are not, as they could not easily receive such an interpretation. While the fine properties of this distribution need to be further investigated, we do not consider these examples as true counterevidence for the analysis proposed in AAS (2006).<sup>10</sup>

#### 4. Dealing with a crosslinguistic difference concerning instrumental PPs

The difference between Greek and English anticausatives as far as the licensing of instrumental PPs is concerned relates to a distinction between ‘pure instrument’ and ‘instrument-causer’ (Kamp & Rossdeutscher 1994: 144).

- (38) Pure instruments: instruments whose action is conceived as strictly auxiliary to that of the agent by whom they are being employed  
Instrument-causers: instruments which can be conceived as acting on their own, once the agent has applied or introduced them

Pure instruments can never function as subjects of transitives (Alexiadou & Schäfer 2006). On this view, the instruments in (24) are actually instrument causers. Since the Greek preposition *me* introduces instruments but also causers and causing events, *me*-PPs are also compatible with all types of anticausatives.

#### 5. Apo vs. me PPs and causing events

Recall finally that both *apo* and *me* license causing events:

- (39) I porta anikse *apo ton aera / me tin thiela*  
The door opened by the wind / by the storm

The question that arises is: are the two prepositions introducing identical causers?

We would like to suggest that there is a difference in meaning which correlates with the distinction between “direct” vs. “indirect” causation (Bittner 1999; Kratzer 2005). The consensus in the literature is that causal chains that can be described by single-clause expressions are those in which there is a direct relation between the causer and causee. In contrast, when the relation between causer and causee is indirect, the causal chain must be described by a periphrastic expression. Making use of event related terminology, direct causation involves one event, while indirect causation involves more than one.

If our interpretation of the PP distribution is correct this would mean that the complement of *me* introduces a further event, which is temporarily different from that of the clause, while there is simultaneity in the context of *apo*. In other words, in the case of *me* we have two temporally independent events, while in the case of *apo* we have two co-identified events (Levin & Rappaport Hovav 1999).

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<sup>10</sup> For discussion on the licensing of Causers as DPs, see Schäfer (2007).

Evidence for this view comes from the following environments. First, consider the behavior of internally caused verbs (AAS 2006).

- (40) To fito anthise ??*apo/me tin zesti*  
The plant blossomed with the heat

In (40) the PP necessarily introduces an indirect Causer. This follows from the encyclopedic meaning of internally caused roots which tells us that properties of the internal argument are highly involved in the bringing about the change of state. Therefore, whenever these roots are combined with causers, these can only be interpreted as indirectly facilitating the change of state of the theme. In support of that note that while internally caused verbs do not transitive, they can be causativized in the periphrastic causative construction (Piñón 2001) which expresses indirect causation (Bittner 1999).<sup>11</sup>

- (41) a. O ilios ekane to luludi na anthisi pio grigora  
The sun made the flower subj blossom-3sg more quickly  
b. \*O ilios anthise to luludi  
The sun blossomed the flower

This means that the concept of internal causation does not exclude any type of causativization *per se*, but only direct causation.

Second, there are cases where the causal chain of events is clearly indirect as in (42). Here again *me* is licit, while *apo* is out/dis-preferred.

- (42) I dimosia sinkinonia alakse *me tus Olimpiakus agones*/  
Public transportation changed with the Olympic games /  
?\* *apo tus Olimpiakus agones*  
by the Olympic games

Third, conversely, there are cases where causation is clearly direct and *me* is excluded (example suggested by Sabine Iatridou):

- (43) O Janis pethane *apo kardial \*me kardia*  
The Janis died from heart/ \*with heart  
'Janis died from a heart attack'

Finally, causing events require *me* with nominalized clauses (44), while there is a choice between *apo/me* with the process nominal *closing* (45) which is ambiguous:

- (44) *Me/\*apo to na xamiloso tin thermokrasia* kriosia tin supa  
With the SUBJ lower-1sg the temperature cooled-I the soup *clause*  
'I cooled the soup by lowering the temperature'  
(45) I porta espase *me/apo to apotomo klisimo*

<sup>11</sup> Cleo Condoravdi (p.c.) points out that one would still have to test if the indirect causation implications of a periphrastic causative are also present with *me*-causatives. If it turns out that they are not, then the right term for *me* might be "facilitating/enabling causers" (as suggested by Beth Levin in her commentary) and not "indirect causers".

The door broke by the abrupt closing

Since the nominalized clause contains Tense that locates the event of lowering the temperature prior to that of cooling, it supports the analysis of *me* complements as being indirect causers.

Summarizing, we find the following pattern as far as the distribution of PPs is concerned:<sup>12</sup>

(46)	<b>Passives</b>		<b>Anticausatives</b>	
	Agent	Instrument	Direct Causer	Indirect Causer
	apo	me	apo	me

## 6. Voice and anticausative formation in Greek

In this final section a brief note on the question of the role of Non-active morphology. Recall that Greek has verbs that only take non-active morphology for anticausative formation and never form a passive (burn); moreover, there are verbs that form anticausatives with active, and use non-active only in the passive (de-adjectival and some other verbs). Finally, there are verbs that are ambiguous between an anticausative and a passive interpretation (destroy)

AAS (2006) proposed that there are two structures associated with anticausatives:

(47)	[ vCaus [Root ]]	<i>Anticausative structure I</i>
(48)	[Voice [ vCaus [Root ]]]	<i>Anticausative structure II</i>
(49)	[Voice [ vCaus [Root ]]]	<i>Passive structure</i>

(48) is necessarily the structure which is associated with non-active morphology and in which externally caused verbs occur. This is not present in all languages. English does not have it, and therefore externally caused roots which have to combine with Voice can only form the passive. Greek has it and therefore externally caused verbs can form anticausatives (sometimes they can also form passives and sometimes not). This Voice head is rather special. It is the locus of non-active morphology, which however is not interpreted as signifying the presence of an implicit external argument. The reason why verbs like *destroy*, *kill* and *hit* do not form anticausatives in English is because they are externally caused and therefore they would need this kind of Voice (this is a potential problem for detransitivization approaches to the alternation).

A similar suggestion has been made for Hebrew by Doron (2003), and German by Schäfer (2007): the presence of non-active morphology with anticausatives signals simply that only the internal argument is projected and the external argument is not merged in any syntactic or semantic relevant way. The fact that this structure is superficially similar to the passive one is then an issue of morphological syncretism (Embick 1998).

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<sup>12</sup> See Beth Levin's commentary for a different interpretation of the properties governing the distribution of *me* with causers and instruments as well as the crosslinguistic difference between English and Greek instruments in anticausatives.

In addition, we found that the Greek passive is necessarily [+AG] and for this reason, causers are not licensed in the passive. By contrast in English passive Voice is unspecified and therefore English causers are compatible with the passive, as long as they are introduced by the preposition *by*.<sup>13</sup>

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<sup>13</sup> It seems that Greek is not unique in having an agentive passive, e.g. Hebrew and Icelandic and Austronesian languages (Masha Polinsky pc) behave alike.

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