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**RESEARCH**

# Two ways of encoding location in Greek: Locative applicatives and prepositions

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Cross-linguistically, oblique theta roles such as location can be encoded by both adpositions and applicative morphemes. In this paper we argue that Standard Modern Greek (SMG), a language that encodes location primarily with prepositions, has a set of morphologically complex predicates that consist of an intransitive verbal root and a locative prefix, and behave like locative applicative constructions. We argue that this prefix is a low applicative head, licensing the addition of a LOCATIVE DP argument to the intransitive verbal root. Specifically, this applicative head: (i) case-and theta-licenses the added argument, but being void of phi-features, it blocks its cliticization; (ii) is distinct from a homophonous free standing P semantically and syntactically; (iii) is undergoing grammaticalization, as evidenced by the emergence of a novel configuration, in which the locative predicates combine with locative PPs that retrieve semantic and syntactic information of the locative prefix. Our findings show that applicatives may come in various flavors, that a language may use both analytic and synthetic devices to encode location which are not derivationally related, and that lexical/inherent case does not necessarily reduce to a PP structure.

**Keywords:** locative predicates; applicatives; adpositions; Standard Modern Greek; lexical case; grammaticalization

## 1 Introduction

Cross-linguistically, oblique theta roles such as LOCATION can be encoded by both adpositions and applicative morphemes, namely valency increasing morphemes that attach on the verb (Polinsky 2013). The two devices are illustrated below with English and Kichaga, a Bantu language spoken in Tanzania (Bresnan & Moshi 1990).

(1) He is eating food at home.

(2) (Bresnan & Moshi 1990: ex. 3b & 1 respectively)
   a. N-ā́-ī́-lyì-í-à m̀-ṛ̀ì-nyì k-élyà.
      FOC-1S-PR-eat-AP-FV 3-homestead-LOC 7-food
      'He/She is eating food at the homestead.'
   b. N-ā́-ī́-ly-à k-élyà.
      FOC-1S-PR-eat-FV 7-food
      'He/She is eating food.'

In the English example (1), the location of the eating event is introduced by the preposition *at,* whereas in the Kichaga example (2a), it is introduced by the applicative morpheme *í*. The latter increases the valency of the verb to which it attaches, by enabling the addition of an extra locative object. Thus, whereas the simple verbal predicate in (2b) is a

transitive verb followed by a single object (the patient DP *kélyà* 'food'), the derived verbal predicate in (2a) is a ditransitive followed by two objects: the patient DP *kélyà* 'food' and, in addition, the locative DP *mrìnyì* 'homestead'.

We will argue that Standard Modern Greek (SMG), an Indo-European language that encodes location primarily with prepositions, has a restricted set of predicates belonging to a formal register – such as *iperiptame* 'to fly over' in (3) – that behave like locative applicative constructions.

(3) Ena sminos apo F-16 iperiptate tis polis mas.
A cluster.NOM from F-16 over.fly.3SG the town.GEN our.CL.GEN
'A cluster of F-16 is flying over our town.'

These predicates share a unique cluster of properties: Morphologically, they consist of an intransitive verbal root and a locative prefix that is homophonous with an independently available locative preposition. Syntactically, they take an optionally realized object argument that realizes genitive case, encodes the theta role LOCATION, and resists cliticization and passivization.

We argue that the locative prefix of these predicates functions like an applicative head in the sense that it attaches to an intransitive root and licenses the addition of a locative DP argument. Specifically, we argue that the applicative head has the following properties: (i) It case- and theta-licenses the added argument, but being void of phi features, it blocks its cliticization; (ii) It is distinct from its homophonous free standing P, as shown by a range of interpretational and syntactic differences that cannot be accounted for under the assumption that they are the same lexical item; (iii) It is undergoing grammaticalization, as evidenced by the emergence of a novel configuration, in which the locative predicates combine with locative PPs that retrieve the semantic and syntactic information of the locative prefix.

The paper is of descriptive, typological, and theoretical importance: At a descriptive level, it offers a thorough description of a set of complex locative predicates that have received little attention in the Greek literature.[1] In this respect, in addition to enhancing our understanding of how location is encoded in Greek, it opens up the possibility for future cross-linguistic comparisons with complex locative predicates in other languages (see, for instance, Wilhelm 2007 and references therein for German and Svenonius 2004b and references therein for Slavic languages). At a typological level, it complements the inventory of Greek applicatives, which, so far, has been shown to include null applicatives introducing goals, benefeciaries, and maleficiaries (Anagnostopoulou 2003; 2005; Georgala 2012; Michelioudakis 2012), and it, furthermore, contributes to existing debates concerning their adpositional nature. In this regard, it compares two analytical possibilities – their analysis as incorporated adpositions (Baker 1988; 1996; Zeller 2006) with their analysis as functional verbal morphemes (Marantz 1993; Baker 1996; McGinnis 2001; Anagnostopoulou 2003; 2005; Pylkännen 2008) – and proposes a number of diagnostics that allow us to differentiate between the two (see also Zeller 2006 and Kim 2014, for a discussion along these lines). One of the main conclusions of this comparison is that the same language may use homophonous analytic (i.e., prepositions) and synthetic devices (i.e., applicative morphemes) of encoding location that – despite their homophony – cannot be reduced to the same lexical item. Finally, the paper informs our theory, by showing that applicative heads do not only differ with respect to their structural position (see Pylkkänen's 2008 analysis of low and high applicatives; McGinnis 2008), but also with

[1] For a preliminary discussion of locative predicates, see Anagnostopoulou (2003) and Holton, Mackridge & Philippaki-Warburton (2004).

respect to their featural composition. The latter, we argue, can account for the observed variation of applied objects in case, theta role, and cliticization.

The discussion is structured as follows: After giving background information on the origin and properties of the locative predicates and their arguments (section 2), we provide evidence in support of the claim that the predicates are prefixed by a non-adpositional, applicative-like morpheme (section 3). In section 4, we relate the properties of the locative arguments to the properties of the locative predicates. Specifically, we argue that the lack of cliticization can be reduced to the featural composition of the locative applicative/prefix, whereas the lack of passivization is reduced to the independent fact that our predicates are unaccusatives. Finally, in section 5, we discuss an alternative configuration suggesting that the locative prefix/applicative is undergoing grammaticalization, and in section 6, we conclude the discussion.

## 2 The properties of locative predicates and arguments

As mentioned in our introduction, SMG has a restricted set of locative predicates – listed in Table 1 – that belong to a formal register.[2]

| Verbal Predicate | Verbal Root | Locative Prefix | Locative Preposition |
|---|---|---|---|
| ***epi****krato* 'to prevail'<br>***epi****lamvanome* 'to take on'<br>***epi****veno* 'to ride on'<br>***ep****ofelume* 'to profit from'<br>***epi****zo* 'to survive' | *krato* 'to sustain'<br>*-lamvanome* 'to take hold of'<br>*veno* 'to develop'<br>*ofelume* 'to profit'<br>*zo* 'to live' | *epi-* 'on' | *epi* 'on' |
| ***eks****erxome* 'to come out of' | *erxome* 'to come' | *ek-* 'out of' | *ek* 'from' |
| ***iper***aminome 'to defend'<br>***iper****iptame* 'to fly over'<br>***iper****isxio* 'to prevail over'<br>***iper****tero* 'to prevail over/be better than' | *aminome* 'to defend myself'<br>*iptame* 'to fly'<br>*isxio* 'to be true/in effect'<br>*-tero* 'suffix denoting comparison' | *iper-* 'over, beyond, in favor of' | *iper* 'in favor of'[3] |
| ***ipo****lipome* 'to be inferior to' | *-lipome* 'to be left; to remain' | *ipo-* 'under' | *ipo* 'under' |
| ***kat****isxio* 'to prevail over' | *isxio* 'to be true/in effect' | *kata-* 'against' | *kata* 'against towards' |
| ***pro****iparxo* 'to preexist'<br>***pro****eðrevo* 'to preside over/ be in charge of'<br>***pro****istame* 'to preside over/ be in charge of ' | *iparxo* 'to exist'<br>*eðrevo* 'to reside'<br>*-istame* 'to stand' | *pro-* 'before' | *pro* 'before' |
| ***af****istame* 'to abstain from/be far from' | *-istame* 'to stand' | *apo-* 'from' | *apo* 'from' |

**Table 1:** Locative verbal predicates in Greek.

[2] The list provided in Table 1 is based on an exhaustive search of Babiniotis (1998), a dictionary of SMG. Special mention needs to be made to two complex locative predicates that have been excluded: *proiɣume* 'to precede' and *iperexo* 'to be better than'. Unlike the predicates under consideration, *proiɣume* has a transitive verbal root. A similar complication is posed by *iperexo*, as it is not clear to us, whether its root is associated with the transitive/possessive *exo* 'to have' or with the intranstive/existential *exo* 'there is'. Given that the intransitivity of the verbal root plays a crucial role for the claim we wish to make, we will have to assume that these two verbs are amenable to a different analysis.

[3] The free morpheme *iper* 'in favor of' has been analyzed both as an intransitive locative preposition (Lechner & Anagnostopoulou 2005) and as a locative modifier modifying a null NP Place (Terzi 2010). In this paper, we will be calling it a preposition for simplicity. However, the analysis that we will put forward is not, in principle, incompatible with its treatment as a modifier.

These predicates are of Ancient Greek origin and were introduced into SMG through the formal register, known as *katharevousa*. Some of these predicates are more frequent, and morpho-syntactically more productive than others. For instance, verbs such as *iperisxio* 'to prevail', *ekserxome* 'to go out', *proiparxo* 'to preexist', or *epizo* 'to survive' are quite frequent (as a preliminary Google search reveals), and may inflect for all person-number combinations, in most tenses, and in both perfective and imperfective aspect.[4] On the contrary, verbs such as *afistame* 'to abstain from', *katisxio* 'to prevail', or *ipolipome* 'to be inferior to' are less frequent, and are fairly restricted morpho-syntactically.[5]

Despite the above differences, all these predicates show a unique cluster of morphological, semantic, and syntactic properties: In terms of morphological composition, they all consist of an intransitive verbal root and a locative morpheme, which according to Ralli (2005: 42–47) synchronically functions as a prefix (see also Ralli 2004 for the same point for prefixes of Ancient Greek origin more generally).

The verbal root can be synchronically bound (hence its meaning is derived in association with the prefix), as the root *-tero* in *iper**tero*** 'to prevail', or unbound, as the root *iptame* 'to fly' in *iper**iptame*** 'to fly over'.[6] As to the locative prefix, it is always homophonous to an independently available formal locative preposition.[7]

As far as their semantics is concerned, the locative prefix can be interpreted literally, as in ***epi**veno* 'to ride on', and/or metaphorically, as in ***epi**lamvanome* 'to take on'. Typically, a literal *vs.* metaphorical reading of the prefix correlates with a literal *vs*. metaphorical reading of the root, giving rise to a gradation of compositionality with the less compositional readings being more common with synchronically bound roots.

Finally, with respect to their syntactic subcategorization, locative predicates take two arguments: A nominative FIGURE/THEME and a genitive LOCATIVE argument (or, in Talmy's 1978; 2000 terms, a GROUND argument), whereby the location expressed by the LOCATIVE argument is predicated of the moving FIGURE /THEME.

With all the verbs, except *epiveno* 'to ride on', *iperaminome* 'to defend', *ipolipome* 'to be inferior', and *afistame* 'to abstain from', the GROUND argument is optional. For example, *epiveno* 'to ride on' in (4) takes the FIGURE/THEME argument *o proθipurγos* 'the Prime Minister' and the obligatorily realized GROUND argument *tu oximatos* 'the vehicle', whereas *iperisxio* 'to prevail' in (5) takes the FIGURE/THEME *o olimbiakos* 'olimbiakos' and the optionally realized GROUND argument tu Panaθinaiku 'Panathinaikos.'

(4) O proθipurγos epiveni tu oximatos.
The prime.minister.NOM on.ride.3SG the car.GEN
'The Prime Minister rides on the vehicle.'

(5) O Olimbiakos iperisxii (tu Panaθinaiku).
The Olimbiakos.NOM prevails (the Panathinaiku.GEN)
'Olimbiakos prevails over Panathinaikos.'

[4] Cf. e.g. **tense**: *iperisxio*' I prevail', *iperisxia* 'I was prevailing', *iperisxisa* 'I prevailed'; **person/number**: *iperisxiis* 'You.SG prevail', *iperisxiume* 'We prevail'; **lexical aspect**: *na iperisxio* 'SUBJ prevail.IMPF' vs. *na iperisxiso* 'SUBJ prevail.PERF'. Of course, various restrictions may apply depending, among others, on the inherent semantics of the relevant predicate (cf. **exi/ixe proiparksi* 's/he has/had preexisted').

[5] Cf. e.g. **tense**: *afistame* 'I abstain from', *??afistamin* 'I abstained from', *tha afistame* 'I will abstain from'; **person/number**: *afistame* 'I abstain from', *afistande* 'They abstain from', *afistamin* 'I was abstaining from', *?*afistaso* 'You were abstaining from'; **lexical aspect**: *na afistame* 'to abstain.IMPF from' only.

[6] In Ancient Greek, all the roots reported in Table 1, besides *-tero* (which denotes comparison), were unbound (Liddell Scott Jones 1996).

[7] Of the prepositions listed in Table 1 only *apo* 'from' has both formal and informal uses.

The theta role of FIGURE/THEME is complex, in the sense that it conveys both an entity that is located in relation to a stationary location (FIGURE) and an entity that moves or is movable (and therefore ends up being located in relation to a stationary location) (THEME). The theta role of GROUND, on the other hand, may involve both literal and metaphorical extensions (see Jackendoff 1983 for temporal meanings and Beavers 2011 for property scales). In all these uses, the locative predicate relates two entities, so that one entity (the moving/movable entity, or FIGURE/THEME) is positioned with regard to some other entity (the fixed one, or GROUND) in terms of place, time, hierarchy, or more generally some scalar property.[8] For example, in the case of *epizo* 'to survive', the predicate relates two entities on a time scale. Thus, in (6) below, *Janis* is located on a time scale with respect to a particular event (namely, an accident), such as *Janis* still lives after the culmination of the event.

(6) O Janis epezise tu ðistiximatos.
The Janis.NOM survived.3SG the accident.GEN
'John survived from/after the accident.'

In the case of *iperaminome* 'to defend', the scale implicated could be a scale of preference (cf. the meaning of *iper* 'in favor'). Under this view, *Janis* in (7) is located with respect to *tu nomu* 'the law' on the positive side of a scale (assuming a negative-positive scale).

(7) O Janis iperaminete tu nomu.
The John.NOM in.favor.of.defend.3SG the law.GEN
'John is defending the law.'

What is of primary importance to us is that despite the fact that the scale may differ (literal location, temporal location, hierarchy, change), the syntax is shared across all these predicates.

Shifting our attention from the LOCATIVE predicate to the LOCATIVE argument, it is clear that the latter shows an equally interesting cluster of properties that sets it apart from other types of objects in Greek:

First, it realizes genitive case differing in this respect from both direct objects, which realize accusative (8a), and from indirect objects whose genitive case is traced back to historical dative (8b).[9]

(8) a. O Janis aγorase to vivlio.
The Janis.NOM bought.3SG the book.ACC
'John bought the book.'
b. O Janis estile tu Kosta mia karta.
The Janis.NOM sent.3SG the Kosta.GEN a card.ACC
'John sent Kostas a card.

Second, as already pointed out, it encodes the theta role LOCATION/GROUND, unlike direct objects that are typically THEMES AND PATIENTS, and, unlike indirect objects, that are typically GOALS/SOURCES and BENEFICIARIES/MALEFICIARIES.

Third, it resists cliticization (9a) (see Holton et al. 2004) as well as any other pattern that is contingent on cliticization, including Clitic Doubling (CD) (9b) (Anagnostopoulou

[8] See Talmy (1978); Jackendoff (1983); Svenonius (2004a; 2010).
[9] Actually, in SMG, genitive is primarily the case of non-verbal arguments such as possessors and arguments of comparative adjectives.

2003), Clitic Left Dislocation (CLLD) (9c), Clitic Right Dislocation (CLRD) (9d), and Resumption (9e) (Daskalaki 2008; Daskalaki & Mavrogiorgos 2013).[10]

(9) a. *O proθipurγos tu epiveni.
The prime.minister.NOM it.CL.GEN on.ride.3SG
'The Prime Minister rides on it.'

b. *Tu epiveni tu oximatos.
It.CL.GEN on.ride.3SG the vehicle.GEN
'Literally: He rides on it the vehicle.'

c. *Tu oximatos tu epiveni.
The vehicle.GEN it.CL.GEN on.ride.3SG
'Literally: The vehicle he rides on it.'

d. *Tu epiveni, tu oximatos.
It.CL.GEN on.ride.3SG the vehicle.GEN
'Literally: He rides on it, the vehicle.'

e. *To oxima pu tu epiveni o proθipurγos.
The vehicle.NOM that it.CL.GEN on.ride.3SG the prime.minister.NOM
'Literally: the vehicle that the Prime Minister is riding on it.'

In this respect, it differs from indirect/dative and direct/accusative objects, which allow cliticization (10a–b) (and, subsequently, all clitic dependencies available in the language).

(10) a. O Janis to aγorase.
The Janis.NOM it.CL.ACC bought.3SG
'John bought it.'

b. O Janis tu estile mia karta.
The Janis.NOM him.CL.GEN sent.3SG a card.ACC
'John sent him a card.

Finally, as illustrated in (11), the locative argument cannot undergo passivization (see Anagnostopoulou 2003).

(11) *To oxima epivenete apo ton proθipurγo.
The vehicle.NOM on.ride.PASS.3SG from the prime.minister.ACC
'The vehicle is ridden on by the Prime Minister '

The same applies to indirect/dative objects (12a), although direct/accusative objects are passivizable (12b).

(12) a. *I Maria stalthike to γrama mu.
The Maria.NOM sent.PASS.3SG the letter.ACC my.CL.GEN
'Mary was sent my letter.'

b. To γrama mu tis stalθike tis Marias.
The letter.NOM my.CL.GEN her.CL.GEN sent.PASS.3SG the Maria.GEN
'My letter was sent to Mary.'

[10] One could argue that the ungrammaticality of (9) is due to the fact that the locative object is inanimate and genitive clitics are generally dispreferred with inanimate referents (cf. Terzi 2010). Although an animate genitive clitic renders the sentence slightly better, the resulting sentence is nevertheless ungrammatical, and definitely much worse than the corresponding sentence without a clitic:

(i) a. O Kostas iperisxise tu andipalu tu.
The Kostas.NOM prevailed.3SG the opponent.GEN his.CL.GEN
'Kostas prevailed over his opponent.'

b. *?O Kostas tu iperisxise.
The Kostas.NOM him.CL.GEN prevailed.3SG
'Intended Meaning: Kostas prevailed over him.'

Summing up, locative predicates and their arguments display an intriguing cluster of properties listed in (13) and (14), respectively, which sets them apart from direct/indirect objects:

(13) *Properties of Greek locative predicates*
Morphological: Complex (locative prefix/ free P + intransitive verbal root)
Semantic: literal and/or metaphorical reading of prefix + root combination
Syntactic: Transitive

(14) *Properties of Greek locative arguments*
a. Case: Genitive
b. Theta Role: GROUND (LOCATION/SOURCE)
c. Lack of cliticization and related patterns (Resumption, CD, CLLD, CLRD)
d. Lack of Passivization
e. Optional Phonological Realization

These properties, in turn, combined with the Ancient Greek origin of the predicates under consideration, pose an interesting question regarding the dilemma the language learner – and the linguist, for that matter – is faced with: What is the most appropriate way to analyze such structures within the SMG system? More specifically:

(15) Is the locative prefix syntactically and semantically active? In other words, does it have case and theta assigning properties?

(16) Is it the same lexical item with its homophonous locative preposition?

And, finally:

(17) What is the correlation – if any – between the properties of the locative prefix and the lack of cliticization/passivization displayed by the locative arguments?

To anticipate our analysis, we provide evidence indicating that the prefix of the locative predicate is a semantically and syntactically active applicative head (section 3.1) that is synchronically distinct from its homophonous locative preposition (section 3.2). Furthermore, we argue that both the lack of cliticization and the lack of passivization derive from properties of the functional projection of the applicative predicate (section 4). We assume that speakers reach this analysis by learning the specific semantic-syntactic content of the locative prefixes (a Lexicon issue), as well as by using the tools that already exist in the system (including applicative/valency-increasing morphemes, genitive case arguments, roots and prefixes that exist independently in the language, albeit possibly with distinct properties). In section 5, we show that competition with independently available, more productive means of encoding location (such as locative/directional PPs and predicates without a locative prefix) leads to semantic and syntactic bleaching which deprives the locative prefix of these special properties. The end result of this process is that location ends up encoded on the root and/or a PP (depending on the properties of the root), on a par with more productive structures. This process is common in case two or more partially overlapping means of encoding the same syntactico-semantic notion co-occur in the same grammar, and in this respect locative predicates behave in a quite regular fashion.

## 3 Accounting for the properties of locative predicates and their arguments

### *3.1 The locative prefix is an applicative morpheme*

Before motivating the claim that the locative prefix of our predicates is an applicative morpheme, it is important to spell out our working definition of applicatives. This is because in the literature, applicative morphemes have been treated both as valency-increasing

and as function-changing morphemes (see Haspelmath 2002 for discussion). Under the former definition, an applicative increases the valency of the verb to which it attaches by adding a new object argument (Bresnan & Moshi 1990; Beck 2009). The added argument expresses an oblique theta role – such as RECIPIENT, BENEFICIARY, INSTRUMENT, and LOCATION – and typically, though not always, displays direct object properties. Under the second definition, an applicative, rather than altering the number of objects, promotes an oblique/indirect object to a direct object (Peterson 2007).

Our claim here is that the locative prefixes of the Greek verbs under consideration behave similarly to applicatives of the valency-increasing type, in the sense that they license the addition of an object argument. Specifically, they attach to monovalent, intransitive verbs and they give rise to bivalent, transitive predicates that may take an optionally realized locative DP. This is clearly shown by the contrast in grammaticality between (18) and (19):

(18) a. O Kostas epofeliθike (tis katastasis).
The Kostas.NOM on.profited.3SG (the situation.GEN)
'Kostas profited from/took advantage of (the situation).'

b. O proθipurγos eksilθe (tis vulis).
The prime.minister.NOM out.came.3SG (the parliament.GEN)
'The Prime Minister came out of (the parliament).'

c. To aeroskafos iperiptate (tis polis).
The airplane.NOM over.fly.3SG (the town.GEN)
'The airplane flies over (the town).'

d. To provlima proipirxe (tis krisis).
The problem.NOM pre.existed.3SG (the crisis.GEN)
'The problem existed before (the crisis).'

(19) a. O Kostas ofeliθike (*tis katastasis).
The Kostas.NOM profited.3SG (*the situation.GEN)
'*Kostas profited (the situation).'

b. O proθipurγos ilθe (*tis vulis).
The prime.minister.NOM came.3SG (*the parliament.GEN)
'*The Prime Minister came (the Parliament).'

c. To aeroskafos iptate (*tis poleos).
The airplane.NOM fly.3SG (*the city.GEN)
'*The airplane flies (the city).'

d. To provlima ipirxe (*tis krisis).
The problem.NOM existed.3SG (*the problem.GEN)
'*The problem existed (the crisis).'

What the above data show is that whereas the locative DPs are perfectly grammatical with the complex predicates (18), they are ungrammatical with the corresponding bare roots (19). This, in turn, suggests that the locative DPs are contingent on the locative prefix for their case and theta interpretation.[11]

[11] An anonymous reviewer asks whether it is possible for applicative morphemes in SMG to attach to bivalent bases. As is made evident by the comparison between (i) and (ii), this appears to be the function of the prefix *pro-* in *protimo* 'to prefer':

(i) Timame ton kathijiti mas.
Honour.1PL the professor. ACC our.CL.GEN
'We honour our professor.'

(ii) Protimame ti ðoksa tu kerðus.
prefer.1PL the fame.ACC the fortune.GEN
'We prefer fame over fortune.'

What the above examples show is that a bivalent root *timo* 'to honour' (i) may become trivalent when prefixed with *pro-* (ii). The added argument is a GROUND, in the sense discussed in section 2, and realizes

It could be counterargued, that the added locative DP is an adjunct rather than an argument. This would be consistent with its oblique properties (optionality and lack of cliticization/passivization), which, in Greek, are typically associated with uncontroversial adjuncts. For instance, as shown below, a temporal adjunct such as *tu xronu* 'next year' in addition to being optional, it fails to be cliticized and passivized:

(20) a. (Tu xronu) i epitropi θa ðosi to vravio tis Marias.
(The year.GEN) the committee.NOM FM give.3SG the prize.ACC the Maria.GEN
'(Next year) the committee will give Mary the prize.'

b. Tu xronu$_i$, i epitropi θa (*tu$_i$) ðosi
The year.GEN the committee.NOM FM (*him$_i$) give.3SG
to vravio tis Marias.
the prize.ACC the Maria.GEN
'Next year$_i$, the committee will give (*it$_i$) Mary the prize.'

c. *O xronos tha ðothi tis Marias/
The year.NOM FM give.PASS.3SG the Maria.GEN /
sti Maria to vravio.
to.the Maria.ACC the prize.ACC.
'*Next year will be given Mary the book/the book to Mary.'

A number of considerations, though, render this alternative analysis hard to maintain:

To begin with, even though locative DPs are only optionally realized, they are always implied by the complex predicate. Compare, for example, (21a) with (21b):

(21) a. O Panaθinaikos θa iperisxisi (tu Olimbiaku).
The Panaθinaikos.NOM FM prevail.3SG (the Olimbiaku.GEN)
'Panaθinaikos will prevail (over Olimbiakos).'

b. O Panaθinaikos θa iperisxisi (tu xronu).
The Panaθinaikos.NOM FM prevail.3SG (the year.GEN)
'Panaθinaikos will prevail (next year).'

Whereas both the locative *tu Olimbiaku* 'over Olimbiakos' (21a) and the temporal *tu xronu* 'next year' (21b) are optional, only the locative DP is implied by the complex predicate *iperisxio* 'to prevail' and, more precisely, by its locative prefix *iper* 'over', which somehow suggests the presence of a LOCATION/GROUND. The semantic content of the latter is contextually determined, in the sense that it receives a deictic interpretation.[12]

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Genitive case. We should point out though, that in Standard Modern Greek, (ii) sounds kind of obsolete and the Genitive DP *tu kerðus* 'the fortune' is most commonly replaced by a PP (*apo to kerðos* 'from the fortune'). Why the applicatives under consideration are synchronically more frequent with intransitive roots and whether the same was true in previous stages of the language is an interesting question for further research. We thank the anonymous reviewer for pointing out this to us.

[12] In this respect, locative predicates remind us of ditransitives such as *stelno* 'to send' (i) and of comparative adjectives such as *psiloteros* 'taller' (ii) that also allow deictic implicit objects (a RECIPIENT and a GROUND, respectively):

(i) Stilame (tu Kosta) to paketo.
Sent.1PL (the Kosta.GEN) the package.ACC
'We sent Kostas the package.'

(ii) O Janis ine psiloteros (tu Kosta).
The Janis.NOM is taller.NOM (the Kosta.GEN)
'Janis is taller (than Kostas).'

Implicit arguments are also licensed by consumption verbs such as *troo* 'to eat' (Bhatt & Pancheva 2006):

(iii) O Janis efaje.
The Janis.NOM ate.3SG
'John ate.'

However, as correctly pointed out to us by an anonymous reviewer, in the case of consumption verbs the implicit argument is existentially quantified. That is, it does not necessarily refer to a specific entity (on the distinction between deictic and existentially quantified implicit arguments, see Lasersohn 1993).

A second difference between locative DPs and adjunct DPs concerns their distribution. As shown in (18)-(19) above, locative DPs are sensitive to the morphological composition of the selecting predicate. This kind of restricted distribution, which correlates with properties of the verbal predicate, is typical of DP arguments, but atypical of DP adjuncts. For example, the temporal DP adjunct *tin Kiriaki* 'on Sunday' is grammatical both with the complex predicate *ekserxome* 'to come out of' (22a) and with the bare verbal root *erxome* 'to come', contrary to the locative DP which is only available with the complex predicate (22b).

(22) a. Θa ekselθi tu nosokomiu tin Kiriaki.
FM out.of.come.3SG the hospital.GEN the Sunday.ACC
'He will come out of the hospital on Sunday.'
b. Θa elθi (*tu nosokomiu) tin Kiriaki.
FM come.3SG (*the hospital.GEN) the Sunday.ACC
'He will come on Sunday.'

Further evidence corroborating the argument status of locative DPs comes from the observation that, unlike adjuncts, they have their case and theta role determined by the predicate they complement – and more precisely by its locative prefix. For example, whereas the complex predicate *ekserxome* requires a locative DP surfacing in genitive case (23a), it does not impose any restrictions on the case morphology of the temporal adjuncts *tin Kiriaki* 'on Sunday', which realizes accusative, and *tu xronu* 'next year' (23b), which realizes genitive.

(23) a. Eksilθe tu nosokomiu /*to nosokomio.
Out.came.3SG the hospital.GEN /*the hospital.ACC
'He came out of the hospital.'
b. Θa ekselθi tu nosokomiu tin Kiriaki /tu xronu.
FM out.come.3SG the hospital.GEN the Sunday.ACC/the year.GEN
'He will come out of the hospital next year.'

Accordingly, whereas the spatial interpretation of the genitive DP in (24) varies depending on the predicate it complements – it is a LOCATIVE, when it complements the locative predicate *ekserxome* 'to come out of' (24a) and a RECIPIENT, when it complements the ditransitive *ðino* 'to give' (24b) – the interpretation of the temporal adjunct DP *tin Kiriaki* 'on Sunday' remains constant.

(24) a. Tin Kiriaki eksilθe tu nosokomiu.
The Sunday.ACC out.came.3SG the hospital.GEN
'On Sunday, he came out of the hospital.'
b. Tin Kiriaki θa ðosun tu Kosta tin ipotrofia.
The Sunday.ACC FM give.3PL the Kostas.GEN the scholarship.ACC
'On Sunday, they will give Kostas the scholarship.'

This shows that the locative argument bears a specific theta-role, which modifies the complex predicate (and, obviously, the prefix part, given our arguments earlier – see examples (18) & (19)), whereas a locative adjunct optionally modifies the whole event.

To the above arguments, we may add the evidence coming from the *do so* test, originally discussed by Lakoff and Ross (1976 [1966]) and widely applied since then (Schütze 1995; for Greek, see Anagnostopoulou 2003; 2005). According to this test, the *do so* pro-form may replace a VP, provided that the latter is headed by a non-stative verb. However, whereas the internal arguments of the VP are obligatorily deleted, its adjuncts can be

exempted from deletion. This is so because adjuncts are attached outside the VP, whereas arguments are sisters to the V head.

What is of relevance for our purposes is that, once again, locative DPs pattern with arguments rather than with adjuncts. Thus, the examples below show that whereas it is possible to exempt a temporal adjunct DP from deletion (25), not deleting a locative DP leads to ungrammaticality (26).

(25) O Olimbiakos iperisxise tu Panaθinaiku to Savato
The Olimbiakos.NOM prevailed.3SG the Panaθinaikos.GEN the Saturday.ACC
ke to iðjo ekane ke i AEK tin Kiriaki.
and the same did.3SG and the.NOM AEK the Sunday.ACC
'Olimbiakos beat Panathinaikos last Saturday and AEK did so last Sunday.'

(26) O Olimbiakos iperisxise tu Panaθinaiku
The Olimbiakos.NOM prevailed.3SG the Panaθinaikos.GEN
ke to iðjo ekane ke i AEK (*?tu PAOK).
and the same did.3SG and the.NOM AEK (*?the.GEN PAOK)
'Olimbiakos beat Panathinaikos and AEK did so (*over PAOK).'

In view of the above properties, we will conclude that the locative DPs under consideration are arguments licensed by the presence of a locative applicative morpheme (i.e., by the locative prefix) and that even when they are not phonologically realized, they are syntactically represented and pragmatically recovered.[13]

### *3.2 The locative prefix is distinct from the locative preposition*

Having established that locative prefixes show an applicative like behavior – and thus are semantically and syntactically active – we may now move on to our second research question concerning the relation between the locative applicatives and the homophonous locative prepositions.

There are two main approaches in the literature regarding this question. On the one hand, Baker's (1988; 1996) transformational analysis treats applicatives as incorporated adpositions. Within this analysis, therefore, applicatives and adpositions can be reduced to the same lexical item. A different view is taken by Marantz (1993), McGinnis (2001), and Pylkkänen (2008), among others, who – differences aside – treat applicatives and adpositions as distinct lexical items (the former being analyzed as v-heads).

[13] It is important to acknowledge that some of the predicates under consideration have obligatorily intransitive uses with different semantic and syntactic properties. Compare, for example, the intransitive *epikrato* in (ia) with its transitive variant illustrated in (ib):

(i) a. Epikrati panikos *(tis lojikis).
Prevail.3SG panic.NOM *(the logic.GEN)
'Panic ensues.'
b. Epikrati o panikos (tis lojikis).
Prevail.3SG the panic.NOM (the logic.GEN)
'The panic prevails over the logic.'

The syntax and semantics of the intransitive *epikrato* is different in two ways: First, it does not license an overtly realized GROUND (compare (ia) with (ib)). Second, it does not seem to involve comparison. These differences suggest that we are dealing with two different predicates that are amenable to two different analyses: An intransitive predicate with a syntactically inactive prefix (this is the case with *epikrato* in (ia)), and a transitive predicate with a syntactically active prefix (this is the case with *epikrato* in (ib)). In the first case, the prefix *epi-* is empty (or part of the root) and does not license a GROUND argument. In the second case, the prefix *epi-* is syntactically active and licenses a GROUND argument, which is present in the syntax, independently of whether it is phonologically realized or not. We would like to thank an anonymous reviewer for bringing to our attention the obligatorily intransitive use of *epikrato* 'to ensue'.

Given that the locative prefixes and the locative prepositions are homophonous, the null hypothesis would be that they are the same lexical item and that an analysis along the lines of Baker is more suited for the data under consideration. However, as shown below, a number of considerations render this analysis hard to maintain.[14]

To begin with, the locative prefix and the locative preposition show several semantic differences that are surprising under the assumption that they are the same lexical item. For example, there are cases where the meaning of the preposition is more restricted compared to the range of meanings associated with the prefix. This is for instance the case with the preposition *iper* and the prefix *iper-*. In Ancient Greek, the preposition *iper* could take on both the literal interpretation 'over' and the metaphorical one 'in favor of'. The same was possible for its homophonous prefix (Liddell Scott Jones 1996). In SMG, though, the situation is different. Whereas the prefix *iper-* can take on both literal (27b) and metaphorical interpretations (27a), the preposition *iper* has retained only its metaphorical interpretation 'in favor of' (28).

(27) a. iperaminome
in.favor.of.defend.1SG
'to defend'
b. iperiptame
over.fly.1SG
'to fly over'

(28) a. Psifisame iper tu nomosxeðiu.
Voted.1PL in.favor.of the bill.GEN
'We voted in favor of the bill.'
b. *iper tu orus
over the mountain.GEN
'over the mountain'

An additional problem for the treatment of locative prefixes as locative prepositions derives from the morphosyntactic differences between the two elements. As we have already seen, the locative prefixes always introduce an optional DP that realizes genitive case and resists cliticization. Their corresponding locative prepositions, though, show less homogeneous patterns. First, whereas most of them assign genitive case to the argument they license (29 a–d), there are two prepositions (*ipo* 'under' and *apo* 'from') that assign accusative (29 e–f).[15]

(29) a. minima ek tu proeðru
message from the president.GEN
'Message from the President'
b. Ine epi tis oðu Skufa.
Is on the street.GEN Skufa.GEN
'It is on the Skufa street.'

[14] It is important to clarify here that Baker's approach does not exclude, in principle, the co-existence of various types of applicatives (adpositional and non-adpositional ones). In this respect, our data do not constitute an argument against his theory overall; rather, the claim is that the locative predicates discussed here are not amenable to such an analysis.

[15] The only examples where *ipo* 'under' and *apo* 'from' assign genitive are in the idiomatic expressions *ipo malis* 'under the armpit' and *apo stiθus* 'by heart', respectively. However, these PPs, unlike the PPs considered in the main text, are fossilized expressions and, consequently, unlikely to be manipulated by morphosyntactic rules such as incorporation.

c. i pro tu Aθo perioxi
the before the Aθo.GEN area.NOM
'The area before Athos'
d. iper tu nomosxeðiu
in.favor.of the bill.GEN
'In favor of the bill'
e. ipo to eðafos
under the ground.ACC
'Under the ground'
f. apo to nosokomio
from the hospital.ACC
'From the hospital'

Second, even though most of the locative prepositions pattern with locative prefixes in not allowing cliticized arguments (30a–e), the preposition *iper* 'in favor of' does accept cliticized arguments (30f).

(30) a. minima ek tu proeðru /*tu
message from the president.GEN /*him.CL.GEN
'Message from the President/*him'
b. Ine epi tis oðu Skufa /*tis.
Is on the street.GEN Skufa.GEN /*his.CL.GEN
'It is at the Skufa street/*it.'
c. i pro tu Aθo /*tu perioxi
the before the Aθo.GEN/ *it.CL.GEN area.NOM
'The area before Athos/*it'
d. ipo to eðafos /*to
under the ground.ACC /* it.CL.ACC
'Under the ground/*it'
e. apo to nosokomio /*to
from the hospital.ACC /*it.CL.ACC
'From the hospital/*it'
f. iper tu nomosxeðiu / √tu
in.favor.of the bill.GEN / √it.CL.GEN
'In favor of the bill/it'

Third, most of the locative prepositions (31) differ from locative prefixes in that they require obligatory DP arguments. Specifically, of the locative prepositions we are examining, only *iper* 'in favor of' has optionally realized arguments (31f).

(31) a. minima ek *(tu proeðru)
message from *(the president.GEN)
'Message from *(the President)'
b. Ine epi *(tis oðu Skufa).
Is on *(the street.GEN Skufa.GEN)
'It is on *(the Skufa street).'
c. i pro *(tu Aθo) perioxi
the before *(the Aθo.GEN) area.NOM
'The area before (Athos)'

d. ipo *(to eðafos)
under *(the ground.ACC)
'Under (the ground)'
e. apo *(to nosokomio)
from *(the hospital.ACC)
'From *(the hospital)'
f. iper (tu nomosxeðiu)
in.favor.of (the bill.GEN)
'In favor of (the bill)'

The above set of morphosyntactic differences resists a straightforward explanation within an analysis that treats the prefixes as prepositions: If the locative prefixes and the locative prepositions were the same item, we would expect them to impose the same morphosyntactic restrictions on their arguments. As shown above, this prediction is only partially born out.

Finally, to the above counterarguments, we may add the absence of a grammatical input. Specifically, under an analysis that treats the locative prefix as an incorporated preposition, one would expect the existence of a grammatical analytical structure that could serve as the input to incorporation.[16] Synchronically, this is true only for two of our predicates: *proiparxo* 'to preexist' and *ekserxome* 'to come out of'. To illustrate with the former verb, the VP *proiparxo tis krisis* 'to exist before the crisis' (32a) has a perfectly grammatical analytical variant consisting of the bare verbal root *iparxo* 'to exist' and the PP *pro tis krisis* 'before the crisis' (32b):

(32) a. To provlima proipirxe tis krisis.
The problem.NOM pre.existed.3SG the crisis.GEN
b. To provlima ipirxe pro tis krisis.
The problem.NOM existed.3SG before the crisis.GEN
'The problem existed before the crisis.'

However, this is not the case with the remaining complex predicates. For instance, as shown in (33), the analytical counterpart of the VP *epiveno tu oximatos* 'to ride on the vehicle' – consisting of the verbal root *veno* 'to develop' and the locative PP *epi tu oximatos* 'on the vehicle' – is, synchronically, unacceptable:

(33) a. O proθipurγos epiveni tu oximatos.
The prime.minister.NOM on.ride.3SG the vehicle.GEN
b. *O proθipurγos veni epi tu oximatos.
The prime.minister.NOM ride.3SG on the vehicle.GEN
'The Prime Minister rides on the vehicle.'

Once again, this is hard to explain under the preposition incorporation analysis: if the prefix were incorporated from inside a PP complement, the underlying structure should be acceptable, contrary to fact.

[16] An anonymous reviewer points out that a language may have obligatory incorporation for a class of cases, which would explain the lack of alternation between free and incorporated forms. We think that this depends on one's theoretical assumptions. Under such an analysis, we would have to accept that incorporation may have an ungrammatical input. Furthermore, we would have to explain why the incorporation of a free form (a P) into another free form (a V) is obligatory in these particular cases.

To conclude, a number of empirical problems suggest that the locative prefixes cannot be treated as locative prepositions. It is important to clarify, though, that our conclusion holds for SMG. Whether or not the two items are historically related and whether or not in Ancient Greek locative applicatives were prepositional in nature requires a thorough investigation of Ancient Greek predicates and prepositions that is beyond the scope of this paper.[17]

## 4 Analysis: The locative prefix and the locative DP argument

In the previous section, we provided empirical evidence in support of the claim that the locative prefix of Greek complex predicates is an applicative head, homophonous though distinct from the corresponding locative preposition. Our aim in this section will be to develop an analysis that in addition to capturing the "valency increasing" effect of the applicative morpheme, accommodates the "curious properties" of the added argument summarized in (14) and repeated in (34), for convenience:

(34) *Properties of Greek locative arguments*
- a. Case: Genitive
- b. Theta Role: GROUND (LOCATION/SOURCE)
- c. Lack of cliticization and related patterns (resumption, CD, CLLD, CLRD)
- d. Lack of Passivization
- e. Optional Phonological Realisation

To this end, we will first motivate our assumptions and we will, then, show how our analysis derives the properties listed in (34).

### *4.1 Assumptions*

We will be following Pylkkänen's (2008) account of low applicatives in assuming that the locative applicative under consideration is originally introduced as the head of an APPLP that complements the Root. Evidence that it behaves like a low applicative – rather than as a high applicative attached above the verb phrase – comes from the observation that it denotes a spatial relation between two individuals (a FIGURE/THEME and a GROUND) and that, in addition, it introduces an argument that resists secondary predication (35):

(35) *Iperisxise tu andipalu tis eksandlimenu.
Prevailed.3SG the opponent.GEN her.CL.GEN exhausted.GEN
'*She prevailed over her opponent exhausted.'

In both respects, it differs from high applicatives, which, in Pylkkänen's (2008) typology, express a relation between an individual and an event, and introduce arguments that are amenable to secondary predication.

[17] In connection with this question, see Alexiadou, Anagnostopoulou, Sevdali (2014). The authors convincingly argue that Ancient Greek has a class of complex dative predicates, whose prefix appears to be an incorporated preposition.

Furthermore, we will be assuming that the Root and the applicative head combine via conflation (see Hale & Keyser 2002), due to the affixal nature of the applicative head and/or the Root.[18] With respect to the exact categorial status of the APPL head, two possibilities have been suggested in the literature: It could be a v-head or a p/P-head. Under the p/P analysis, the applicative head is a Place Prepositional head, further embedded within a p-head, as illustrated in (36).[19]

(36) $[_{\text{RootP}}$ Root $[_{\text{pp}}$ p $[_{\text{PP}}$ P$]]]$

The role of the p-Head would be to introduce the FIGURE/THEME argument and to case license the GROUND argument (see e.g. Jackendoff 1983; van Riemsdjik 1990; den Dikken 2010; Koopman 2000/2010; Svenonius 2010; Terzi 2010). Even though both analyses are compatible with the essentials of our proposal, it appears to us that the second one is not supported synchronically by independent evidence. Thus, it is not clear why the presumably prepositional applicative is always affixal[20] and why it fails to license any additional material despite the presence of multiple specifiers. In this respect, we may compare (37a) with (37b).

(37) a. *To aeroplano iperiptate ekato metra tis polis.
The airplane.NOM over.fly.3SG hundred meters.ACC the town.GEN
'The airplane flies a hundred meters above the town.'
b. To aeroplano petai ekato metra pano apo tin poli.
The airplane.NOM fly.3SG hundred meters.ACC above from the town.ACC
'The airplane flies 100 meters above the town.'

The examples show that the applicative *iper-* 'over' fails to license the degree phrase *ekato metra* 'a hundred meters' (37a), differing in this respect from the free standing Path PP *pano apo tin poli* 'over the town', which, having a complex structure, may license the degree phrase in question (37b).

Summing up, in view of the above evidence, we will be assuming that the locative prefix is a low vAppl head – rather than a p/P head – that combines with the root via conflation.

### *4.2 Derivation*

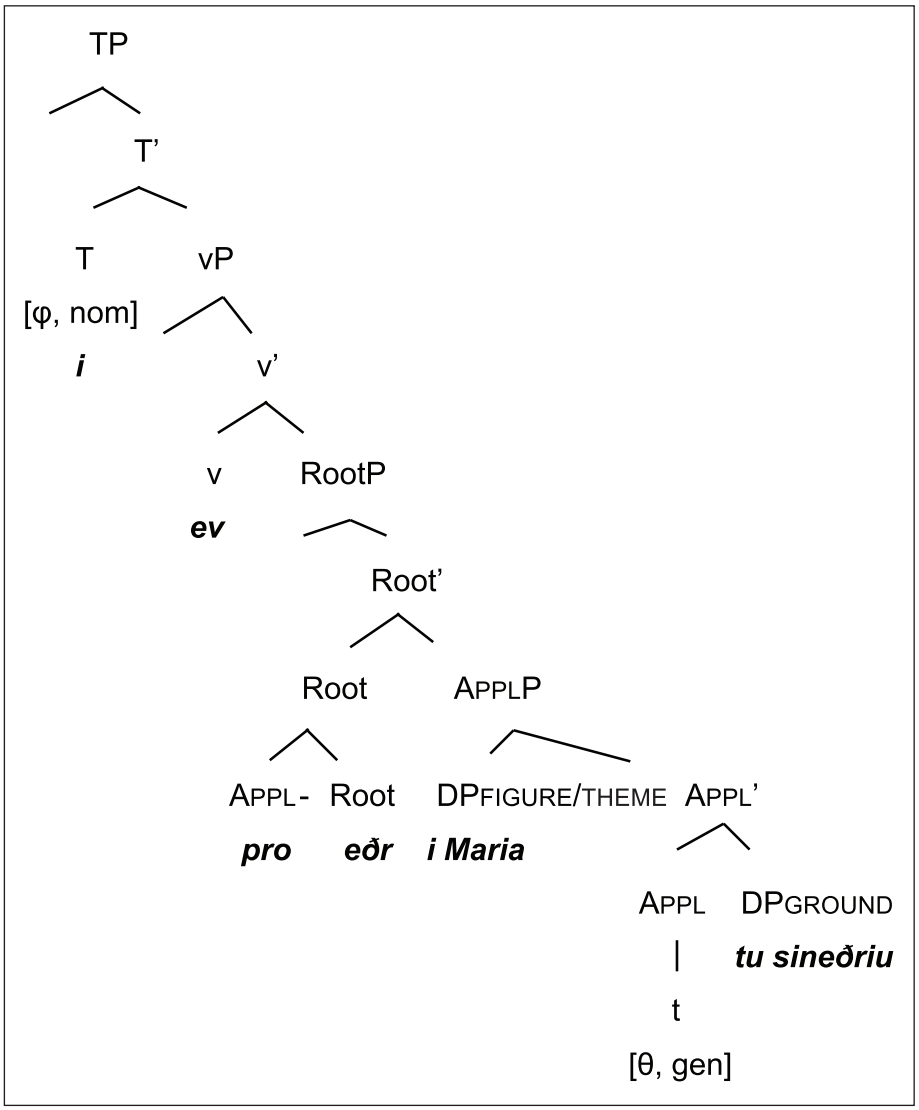
Having motivated our assumptions, we are now in the position to discuss the details of the proposed derivation, which we depict in (38) with the sentence *Proeðrevi i Maria tu sineðriu* 'preside.3SG the Maria.NOM the conference.GEN':

[18] Recall that the prefix is only homophonous with the free standing P. Because it always appears attached on a root, we can safely assume that it has an inherent affixal property.

[19] Depending on the semantics of the predicate, the postulation of an additional Path Prepositional head would also be possible.

[20] Compare, for instance, the grammaticality of the affixal variant of *iper* 'over' in *iperiptame* 'to fly over' with the ungrammaticality of the free variant in **iper tis poleos* 'over the city'.

(38)




In the emerged configuration, the DPGROUND is introduced in the complement position of the applicative head, whereas the DPFIGURE/THEME is introduced in its Specifier. This has a number of advantages. First, we capture straightforwardly the spatial relation that exists between the DPFIGURE/THEME and the DPGROUND (see Svenonius 2004a; 2010). In particular, the DPGROUND expresses a stationary entity (i.e. an entity whose location is fixed in relation to a particular landmark) in relation to which the path, site, or orientation of the DPFIGURE/THEME (a moving or movable entity) is set. This (locative and/or directional) relation is mediated via the APPL head.

Second, we can account for the fact that the DPFIGURE/THEME asymmetrically c-commands into the DPGROUND (but not the other way round) (see Anagnostopoulou 2003; 2005 for use of the *each other* test vis-à-vis GOALS and THEMES):

(39) a. Iperisxise i mia fititria
Prevailed.3SG the one.NOM student.FEM.NOM
tu filu tis alis.
the boyfriend.GEN the other.FEM.GEN
'Each female student prevailed over the other's boyfriend.'

b. *Iperisxise i fititria tu alu
Prevailed.3SG the student.FEM.NOM the other.MASC.GEN
tu enos filu.
the one.GEN boyfriend.GEN
'*The other's female student prevailed over each boyfriend.'

Third, by positioning the two arguments in the same locality domain, we immediately explain why permutation/A-scrambling of the DPGROUND across the DPFIGURE/THEME is possible:

(40) Iperisxise tis mias fititrias o filos tis alis.
Prevailed.3SG the one.GEN student.FEM.GEN the boyfriend.NOM the other.GEN
'The boyfriend of the other one prevailed over each female student.'

This is so, because the proposed configuration abides by the Minimality Condition stated in (41) and widely assumed in the literature (see, in this regard, Anagnostopoulou 2005: 69–70):

(41) If β c-commands α, and τ is the target of movement, then β is closer to τ than α unless β is in the same minimal domain as (i) τ or (ii) a.
(a) [$_{KP}$ Spec2 K [$_{YP}$ Spec 1 Y XP]]
(b) [$_{KP}$ Spec2 Spec1 K [$_{YP}$ Y XP]]

Specifically, it corresponds to (41a), where both the DPGROUND (XP) and the DPFIGURE/THEME (Spec1) are contained within the same minimal domain, and, consequently, the former can move across the latter.

In addition to the above advantages, the suggested configuration explains the properties of locative arguments listed in (34). Let us consider them in turn:

(i) *Case and Theta Role*: We propose that the case and the theta role of the DPGROUND are assigned by the applicative head, which is itself specified for (lexical) case (namely, genitive) and theta role (GROUND/LOCATION). The genitive case is lexical in the sense that, rather than being related to a structural relation such as Agree, it is related to selection by a particular set of lexical predicates: those containing the locative prefix/applicative head. As to the DPFIGURE/THEME, we propose that each component part of the complex theta-role FIGURE/THEME is assigned at a distinct specifier (following in this Ramchand 2008). In particular, the DPFIGURE/THEME receives the FIGURE interpretation in [Spec ApplP], which allows it to be interpreted as an entity located in relation to the DPGROUND. It then moves to [Spec, RootP], where it receives the THEME interpretation, which allows it to be interpreted as the moving/movable entity that undergoes the action denoted by the predicate. This two-step derivation captures the fact that it is the presence of the locative prefix that licenses the FIGURE interpretation of the THEME. When the prefix is absent, then, only a THEME interpretation is possible. The DPFIGURE/THEME then moves to the specifier of an intransitive v,[21] where it receives its Nominative case via

[21] Note that in terms of event structure this intransitive v may be a BE (stative) or BECOME or CAUSE (eventive) predicate (alternatively, a structure may involve more than one v's, neither of which has accusative case/agentive features). This possibility (which does not affect our point) is exemplified below, where (ii) (an eventive predicate) is ambiguous as opposed to (i) (a stative predicate) (see e.g. von Stechow 1996):

(i) O Janis iperechi tis Marias ksana.
The Janis.NOM is.better.than.3SG the Maria.GEN again
'John is better than Mary again.' (*again* modifies the state of John being better than Mary)
(ii) O Janis epikratise tis Marias ksana.
The Janis.NOM prevailed.3SG the Maria.GEN again
'John prevailed over Mary again.' (*again* modifies a CAUSE predicate or a BECOME predicate)

Agree with a T head merged higher up. Note that because the highest v-head is intransitive, it does not carry any case/phi-features that could assign structural (accusative/genitive) case to any of the two internal arguments (on the different flavors of v crosslinguistically, see Arad 1999; for Greek, see Alexiadou, Anagnostopoulou & Schäfer 2006).[22]

(ii) *Lack of Cliticization and other clitic patterns*: To explain the lack of cliticization (and related clitic patterns such as resumption, CD, CLLD, and CLRD, which are all contingent on the presence of a clitic head merged as the highest D-head within the extended nominal projection – see Daskalaki & Mavrogiorgos 2013), we will assume that the applicative head lacks phi-features. In the absence of phi-features, the Agree relation between the applicative head and the (clitic inside the) locative DP fails, and the impossibility of cliticization comes as no surprise (for the claim that cliticization is contingent on Agree, see Mavrogiorgos 2010; Roberts 2010). This effect is demonstrated with the following example:

(42) a. *?Tu iperisxise i Maria tu Jani.
Him.CL.GEN prevailed.3SG the Maria.NOM the John.GEN
'Mary prevailed over him, John.'

b. $[_{TP}$ se T $[_{vP}$ v $[_{RootP}$ isxi Root $[_{ApplP}$ i Maria $[_{App'}$ iper Appl$_{[-phi]}$ $[_{DP1}$ tu cl $_{[+phi/ucase]}$ $[_{DP2}$ tu D $[_{NP}$ Jani]]]]]]]]

In (b), the locative prefix, being void of phi-features (a lexical issue), fails to Agree with the clitic-head, which carries an uninterpretable case feature. As a result, cliticization is ruled out. This hypothesis also explains the fact that direct/accusative and indirect/dative objects can be cliticized, as they both Agree with a v-head carrying phi-features.

(iii) *Lack of Passivization*: The lack of passivization, we suggest, can be related to the fact that our predicates are unaccusatives.[23] Given that unaccusatives are intransitive [-accusative] predicates, the impossibility of passivization comes as no surprise. Evidence for the unaccusativity hypothesis comes from the observation that all of our predicates licence bare plural subjects, patterning in this respect with unaccusative predicates.[24] This is illustrated below with *ekserxome* 'to come out of':

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Example (i) denotes that John is better than Mary now and that this state has been true before (e.g. we may assume that John is a better student than Mary this year and that he was a better student also last year). On the other hand, example (ii) could be felicitous in two situations: (a) If John did something again (e.g. he ran in the local marathon) and as a result he prevailed over Mary (although he has not won over her before); and (b) if John did something yesterday (e.g. he ran in the local marathon) and as a result he prevailed over Mary again (he had won over Mary also last year, when both participated in a baking contest).

[22] An implication of an intransitive v is that promotion of the oblique argument to a direct object would still be out, independently of whether the prefix and the free standing P were the same lexical item or not (as promotion is contingent on the presence of a structural case assigning v-head).

[23] This is not a surprising correlation from a typological perspective, as there are reported cases of unaccusative applicative predicates resisting passivization. For example, Bresnan & Moshi (1990) report that Chichewa has a small class of unaccusative applicative verbs such as *gwera* 'to fall into' that contrary to other applicative verbs in the language fail to passivize.

(i) (Bresnan & Moshi 1990: ex 80 (a,c))
a. Mbuizi y-a-gw-er-a m-chi-tsime.
9 goat 9 SB-PERF-fall-APPL-IND 18-7-well
'The goat has fallen into the well.'
b *M-chi-tsime mw-a-gw-er-edw-a' ndi mbuzi.
18-7-well 18 SB-PERF-fall-APPL-PASS-IND by 9 goat
'The well has been fallen into by a goat.'

[24] In this regard, see Alexiadou & Anagnostopoulou (1997) who propose four structural unaccusativity tests: licensing of bare indefinite subjects, dative clitic raising, causative-anticausative alternation, and possessor extraction. Of the suggested tests the last three seem to be inapplicable for independent reasons. Thus, our predicates do not allow cliticization, they do not display the causative-anticausative alternation, and, finally, they take genitive locative arguments, a fact that favors the reading of a preposed genitive in an example such as (i), as a genitive locative argument rather than as a genitive possessor:

(43) Ekserxonde vuleftes tu ktiriu tis vulis.
Out.come.3PL members.of.parliament.NOM the building.GEN the parliament.GEN
'Members of parliament are coming out of the parliament building.'

Admittedly, once we take semantic criteria into consideration, the picture gets less clear. On the one hand, most of our predicates belong to semantic classes that have been shown to have an unaccusative syntax cross-linguistically (see e.g. Levin & Rappaport-Hovav 1995). That is, they are either verbs of existence (*proiparxo* 'to pre exist', *epizo* 'to survive'*,* *ipertero* 'to prevail'*,* *iperisxio* 'to prevail'*,* *epikrato* 'to prevail') or verbs of inherently directed motion (*ekserxome* 'to come out of').[25] On the other hand, there are three predicates whose semantic class has been linked to unergative syntax (*epiveno* 'to ride on' is a manner of motion verb, *iperiptame* 'to fly over' is a maintain spatial configuration verb, while *proeðrevo* 'to preside' is an agentive activity verb) and two predicates that are reflexives (*iperaminome* 'to defend' and *epofelume* 'to profit from').[26] Independently of whether we decide to analyze these problematic verbs as unergatives or unaccusatives, what is of relevance for our purposes, is that under either analysis, the root is embedded under a [-accusative] v. Significantly, this line of reasoning is compatible with the fact that passivization in Greek is only possible with transitive predicates with a [+accusative/+agentive or +causative] v (see Tsimpli 1989; Anagnostopoulou 2003).

(iv) *Optionality*: The final aspect of our analysis that needs to be discussed concerns the intuition that the GROUND DP is implied, even when it is not phonologically realized. This, we suggest, could be attributed to the fact that the DPGROUND is syntactically projected independently of its phonological realization (for a discussion on null GROUNDS in English see Svenonius 2004a and references therein; for a discussion of implicit arguments and of the debate surrounding their syntactic representation, see Bhatt & Pancheva 2006; Landau 2010).

All in all, in this section we have proposed an analysis which takes the locative prefix to be an applicative affix that introduces an optional DPGROUND. In structural terms, the GROUND is in the complement position of the applicative head, while the FIGURE/THEME DP is in its specifier. In featural terms, this applicative head is special in that it does not carry phi-features (hence the lack of cliticization), but assigns lexical/genitive case to its GROUND complement. On the other hand, the FIGURE/THEME DP is assigned nominative case via AGREE with the higher T head.

Before concluding, it is worth making a digression to motivate an aspect of our analysis that could, in principle, be amenable to a different explanation than the one adopted here. We are referring to our account of agreement failure.

(i) ??Tinos tha epofelithi o aðelfos tu neu nomu jia ta kokina ðania?
Whose FM profit.3SG the brother.NOM the new law.GEN for the red debts.ACC
'Whose brother will profit from the new law on bad mortgages?'

[25] It is not clear to us which semantic class *ipolipome* 'to be inferior', *afistame* 'to abstain', and *proistame* 'to preside' belong to. The bound root *-istame* denotes spatial configuration (= 'to stand', either with a maintain position reading or a simple position reading – the former is considered in the literature to correlate with unergativity, the latter with unaccusativity), while *-lipome* is a bound deponent root with an obscure meaning within the Modern Greek system.

[26] Note that the status of reflexives as unergatives or unaccusatives is far from settled in the literature, as some consider them unaccusatives, some unergatives, and some mixed (see e.g. Alboiu, Barrie & Frigeni 2004; Chierchia 2004; Reinhart & Siloni 2004).

### *4.3 Agreement failure*

In theory, agreement failure could be attributed either to the functional projection of the verbal predicate – this is the view taken here – or to the functional projection of the nominal argument.

Under the former view, AGREE (in the sense of Chomsky 2001) fails, because the functional projection of the verbal predicate lacks an appropriate probe with phi features (Daskalaki & Mavrogiorgos 2013). This is illustrated in (44):

(44) $[_{\text{APPLP}}\ [_{\text{DP}}\ \text{FIGURE/THEME}]\ [_{\text{Appl'}}\ \text{Appl}_{[\text{-phi}]}\ [_{\text{DP}}\ \text{CL}_{[+\text{phi}]}\ [_{\text{DP}}\ \text{GROUND}]]]]$

*AGREE

Under the second view, it fails because the stranded DP is actually c-commanded by a null P, which is an intermediate projection between the incorporated applicative and the DPGROUND. Given that the PP is a phase (McGinnis 2001; Abels 2003), the phi-features of the containing DP are not visible for AGREE. Hence, the lack of cliticization.[27] This is illustrated in (45):

(45) $[_{\text{APPLP}}\ [_{\text{DP}}\ \text{FIGURE}]\ [_{\text{Appl'}}\ \text{Appl}_{[+\text{phi}]}\ [_{\text{PP}}\ \emptyset\ [_{\text{DP}}\ \text{CL}_{[+\text{Phi}]}\ [_{\text{DP}}\ \text{GROUND}]]]]]$

*AGREE

In order to decide between the two possibilities, we need to provide independent evidence for/against the postulation of a null P. To this end we will discuss the evidence coming from three commonly cited diagnostics: *wh*-extraction, locative inversion and coordination. As it will become clear, all three diagnostics suggest that locative arguments in Greek pattern with DPs rather than with PPs.

We will begin with the evidence from *wh*-extraction. It has been argued that sub-extraction out of a null PP is blocked and that this explains the impossibility to extract a goal argument in English (see e.g. Baker 1988):

(46) *Who did you send a letter?

The idea here is that goal arguments are headed by a null P, which prevents its DP complement from being extracted. It follows, that if the locative arguments under consideration were PPs they should resist *wh*-movement. Given that the prediction is not borne out (47), the postulation of the null P cannot be maintained:[28]

[27] This theoretical possibility builds on a long tradition in the literature maintaining that datives – and possibly genitives – are always c-commanded by a (null/overt) P (see Emonds 1985; Bittner & Hale 1996; Řezáč 2008; Caha 2009, among many others). The presence of P has been used to explain various opacity effects observed with oblique arguments, and has led various researchers (see e.g. McFadden 2004; Landau 2009; Baker in press) to propose the reduction of inherent and/or lexical case to the presence of P. As we will see later on, an absolute reduction is not supported by the particular constructions reported in this paper. This suggests that locative lexical case in SMG cannot be reduced to an underlying PP structure.

[28] At first glance, Free Relatives (FRs), that is embedded A'-movement constructions that inherit the syntactic category of the moved pronoun, challenge the conclusion that locative arguments pattern with DPs. Thus, one could argue that the reason why (i) is ungrammatical is because the FR pronoun *opjon* is subextracted out of a null P.

(i) *Sinexarika opjon iperisxises.
congratulated.1SG who.ACC prevailed.2SG
'I congratulated whoever you prevailed over.'

A closer inspection of the data though reveals that its ungrammaticality is more likely related to the case conflict between the matrix predicate 'to congratulate' – which requires accusative – and the relative predicate 'to prevail' – which requires genitive. We know that different languages resolve case conflicts in FRs in different ways. What is of relevance for our purposes is that in Greek, the FR pronoun has to realize the case required by the matrix, whereas the case required by the relative predicate, if genitive, has to be resumed by

(47) Tinos iperisxise o Nikos?
who.GEN prevailed.3SG the Nikos.NOM
'Who did Nick prevail over?'

Let us move on to the evidence from locative inversion. Landau (2009) has argued that locative PPs undergo overt/covert raising to [Spec, TP] in order to check a related feature on T. As a result of this, they display subject properties cross-linguistically. This observation suggests that if genitive GROUNDS in Greek were PPs, they should display subject properties on a par with locative PPs across languages.

Once again, the prediction is not borne out. Greek genitive GROUNDS, pre-verbal and post-verbal alike, fail a series of subjecthood diagnostics, including the ability to control PRO within an absolute construction. This is clearly shown below, where the GROUND argument *tu Petru*, independently of whether it is preverbal as in (48a) or post-verbal as in (48b), fails to co-refer with the PRO of the preceding absolute construction.[29]

(48) a. [Akuγondas $PRO_{i/*j}$ tin istoria] tu $Petru_j$ iperaminθike
Hearing $PRO_{i/*j}$ the story.ACC the Peter.GEN over.defended.3SG
i $Maria_i$
the Maria.NOM
'While she was listening to the story, Mary defended Peter.'

b. [Akuγondas $PRO_{i/*j}$ tin istoria] i $Maria_i$ iperaminθike
Hearing $PRO_{i/*j}$ the story.ACC the Maria.NOM over.defended.3SG
tu $Petru_j$.
the Peter.GEN
'While she was listening to the story, Mary defended Peter.'

Following Landau's (2009) reasoning, the fact that genitive locative arguments do not display subjecthood properties suggest that they cannot be headed by a null P. Unfortunately, the evidence from this diagnostic is weakened by the observation that in SMG, overt PPs do not display subjecthood properties either (49):

(49) a. [Akuγondas $PRO_{i/*j}$ tin istoria] iper tu $Petru_i$ milise
Hearing $PRO_{i/*j}$ the story.ACC in.favor.of the Peter.GEN talked.3SG
i $Maria_j$.
the Maria.NOM
'While she was listening to the story, Mary talked in favor of Peter.'

b. [Akuγondas $PRO_{i/*j}$ tin istoria] i $Maria_i$ milise
Hearing $PRO_{i/*j}$ the story.ACC the Maria.NOM talked.3SG
iper tu $Petru_j$.
in.favor.of the Peter.GEN
'While she was listening to the story, Mary talked in favor of Peter.'

means of a clitic (see Philippaki-Warburton & Stavrou 1986; Alexiadou & Varlokosta 1997; Daskalaki 2008, among others). Given that in (i) the internally required genitive can be realised neither by the FR pronoun, nor by means of a resumptive clitic (recall that locative arguments cannot be cliticized for independent reasons) the derivation crashes. Evidence in support of this explanation comes from the fact that the FR is rendered grammatical in case matching examples such as (ii), where both predicates require genitive (see Daskalaki 2008):

(i) Iperisxisa opju iperisxises.
Prevailed.1SG who.GEN prevailed.2SG
'I prevailed whoever you prevailed over.'

[29] The test is adapted from Anagnostopoulou (1999). Anagnostopoulou applies a number of subjecthood tests to show that dative EXPERIENCERS in Greek behave on a par with subjects in certain respects.

More helpful is the evidence coming from co-ordination. Thus, Jaeggli (1982), building on Vergnaud (1974), shows that coordinated PPs may not serve as the head of a relative clause which functions as a derived collective predicate. Based on this diagnostic, Anagnostopoulou (2005) shows that Greek GOALS/BENEFICIARIES introduced by *se* 'to' are indeed PPs. This is because a conjunction of *se* goals can only marginally be assigned a group interpretation (50a). By contrast, a conjunction of DPs, headed by *se,* is well-formed under the same interpretation (50b).

(50) (Anagnostopoulou 2005: ex. 125a–b)

a. ??Estilan γramata ston anðra ke sti γineka
Sent.3PL letters.ACC to.the man.ACC and to.the woman.ACC
pu zusan mazi.
that were.living.3PL together
'They sent letters to the man and to the woman who were living together.'

b. Estilan γramata ston anðra ke ti γineka
Sent.3PL letters.ACC to.the man.ACC and the woman.ACC
pu zusan mazi.
that were.living.3PL together
'They sent letters to the man and the woman who were living together.'

What is of interest for our purposes is that Greek genitive GROUNDS behave on a par with DPs with respect to this diagnostic:

(51) Stus aγones epikratise tu anðra ke tis γinekas
In.the games.ACC prevailed.3SG the man.GEN and the woman.GEN
pu zusan mazi.
that lived.3PL together
'In the games, she prevailed over the man and the woman who were living together.'

In view of the problems associated with the postulation of a null P, we will conclude that the properties of Greek locative arguments (genitive case, ground theta role, and lack of passivization) are related to the featural composition of the locative applicative.[30]

## 5 PP Alternates

In our discussion so far, we have focused on locative predicates taking locative DP arguments and we have argued that they are prefixed by a semantically/syntactically active applicative head. In this section, we will consider the emergence of a novel, less formal configuration, in which the same predicates are followed by locative PPs rather than by locative DPs. In these cases, we argue, the prefix of the locative predicate has undergone a significant degree of grammaticalization, in the sense that it has lost its syntactic (case and theta assigning) and semantic (spatial) properties (see Dimela & Ralli 2012 for the properties of grammaticalization in Greek prefixation; see also Narrog & Heine 2011 for an introduction into the various aspects of grammaticalization phenomena). Grammaticalization has resulted in the creation of a novel verb with different syntax and less transparent semantics. In what follows, we will first present the data and we will then provide evidence in support of our hypothesis.

[30] As pointed out to us by an anonymous reviewer, Gehrke and Lekakou (2013) have shown, on the basis of bare accusative locative nouns (cf. e.g. the example *pao platia* = go.1SG square.ACC 'I go to the square'), that Greek does not possess a null P in its inventory of Ps. This fact constitutes a further argument that Greek does not have null Ps even when a locative meaning is implicated in the structure.

As already mentioned, all the predicates discussed in section 2 allow their locative DP to be replaced by a prepositional PP. The two possibilities are illustrated with *proeðrevo* 'to preside over' in (52), whereas a complete list of the attested possibilities is given in Table 2.

(52) a. Proeðrevi tu simvuliu.
Preside.3SG the meeting.GEN
'She presides over the meeting.'
b. Proeðrevi sto simvulio.
Preside.3SG at.the meeting.ACC
'She presides at the meeting.'

For each one of the locative predicates, Table 2 provides the prepositional variants reported in Babiniotis (1998) – a well-regarded dictionary of SMG – as well as those ones attested in recent online documents (primarily newspapers). The latter ones were gathered through a Google search and are illustrated with complete (numbered) examples in the Appendix (X denotes unavailability). [31]

The hypothesis that the prefix of predicates combining with PPs has undergone grammaticalization is supported by a number of considerations. First of all, cross-linguistically, *overtly* realized applicative heads introduce, to the best of our knowledge, DPs. Thus, arguing that in examples such as (52b) above, the locative prefix is an applicative that licenses a locative PP would be odd from a typological perspective.[32]

But even if we set the cross-linguistic perspective aside, there is language specific evidence suggesting that the prefix of predicates combining with PPs is syntactically/semantically impoverished compared to the prefix of predicates combining with DPs. First, the locative PP shows a wider distribution than the locative DP. As illustrated in (53) below, the PP *apo ti vuli* 'from the Parliament' is equally grammatical with the complex predicate *ekserxome* 'to come out' (53a) – that consists of the prefix *ek-* 'out' and the verb *erxome* 'to come' – and with the simple predicates *erxome* 'to come' (53b) and *vjeno* 'to come out' (53c).

(53) a. O proθipurγos eksilθe apo ti vuli.
The prime.minister.NOM out.came.3SG from the parliament.ACC
'The Prime Minister came out of the Parliament.'
b. O proθipurγos ilθe apo ti vuli.
The prime.minister.NOM came.3SG from the parliament.ACC
'The Prime Minister came from the Parliament.'
c. O proθipurγos vjike apo ti vuli.
The prime.minister.NOM came out.3SG from the parliament.ACC
'The Prime Minister came out of the Parliament.'

[31] Note that there are complex locative verbs, not included in our list, that have completely lost their ability to combine with locative DPs. This is, for instance, the case with *kataferome* 'to express oneself negatively against', which at least etymologically consists of the prefix *kata* 'towards/against' and the verb *ferome* 'to bring myself':

(i) a. ??*Kataferete tis kivernisis.
Against.bring.himself.3SG the government.GEN
b. Kataferete kata /enandion tis kivernisis.
Against.bring.himself.3SG against(formal) /against(informal) the government.GEN
'He expresses himself negatively against/attacks (verbally) the government.'

[32] Even though there are studies showing that PPs can be introduced by null applicatives (see Anagnostopoulou 2005), we are not aware of any study showing that they can be introduced by overt applicatives.

| | Babiniotis (1998) | Google Search |
|---|---|---|
| ***epi**krato* 'to prevail' | X | *epi* 'on' (1)<br>*enandi* 'in relation to' (2)<br>*enandion* 'against' (3)<br>*kondra se* 'against' (4) |
| ***epi**lamvanome* 'to take on' | X | *epi* 'on' (5)<br>*se* 'at' (6) |
| ***epi**veno* 'to ride' | *se* 'at' | *epi* 'on' (7)<br>*pano se* 'on'; literally: 'above on' (8)<br>*se* 'at' (9) |
| ***ep**ofelume* 'to profit' | *apo* 'from' | *apo* 'from' (10) |
| ***epi**zo* 'to survive' | *apo* 'from' | *apo* 'from' (11) |
| ***eks**erxome* 'to come out' | *apo* 'from' | *apo* 'from' (12) |
| ***iper**aminome* 'to defend' | X | *iper* 'in favor of' (13) |
| ***iper**iptame* 'to fly over' | X | *pano apo* 'above/over'; literally: 'above from' (14) |
| ***iper**isxio* 'to prevail' | X | *apo* 'from' (15)<br>*enandi* 'in relation to' (16)<br>*enandion* 'against' (17) |
| ***iper**tero* 'to prevail/be better' | X | *apo* 'from' (18)<br>*enandi* 'in relation to' (19) |
| ***ipo**lipome* 'to be inferior' | *enandi* 'against' | *apo* 'from' (20)<br>*enandi* 'in relation to' (21) |
| ***kat**isxio* 'to prevail' | | *enandi* 'in relation to' (22) |
| ***pro**iparxo* 'to preexist' | X | *prin (apo)* 'before'; literally: 'before (from)' (23)<br>*apo* 'from' (24) |
| ***pro**eðrevo* 'to preside; to be in charge' | *se* 'in/at' | *se* 'at' (25) |
| ***pro**istame* 'to preside; to be in charge' | X | *se* 'at' (26) |
| ***af**istame* 'to abstain; to be far' | *apo* 'from' | *apo* 'from' (27) |

**Table 2**: Locative verbal predicates with PPs.

In this respect, it differs from its DP counterpart *tis vulis* 'the parliament' whose locative interpretation and overall grammaticality is clearly contingent on the presence of the locative prefix.

(54) a. O proθipurγos eksilθe tis vulis.
The prime.minister.NOM out.came.3SG the parliament.GEN
'The Prime Minister came out of the Parliament.'

b. *O proθipurγos ilθe tis vulis.
The prime.minister.NOM came.3SG the parliament.GEN
'The Prime Minister came from the Parliament.'

c. *O proθipurγos vjike tis vulis.
The prime.minister.NOM came out.3SG the parliament.GEN
'The Prime Minister came out of the Parliament.'

What the above contrast suggests is that whereas in (54a) the locative meaning and correlated syntax (i.e. theta role, case) are located entirely on the prefix *ek-* (and as a result, on the verbal predicate), in (53a) the locative meaning and syntax are located partially on the verbal predicate *ekserxome* (it means 'come out' and it selects a directional PP complement) and partially on the preposition *apo* 'from' (it assigns structural case to the DP complement and it also theta-marks it in association with the main predicate – see Pesetsky 1982). In other words, the prefix of PP predicates is syntactically impoverished compared to the prefix of DP predicates.

Further evidence in support of the grammaticalization hypothesis comes from the observation that in many cases the P-head of the locative PPs spells out a semantic relation close to the original one expressed by the prefix. By way of illustration, we may consider the verbs *iperaminome* 'to defend' (55) and *iperiptame* 'to fly over' (56).

(55) Iperaminθike iper tis kivernisis.
In.favor.of.defended.3SG in.favor.of the government.GEN
'He defended the government'

(56) Iperiptate pano apo tin poli.
Over.fly.3SG above from the city.ACC
'He flies over the city.'

Both verbs are prefixed by *iper-* 'over; in favor of'. The first one is followed by a PP headed by the preposition *iper* 'in favor of', which replicates the metaphorical interpretation of the homophonous prefix, whereas the second one is followed by a PP headed by the complex preposition *pano apo* 'over' which replicates the literal interpretation of the locative prefix.[33] The replication of the locative meaning by the preposition suggests that the prefix has started to lose part of its semantic (locative) content.[34]

If we are right that in the PP cases the locative prefix has undergone grammaticalization giving rise to a novel verb, the next question that arises is whether the novel verb takes the locative PP as an argument or an adjunct. The evidence coming from argumenthood

[33] Because the preposition *iper* has not retained its literal meaning 'over', the variant given in (i) is not, synchronically, an option:

(i) *Iperiptate iper tis polis
Over.fly.3SG over the city.GEN
'He flies over the city.'

[34] In this respect, note that grammaticalization is commonly found with derivational morphemes cross-linguistically, and is independently attested in the diachrony of Greek as a process that has given rise to roots that are embedded within an intransitive, transitive, or ditransitive verbal structure, or within a nominal structure (see Ralli 2005 and references therein). For example, SMG uses various prefixes (*en-*, *sin-*, *meta-*, *ana-*, *iper-*, *epi-*, etc.) which are semantically and syntactically empty (and hence may be embedded within various structures). Example (i) below illustrates that the prefix *pro-* (which is homophonous with the locative prefix *pro-* in the locative predicate *proiparxo* 'to preexist') has no locative or other meaning when it is combined with the verb *kovo* 'to cut', giving rise to a novel intransitive verb *prokovo* 'to do well' (that *pro* is a prefix is supported by the fact that the stem may appear on its own and also by the fact that the same prefix may combine with other stems - cf. *pro-vlepo* 'to predict'; *pro-exo* 'to come first/be more urgent or important ; *pro-trexo* 'to be hasty'. See also Ralli 2004 for similar arguments regarding what she calls Class II preverbs in Greek):

(i) I Maria ekopse tin korðela vs. I Maria prokopse.
The Maria.NOM cut.3SG the ribbon.ACC vs. The Maria.NOM *pro*.cut.3SG
'Mary cut the ribbon vs. Mary did well (in her life).'

Example (ii) illustrates the same effect with a nominal base:

(ii) xoma vs. anaxoma
earth vs. mound

diagnostics reveals a non-uniform picture. On the one hand, one can show that the meaning of the DP which is introduced by P may also be dependent on the verbal predicate. Such semantic dependency is considered to be characteristic of theta-role assignment (see Marantz 1984). For example, in (57a) the PP *apo ton Kosta* 'from Kostas' is semantically dependent on the verbal predicate (its meaning is that of a GROUND in relation to which the FIGURE/THEME is metaphorically located), hence it is an argument. On the other hand, in (57b) the PP *sto staðio Irinis ke Filias* 'the stadium of Peace and Friendship' can only be interpreted as an optional location which modifies the whole event (an adjunct), but crucially not as a GROUND.

(57) a. I Maria iperisxise apo ton Kosta.[35]
The Maria.NOM prevailed.3SG from the Kosta.ACC
'Mary prevailed over Kostas.'
b. I Maria proeðrevi sto staðio
The Maria.NOM presides.3SG at.the stadium.ACC
Irinis ke Filias.
Peace.GEN and Friendship.GEN
'Mary presides inside the stadium of Peace and Friendship.'

Syntactic diagnostics also give rise to a mixed picture. On the one hand, there are verbs like *epikrato* 'to prevail', whose PP displays adjunct like properties: It can be headed by a range of synonymous prepositions (*epi/enandi/enandion/kondra se* 'against/over') and, in addition, it can be exempted from VP ellipsis:

(58) O Olimbiakos epikratise enandi tu Panaθinaiku,
The Olimbiakos.NOM prevailed.3SG against the Panaθinaikos.GEN
ke to iðjo ekane ke i AEK enandi tu PAOK.
and the same did.3SG and the.NOM AEK against the.GEN PAOK
'Olimbiakos prevailed over Panathinaikos, and AEK did so over PAOK.'

On the other hand, there are verbs like *ekserxome* 'to come out' whose PP appears to pattern with arguments with respect to both diagnostics: Thus, it can be headed by a single preposition (*apo* 'from') and it cannot be exempted from VP ellipsis.

(59) ??O Petros eksilθe apo tin anatoliki pteriɣa,
The Petros.NOM out.came3SG from the.ACC east.ACC wing.ACC
ke to iðjo ekane o Kostas apo ti ðitiki.
and the same did.3SG the Kostas.NOM from the.ACC west.ACC
'??Peter came out of the east wing and Kostas did the same out of the west wing.'

All in all, what we see here is that a locative PP, which may or may not complement the verbal predicate, shows up when the prefix has lost part or all of its semantic/syntactic properties. As already mentioned in section 2, it is possible that the emergence of this novel construction results from the native speaker's attempt to integrate a non-productive set of applicative verbs into the existing system. Thus, the speaker resorts to the reanalysis of locative applicative prefixes as syntactically/semantically inactive morphemes and to

[35] According to an anonymous reviewer (57a) is ungrammatical, while (15) in the Appendix is only slightly better. As the reviewer points out, the existence of substantial speaker variation further corroborates the hypothesis that we are dealing with change in progress.

the expression of the locative relationship by means of independently available analytic expressions (i.e. PPs).[36]

## 6 Conclusions

To conclude, SMG, an Indo-European language which normally uses a P predicate to express location, has a restricted set of morphologically complex predicates that belong to a formal register and that behave like locative applicative constructions. In particular, these predicates involve an overt locative prefix which, when added to an intransitive root, introduces an optional locative DP argument with lexical genitive case and the theta-role GROUND. We have argued that the locative prefix cannot be identified with an independently available homophonous free P (although the two might be related at earlier stages of the language, an issue for further research). This fact combined with the lack of an underlying PP input and the fact that the root is not an accusative case assigner makes a P-incorporation/promotion analysis extremely unlikely. Regarding certain morpho-syntactic properties of the locative argument (such as lack of cliticization or passivization), we argued that these are related to the featural make up of the applicative prefix (and not to the structural/PP status of the locative argument). Finally, we showed that locative predicates may also combine with a PP argument or adjunct (depending on the predicate), which constitutes a novel, informal, analytical environment, and which correlates with loss of semantic and syntactic content from the locative prefix (via grammaticalization).

These findings are of typological interest as they show that SMG, in addition to the relatively well studied type of null applicatives that encode the theta roles of goal, maleficiary and beneficiary (Anagnostopoulou 2003; 2005; Georgala 2012; Michelioudakis 2012), has a restricted set of overt locative prefixes that display an applicative-like behaviour. How exactly these prefixes compare with overt locative applicatives that are productive in African and Native American languages (see, e.g. Bresnan & Moshi 1990 for Bantu languages; Beck 2009 for Salish) and how common it is for languages to combine overt analytic (adpositions) and synthetic devices (applicatives) of encoding location are interesting questions that require a systematic cross-linguistic comparison. Given though that both devices have the same function, it seems reasonable to hypothesize that languages that make an equally productive use of both them are less common than languages that only use one of the two, or both but in different degrees.

In addition to its typological interest, our study has interesting theoretical implications. Thus, it suggests that applicative morphemes do not only vary in terms of their structural position within the clause (high vs. low), but also in terms of their featural make-up (see e.g. Anagnostopoulou 2003; 2005 for Greek low applicatives; Arad 1999 for flavors of v cross-linguistically). This is compatible with the Chomsky-Borer conjecture that linguistic variation is located in the functional Lexicon, and it follows directly from the nature of AGREE.

Equally importantly, our analysis implies that not all oblique arguments taking inherent and/or lexical case (also known as semantic case) can be analysed as PPs. In particular, we argue that lexical case is assigned to an argument when the latter is selected by a particular flavor of v head, an assumption that is fully compatible with structural approaches to case (e.g. Marantz 1992). Of course, this does not entail that there are no instances of

[36] This hypothesis appears to be consistent with Alexiadou & Anagnostopoulou (2015) who, building on Asyllogistou's (2013) work on motion verbs, argue that SMG is in a state of transition from a weak satellite language – that is a language that construes Paths through prefixes – to a weak verb-framed language – that is a language that construes Paths through verbal roots that combine with Path denoting PPs. The transition is analyzed as the result of syntactic, phonological, and perhaps semantic weakening of the prefix that, synchronically, combines into one element with the root.

inherent and/or lexical case which may be reducible to the categorial status of the case-marked DP. Rather, it means that what renders a DP structurally case-marked or not (in terms of its morpho-syntactic behavior, such as passivization, cliticization, agreement, etc.) may be related to more than one structural strategy (e.g. an applicative morpheme, a P/p predicate, or a K morpheme). In this case, the question that arises is whether all these strategies are reducible to a single underlying strategy or not, and if yes in what way exactly.

Accordingly, the development of novel uses for the locative predicates shows that both applicative morphemes and P/p predicates (and K morphemes, for that matter) contain semantic/syntactic information, which may license a spatial argument. What varies is the morphological realization (which is language specific, and clearly influenced from diachrony), but also the domain in which such a morpheme belongs to (e.g. nominal domain, verbal domain, or an independent domain projected by an additional predicate).[37] In this regard, further empirical and theoretical evidence may be provided by a cross-linguistic comparison of locative morphemes (including, affixes, particles, case, and P/p-predicates), as they seem to differ morpho-syntactically and semantically in various respects (see e.g. Svenonius 2004b for aspect and case in Slavic prefixes; Wilhelm 2007 for German particles).

## Abbreviations

1 = first person, 2 = second person, 3 = third person, ACC = accusative, CL = clitic, FEM = feminine, FM = future marker, GEN = genitive, MASC = masculine, NOM = nominative, PASS = passive, PL = plural, SG = singular, SUBJM = subjunctive marker. For the Kichaga examples, we follow the conventions of Bresnan and Moshi (1990). These include: Arabic Numbers = Noun Classes, Ap = Applicative, Foc = focus, Fv = Final Vowel, Loc = Locative, Pr = Present, S = Subject.

## Supplementary Files

The supplementary material for this article can be found here:

- **Supplementary File 1:** Appendix. http://dx.doi.org/10.5334/gjgl.74.s1

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## Competing Interests

The authors declare that they have no competing interests.

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[37] In this respect see Botwinik-Rotem (2004), who discusses the morpho-syntax and semantics of various types of Ps in English and Hebrew.

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