

# REFLEXIVITY AND EXTERNAL ARGUMENT INTRODUCTION: INSIGHTS FROM GREEK<sup>\*</sup>

Lefteris Paparounas  
*Université du Québec à Montréal*  
paparounas.lefteris@uqam.ca

Winter 2024

## ABSTRACT

In Greek, verbal reflexives share their morphology with passives and passive-like structures. This paper brings to light a number of novel generalizations supporting the idea that this instance of formal overlap follows from a shared syntax. Greek verbal reflexives look like passives and their ilk because they have the syntax thereof: they are true unaccusative reflexives, with a single syntactic argument originating low. This state of affairs is argued to follow from a view treating (verbal) reflexivity as a type of external argument introduction, supporting the existence of reflexivizing Voice.

**Keywords:** reflexives; Voice; unaccusativity; argument structure

## 1 INTRODUCTION

This paper is concerned with the relation between reflexivity and the introduction of the external argument in syntax. I approach this issue through the lens of languages exhibiting a type of *Voice syncretism*, where the verbal morphology that realizes passives also realizes other structures opposed to the active, including unaccusatives, middles, experiencer verbs and, importantly, verbal reflexives and reciprocals. I focus more specifically on Modern Greek, arguably a textbook case of Voice syncretism, whose verbal reflexives have nonetheless eluded careful scrutiny from a syntactic point of view.

At its broadest, the main claim of the paper is that the link between verbal reflexivity and the introduction of the external argument can be particularly intimate: in Greek(-type languages), verbal reflexivity amounts to a kind of external argument introduction, that is, a kind of grammatical voice.

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<sup>\*</sup>This work has benefitted greatly from discussions with David Embick, Julie Anne Legate, Martin Salzmann, and Florian Schwarz. For helpful comments and suggestions, I also thank Alexandros Kalomoiros, Faruk Akkuş, Artemis Alexiadou, Elena Anagnostopoulou, Byron Ahn, Johanna Benz, Shannon Bryant, Chris Collins, Bob Frank, Matt Hewett, Richard Kayne, Jason Merchant, Sreekar Raghotham, Milena Šereikaitė, Dominique Sportiche, Gary Thoms, Alexander Williams, Jim Wood, and audiences at LSA 2022, PLC 46, CLS 58, the Yale University Syntax Reading Group, Istanbul Aydın University, NYU Syntax Brown Bag, UQAM, UCL, and the UMass Amherst syntax group. I am also grateful to Yiannis Dakoumis, Efe Galiatsou, Alexandros Kalomoiros, and Konstantinos Paparounas for lending their judgments. All errors are mine.

25 This conclusion is reached on the basis of a careful examination of the argument structure of  
26 Greek verbal reflexives, as in (1).<sup>1,2</sup>

- 27 (1) I Maria afto- ðiafimiz- etc.  
the.NOM Mary.NOM REFL advertise 3SG.NACT  
28 ‘Mary promotes herself.’

29 Three core questions arise regarding the structure of examples like (1) in the language.

- 30 (2) *Questions on the morphosyntax of Greek verbal reflexives*  
31 a. VOICE MORPHOLOGY: Why are verbal reflexives always inflected with nonactive mor-  
32 phology?  
33 b. TRANSITIVITY: How many arguments are involved in the argument structure of verbal  
34 reflexives?  
35 c. STATUS OF THE SURFACE SUBJECT: Where does the surface subject of verbal reflexives  
36 originate?

37 (2a) is a question about the morphology of verbal reflexives. As we will see shortly, in Greek, verbal  
38 reflexives systematically surface with the morphology of passives and related structures. Being not  
39 only an exceptionless generalization Greek-internally, but also a widespread cross-linguistic fact (see  
40 esp. Geniušienė 1987), this observation deserves a principled explanation.

41 (2b) concerns the status of the reflexivizing element: in the case at hand, is *afto-* in (2) an  
42 anaphoric argument bound by *Mary* in a transitive structure, or is the structure really intransitive,  
43 with *afto-* being somehow a marker of reflexivization, rather than an anaphoric argument? Finally,  
44 (2c) asks about the exact configuration of the argument or arguments: in (2), what position does  
45 *Mary* originate in?

46 As discussed early in section 3, previous work on Greek has not always addressed this question di-  
47 rectly, owing to considerable difficulties with argument-structural diagnostics in the language. Such  
48 diagnostic difficulties are by no means specific to the case of Greek; indeed, verbal reflexives often  
49 pose empirical challenges cross-linguistically. Some of the difficulties with approaching (2c) in par-  
50 ticular arise from the fact that diagnostics for unaccusativity/unergativity often target the presence  
51 of an agentive entailment, without necessarily being sensitive to the syntactic position of an argu-  
52 ment; the two are often difficult to tease apart. Verbal reflexives thus represent a case where there  
53 is considerable room for refinement of existing diagnostics; the present work contributes empirical  
54 refinements of this kind for a language thought to be famously uncooperative in this regard, Greek,

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<sup>1</sup>Judgments are the native speaker author’s, and have been confirmed with four native speaker consultants, of whom one is a linguist; many examples have also been verified by several Greek-speaking audience members at major linguistics conferences. Points of divergence in judgments between consultants are noted where they occur; it is worth noting that judgments have generally been remarkably uniform across consultants.

<sup>2</sup>Glossing abbreviations: **NACT** = non-active, **ACT** = active, 1 = first person, 2 = second person, 3 = third person, **ACC** = accusative, **COMP** = complementizer, **DAT** = dative, **F** = feminine, **GEN** = genitive, **IMP** = imperative, **M** = masculine, **N** = neuter, **NEG** = negative, **NMLZ** = nominalizer, **NOM** = nominative, **PFV** = perfective, **PL** = plural, **POSS** = possessive, **PST** = past, **RECIP** = reciprocal, **REFL** = reflexive, **SG** = singular.

bringing to light a range of novel empirical generalizations on both the valency of verbal reflexives and the status of their surface subject.

On the basis of these generalizations, the paper undertakes a sure-footed investigation of what reflexive verbs in systems with Voice syncretism might entail for the theory of verbal reflexivity more broadly. The result of this investigation clarify the empirical picture in the direction of what, in much previous work on the language, had remained largely at the level of conjecture: Greek verbal reflexives instantiate a case of a true unaccusative reflexive. Their surface subject thus originates *vP*-internally; additionally, it is the only syntactically realized argument in the structure, with *afto*- itself being a reflexivizing morpheme, not an argument in itself.

Reflexives in Greek, then, bear the morphology also borne by passives and (many) unaccusatives because they have the syntax of passives and unaccusatives.<sup>3</sup> I thus argue that, like passivization, unaccusativity, and their ilk, verbal reflexivity is a phenomenon arising at the level of the introduction of the external argument.

The specific implementation of this intuition assumes a theory where the introduction of the external argument in syntax is *delexicalized* (Alexiadou, Anagnostopoulou, & Schäfer 2015; Embick 1997; Harley 1995; Kratzer 1996; Legate 2014; Pylkkänen 2008: e.g.). In the context of such a theory, I propose that the external argument-introducing functional head, Voice, must be able to effect reflexivization without introducing a syntactic argument (with e.g. Bruening 2006; Labelle 2008; McGinnis 2022; Oikonomou and Alexiadou 2022; cf. Alexiadou 2014b; Spathas et al. 2015; for related ideas in anaphor binding, see e.g. B. T. Ahn 2015; Kallulli and Roberts 2023; Kratzer 2009; Murphy and Meyase 2022; Paparounas and Akkuş 2023). Languages with Voice syncretism, like Greek, are particularly revealing of this connection between reflexivity and Voice (see also Beavers & Udayana 2023; Embick 2004b; Key 2021a, to appear; Lidz 1996, 2001; Raghotham 2022b).

Though similar analyses might be pursued under different starting assumptions, it bears emphasizing that the emergence of a reflexive interpretation from a single-argument structure is incompatible with certain views of argument structure. Specifically, the generalizations uncovered here do not seem in line with any theory that takes the binding of a reflexive pronoun as the only way to arrive at a reflexive interpretation, as some theories assuming the Uniformity of Theta-Role Assignment Hypothesis might. At the same time, the demonstration that Greek reflexives are intransitive unaccusatives speaks out against the position that unaccusative reflexives do not exist, a hallmark of some theories of ‘lexical’ reflexivization (Chierchia 2004; Reinhart and Siloni 2004, 2005; cp. Bresnan 1982; Grimshaw 1982).

Though advanced here specifically for the case of Greek, the analysis has consequences for a range of broader issues concerning Voice, reflexivity, and the relationship between the two. Notably, it enriches the typology of Voice from the perspective of verbal reflexives; informs the proper analysis of Greek-type Voice syncretism; and reinforces the conclusion that verbal reflexivity is dissociable from pronominal reflexivity. I elaborate on these broader conclusions in section 5.

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<sup>3</sup>This paper thus builds on the insights of Alexiadou (2014b), Embick (1998, 2004b), Spathas, Alexiadou, and Schäfer (2015), but offers for the first time concrete empirical arguments in favor of the unaccusative analysis for Greek. At the same time, this paper takes a sharply different stance from Alexiadou (2014b) and Spathas et al. (2015) in taking *afto*- to be a proper reflexivizer (see section 4.2).

The paper is structured as follows. [Section 2](#) provides essential background on Greek voice syncretism, before introducing Greek verbal reflexives and the puzzle at hand. [Section 3](#) motivates at length a particular implementation of this analysis for the case of Greek, providing a range of novel empirical arguments suggesting that *i*) Greek verbal reflexives have a single syntactic argument, and *ii*) this argument originates as a deep object. [Section 4](#) shows how the syntax, morphology and interpretation of Greek verbal reflexives follow from the presence of a reflexivizing Voice head, and argues that further support for the presence of this element comes from the thematic restrictions obeyed by *afto*- reflexives; [Section 4](#) also offers explicit arguments against an ‘incorporation’ analysis of the reflexivizer *afto*-. [Section 5](#) concludes and discusses broader implications of this study.

## 2 BACKGROUND: REFLEXIVES IN VOICE SYNCRETISM

### 2.1 VOICE SYNCRETISM

In Greek, verbal morphology is intimately tied to syntactic argument structure. For instance, the language uses verbal morphology to set apart active from passive structures, as shown in (3). (3a) is a typical active transitive; (3b) is the corresponding passive, showing promotion of the theme to surface subject and optional expression of the agent as a *by*-phrase (for Greek passives, see among many others Alexiadou et al. 2015; Alexiadou & Doron 2012; Lascaratou & Philippaki-Warbuton 1983; Manzini, Roussou, & Savoia 2016; Smirniotopoulos 1991; Warburton 1975). Importantly, the change from active to passive syntax is accompanied by a change in morphology: the passive is set apart from active morphology by means of a distinct set of *nonactive* exponents. In the case of (3), the active/nonactive distinction surfaces on the agreement exponents.<sup>4</sup>

#### (3) Active vs. passive

- a. I ylosoloji sineça anaptis- un perierjes  
the.PL.NOM linguist.PL.NOM constantly  $\sqrt{\text{DEVELOP}}$  3PL.**ACT** strange.PL.ACC  
theories.  
theory.PL.ACC  
‘Linguists constantly develop strange theories.’
- b. Perierjes theories anaptis- onde sineça (apo ylosoloyus).  
strange.PL.NOM theory.PL.NOM  $\sqrt{\text{DEVELOP}}$  3PL.**NACT** constantly from linguist.PL  
‘Strange theories are constantly developed (by linguists).’

*Voice syncretism* amounts to a crucial observation regarding the distribution of non-active morphology: alongside passives (3b), nonactive morphology is also recruited to express other structures opposed to the active (see among others Alexiadou et al. 2015; Embick 1998, 2004b; Oikonomou and Alexiadou 2022; Paparounas 2023b; Rivero 1990; Tsimpli 1989). Thus, (many) unaccusative verbs

<sup>4</sup> Note that the Greek active/non-active distinction is never realized directly on the head Voice where it originates, surfacing instead on peripheral suffixes through **allomorphy**; see Paparounas 2023a for details and analysis. As shown therein, analytically, the ‘active’ exponents are really defaults, with only the nonactive exponents being true Voice-sensitive allomorphs. In examples, I consistently underline the language’s ‘active’ exponents and bold the nonactive ones.

look morphologically identical to passives (4), as do dispositional middles (5) and subject experiencer verbs (6).

(4) *Unaccusative*

Ta fita ðen anaptis- onde apo mona tus.  
the.PL.NOM plant.PL.NOM NEG  $\sqrt{\text{DEVELOP}}$  3PL.NACT from alone.PL their

‘Plants don’t grow on their own.’

(5) *Middle*

Afta ta vivlia ðiavaz- onde efkola.  
this.PL.NOM the.PL.NOM book.PL.NOM  $\sqrt{\text{READ}}$ - 3PL.NACT easily

‘These books read easily.’

(6) *Experiencer verb*

Ta peðja fov- unde to skotaði.  
the.PL.NOM child.PL.NOM  $\sqrt{\text{FEAR}}$  3PL.NACT the.ACC dark.ACC

‘Children are afraid of the dark.’

This type of Voice syncretism, where the morphology neutralizes a range of fine-grained syntactic distinctions into a binary active/non-active opposition, is cross-linguistically very common, with some variation on the exact subset of categories being realized as non-active (see Bahrt 2021; Geniušienė 1987; Haspelmath 1987, 1990).

From a grammatical perspective, Voice syncretism has been understood as an instance of natural class behavior: nonactive morphology seems to realize structures that lack a thematic subject. Passives (3b) and unaccusatives (4) are the prototypical categories with this property; Greek middles are typically taken to be unaccusative-like in their syntax (see e.g. Lekakou 2005, Schäfer 2008: ch. 6); and subject experiencer verbs of the *frighten* type in Greek have been shown to lack canonical external arguments, thus being distinct from transitives in various respects (Anagnostopoulou 1999; see also e.g. Alexiadou 2018; Alexiadou and Iordachioaia 2014; Zombolou and Alexiadou 2014, and cf. Belletti and Rizzi 1988; Grimshaw 1990; Pesetsky 1995).

From this perspective, then, the distribution of nonactive morphology seems to be structurally unified, as summarized in (7).<sup>5</sup>

<sup>5</sup>Greek shows two classes of verbs that ostensibly raise complications for this generalization; as argued at length in Paparounas (2023b), neither in fact constitutes a true counterexample.

Firstly, there exist two-argument verbs surfacing with nonactive morphology, known as deponent verbs (see Embick 1997 for deponents in Greek-type voice systems). However, deponents in Modern Greek do not passivize; they thus pattern with the language’s subject experiencer predicates and suggesting that they lack a canonical external argument; in this sense they ultimately emerge as being in line with (8) (*contra* Angelopoulos, Collins, and Terzi 2020, and to some extent Kallulli 2013). See also Grestenberger 2018; Zombolou and Alexiadou 2014 for this same conclusion from slightly

(7) *The distribution of nonactive morphology*

Nonactive morphology realizes structures lacking a thematic subject.

For concreteness, I will adopt the realizational implementation of this generalization proposed in Embick (1997) (with antecedents in e.g. Babby 1975; Babby and Brecht 1975; Cranmer 1976) and subsequently adopted in a large literature on the Voice system of Greek and languages like it (see e.g. Alexiadou et al. 2015; Embick 1998, 2004b; Grestenberger 2018; Key to appear; Oikonomou and Alexiadou 2022; Paparounas 2023b; Schäfer 2008; Spathas et al. 2015).<sup>6</sup>

According to this type of approach, schematized in (8), nonactive morphology is the realization of a Voice head that lacks a specifier. On the assumption that the canonical external argument is introduced by Voice in its specifier (Kratzer 1996), the purpose of a post-syntactic but pre-Vocabulary Insertion enrichment rule like (8) is to guarantee that Voice heads that fail to introduce an external argument will be collapsed for the purposes of realization, subsumed under the diacritic feature [NACT]. The underlying intuition is that there may be more than one ‘flavor’ of Voice, but all Voice heads sharing the particular structural property of failing to introduce an external argument will participate in the syncretism.

(8) Voice → Voice<sub>[NACT]</sub> / No DP specifier \_\_

(Alexiadou et al. 2015; Embick 1997, 1998, 2004b; Paparounas 2023b)

different perspectives.

Secondly, the language shows so-called unmarked unaccusatives, which surface with ‘active’ morphology despite lacking an agent. These have sometimes been taken as raising issues for (8) (e.g. Kallulli 2013: p. 347). In fact, following Alexiadou et al. (2015), Schäfer (2008), these can be plausibly analyzed as Voice-less unaccusatives, which, lacking the target of (8), do not receive the diacritic [NACT]; they thus differ from Voiced unaccusatives, which are built with expletive Voice (Schäfer 2008), which does not contribute agentive semantics but does participate in (8). Direct syntactic diagnosis of the Voiced/Voice-less unaccusative divide remains outstanding for Greek; at the same time, as noted in Paparounas (2023b), this analysis conforms with the (independently diagnosable) default status of ‘active’ morphology in Greek (see Paparounas 2023a and main text above): since ‘active’ is in fact an elsewhere realization of heads external to Voice, it can emerge unproblematically in the absence of a Voice head in the structure, deriving unmarked unaccusatives.

Note that the same conclusion – that ‘active’ is in fact a default – correctly predicts a range of other generalizations concerning the realization of Voice in Greek, including the important observation that, although the language shows deponents, it does not show a single instance of an ‘anti-deponent’, that is, a passive surfacing with ‘active’ morphology (Embick 1997).

<sup>6</sup>I follow the literature cited in the main text in eschewing a treatment of nonactive Voice as being an argument in itself (Rivero 1990; Tsimpli 1989; cf. Baker, Johnson, and Roberts 1989), taking it that the arguments against this position for Greek-type languages in Embick (1998) continue to hold. See also section 3.1 for arguments that the language’s reflexivizing morphology is not an argument.

A separate question concerns whether, in place of an approach where nonactive morphology is ‘reflective’, flagging the presence of a certain type of structure, one could take it to be ‘causal’, corresponding to a feature that ‘drives’ the syntactic derivation, and in particular forces the creation of a passive-like structure. As far as I can tell, nothing in what follows would clearly help us distinguish between these two alternatives; but since a proper comparison would involve larger architectural considerations, I leave it for future work. See also Embick (1997) for an argument in favor of the ‘reflective’ approach from languages with Voice syncretism, based to some extent on the behavior of deponent verbs; the crucial considerations therein do not straightforwardly apply to Modern Greek, because deponents in this language turn out not to passivize, suggesting they are not proper transitives (see section 4.1 and footnote 5).

(8) is given here in a purposefully underspecified form, and two notes are in order regarding what is crucial in this rule, and what is incidental.

The context of (8) is left purposefully vague to clarify that the type of rule given in (8) should be compatible with different conceptions of the mechanics of specifier introduction. For instance, in a system where external Merge of a specifier corresponds to the presence of a structure-building [D] feature, [NACT] may plausibly amount to a transduction of this feature into a PF-legible diacritic; see e.g. Grestenberger (2019) for such an approach, and cf. Alexiadou et al. (2015), Schäfer (2008) for related points of view. Since the mechanics are not germane to what follows, I avoid committing to a particular implementation here.<sup>7</sup>

Perhaps more interestingly, (8) entails that the nonactive is marked: there exists, at the point of realization, a feature [NACT] capable of acting as the target and context for Vocabulary Insertion (in Greek, it only ever acts as the context; see footnote 4). This point of view entails that nonactive does not correspond to an elsewhere realization of Voice, a conclusion that is independently supported (see e.g. Embick 1997 for Latin and Classical Greek, and Paparounas 2023a for Modern Greek). In other words, nonactive in Greek(-type languages) indeed corresponds to a specific realization of Voice, appearing in a syntactically well-defined environment.

## 2.2 THE PUZZLE: REFLEXIVES IN VOICE SYNCRETISM

Consider now an observation surprising from the perspective of (7)/(8): in Greek, reflexive and reciprocal verbs also participate in Voice syncretism.

Greek reflexive verbs come in two varieties. Derived reflexives, as in (9), represent the language's productive verbal reflexivization strategy; they are built by means of the prefixal<sup>8</sup> reflexivizer *afto-* alongside nonactive morphology. Certain Roots, notably involving those denoting body-action events such as grooming and motion (Geniušienė 1987; Kemmer 1993), can describe reflexive events without the prefixation of *afto-* when inflected with nonactive morphology; (10) illustrates with  $\sqrt{\text{WASH}}$ . Call such verbs Naturally Reflexive Verbs (NRVs) for convenience.

- (9) O Janis afto-  $\sqrt{\text{ADVERTISE}}$   $\theta$ - ik- e.  
the.NOM John.NOM REFL  $\sqrt{\text{ADVERTISE}}$  PFV.NACT PST.NACT 3SG  
‘John advertised himself.’ (derived reflexive)
- (10) I Maria pli-  $\theta$ - ik- e.  
the.NOM Mary.NOM  $\sqrt{\text{WASH}}$  PFV.NACT PST.NACT 3SG  
‘Mary washed.’ (inherent reflexive)

<sup>7</sup>Clearly, no sensible formalization of (8) will involve negative universal quantification over structural descriptions; that is to say, ‘No DP specifier’ is the effect, but not the description, of the appropriate featural implementation of (8). I thank Jason Merchant (p.c.) for discussion on this point.

<sup>8</sup>Note that *afto-* is not a (morphophonological) clitic, under any sensible construal of the term; this conclusion can be illustrated by comparing *afto-* to pronominal clitics. The latter are host-insensitive, in that they surface on the verb in synthetic verb forms (ia) but on the auxiliary in compound tenses (ib)-(ic); *afto-* always remains on the main verb (ii). Moreover, pronominal clitics are mobile: normally proclitic (ia-b), they surface as enclitics in situations where the verb is syntactically high, such as imperatives (iii); *afto-* again behaves as more closely integrated with the verb (iv).



193 These facts from reflexives find a perfect parallel in the domain of reciprocals. The language produc-  
 194 tively builds verbal reciprocals by prefixing a Root with the reciprocal prefix *alilo-*, and inflecting the  
 195 result with nonactive morphology (11). So-called naturally reciprocal Roots – those denoting events  
 196 that can be construed as prototypically reciprocal or symmetrical – can yield verbal reciprocals by  
 197 means of nonactive morphology alone, without *alilo-* (12).

198 (11) I Maria ke o Janis alilo- ipostirix- θ- ik- an.  
 the.NOM Mary.NOM and the.NOM John.NOM RECIP  $\sqrt{\text{SUPPORT}}$  PFV.NACT PST.NACT 3PL  
 199 ‘Mary and John supported each other.’ (derived reciprocal)

200 (12) I Maria ke o Janis angalias- θ- ik- an.  
 the.NOM Mary.NOM and the.NOM John.NOM  $\sqrt{\text{HUG}}$  PFV.NACT PST.NACT 3PL  
 201 ‘Mary and John hugged.’ (inherent reciprocal)

202 Importantly, it is not merely the case that reflexives and reciprocals *can* occur with nonactive mor-  
 203 phology; rather, they *must* do so. Hence, the counterparts of (10) and (12) with active morphology  
 204 may have at most a transitive reading with a null object, but lack a reflexive reading, see (13) and (15);  
 205 moreover, derived reflexives and reciprocals with active morphology are altogether ungrammatical,  
 206 see (14) and (16).

207 (13) I Maria e- plin- Ø- e.  
 the.NOM Mary.NOM PST  $\sqrt{\text{WASH}}$  PFV.ACT 3SG  
 208 ?‘Mary washed something’ (fine in a context with a salient object of washing)  
 209 ✗ ‘Mary washed herself’

210 (14) \*O Janis afto- ðiafimi- s- e (ton eafto tu / ti  
 the.NOM John.NOM REFL  $\sqrt{\text{ADVERTISE}}$  PFV.ACT 3SG the.ACC self.ACC 3SG.M.GEN the.ACC

- |  |  |
|--|--|
| <p>(i) a. Ton= eksorisa.<br/>3SG.M.ACC exile.PST.3SG<br/>‘I exiled him.’<br/>b. Ton= exo eksorisi.<br/>3SG.M.ACC have.1SG exile.PFV<br/>‘I have exiled him.’<br/>c. *exo ton= eksorisi<br/>have.1SG 3SG.M.ACC exile.PFV</p>            | <p>(iii) a. Eksorise =ton!<br/>exile.IMP.2SG 3SG.M.ACC<br/>‘Exile him!’<br/>b. *ton= eksorise!<br/>3SG.M.ACC exile.IMP.2SG</p> |
| <p>(ii) a. afto- eksorisθika.<br/>REFL exile.NACT.PST.1SG<br/>‘I self-exiled.’<br/>b. exo afto- eksorisθi<br/>have.1SG REFL exile.NACT.PFV<br/>‘I have self-exiled.’<br/>c. *afto- exo eksorisθi.<br/>REFL have.1SG exile.NACT.PFV</p> | <p>(iv) a. afto- eksorisu!<br/>REFL exile.NACT.2SG<br/>‘Self-exile!’<br/>b. *eksorisu- afto!<br/>exile.NACT.2SG REFL</p>       |



- 211 Maria).  
 Mary.ACC
- 212 (15) I Maria ke o Janis angalia- s- an.  
 the.NOM Mary.NOM and the.NOM John.NOM  $\sqrt{\text{HUG}}$  PFV.ACT 3PL  
 213 ?‘Mary and John hugged someone’ (*fine in a context with a salient object of hugging*)  
 214 ✗ ‘Mary and John washed each other’
- 215 (16) \*I Maria ke o Janis alilo- ipostirix- s- an (o  
 the.NOM Mary.NOM and the.NOM John.NOM RECIP  $\sqrt{\text{SUPPORT}}$  PFV.ACT 3PL the.NOM  
 216 enas ton alo).  
 one.NOM the.ACC other.ACC

217 In Greek, then, reflexives and reciprocals are *Voice-selective*: they only occur with nonactive Voice  
 218 morphology, thereby mirroring the language’s nonactive category *par excellence*, the passive.

219 Note that, with the majority of Roots in the language, the presence of nonactive morphology is  
 220 necessary, but not sufficient, to yield a reflexive or reciprocal reading. This fact is illustrated in (17),  
 221 where the nonactive form can only be interpreted as a passive (‘Mary was accused’), as opposed to  
 222 having the stronger, contextually appropriate reflexive reading (‘Mary was accused *by Mary*’).

- 224 (17) [*Mary testifies against herself in court.*]  
 225 #I Maria katiyori-  $\theta$ - ik- e.  
 the Mary.NOM  $\sqrt{\text{ACCUSE}}$  PFV.NACT PST.NACT 3SG  
 226 Intended: ‘Mary accused herself’

227 The only verbs capable of yielding reflexive readings in the absence of *afto-* are NRVs, as in (10).  
 228 These Roots are said to be able to carry out reflexivity ‘on their own’; an important clue to this end  
 229 comes from the observation that these Roots are generally incompatible with *afto-* (18a). Such com-  
 230 binations are only felicitous in a contrastive context with focus on the reflexivizer, and are judged as  
 231 somewhat marked even then (18b).

- 232 (18) a. #I Maria afto- pliθike.  
 the.NOM Mary.NOM REFL wash.NACT.PST.3SG  
 233 ‘Mary washed.’
- 234 b. Q: Someone else washed little Mary, right?  
 235 A: ?Oçi, i Maria AFTO- pliθike.  
 no the.NOM Mary.NOM REFL wash.NACT.PST.3SG  
 236 ‘No, Mary self-washed.’

237 Note, finally, that verbal reflexives in Greek are distinct from pronominal anaphora proper; in  
 238 (19), which is to be contrasted with (9), the transitive verb taking a pronominal anaphoric object is  
 239 in the active transitive form.

- 240 (19) O Janis diafimi- s- e ton eafto tu.  
 the.NOM John.NOM advertise PFV.ACT 3SG the.ACC self.ACC 3SG.M.GEN

241 ‘John advertised himself.’

242 The participation of verbal reflexives and reciprocals in Voice syncretism raises an important  
 243 challenge for the view of this phenomenon outlined in [Section 2.1](#). The core syncretizing verb classes  
 244 – passives, unaccusatives, middles and subject experiencer verbs – all show a surface subject that is  
 245 not interpreted as an agent. Unaccusatives and experiencer verbs lack agent entailments entirely;  
 246 passives and (arguably) middles do involve agentive semantics, but this semantics is clearly never  
 247 associated with their surface subject. These core verb classes are therefore amenable to an analysis  
 248 of Voice syncretism where the factor responsible for the emergence of nonactive morphology is the  
 249 absence of a base-generated agent.

250 For reflexives and reciprocals, however, this is less straightforwardly the case. Unlike all the other  
 251 verb classes participating in the syncretism, reflexives do involve a surface subject that comes to be  
 252 associated with the agentive entailment. In (9), for instance, John is understood as both the agent  
 253 and the theme of an advertising event, just as Mary seems to be both the agent and the patient of the  
 254 reflexive event in (10). Similarly, each of Mary and John are both patients and agents in the reciprocal  
 255 hugging and supporting events of (11) and (12).

256 As will be shown in [section 4.1](#), the link between verbal reflexivization and agentivity in fact runs  
 257 particularly deep in Greek. For now, it suffices to show that verbal reflexives unproblematically pass  
 258 the tests usually taken to diagnose agentive semantics, such as agent-oriented adverbs and instru-  
 259 ments. (20) demonstrates for natural reflexives, but the same facts hold for natural reciprocals, as  
 260 well as derived reflexives and reciprocals.<sup>9</sup>

- 261 (20) O Janis ksiris- θ- ik- e {prosektika / me to kenurjio  
 262 the.NOM John.NOM  $\sqrt{\text{SHAVE}}$  PFV.NACT PST 3SG carefully with the.ACC new.ACC  
 263 ksirafi }.  
 264 razor.ACC  
 265 ‘John shaved carefully/with the new razor.’

264 We thus arrive at a point of tension. On the one hand, there is a deep-seated link between verbal  
 265 reflexivization and nonactive morphology. On the other hand, reflexives seem crucially different to  
 266 the other categories participating in the syncretism. In the case of the other syncretizing categories,  
 267 the fact that their surface subject is never an agent is precisely what lends credence to the view that  
 268 the syncretism targets the structural absence of a syntactically projected agent; the surface subject of  
 269 reflexives, however, is clearly ultimately interpreted as an agent.

270 I show below that this tension resolves once the task of diagnosing the syntax of the surface sub-

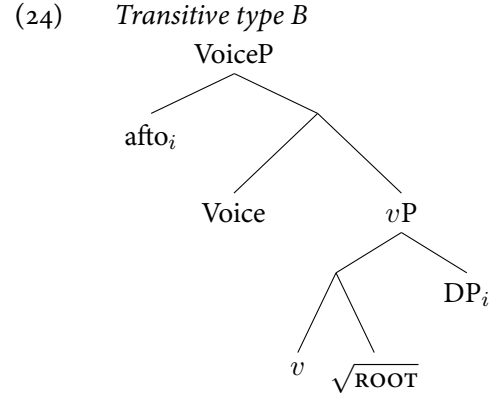
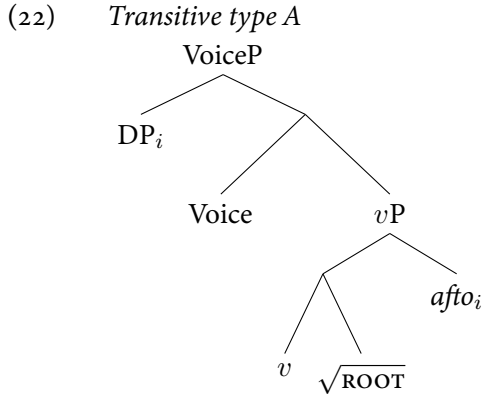
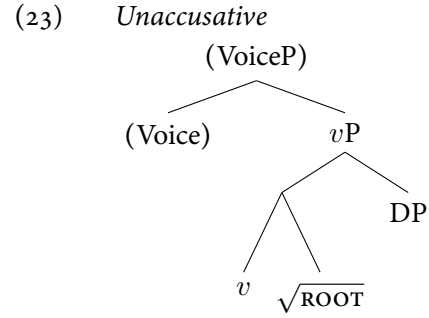
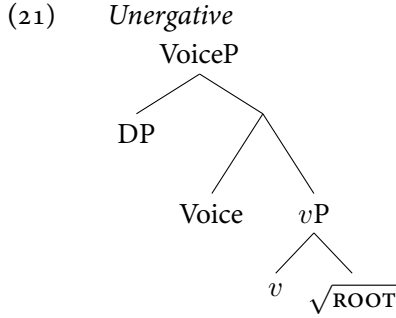
<sup>9</sup>Note that other diagnostics that often travel together with instruments and agent-oriented verbs need not necessarily do so in the case of verbal reflexives. Thus, for instance, *by*-phrases are ruled out (i), by whatever more general constraint rules out the introduction of two agents (including of the same agent twice); whether examples like (i) are ungrammatical in the technical sense, or simply incoherent, is not an entirely simple question.

(i) #O Janis afto- ðiafimis- θ- ik- e apo ti Maria / apo to Jani.  
 the.NOM John.NOM REFL  $\sqrt{\text{ADVERTISE}}$  PFV.NACT PST 3SG from the Mary from the John

ject of reflexives is undertaken. Their behavior turns out to be fully in line with the analysis of Voice syncretism as related to the absence of a deep subject, and to in fact reinforce this type of analysis. It has been conjectured repeatedly that the participation of verbal reflexives in Greek Voice syncretism would follow straightforwardly if these verbs were unaccusative reflexives (Alexiadou 2014b; Alexiadou et al. 2015; Alexiadou & Schäfer 2014; Embick 1998, 2004b; Spathas et al. 2015); as we will see immediately, a number of generalizations suggest that this type of analysis is appropriate for Greek.

### 3 DIAGNOSING UNACCUSATIVE SYNTAX

Verbal reflexives in Greek are descriptively intransitive verbs, with what appears to be the sole argument DP behaving for all intents and purposes as a surface subject. The major challenge for any account of such verbs is to specify how reflexivity arises, that is, how the apparently single nominal is interpretively linked to two argument positions. This goal is in principle attainable via a broad range of structures, with the main options schematically illustrated below.



(21) illustrates an unergative structure whereby the single argument of a reflexive verb originates in the external argument position, and must somehow be linked to a lower position for the purposes of interpretation. This type of approach has been proposed for a variety of languages (e.g. Bruening 2006; Chierchia 2004; Jo 2019; Labelle 2008; Reinhart & Siloni 2004, 2005), including Greek (Papangeli 2004).

290 The mirror image of the unergative analysis is illustrated in (23), where the single argument  
291 is taken to be internal. This unaccusative analysis of reflexives has been widely conjectured (but  
292 not explicitly defended) for Greek (Alexiadou, Schäfer, and Spathas 2014; Embick 2004b; Spathas  
293 et al. 2015; cf. Alexiadou and Schäfer 2014 and Alexiadou 2014b on NRVs, where only a tentative  
294 conclusion is drawn).

295 The diagnostic task at hand is further compounded by the availability of at least two more struc-  
296 tures to consider, schematized in (22) and (24). Both structures treat reflexives as ‘hidden transitives’,  
297 such that the single overt DP is one primary argument, and what appears to be a reflexivizing mor-  
298 pheme is in fact also an argument itself, one that is coindexed with the overt DP. Under this type of  
299 thinking, *afto-* can in principle be taken to be either the internal (22) or the external (24) argument.

300 (24) is in fact the structure referred to as the unaccusative analysis of reflexives, as developed  
301 primarily for Romance clitic reflexives (see e.g. Burzio 1986; Embick 2004b; Kayne 1988; Marantz  
302 1984: 152ff; McGinnis 2004, 2022; Pesetsky 1995: 102ff; Sportiche 1998: 152ff; for opposing per-  
303 spectives, see esp. Labelle 2008; Reinhart 2016; Reinhart and Siloni 2004, 2005; Sportiche 2014).  
304 This type of analysis has sometimes extended to Greek *afto-* (e.g. Embick 2004b; Tsimplici 1989; the  
305 analyses in these two works differ from each other in important ways, however). (22) inverts the  
306 argument relations, with the reflexivizing element being the *internal* argument; this is the situation  
307 explicitly denied by some, but not all, authors for Romance (see above), but proposed for other lan-  
308 guages (e.g. Wood 2014, 2015 for Icelandic figure reflexives; cf. Key *to appear* for Turkish), including  
309 Greek (with subsequent ‘incorporation’ of the internal argument) in Rivero (1992); cf. Embick 1997:  
310 38ff.

311 The fact that Greek has been argued to instantiate all four analyses reflects a significant amount  
312 of difficulty with the relevant diagnostics. Within the unaccusative camp, the presence of nonactive  
313 morphology is often given as the main observation suggestive of an unaccusative analysis, without ad-  
314 ditional syntactic diagnostics (Spathas et al. 2015: e.g.); a notable exception is Alexiadou and Schäfer  
315 (2014) for Greek natural reflexives, where the diagnostics used are however admitted to be problem-  
316 atic, reflecting the more general paucity of or difficulty with syntactic diagnostics of the relevant type  
317 in Greek (see e.g. Alexiadou and Anagnostopoulou 1999). As a result, differing analyses have also  
318 been proposed, again without explicit argumentation on the position of the surface subject or the  
319 transitivity of the verb. Within the unergative camp, syntactic tests are similarly sometimes not de-  
320 ployed (Papangeli 2004: p. 59 for NRVs); as for the ‘hidden transitive’ structures, they have been  
321 defended by analogy with Romance (e.g. Embick 2004a), with nonactive morphology again being  
322 the main argument, or on the basis of diagnostics that can be shown to be partially probative at best  
323 (Tsimplici 1989, on which see also Tsimplici 1989: 31ff).<sup>10</sup>

324 In what follows, I argue that Greek *afto-* verbs instantiate an unaccusative structure, with the final  
325 analysis combining aspects of (23) and (24): the single argument of these verbs is internal, and *afto-*

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<sup>10</sup>Tsimplici (1989) argues on the basis of (a) the agentive semantics of the subject of reflexives and (b) the ability of these subjects to control into purpose clauses. The former is a non-argument, since it is not clear *a priori* that competing analyses cannot assign agentive semantics to the single argument of reflexives (see also Alexiadou 2014b: pp. 77–78); the latter diagnostic is not sensitive to the difference between deep and surface subjecthood (or indeed to syntactic projection of the relevant argument; see Biggs and Embick 2020: pp. 28–29 for brief recent discussion and references).

originates in a high position in the verbal shell. Departing from (24), I will take this position to be not an argument position, but rather the Voice head itself.

The argumentation of this section thus proceeds in two stages. First, in section 3.1, I provide syntactic and interpretive diagnostics suggesting that *afto*- verbs are syntactically intransitive in the deep sense, thereby arguing against (22) and (24): *afto*- verbs have a single argument, the sole overt DP. Subsequently, in section 3.2, I provide a range of diagnostics suggesting that this single argument originates as a deep object, thereby deciding in favor of (23) over (21).

### 3.1 INTRANSITIVITY

At first glance, the intransitivity of *afto*- verbs need not be explicitly argued for; after all, nothing in the surface facts seems to cast doubt on the conclusion that these verbs have just one argument nominal.

But the surface facts may well be deceptive, witness the availability of analyses of the ‘secret transitive’ type (22) and (24). Broadly, this type of analysis is guided by the intuition that reflexive interpretations in the case of ostensibly intransitive reflexives come about in just the same way as they do when transitive verbs take pronominal anaphoric arguments, namely, via anaphoric binding. As such, the element that ostensibly ‘carries’ the reflexive interpretation (*se/si* in Romance) is often analyzed as a more-or-less garden variety anaphor in need of binding to satisfy Condition A of the Binding Theory (Chomsky 1980, 1981). Such a treatment is certainly worth considering for Greek, particularly in light of the fact that *afto*- seems to overlap morphologically with the nominal contained in the *bona fide* reflexive pronoun (but see section 4.3 for evidence that this overlap is not grammatically significant, at least synchronically).

The following diagnostics highlight numerous differences between *afto*- and the Greek reflexive pronoun. It is well known that argumental reflexive pronouns show properties different to those of verbal reflexives across different languages (see Reuland 2018 for recent summary; cf. Dimitriadis and Everaert 2014; Doron 2003; Jackendoff 1992; Labelle 2008; Lidz 2001; Marelj and Reuland 2016; Reuland 2001; Reuland and Winter 2009; Safir 2004; Sells 1987). Bringing together these (often individually discussed) points of possible divergence between pronominal and verbal reflexives, I show that *afto*- verbs in Greek pattern differently from the full-blown reflexive pronoun, and with natural reflexives like *shave* in Greek and other languages. I take these wide-ranging differences as grounds to avoid treating *afto*- as an anaphoric argument.

The rest of this section first identifies six corners of the Greek grammar where pronominal and verbal reflexives come apart.<sup>11</sup> I then make precise what exact aspect of the structure these diagnostics are predicated of, in section 3.1.7.

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<sup>11</sup>Natural reflexives, as well as reciprocals, both natural and prefixal, behave fully on a par with *afto*- reflexives for all tests in this section. For reasons of space, I provide only the examples with *afto*-.

### 3.1.1 PROXY READINGS

A first set of contrasts comes from so-called proxy interpretations. As Jackendoff (1992) highlighted (building on observations in Fauconnier 1985), the interpretive identity between a reflexive pronoun and its antecedent need not be total. In a sentence like (25), the reflexive can refer not just to the antecedent proper, but also to a contextually salient, metonymically designated proxy for the antecedent; in this case, a statue portraying the antecedent.

(25) [*Pleased with his wax statue, Ringo decides to take a photographic souvenir.*]

O        Ringo        fotoyrafi-        s-        e        ton        eafto        tu.  
the.NOM Ringo.NOM  $\sqrt{\text{PHOTOGRAPH}}$  PFV.ACT 3SG the.ACC self.ACC his

‘Ringo took a picture of himself.’

Importantly, as later literature notes extensively, the same effect does not arise when reflexive readings arise without the use of a reflexive pronoun (see Lidz 2001; Reuland and Winter 2009; Safir 2004; Sells, Zaenen, and Zec 1987; and for a recent in-depth study, Raghotham 2022b). Crucially, in Greek, *afto-* verbs dissociate from pronominal reflexives: in (26), the verbal reflexive does not felicitously yield the proxy reading, as noted also in Oikonomou (2014).

(26) [*Pleased with his wax statue, Ringo decides to take a photographic souvenir.*]

#O        Ringo        afto- fotoyrafi-        θ-        ik-        e.  
the.NOM Ringo.NOM REFL  $\sqrt{\text{PHOTOGRAPH}}$  PFV.NACT PST.NACT 3SG

‘Ringo self-photographed.’

It is worth noting that non-linguist consultants find examples like (26a) to be marked, which we may expect for instances of metonymy more generally. What is instructive, then, is the contrast between (25) and (26); the latter is uniformly judged as severely degraded relative to (25), and even speakers who initially find (25) to be marked report that this type of example is in fact readily admissible when subsequently presented with (26).

If *afto-* were itself an anaphor, its inability to license proxy interpretations would seem mysterious, all things being equal (see section 3.1.7). This argument is based on the assumption that the licensing of proxy readings is a hallmark of argument anaphors; though widely held and borne out by data in different languages, this assumption must be made precise – see 3.1.7.

### 3.1.2 GAPPING

Different ellipses provide additional evidence that *afto-* verbs are intransitive. Though comparative ellipsis is standardly employed to this end (see section 3.1.3 below), gapping can also be employed.

To see the rationale of the test, consider first pronominal reflexives. In (27), where *destroy* is clearly transitive and takes a pronominal reflexive object, the gapped follow-up *and Bill Mary* is licensed.

391 (27) O Janis katestref- s- e ton eafto tu, ke o Vasilis  
the.NOM John.NOM  $\sqrt{\text{DESTROY}}$  PFV.ACT 3SG the.ACC self.ACC his and the.NOM Bill.NOM  
392 ti Maria.  
the.ACC Mary.ACC  
393 ‘John destroyed himself, and Bill Mary.’

394 But the same is not true in (28b), with the *afto*--prefixed counterpart; while the sentence without  
395 the gapped follow-up is perfectly acceptable, inclusion of this follow-up results in severe degraded-  
396 ness:

397 (28) \*O Janis afto- katastraf- ik- e, ke o Vasilis ti  
the.NOM John.NOM REFL  $\sqrt{\text{DESTROY}}$  PST.NACT 3SG and the.NOM Bill.NOM the.ACC  
398 Maria.  
Mary.ACC  
399 ‘John self-destroyed, and Bill Mary.’

400 The ungrammaticality of (28) is unexpected if this instance of *destroy* is transitive. Part of what  
401 licenses nonpronunciation of the verb in (27) is arguably the fact that both the antecedent and the  
402 elided verb are transitive; if the pronounced verb in (28) is syntactically intransitive, it will fail to  
403 license nonpronunciation of the transitive verb whose object is *Mary*, by whatever identity conditions  
404 govern gapping.

405 The argument should thus be clear: if *afto*-- were an argument anaphor, it should license gap-  
406 ping in the same way as its putative full reflexive counterpart in (28a), contrary to fact. Note that  
407 the ungrammaticality of (28b) is unexpected, *ceteris paribus*, on both the *afto*--as-internal-argument  
408 analysis in (22) and the *afto*--as-external-argument analysis in (24): either way, there should be an  
409 internal argument in the antecedent clause licensing gapping in the second conjunct.

410 Note that the deviance of (28) cannot straightforwardly be attributed to a surface-oriented paral-  
411 lelism requiring that the object in the antecedent clause be pronounced.<sup>12</sup> Syntactically projected but  
412 silent elements arguably do license gapping, as in Greek subject *pro*-drop (29) and nominal ellipsis  
413 (30), where strikethrough indicates non-pronunciation (and cf. Merchant 2018; Paparounas 2019).

414 (29) Q: Eftase i Maria?  
arrive.PST.3SG the.NOM Mary.NOM  
415 ‘Did Mary arrive?’  
416 A: Ne. *pro* efere fajito, ke o Janis efere pota.  
yes bring.PST.3SG food.ACC and the.NOM John.NOM bring.PST.3SG drink.ACC.PL  
417 ‘Yes. She brought food, and John drinks.’  
418 (30) Q: Efaje i Maria mila?  
eat.PST.3SG the.NOM Mary.NOM apple.ACC.PL  
419 ‘Did Mary eat apples?’

<sup>12</sup>Thanks to Dominique Sportiche (p.c.) for alerting me to this possible confound.



420 A: Efaje mīla, ke o Janis efaje keraſça.  
 eat.PST.3SG and the.NOM John.NOM cherry.ACC.PL  
 421 ‘She did – and John cherries.’

### 422 3.1.3 COMPARATIVE ELLIPSIS

423 The next two diagnostics target a specific aspect of the interpretation of reflexive structures, namely  
 424 their ability to license bound/free variable ambiguities. Comparative ellipsis is a first standard test to  
 425 this end (Dimitriadis & Everaert 2014; Lidz 2001; Sells et al. 1987; Zec 1985).

426 Consider once again pronominal reflexives as the baseline. (31) exhibits a well-known ambiguity:  
 427 ity: it supports an object comparison reading alongside two distinct subject comparison readings.

- 428 (31) Aftos o poðosferistis ðiafimiz- i ton eafto tu perisotero  
 this.NOM the.NOM footballer.NOM  $\sqrt{\text{ADVERTISE}}$  3SG.ACT the.ACC self.ACC his more  
 429 apo ton xoriyo tu.  
 from the sponsor.ACC his  
 430 ‘This football player advertises himself more than his sponsor.’  
 431 ✓object comparison: ‘...than the player advertises the sponsor.’  
 432 ✓subject comparison, strict: ‘...than the sponsor advertises the player.’  
 433 ✓subject comparison, sloppy: ‘...than the sponsor advertises the sponsor.’

434 The two distinct subject comparison readings constitute a strict/sloppy ambiguity: once the el-  
 435 lipsis site is reconstructed as *sponsor advertises self*, the reflexive can (presumably) be bound under  
 436 either co-reference or local semantic binding, assuming the view of strict/sloppy ambiguities in Heim  
 437 and Kratzer (1998). On the other hand, the object comparison reading is made possible by the transi-  
 438 tive nature of the antecedent sentence: in other words, because the antecedent sentence is transitive,  
 439 the identity condition on ellipsis makes it possible to reconstruct a transitive verb in the ellipsis site,  
 440 and *the sponsor* can be identified as the object of this elided verb.

441 Consider now the *afto-* counterpart (32). This example differs from (31) in two ways. Firstly,  
 442 it lacks the object comparison reading. If the antecedent clause *The football player afto-washed* is  
 443 truly intransitive, this observation follows straightforwardly: there is simply no object DP in the  
 444 antecedent clause, and therefore, by the identity condition, no two distinct transitive fragments to be  
 445 reconstructed in the ellipsis site. Once again, if the *afto-* verb were secretly transitive, the facts would  
 446 seem mysterious. Secondly, (32) also lacks the strict subject reading, suggesting that strict/sloppy  
 447 ambiguities do not arise in this case; this fact also follows if, in interpreting an ellipsis anteceded  
 448 by a verb like *afto-advertise*, we are simply not reconstructing a reflexive pronoun at all: there is no  
 449 variable to be interpreted under either semantic binding or co-reference, and no ambiguity can arise.

- 450 (32) Aftos o poðosferistis afto- ðiafimiz- ete perisotero apo ton  
 this.NOM the.NOM footballer.NOM REFL  $\sqrt{\text{ADVERTISE}}$  3SG.NACT more from the

451 xoriyo tu.  
 sponsor.ACC his  
 452 ‘This football player self-advertises more than his sponsor.’  
 453 ✗object ✓subject-sloppy ✗subject-strict

454 This lack of strict/sloppy ambiguities, ensuring that only one subject comparison reading is  
 455 present, can in fact be diagnosed independently of the comparative facts discussed here.

#### 456 3.1.4 FOCUS ALTERNATIVES

457 The previous subsection established that Greek *afto*- reflexives, unlike their pronominal counter-  
 458 parts, allow bound but not free variable readings; they hence allow only sloppy construals under  
 459 ellipsis. The same difference regarding bound/free readings can be glimpsed outside the domain of  
 460 ellipsis, by considering the behavior of focus-sensitive operators in reflexive contexts (Haiden 2019;  
 461 Kobayashi 2021; Sportiche 2014).

462 To see the reasoning of this test, consider the (33), which can be felicitously denied in two distinct  
 463 ways, (33a) and (33b). (33) can be read in two distinct ways, corresponding to distinct association  
 464 possibilities of *only*. Thus, (33) is ambiguous between ‘John is the only  $x$  such that  $x$  accused John’,  
 465 or ‘John is the only  $x$  such that  $x$  accused  $x$ ’. Each of the denials targets one of these two distinct  
 466 construals; thus, (33a) denies the free variable reading by asserting that there exists some other in-  
 467 dividual alongside John for whom it is true that that individual accused John, whereas (33b) denies  
 468 the bound reading by asserting that there is some other individual who also engaged in the relevant  
 469 self-action.<sup>13</sup>

- 470 (33) Mono o Janis katiyorise ton eafto tu.  
 only the.NOM John.NOM accuse.PST.3SG the.ACC self.ACC 3SG.M.GEN  
 471 ‘Only John accused himself.’  
 472 a. Oçi, ke o Vasilis ton katiyorise.  
 no and the.NOM Bill.NOM 3SG.M.ACC shave.PST.3SG  
 473 ‘No, Bill accused him too.’  
 474 b. Oçi, ke o Vasilis katiyorise ton eafto tu.  
 no and the.NOM Bill.NOM shave.PST.3SG the.ACC self.ACC 3SG.M.GEN  
 475 ‘No, Bill accused himself too.’

476 That both denials can be used felicitously in (33) suggests that the basic example is ambiguous,

<sup>13</sup>A third conceivable construal, along the lines of *No, John shaved me too*, would be expected if *only* were able to associate just with the theme, producing the assertion that John shaved only himself. This denial is infelicitous throughout the following examples, as it is in French see, Sportiche (2014). It is possible, partly following Sportiche, to interpret the unavailability of such a denial as evidence against a ‘hidden transitive’ analysis of verbal reflexives: if there is a second argument, why can *only* not independently associate with it? This reasoning goes through only to the extent that *only* should be able to associate with a low constituent from a given position; compare *John shaved only himself*. I thus consider this type of argument against the intransitive analyses inconclusive.

supporting both free and bound readings. This is not so for the *afto*- reflexive, however; (34) is judged to only support one denial, (34a), with (34b) being judged as strongly infelicitous. The infelicity of (34a) suggests the absence of a free reading, paralleling exactly the results from comparative ellipsis in the previous section.

- (34) Mono o Janis afto- katiyori-  $\theta$ - ik- e.  
 only the.NOM John.NOM REFL  $\sqrt{\text{ACCUSE}}$  PFV.NACT PST.NACT 3SG  
 ‘Only John self-accused.’
- a. #Oçi, ke o Vasilis ton katiyorise.  
 no and the.NOM Bill.NOM 3SG.M.ACC accuse.PST.3SG  
 ‘No, Bill accused him too.’
- b. Oçi, ke o Vasilis afto- katiyori-  $\theta$ - ik- e.  
 no and the.NOM Bill.NOM REFL  $\sqrt{\text{ACCUSE}}$  PFV.NACT PST.NACT 3SG  
 ‘No, Bill self-accused also.’

### 3.1.5 RECIPROCAL SCOPE

An additional diagnostic is provided by the scope-taking possibilities of the reciprocal prefix. The foundation of the test is provided by a well-known ambiguity in the interpretation of reciprocals, illustrated here with Greek (35) (see Heim, Lasnik, and May 1991: p. 65 and references therein).

- (35) O Janis ke i Maria ipan tis Anas oti ayapun  
 the.NOM John.NOM and the.NOM Mary.NOM say.PST.3PL the.GEN Anna.GEN COMP love.3PL  
 o enas ton alo.  
 the.NOM one.NOM the.ACC other.ACC  
 ‘John and Mary told Anna that they love each other.’

The example can describe two distinct sorts of saying events. Under one reading (call it *collective action*), John and Mary both told Anna the same thing, namely, that John loves Mary and Mary loves John. Under a different reading (call it *distributed action*), John and Mary told Anna distinct things: John said that he loves Mary, and Mary said that she loves John, but neither of them necessarily said that the other person loves them. As Heim et al. 1991 assume following previous literature, this ambiguity can be understood with reference to the different scope-taking possibilities of the distributor *each* (cf. E. Williams 1991). When *each* scopes narrowly, we obtain the collective action reading; but *each* can also scope widely, distributing over the antecedent and yielding the reading paraphrasable as *Each of John and Mary told Anna that they like the other person*.

The aim here, then, is to compare the full reciprocal pronoun with its prefixal counterpart: recall that the reciprocal counterpart of *afto*- is *alilo*-, and that the two display an identical distribution (see section 2.2).

Consider first a context favoring the collective action reading such as the one in (36) (note that the root  $\sqrt{\text{OIL}}$  can mean ‘bribe’). As expected, the full reciprocal can felicitously in (36a) describe the relevant situation, where both Mary and John testify that reciprocal bribing took place; unsurpris-

ingly, so can the affixal reciprocal in (36b). This is nothing out of the ordinary: both the reciprocal pronoun and the prefixal reciprocal take scope in their surface position.

(36) *[John and Mary are under investigation for a bribery scandal. The truth is that John bribed Mary, and later Mary bribed John. When testifying in court, each of them admits to the full extent of their wrongdoing: John admits that he bribed and got bribed by Mary, and Mary admits that she bribed and got bribed by John.]*

- a. O Janis ke i Maria ipan ksexorista oti laðosan  
the.NOM John.NOM and the.NOM Mary.NOM say.PST.3SG separately COMP oil.PST.3PL  
o enas ton alo.  
the.NOM one.NOM the.ACC other.ACC  
'John and Mary separately said that they bribed each other.'
- b. O Janis ke i Maria ipan ksexorista oti alilo-  
the.NOM John.NOM and the.NOM Mary.NOM say.PST.3SG separately COMP RECIP  
laðoθikan.  
oil.NACT.PST.3PL  
'John and Mary separately said that they bribed each other.'

Importantly, the reciprocal pronoun and *alilo-* diverge when we embed them in a context favoring the wide scope reading of the distributor. In (37), the context points to a distributed action reading; here, the reciprocal pronoun continues to be felicitous (37a), but the prefixal reciprocal leads to infelicity (37b).<sup>14</sup>

(37) *[John and Mary are under investigation for a bribery scandal. The truth is that John bribed Mary, and later Mary bribed John. When testifying in court, each of them mentions only their own wrongdoing to protect the other person: John says only that he bribed Mary, and Mary says only that she bribed John.]*

- a. O Janis ke i Maria ipan ksexorista oti laðosan  
the.NOM John.NOM and the.NOM Mary.NOM say.PST.3SG separately COMP oil.PST.3PL  
o enas ton alo.  
the.NOM one.NOM the.ACC other.ACC  
'John and Mary separately said that they bribed each other.'
- b. #O Janis ke i Maria ipan ksexorista oti alilo-  
the.NOM John.NOM and the.NOM Mary.NOM say.PST.3SG separately COMP RECIP  
laðoθikan.  
oil.NACT.PST.3PL  
'John and Mary said separately that they bribed each other.'

<sup>14</sup>The examples here use *ksexorista* 'separately' to avoid a homogeneity-related confound: without the inclusion of this adverb, (ib) could be judged as true in the scenario given, since the testimonies of John and Mary, when put together, lead to the conclusion that the bribing was reciprocal.

535 The contrast in (36)–(37) suggests that, unlike the reciprocal pronoun, the prefixal reciprocal  
 536 *alilo-* cannot scope widely (cf. e.g. Dalrymple, Mchombo, and Peters 1994; Kobayashi 2021; Siloni  
 537 2012). This constitutes yet another observation inconsistent with an analysis whereby *alilo-* is an  
 538 argument much like the reciprocal pronoun is, all things being equal. More specifically, the contrast  
 539 in (36)–(37) suggests that the two items must have different phrase-structural properties: whereas  
 540 (one part of) the reciprocal pronoun is a full phrasal nominal capable of taking wide scope, *alilo-* is  
 541 not, consistent with the position that *alilo-* is not an argument at all. The facts will then follow on  
 542 any treatment that takes DP-hood to be an essential precondition for non-surface-true scope-taking,  
 543 including Quantifier Raising.<sup>15</sup>

### 544 3.1.6 DE RE

545 The final diagnostic disfavoring an analysis of *afto-* reflexives as ‘hidden transitives’ is inspired by  
 546 Sportiche’s (2022) discussion of the following type of example, originally from Heim (1994) (see  
 547 also Charlow 2010): ?

- 548 (38) [*Oedipus, raised as King Polybus’s only son, kills someone he does not know, namely Laius,*  
 549 *who, unbeknownst to Oedipus, is his real father. The gods send a plague on Thebes, and an*  
 550 *oracle reveals that Laius’s killer must be punished to end the plague. Oedipus searches for*  
 551 *Laius’s killer, aiming to punish him, placate the gods and end the plague.]*
- 552 ‘Oedipus<sub>i</sub> wants to PRO<sub>i</sub> punish himself<sub>i</sub>.’ (Sportiche 2022: p. 7)

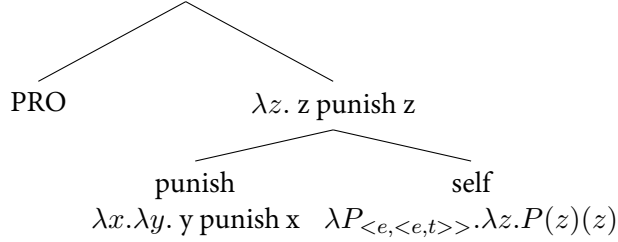
553 As Heim points out, sentences of this type seem problematic from the point of view of the classical  
 554 binding theory. In (38), *himself* is naturally read as *de re*, but its local binder *PRO* is *de dicto*, even  
 555 though both are apparently in the scope of the intensional operator contributed by *want*. In other  
 556 words, Oedipus wants Oedipus to punish someone who is distinct from Oedipus in Oedipus’ own  
 557 desire-worlds, but not in the real world. This is a puzzle for the theory of domains supplied by the  
 558 binding theory: how can it be that, from Oedipus’ point of view, *PRO* is identical to Oedipus, but  
 559 the reflexive pronoun is not? Sportiche (2020) argues that the tension resolves if (semantic) binding  
 560 is relativized to attitude holders.

561 Of more direct interest here is the observation in Sportiche (2022) that the sentence in (38) is  
 562 incorrectly predicted to be infelicitous under treatments of *himself* as a arity-affecting reflexivizer, as  
 563 opposed to a variable. As Sportiche notes, if *himself* effects reduction and argument identification,  
 564 such that the embedded clause is essentially of the form  $[\lambda x.punish(x)(x)](PRO)$ , *PRO* is (ulti-  
 565 mately) the only semantic argument of *punish*. In turn, since *PRO* is interpreted *de se*, (38) should  
 566 only be able to describe situations where Oedipus thinks ‘I will punish myself’, and should thus be

<sup>15</sup>In line with the tests discussed immediately above, we expect naturally reciprocal verbs in Greek and English to pattern with *alilo-* verbs with respect to scope. However, this possibility is difficult to test. Since most naturally reciprocal verbs denote inherently symmetric events, the wide-scope reading of the (implicit) distributor is independently implausible: in *John and Mary said that they met*, what would it mean for John to say that he met Mary, but that Mary did not meet him? The confound could perhaps be resolved using verbs such as *hug*, where it is conceivable that Mary hugged John without him hugging her back, at least under one construal of what kinds of situations ‘hug’ can describe.

567 infelicitous in the context given.

568 (39)



569 We may extend Sportiche’s observation as follows. In sentences like (39), the reflexive is an au-  
 570 tonomous syntactic argument, which, as Sportiche notes, must also be interpreted as an autonomous  
 571 semantic argument. If there exist reflexive elements that do not contribute entity variables (but e.g.  
 572 merely identify thematic roles), they should pattern distinctly from full reflexive arguments; in par-  
 573 ticular, they should be infelicitous in the context in (39).

574 Greek offers evidence confirming this hypothesis: whereas the full reflexive pronoun is felicitous  
 575 in the relevant context, much like English *himself*, *afto-* is much less clearly felicitous:

576 (40) [Oedipus, raised as King Polybus’s only son, kills someone he does not know, namely Laius,  
 577 who, unbeknownst to Oedipus, is his real father. The gods send a plague on Thebes, and an  
 578 oracle reveals that Laius’s killer must be punished to end the plague. Oedipus searches for  
 579 Laius’s killer, aiming to punish him, placate the gods and end the plague.]

- 580 a. O Iðipoðas ðeli na timorisi ton eafto tu.  
 the.NOM Oedipus.NOM want.3SG COMP punish.3SG the.ACC self.ACC 3SG.POSS  
 581 ‘Oedipus wants to punish himself.’  
 582 b. #O Iðipoðas ðeli na afto- timoriði.  
 the.NOM Oedipus.NOM want.3SG COMP REFL punish.NACT.3SG  
 583 ‘Oedipus wants to self-punish.’  
 584 Consultant comment: ‘But he doesn’t want to self-punish; we wants to punish someone  
 585 who happens to be himself.’

586 The judgments of my consultants here mirror those reported for proxy readings in section 3.1.1. (40a)  
 587 is somewhat marked, as we might expect the relevant readings to be more generally; (40b) is judged  
 588 as considerably more difficult even relative to this marked baseline, as suggested by the consultant  
 589 comment provided underneath (40b).

590 Thus, as both Heim (1994) and Sportiche (2022) observe, argumental reflexives dissociate from  
 591 reflexivized verbs in *de re*-favoring contexts. The full significance of this observation for our purposes  
 592 becomes clear in light of Sportiche’s original argument regarding how (38) bears on the semantics of  
 593 reflexivization: unlike verbs that take a pronominal reflexive argument, reflexivized verbs must be  
 594 treated as semantically monadic.

### 3.1.7 INTERIM SUMMARY

This section has aimed to argue that *afto*- reflexives (and their *alilo*-prefixed reciprocal counterparts) are syntactically intransitive. They thus pattern on a par with natural reflexives in Greek (not shown above for reasons of space), and distinctly from anaphoric-argument-taking transitive verbs. Table 1 summarizes the diagnostics that motivate this conclusion.

Diagnostic	Anaphoric pronoun	<i>afto</i> -/ <i>alilo</i> -	Natural reflexives
Proxy readings	✓	✗	✗
Gapping	✓	✗	✗
Object comparatives	✓	✗	✗
Object focus alternatives	✓	✗	✗
Wide scope	✓	✗	✗
<i>De re</i> readings	✓	✗	✗

Table 1: Summary of transitivity diagnostics.

At this juncture, it is important to become precise on the point of what exactly these diagnostics are testing. For many of the tests employed thus far, the crucial dimension differentiating pronominal from verbal reflexives seems to be the number of interpretively represented participants in the reflexive events. To see what is at stake, consider the two different reflexive denotations in (41).

- (41) a. *Dyadic reflexive*  
 $\lambda y \lambda x \lambda e. Verb(e) \wedge Agent(e) = x \wedge Theme(y) \wedge x = y$   
b. *Monadic reflexive*  
 $\lambda x \lambda e. Verb(e) \wedge Participant(e) = x \wedge Reflexive(e)$

(41a) is dyadic, in the sense that the denotation involves two distinct entity-denoting variables,  $x$  and  $y$ ; reflexivity arises because these variables have been identified. In a standard analysis of, for example, the semantics of reflexive pronouns (e.g. Heim & Kratzer 1998), this type of identification comes about through semantic binding, with two syntactically independent elements being linked through indexation and binding. This is the type of analysis that (41a) is meant to instantiate.

(41b), by contrast, is monadic: there is but a single individual variable  $x$ , associated with some role linked to the event (here neutrally labeled ‘Participant’). The information that the event is reflexive is supplied by means that do not directly involved this individual variable, for instance by some relation Reflexive in (41b).

The denotations in (41) are not provided as actual possible analyses of the data at hand in this paper, but rather as illustrations of the idea that aspects of the interpretation of reflexives can be sensitive to the number of event participants. In particular, (41a) furnishes one individual variable more relative to (41b); the idea is that, for the purposes of the tests adduced so far in this section, this variable can be manipulated in different ways. For instance, the extra variable present in (41a), but not (41b), can be treated as a proxy of its binder, giving rise to proxy readings; subjected to



coreference instead of local binding, giving rise to ambiguities in the contexts provided by ellipsis and focus; or be assigned wide scope relative to an intensional operator, allowing the exceptional readings discussed in 3.1.6. (41b), being semantically monadic, fails to provide these options: it involves just one individual variable, and hence fails to provide a second entity capable of being proxy-shifted, interpreted under co-reference, and so forth (see esp. Labelle 2008 for a similar view of some of the relevant diagnostics).<sup>16</sup>

A denotation of the type seen in (41a) corresponds to the kind of denotation we expect to arise from a structure bearing two syntactic arguments (see e.g. the semantics of anaphoric binding in Heim and Kratzer 1998, and cf. arity-reducing analyses like Bach and Partee 1980); (41b) is naturally compatible with a syntax bearing one argument and a reflexivizer of some kind (see e.g. Buring 2005: 40ff, Labelle 2008). The analysis to be proposed for the interpretation of *afto*- will indeed be of the latter type, specifically taking the shape in (42). On the question of whether this single-argument interpretation could arise, in the case of *afto*-, from a two-argument syntax, see section 4.3.

$$(42) \quad \lambda x \lambda e. Verb(e) \wedge Theme(e) = x \wedge Agent(e) = Theme(e)$$

### 3.2 LOW ORIGIN

Having ruled out the ‘hidden transitive’ analyses of reflexives, we are now left to decide between the unergative and unaccusative analyses. It must be noted at the outset that the issue of unaccusativity diagnostics is a notoriously thorny one for Greek: the language seemingly supplies few tests for unaccusativity (see Alexiadou and Anagnostopoulou 1999), and deployment of these tests is often tentative in practice (see e.g. Alexiadou & Schäfer 2014). Here, I propose a novel unaccusativity diagnostic applicable to Greek reflexives, and refine existing diagnostics to extend them to the case at hand.

Four arguments support an unaccusative analysis of Greek reflexives.<sup>17</sup> With respect to these

<sup>16</sup>Interestingly, Greek verbal reflexives seem to dissociate from Romance clitic reflexives with respect to many of the diagnostics in this section. For instance, the *se* reflexives of French freely host proxy readings (Labelle 2008: p. 856), allow bound variable interpretations under focus (Sportiche 2014: pp. 311–312) (but see Labelle (2008: 858ff) on comparatives), and are acceptable in the *Oedipus*-type contexts of section 3.1.6 (Sportiche 2022: p. 8). These facts are expected if, unlike Greek *afto*-, French *se* has the interpretive contribution of a pronoun (pace Labelle 2008; McGinnis 2022); a proper comparison is well beyond our scope here, however.

<sup>17</sup>Other unaccusativity tests previously proposed for Greek do not behave reliably for the reflexive data. Modification with *by itself* yields infelicity, but this is fully expected: if *by itself* denotes the non-existence of an agent/causer (see e.g. Alexiadou, Anagnostopoulou, & Schäfer 2006: 195 and references therein), then it will be incompatible with reflexives, which, unlike unaccusatives, show agentivity. Possessor sub-extraction yields unclear results: all my consultants fail to detect a strong unaccusative/unergative split here, and it is debatable whether Greek shows the necessary subject/object extraction asymmetry in the first place (for conflicting reports from transitives, compare Vassilios Spyropoulos and Philippaki-Warbuton 2001: p. 164, Kotzoglou 2007 and Vassillios Spyropoulos and Stamatogiannis 2011 with Lekakou 2005: pp. 19–21 and Alexiadou and Anagnostopoulou 1999; Alexiadou, Anagnostopoulou, and Everaert 2004, with the last work conceding that the alleged contrast is not strong). Postverbal bare plurals (Alexiadou et al. 2004) yield similarly inconclusive results. Finally, participle formation (Alexiadou & Anagnostopoulou 1999) is subject to additional (and hitherto underdiscussed) constraints on the combination of *afto*- with participial structures; see Paparounas (2023b: ch. 5).

tests, *afto*- verbs never pattern with unergative verbs, but rather with structures that involve an underlying internal argument (transitives, passives, and unaccusatives). More precisely, *afto*- reflexives pattern consistently only with unaccusatives/passives; where they pattern with transitive structures, their sole argument can be shown to behave on a par with the internal, not the external, argument of those structures.<sup>18</sup>

### 3.2.1 PREDICATIVE COMPLEMENTS

A robust test for the presence of an internal argument in many languages comes from resultative secondary predication. A classic paradigm from English is given in (43); here, the predicate can successfully combine with an active transitive (43a), an unaccusative (43b), and a passive (43c); but the unergative (43d) lacks a resultative reading (compare (43e)).

- (43) a. The wind froze the metal solid.  
 b. The metal froze solid.  
 c. The metal was frozen solid.  
 d. \*John ran tired. *(fine only on depictive reading)*  
 e. John ran himself tired/ragged.

The paradigm in (43) suggests that the surface subject of unaccusatives and passives has something in common with the object of transitives; the subject of unergatives behaves differently, however. The correct partition between the examples can be made by assuming that the resultative predicate is deep-object-oriented, with all examples but the unergative (43d) involving a deep object, crucially including the unaccusative (43b). This is the so-called *Direct Object Restriction* (Levin & Rappaport Hovav 1995; Simpson 1983), according to which resultative secondary predicates attach to deep objects.

Because Greek lacks resultative predication (Giannakidou & Merchant 1999), previous literature has not attempted to extend this test to the language. But on closer inspection, Greek does make available a parallel structure, in the form of *predicative complements* licensed by verbs like *declare*, *characterize*, *call/name* and *appoint*.

In simple transitives, the predicate appears in the accusative, thereby matching the case of the object:

- (44) a. I Maria xarakterise to Jani vlaka.  
 the.NOM Mary.NOM characterize.PST.3SG the.ACC John.ACC idiot.ACC  
 ‘Mary branded John an idiot.’  
 b. O papas anakirikse ton Karlomagno vasilia.  
 the.NOM pope.NOM declare.PST.3SG the.ACC Charlemagne.ACC king.ACC  
 ‘The pope declared Charlemagne king.’

<sup>18</sup>Natural reflexives, as well as reciprocals, both natural and *alilo*-prefixed, can also be shown to pass many of the same unaccusativity diagnostics as *afto*- reflexives, guaranteeing that all the verbal reflexives and reciprocals in the language participate in Voice syncretism. For reasons of space, I only provide examples with *afto*- in this section.

- 678 c. I prothipuryos apokalese ton aktivisti **faro** **elpiðas**.  
the.NOM prime.minister.NOM call.PST.3SG the.ACC activist.ACC beacon.ACC hope.GEN  
679 ‘The prime minister called the activist a beacon of hope.’  
680 d. I prothipuryos ðiorise ti Maria **ipuryo**  
the.NOM prime.minister.NOM appoint.PST.3SG the.ACC Mary.ACC minister.ACC  
681 **peðias**.  
education.GEN  
682 ‘The prime minister appointed Mary minister of education.’

683 When transitives are passivized, with the underlying object now receiving nominative, the predicate  
684 continues to track the case of the object, becoming nominative itself:

- 685 (45) a. O Janis xarakteristike **vlakas** (apo polus  
the.NOM John.NOM characterize.NACT.PST.3SG idiot.NOM from many  
686 ðimosioyrafus).  
journalist.PL  
687 ‘John was branded an idiot (by many journalists).’  
688 b. O Karlomaynos anakirixðike **vasilias** (apo ton papa).  
the .NOMCharlemagne.NOM declare.NACT.PST.3SG king.NOM from the pope  
689 ‘Charlemagne was declared king (by the pope).’  
690 c. Pjos aktivistis apokalestike **faros** **elpiðas** apo tin  
which.NOM activist.NOM call.NACT.PST.3SG beacon.NOM hope.GEN from the  
691 prothipuryo?  
prime.minister  
692 ‘Which activist was called a beacon of hope by the prime minister?’  
693 d. I Maria ðioristike **ipuryos** **peðias** (apo tin  
the.NOM Mary.NOM appoint.NACT.PST.3SG minister.NOM education.GEN from the  
694 prothipuryo).  
prime.minister  
695 ‘Mary was appointed minister of education (by the prime minister).’

696 The predicate can never fail to case-match the object:

- 697 (46) a. I Maria xarakterise to Jani **vlaka** / \***vlakas**.  
the.NOM Mary.NOM characterize.PST.3SG the John.ACC idiot.ACC idiot.NOM  
698 ‘Mary branded John an idiot.’  
699 b. O Janis xarakteristike **vlakas** / \***vlaka**.  
the.NOM John.NOM characterize.NACT.PST.3SG idiot.NOM idiot.ACC  
700 ‘John was branded an idiot.’

701 There are reasons to believe that the predicative complement and the object form a constituent un-

derlyingly. Firstly, no material can intervene between the two.<sup>19</sup>

- (47) a. (epiyondos) i proθipuryos (epiyondos) sinandise (epiyondos)  
urgently the.NOM prime.minister.NOM meet.PST.3SG  
ton Vretano omoloγo tis (epiyondos).  
the.ACC British.ACC counterpart.ACC her  
'The prime minister urgently met her British counterpart.'  
b. (epiyondos) i proθipuryos (epiyondos) ðiorise (epiyondos) ti  
urgently the prime.minister.NOM appoint.PST.3SG the  
Maria (?\*epiyondos) **stratiyo** (epiyondos)  
Mary.ACC general.ACC  
'The prime minister urgently appointed Mary as general.'

Additionally, it can be shown that the predicate is low in the structure, as required by the analysis whereby it attaches to the internal argument. In (48a), a reflexive embedded within the predicative complement is successfully bound by the object, suggesting that the former is c-commanded by the latter. As expected, this is not symmetric c-command: in (48b), the object anaphor cannot be bound by the nominal embedded within the predicative complement.

- (48) a. O vasilias anakirikse ton lao<sub>i</sub> kiriarxo tu eaftu  
the.NOM king.NOM declare.PST.3SG the.ACC public.ACC master.ACC the.GEN self.GEN  
tu<sub>i</sub>.  
his  
'The king declared the people masters of themselves.'  
b. \*O vasilias anakirikse ton eafto tu<sub>i</sub> kiriarxo tu lau<sub>i</sub>.  
the king.NOM declare.PST.3SG the.ACC self.ACC his master.ACC the.GEN public.GEN  
'The king declared the people masters of themselves.'

All considerations adduced thus far suggest that predicative complements of *declare*-class verbs attach to the internal argument of such verbs. Importantly, to my knowledge, no unergative verb in the language forms predicative complements; that is, we do not find any examples of the kind in (49), taking 'run' as a placeholder for any *bona fide* unergative verb.

- (49) \*O Yanis etrekse olimbionicis.  
the.NOM John.NOM run.PST.3SG olympic.champion.NOM

The crucial observation, then, is that *afto*- reflexives freely take predicative complements. Examples like those in (44) to (45) are perfectly grammatical once reflexivized, with the predicate's case tracking the case of the single argument of the reflexive:

<sup>19</sup>The final attachment site of *urgently* in (47b) is possible only if the object is phonologically heavy (e.g. *leader of the armed forces* rather than *general*); even then, a clear pause is required after *urgently*.

- 727 (50) a. O Yanis afto- xaraktiristike vlakas.  
 the.NOM John.NOM REFL characterize.NACT.PST.3SG idiot.NOM  
 728 'John branded himself an idiot.'
- 729 b. O Karlomaynos afto- anakirixθike vasilias.  
 the.NOM Charlemagne.NOM REFL declare.NACT.PST.3SG king.NOM  
 730 'Charlemagne declared himself king.'
- 731 c. O aktivistis afto- apokalestike faros elpiðas.  
 the.NOM activist.NOM REFL call.NACT.PST.3SG beacon.NOM hope.GEN  
 732 'The activist called himself a beacon of hope.'
- 733 d. I Maria afto- ðioristice ipuryos peðias.  
 the.NOM Mary.NOM REFL appoint.NACT.PST.3SG minister.NOM education.GEN  
 734 'Mary appointed herself minister of education.'

735 For completeness, note that it is also perfectly possible to achieve a reflexive interpretation with the  
 736 same class of verbs by combining the predicate with the reflexive pronoun:

- 737 (51) O Karlomaynos anakrikse ton eafto tu vasilia.  
 the.NOM Charlemagne.NOM declare.PST.3SG the.ACC self.ACC his king.ACC  
 738 'Charlemagne declared himself king.'

739 The argument is clear: since predicative complements require an underlying object to attach to,  
 740 and *afto*- reflexives freely take predicative complements, then the single argument of *afto*- reflexives  
 741 must be internal. From this perspective, the derivation of examples like (50) must closely parallel  
 742 that of the passive examples in (45), with the internal argument vacating the constituent it shares  
 743 with the predicate to become the surface subject.

744 The unergative analysis of reflexives, whereby the only argument of the reflexive is an external  
 745 one, cannot account for this data, unlike the unaccusative analysis. But it seems at first glance that  
 746 the 'transitive' analyses in (22) and (24) also fare well here, insofar as these structures do supply  
 747 an internal argument for the predicate to attach to. But the case matching aspect of (50) supplies a  
 748 straightforward argument against at least (22): if *afto*- were the internal argument participating in  
 749 predicate formation, it seems unexpected that the predicate should track the case of a wholly different  
 750 element, namely, the nominal that, under (22), would occupy the external argument position.<sup>20</sup>

### 751 3.2.2 DATIVE INTERVENTION

752 A particularly striking piece of evidence in favor of the unaccusative analysis comes from the behavior  
 753 of reflexives in ditransitive constructions. These configurations show that the argument of reflexives  
 754 triggers intervention effects in the context of a genitive goal – an effect completely unexpected on any  
 755 analysis where this argument originates higher than datives. As with the other diagnostics presented  
 756 in this section, this set of facts has, to my knowledge, not been brought to bear on (Greek) verbal

<sup>20</sup>For a parallel case, see the argument against the unergative analysis of reflexives from reflexivization of ECM verbs in Icelandic (Andrews 1982; Marantz 1984: pp. 164–165).

reflexives before.

As background, consider a well-known set of observations on the behavior of Greek two-argument structures. Illustrating with ditransitives,<sup>21</sup> (52a) is a typical Greek ditransitive, where the goal is marked with genitive and the theme with accusative. Greek ditransitives are asymmetric under passivization: the goal can never be promoted to subject, with datives (realized in standard Greek as genitives; Anagnostopoulou and Sevdali (2020: see esp.)) being inert for A-movement across the board in the language. The only possibility is thus to promote the theme across the goal. Interestingly, this possibility is obligatorily accompanied by clitic doubling of the goal, as shown in (52b).<sup>22</sup>

- (52) a. *ðio aynosti (tis) eðosan tis Marias to vivlio.*  
 two stranger.NOM.PL 3SG.F.GEN give.PST.3PL the.GEN Mary.GEN the.ACC book.ACC  
 ‘Two strangers gave the book to Mary.’  
 b. *To vivlio \*(tis) ðoθice tis Marias (apo ðio*  
 the.NOM book.NOM 3SG.F.GEN give.NACT.PST.3SG the.GEN Mary.GEN from two  
*aynostus).*  
 stranger.PL  
 ‘The book was given to Mary (by two strangers).’

(53) provides a further set of examples illustrating the same facts.

- (53) a. *Kapçi ipurji (tis) parusiasan tis*  
 some.NOM.PL minister.NOM.PL 3SG.F.GEN present.PST.3PL the.GEN  
*proθipuryu ton Jani os iðiko.*  
 prime.minister.GEN the.ACC John.ACC as expert.ACC  
 ‘Some ministers presented John to the prime minister as an expert.’  
 b. *O Janis \*(tis) parusiastike tis proθipuryu os*  
 the.NOM John.NOM 3SG.F.GEN present.NACT.PST.3SG the.GEN prime.minister.GEN as  
*iðikos (apo kapçus ipuryus).*  
 expert.NOM from some.PL minister.PL  
 ‘John was presented to the prime minister as an expert (by some ministers).’

The effect in (52b)/(53b) has been assimilated to dative intervention configurations in other languages, along the following lines (see Anagnostopoulou 1994, 2003: see and much subsequent work). Greek goals c-command themes in the base; in cases like (52b)/(53b), then, the dative is a defective intervener, being itself ineligible for promotion yet still disrupting the relation between the landing site of A-movement and the only legitimate goal, the theme. The effect of clitic doubling in cases such as (52b)/(53b) is then to move the dative ‘out of the way’ of the higher probe, allowing it to access

<sup>21</sup>The same basic effects obtain in unaccusative DAT-NOM configurations, including the verb *seem* and experiencer object verbs such as *please*; see Anagnostopoulou 2003: 23ff.

<sup>22</sup>As noted in Anagnostopoulou (1994) and much subsequent work, bare cliticization patterns together with clitic doubling in alleviating the intervention effect. I limit myself to examples with clitic doubling here in the interest of brevity, though all facts below, including those involving reflexives, replicate with bare clitics.

the theme, much as movement of the dative in Icelandic (see among very many others Sigurðsson 1996). The ameliorating effect of clitic doubling in Greek has been classically understood as involving movement itself (see e.g. Anagnostopoulou 2003; Angelopoulos 2019), though agreement-based solutions have recently proposed in its place (Paparounas & Salzmann 2023). The choice between the two approaches to the suspension of intervention is immaterial for our purposes here.

What is crucial is the utility of the intervention effect as a diagnostic of the position of a given argument relative to the dative. The reasoning is straightforward: if a given argument originates above the dative, it should not obligatorily trigger clitic doubling of the dative (see e.g. the nominative in (52a)/(53a), where doubling is optional). But if an argument is c-commanded by the dative, as themes of ditransitives are, then we expect the behavior seen in (52b)/(53b), with doubling becoming obligatory. In the domain of reflexivized ditransitives, then, the unergative and unaccusative analyses of reflexives will make clearly different predictions here: the unergative analysis predicts no intervention by the dative, and thus optional clitic doubling, whereas the unaccusative analysis predicts clitic doubling to be obligatory.

The facts are in line with the unaccusative analysis. In reflexivized ditransitives, clitic doubling of the goal is obligatory:

(54) [*The robbers convinced the victim to be let in to the apartment by posing as plumbers.*]

I            listes            \*(tu)            afto- parusiastikan            tu            θimatos            os  
the.NOM.PL robber.NOM.PL    3SG.N.GEN REFL present.NACT.PST.3PL the.GEN victim.GEN as  
iðravlici.  
plumber.NOM.PL

‘The robbers presented themselves to the victim as plumbers.’

These facts clearly evidence a low origin for the surface subject of reflexives, where ‘low’ means specifically ‘lower than dative goals’. They are thus damning as to the viability of an unergative analysis, but follow naturally if reflexives have effectively the syntax of passives.<sup>23</sup>

<sup>23</sup>Judgments on dative intervention are known to be subject to some amount of inter-speaker variation (see e.g. Murphy 2018; Sigurðsson and Holmberg 2008: p. 524 on Icelandic). Greek is no exception in this respect, and other empirical puzzles for existing analyses have been noted, chiefly concerning the potential role of A’ movement in lifting the intervention effect (for brief overview, see Paparounas and Salzmann 2023: fn. 42). To the best of my understanding, the argument here remains unaffected by such considerations. All that it takes for the facts discussed in this section to be probative is for the effect of clitic doubling in reflexivized ditransitives to mirror the effect in passives within speakers. This is categorically the case in my consultant pool: all consultants find undoubled datives in both passives and reflexives completely unacceptable, and all consultants report that clitic doubling improves this configuration significantly, in both passives and reflexives. What seems to differ between speakers is the extent to which clitic doubling repairs the configuration relative to the baseline of a prepositional goal (e.g. *sti Maria* ‘to Mary’; see Anagnostopoulou 2003: pp. 9–15), which never triggers intervention for any speaker. For one consultant and the native speaker, doubled datives and prepositional goals are on a par with each other; but two other consultants, prepositional goals are judged as systematically better than doubled datives, which are in turn nonetheless significantly better than undoubled datives. Crucially, for all speakers I have encountered, the hierarchy of preferences is the same in both passives and reflexives. Differences between speakers may be plausibly attributed to an orthogonal factor, in the form of differences in the markedness of genitive goals relative to prepositional



### 3.2.3 AGENT NOMINALS

A further diagnostic is given by agent nominals in *-tis* (cf. English *-er*), which are freely formed only from underlyingly agentive verbs. Roots building prototypical unergatives and transitives thus freely form agent nominals, but the same is not true of unaccusatives (Alexiadou & Schäfer 2014: pp. 4–5).

- (55) a. { trayudis , xoref , kolimv , kaθaris , apeleθero , ðioryano } -tis  
 $\sqrt{\text{SING}}$   $\sqrt{\text{DANCE}}$   $\sqrt{\text{SWIM}}$   $\sqrt{\text{CLEAN}}$   $\sqrt{\text{LIBERATE}}$   $\sqrt{\text{ORGANIZE}}$  NMLZ  
 ‘singer, dancer, swimmer, janitor, liberator, organizer’  
 b. \*{ pef , peθan , ftan } -tis  
 $\sqrt{\text{FALL}}$   $\sqrt{\text{DIE}}$   $\sqrt{\text{ARRIVE}}$  NMLZ  
 ‘\*faller, \*dier, \*arriver’

Similarly to English (56a), grammatical *-tis* nominals often have a prototypical occupational reading (57a); this reading is not a necessity, however, and a simple agent nominal interpretation emerges once we supply an overt complement (56b), (57b).

- (56) a. John is a builder. *interpreted occupationally by default*  
 b. John is a careful builder of Jenga towers.  
 (57) a. O Janis ine xtis- tis.  
 the.NOM John.NOM be.3SG  $\sqrt{\text{BUILD}}$  NMLZ.NOM  
 ‘John is a builder.’  
 b. O xtis- tis tu jefirju itan o Kostas Bekas.  
 the.NOM  $\sqrt{\text{BUILD}}$  NMLZ.NOM the.GEN bridge.NOM be.3SG the.NOM  
 ‘The builder of the bridge was Kostas Bekas.’ (attested, <https://tinyurl.com/2cvs3u3t>)

Importantly, *afto-* reflexives do not form good *-tis* nominals (see also e.g. Dalrymple et al. 1994: p. 154 on Chicheŵa, and cf. Reinhart 2016: p. 22 on English). Prefixing an existing *-tis* nominal with the reflexivizer systematically yields unacceptable forms (58). Note that this unacceptability cannot be attributed to the absence of a name-worthy occupational reading for the relevant forms. Any confounds arising from such readings should be ruled out by the provision of a complement in the first place (cf. (57a) to (57b)), and (59) clarifies that a reflexive pronoun complement indeed felicitously yields a non-occupational agent noun.

- (58) a. (\*afto-) ðiafimis- tis  
 self  $\sqrt{\text{ADVERTISE}}$  NMLZ  
 b. (\*afto-) ekðo- tis  
 self  $\sqrt{\text{PUBLISH}}$  NMLZ

---

ones across the board, outside the domain of passivization/reflexivization; this is a well-known fact about the Greek dative (see e.g. Holton, Mackridge, and Philippaki-Warbuton 2012: pp. 251–252). Note that one of the core consultants was not consulted for this diagnostic, since they dislike non-prepositional goals across the board, and the relevant examples thus could not be constructed.

- 832 c. (\*afto-) anali- tis  
self  $\sqrt{\text{ANALYZE}}$  NMLZ
- 833 d. (\*afto-) epikri- tis  
self  $\sqrt{\text{CRITICIZE}}$  NMLZ
- 834 (59) O Janis ine o pio skliros epikri- tis tu  
the.NOM John.NOM be.3SG the.NOM most harsh.NOM  $\sqrt{\text{CRITICIZE}}$  NMLZ.NOM the.GEN  
835 eaftu tu.  
self.GEN his  
836 ‘John is his own harshest critic.’ (adapted from <https://tinyurl.com/3n7pjnt9>)

837 This dissociation between transitives and unergatives on the one hand, and reflexives on the other,  
838 lends some insight into the inner workings of this diagnostic. (58) is *prima facie* surprising: since  
839 reflexives are, in one sense, agentive verbs, it may be unexpected that they do not form agent nomi-  
840 nals. It must be the case, then, that the formation of agent nominals requires ‘deep’ agentivity, of the  
841 kind borne by unergatives and transitives but not by reflexives derived via an unaccusative syntax.<sup>24</sup>

<sup>24</sup>Alexiadou and Schäfer (2014) urge caution in interpreting the output of this diagnostic for NRVs, based on the observation that Greek agent nominals formed from NRVs (e.g. the counterpart of *shaver*) are ungrammatical not just on the reflexive reading (‘self-shaver’), but also on the transitive reading which the relevant roots otherwise accommodate (‘shaver of someone else’). But making more precise the nature of the issue here is a non-trivial task. To begin with, the mere fact that speakers hesitate to accept the counterpart of ‘shaver’ does not necessarily indicate that it is not generated by their grammar, as judgments are likely to be influenced by formally unrelated but pragmatically competing forms, especially on the occupational reading (e.g. ‘barber’). This mitigating factor is reinforced by the fact that, in Greek, even the unacceptable formations mentioned in Alexiadou and Schäfer (2014) improve somewhat with the addition of an overt object for the agent nominal (cf. Embick and Marantz 2005: 14ff for English *stealer* versus *base-stealer*).

- (i) O Janis ðen ine aplos kureas. Ine o ??ksiris- tis tu vasilja.  
the.NOM John.NOM NEG be.3SG simple.NOM barber.NOM be.3SG the.NOM  $\sqrt{\text{SHAVE}}$  NMLZ.NOM the.GEN king.GEN  
‘John isn’t just a barber; he shaves the king.’

Moreover, certain roots that form NRVs in fact do apparently form *-tis* nominals, with only the transitive reading; body-action verbs like *proponume* ‘train’ and *jimnazome* ‘exercise’ below are a case in point.

- (ii) a. O Janis jimnazi oles tis miikes omaðes eksisu.  
the.NOM John.NOM exercise.3SG all.ACC the.PL.ACC muscle group.ACC equally  
‘John trains all muscle groups equally.’
- b. O Janis jimnazete sixna.  
the.NOM John.NOM exercise.NACT.3SG often  
‘John exercises often.’
- c. O Janis ine jimnas- tis.  
the.NOM John.NOM be.3SG  $\sqrt{\text{EXERCISE}}$  NMLZ.NOM  
✓ ‘John is a fitness coach.’  
✗ ‘John trains himself.’

Paradigms like (ii) may tentatively mitigate the concern in Alexiadou and Schäfer (2014); however, the details admittedly require caution in their own right. It would need to be shown, for example, that verbs like that in (iib) are indeed NRVs, not simple unaccusatives, and any confounds regarding possible differences between agent nouns more generally, and occupational nouns like that in (iic) specifically, would need to be taken into account.

### 3.2.4 EVENT NOMINALS

A further diagnostic for unaccusativity is provided by the formation of event nominals.<sup>25</sup> Alexiadou (2001: pp. 41–42) states the relevant generalization in the most general way possible: Greek unaccusatives readily form event nouns, whereas unergatives do not.

Ascertaining whether this generalization holds across the board is a task that remains to be undertaken; Alexiadou provides a few illustrative examples, but without systematically controlling for the nominalizer used. What seems clear for our purposes is that the generalization does seem to hold for event nominals formed with the nominalizer *-si*.

With roots commonly forming transitives (60) and unaccusatives (61), affixation of *-si* freely yields event nominals, using standard tests from Grimshaw (1990): the eventiveness of the nominals is diagnosed by the availability of aspectual modifiers, the obligatoriness of internal arguments are obligatory, and modification by *frequent* without plural marking on the noun.

- (60) a. I ekserevni- si tu spileu (apo eθelondes) epi ðio  
the.NOM  $\sqrt{\text{EXPLORE}}$  NMLZ.NOM the.GEN cave.GEN from volunteer.PL for two  
evdomaðes prokalese ðieθni θavmazmo.  
week.PL cause.PST.3SG international admiration.ACC  
‘The exploration of the cave by volunteers for two weeks was the cause of international admiration.’
- b. I (sineçis) ekserevni- si \*(tu spileu) apeti  
the.NOM constant  $\sqrt{\text{EXPLORE}}$  NMLZ.NOM the.GEN cave.GEN require.3SG  
ipomoni ke kalo eksoplizmo.  
patience.ACC and good.ACC equipment.ACC  
‘The (constant) exploration of the cave requires patience and good equipment.’
- (61) a. I pto- si ton timon epi tris evðomaðes  
the.NOM  $\sqrt{\text{FALL}}$  NMLZ.NOM the.PL.GEN price.PL.GEN for three week.PL  
ekplisi polus ikonomoloyus.  
surprise.3SG many economist.PL.ACC  
‘The fall of prices for three weeks surprises many economists.’
- b. I (sineçis) pto- si \*(ton timon) sxetizete  
the.NOM constant  $\sqrt{\text{FALL}}$  NMLZ.NOM the.GEN.PL price.PL.GEN correlate.NACT.3SG  
me apopliθorizmo.  
with deflation  
‘The (constant) fall of prices is correlated with deflation.’

Note in the examples above that the internal argument surfaces in the genitive, with the transitive

<sup>25</sup> Here I use the term ‘event nominal’ to correspond to the presence of argument structure; in the terminology introduced in Grimshaw (1990), the relevant class are *complex* event nominals (cf. (Alexiadou 2010; Borer 2003), who use the term *argument structure nominals*).

(60a) permitting the external argument to be expressed as a *by*-phrase.

Unlike the transitive- and unaccusative-forming Roots just surveyed, unergative-forming Roots never combine with *-si* on the event nominal reading. Two observations support this generalization. Some roots typically forming unergatives do combine with *-si*, but in so doing form nominals that do not tolerate any overt argument structure. In (62a), the *-si* nominal has a generic reading, which is incompatible with an overtly expressed argument and with aspectual modification (62b)/modification by *frequent* (62c):

- (62) a. I kolimvi- si kani kalo.  
the.NOM  $\sqrt{\text{SWIM}}$  NMLZ.NOM do.3SG good.ACC  
‘Swimming is good for you.’
- b. \*I kolimvi- si tis Marias (epi ðio ores)  
the.NOM  $\sqrt{\text{SWIM}}$  NMLZ.NOM the.GEN Mary.GEN for two hour.PL  
metaðoðike zondana se pende kanalja.  
broadcast.NACT.PST.3SG live in five channel.PL  
‘Mary’s swimming for two hours was broadcast live on five channels.’
- c. \*I (sihni / sineçis) kolimvi- si tis Marias tin  
the.NOM frequent constant  $\sqrt{\text{SWIM}}$  NMLZ.NOM the.GEN Mary.GEN 3SG.F.ACC  
proetimase kala ja to protaθlima.  
prepare.PST.3SG well for the championship  
‘Mary’s (frequent) swimming prepared her well for the championship.’

A second type of Root does allow (what looks like) the external argument to be overtly expressed, but does not tolerate aspectual modification or *frequent*,<sup>26</sup> suggesting that the relevant nominals are of the result type:

- (63) a. I epemva- si ton Amerikanon (\*epi tria xronia)  
the.NOM  $\sqrt{\text{INTERVENE}}$  NMLZ.NOM the.GEN American.PL.GEN for three year.PL  
alakse ja panda tis jeopolitices isoropies tis perioçis.  
change.PST.3SG for always the geopolitical balance.PL.ACC the.GEN region.GEN  
‘The intervention by the Americans (for three years) forever changed the geopolitical balances of the region.’
- b. I (\*sineçis / \*sihni) epemva- si ton Amerikanon  
the.NOM constant frequent  $\sqrt{\text{INTERVENE}}$  NMLZ.NOM the.GEN American.PL.GEN

<sup>26</sup>As expected for result nominals, this type of modification becomes possible if the noun is pluralized:

- (i) I (sineçis / sihnes) epemva- si- s ton Amerikanon alaksan ja  
the.PL.NOM constant.PL frequent.PL  $\sqrt{\text{INTERVENE}}$  NMLZ.NOM PL the.GEN American.PL.GEN change.PST.3PL for  
panda tis jeopolitices isoropies tis perioçis.  
always the geopolitical balance.PL.ACC the.GEN region.GEN  
‘The frequent/constant interventions by the Americans forever changed the geopolitical balances of the region.’

891                   alakse           ja panda tis jeopolitices isoropies           tis           perioçis.  
change.PST.3SG for always the geopolitical balance.PL.ACC the.GEN region.GEN  
892                   ‘The frequent/constant intervention by the Americans forever changed the geopolitical  
893                   balances of the region.’

894   Crucially, *afto*- reflexives freely form *-si* nominals, again patterning with transitives and unaccusatives  
895   and unlike unergatives.

- 896   (64)   a.   I           afto- anakri-           si           tis           Marias   epi mia ora   sto   one  
the.NOM REFL  $\sqrt{\text{INTERROGATE}}$  NMLZ.NOM theGEN Mary.GEN for one hour in.the one  
897           man show apespase           to           sxoliko vravio   ipokritikis.  
man show glean.PST.3SG the.ACC school prize.ACC acting.GEN  
898           ‘Mary’s interrogating herself for one hour in the one man show won the school acting  
899           prize.’  
900           b.   I           sihni   afto- ðiafimi-           si           tu           Jani           tu  
the.NOM frequent REFL  $\sqrt{\text{ADVERTISE}}$  NMLZ.NOM theGEN John.GEN 3SG.M.GEN  
901           apoferi   polus neus followers sto   Instagram.  
yield.3SG many new followers on.the instagram  
902           ‘John’s frequent advertizing himself yields him many new followers on Instagram.’  
903           c.   I           afto- anakirik-           si           tu           stratiyu   os ðiktatora epi teteris  
the.NOM REFL  $\sqrt{\text{PROCLAIM}}$  NMLZ.NOM theGEN general.GEN as dictator for four  
904           ores eðose           to xrono   stis kivernitikes ðinamis na   ton  
hour.PL give.PST.3SG the time.ACC to.the governmental force.PL COMP 3SG.ACC  
905           anatrep sun proora.  
overturn.3PL prematurely  
906           ‘The general’s proclamation of himself as dictator for four hours gave government forces  
907           the time to overturn him prematurely.’

908   Note that the single argument of the reflexives in (64) is expressed as a genitive; it thereby patterns  
909   with the internal argument of nominalized transitives, and not with their external argument, which,  
910   in event nominals with a genitive theme, can be expressed only as a *by*-phrase (60a); see (Horrocks  
911   and Stavrou 1987; Alexiadou 2001: 79ff).

### 912   3.2.5   ETHICAL GENITIVES

913   The final diagnostic for unaccusativity comes from ethical genitives.<sup>27</sup> These elements take the gen-  
914   eral form in (65), where the genitive clitic indexes an entity somehow affected by the event.

- 915   (65)   Mu           efije           to peði.  
1SG.GEN leave.PST.3SG the child.NOM

<sup>27</sup>Note that dative and genitive systematically syncretize in (standard) Modern Greek; see Anagnostopoulou and Sevdali (2020) for recent discussion.

916 ‘The child left on me. (i.e. to my detriment)’

917 That these elements may provide an unaccusativity diagnostic is conjectured by Alexiadou et al.  
 918 (2004), where they are labeled possessor clitics following Borer and Grodzinsky (1986). In Greek at  
 919 least, there is a clear adversity reading dissociable from possession, as demonstrated by the following  
 920 example, where the possessor of the object is explicitly distinguished from the maleficiary (see also  
 921 Michelioudakis 2012; Michelioudakis and Kapogianni 2013; cf. Cuervo 2003 on Spanish):<sup>28</sup>

922 (66) [I have been tasked with watching Mary’s child at the park. I discover that, while I had my  
 924 back turned, the child ran away.]  
 923 Mu efje to peði tis Marias.  
 925 1SG.GEN leave.PST.3SG the child the.GEN Mary.GEN  
 926 ‘Mary’s child left on me.’

927 Ethical datives can generally be built from transitives and unaccusatives, but not from unergatives  
 928 (Alexiadou & Anagnostopoulou 2004):<sup>29</sup>

929 (67) a. Mu evrise to peði tis Marias.  
 1SG.GEN curse.PST.3SG the.ACC child.ACC the.GEN Mary.GEN  
 930 ‘S/he cursed Mary’s child on me.’

<sup>28</sup>In the absence of explicit disambiguation of the kind in (66), (65) is of course compatible with a reading where it is the speaker’s child that left; this is presumably why the term ‘possessor clitic’ has often been given to these structures. See Pylkkänen (2008: p. 68) for similar effects in Japanese adversity passives.

<sup>29</sup>See Michelioudakis (2012: ch. 4) for refinements to this simple picture: broadly speaking, the degree of participation of the dative in the event arguably modulates the extent to which it can combine with unergative structures. The generalizations are complex, however, and the judgments subtle. For instance, Michelioudakis (2012: p. 182) argues that benefactives can be built from unergatives; but the relevant examples either have an overt result (see main text below), or are of the following form:

- (i) I Maria tu jelase tu Tasu.  
 the.NOM Mary.NOM 3SG.M.GEN laugh.PST.3SG the.GEN Tasos.GEN  
 ‘Mary laughed for Tasos.’

Closer inspection suggests that the genitive here denotes not a beneficiary, but a direction/goal for the laughing event (cf. English *smile at Mary* versus *smile for Mary*). The following example makes this point:

- (ii) [Mary’s first show as a screenwriter is premiering on TV, and the network will gauge whether to fund a second episode from the ratings of the laugh-o-meters installed in select viewers’ TV sets. The more laughter the laugh-o-meter registers per viewer, the more likely the network is to retain Mary’s show. She implores her friend:]  
 #Se parakalo, jelase mu otan ðis to show apopse!  
 2SG.ACC implore.1SG laugh.IMP.2SG 1SG.GEN tonight when watch.2SG the.ACC show.ACC  
 Intended: ‘Please laugh for my benefit when you watch the show tonight!’

In (ii), it is understood that Mary cannot directly witness the laughing event, not being present for her friend’s watching session; but she would benefit from the laughing event. Nevertheless, the genitive is decidedly odd here, suggesting that, whatever the role of the entity it denotes, it must be more closely involved in the event than simply benefitting from it. Since sorting out the complexities here, let alone comparing benefactives and malefactives, would take us far afield, I put these questions to the side for now.

- 931           b. Mu       efije           to       peði       tis       Marias.  
                   1SG.GEN leave.PST.3SG the.NOM child.NOM the.GEN Mary.GEN  
 932               ‘Mary’s child left on me.’  
 933           c. \*Mu       etrekse       to       peði       tis       Marias.  
                   1SG.GEN run.PST.3SG the.NOM child.NOM the.GEN Mary.GEN  
 934               ‘Mary’s child ran on me.’

935 Some unergative examples improve with the provision of a path/result, as in (68); as Elena Anagnos-  
 936 topoulou (p.c.) points out, this addition plausibly facilitates coercion into an unaccusative structure:

- 937 (68) ?Mu       etrekse       to       peði       tis       Marias   os   to   gremono.  
                   1SG.GEN run.PST.3SG the.NOM child.NOM the.GEN Mary.GEN until the cliff  
 938               ‘Mary’s child ran to the cliff on me.’

939 The impossibility of ethical datives with unergatives finds an explanation in a system such as Pylkkä-  
 940 nen (2008): if these are introduced by Low Appl, with this head combining with the internal argu-  
 941 ment before it meets the event, then (68c) will be ungrammatical for the same reason that *\*I ran them*  
 942 is in English: Appl has nowhere to attach.<sup>30</sup>

943 Crucially, ethical datives can be built from *afto*- reflexives perfectly easily:

- 944 (69) a. Mu       afto- katastrafike           to       ðiastimoplio.  
                   1SG.GEN REFL destroy.NACT.PST.3SG the.NOM spaceship.NOM  
 945               ‘The spaceship self-destructed on me.’  
 946           b. [A lawyer prepares his client for testimony in court.]  
 947               Mi mu       afto- katiyoriθis       avrio       sto       ðikastirio!  
 948               NEG 1SG.GEN REFL accuse.NACT.2SG tomorrow in.the court  
 949               ‘Don’t accuse yourself on me tomorrow in court!’

950 Once again, *afto*- reflexives pattern with structures involving an internal argument, and distinctly  
 951 from unergatives.

### 952 3.2.6 SUMMARY OF LOWER ORIGIN DIAGNOSTICS

953 As shown in Table 2, *afto*- reflexives pattern with unaccusatives (or passives, in the case of the pred-  
 954 icative complements diagnostic) with respect to all four tests. They never pattern with unergatives,  
 955 and do not pattern with transitives consistently. Importantly, when reflexives do pattern with tran-  
 956 sitives, their single argument parallels the behavior of the internal, not the external, argument of the  
 957 transitives, as in the case of event nominal formation discussed above.

<sup>30</sup>An issue that deserves more attention here concerns the semantic composition, insofar as, in Pylkkänen (2008), malefactive are typically introduced by *High* Appl. That things may work differently in Greek is perhaps suggested by the fact that malefactive genitives can be compatible with a possessive reading (see footnote 28), but much more must be said here. Cf. Michelioudakis and Kapogianni 2013, who take ethical datives to originate in High Appl, a move that leaves the restriction to deep object-taking predicates unexplained.



Diagnostic	Active transitive	Unergative	Unaccusative/Passive	<i>afto</i> - reflexive
Predicative complements	✓	✗	✓	✓
Dative intervention effect	✗	✗	✓	✓
Event nominals	✓	✗	✓	✓
Agent nominals	✓	✓	✗	✗
Ethical datives	✓	✗	✓	✓

Table 2: Summary of unaccusativity diagnostics.

Crucially, the arguments in this section are not merely correlational: instead, it is possible to argue, in each case, that the diagnostics used above group structures together based on thematic properties. Because reflexives and unaccusatives both fulfill this criterion, they are capable of hosting predicative complements and ethical datives (both built on internal arguments); to form event nominals (whose formation arguably requires an internal argument; see e.g. Borer 2003); and they thus obligatorily trigger clitic doubling when the internal argument is promoted to surface subject across a dative. Because they lack an underlying Agent, both unaccusatives and reflexives fail to form agent nominals – even though the internal argument of reflexives does end up acquiring agentive semantics, as detailed below.

#### 4 ANALYSIS: REFLEXIVITY ON VOICE

*afto*- reflexives have been shown to have three core properties. Firstly, they are truly syntactically intransitive; that is, the syntactic argument structure involves just one nominal, and *afto*- itself realizes a reflexivizing morpheme. Secondly, *afto*- reflexives only appear with **NACT** morphology; and thirdly, they trigger a passive-like syntax, with only a single argument present, in the internal argument position.

Any adequate account of this instance of reflexivization must do justice to the correlation of these three properties; in other words, it must specify why reflexivization in Greek-type languages goes hand-in-hand with an intransitive syntax, and moreover, why this intransitive syntax is of the unaccusative/passive type.

I propose that this correlation can be insightfully accounted for by tying reflexivization directly to the domain responsible for (external) argument introduction. Assuming the existence of a projection responsible for the introduction of the external argument (Kratzer 1996: et seq.), I build on the intuition that this projection can be the locus of reflexivization (with Bruening 2006; Labelle 2008; McGinnis 2022; Oikonomou and Alexiadou 2022; Raghotham 2022b; cf. Alexiadou 2014b; Spathas et al. 2015; for related ideas in anaphor binding, see e.g. B. T. Ahn 2015; Kratzer 2009; Paparounas and Akkuş 2023, and cf. Baker 2022). From this perspective, in Greek-type languages, verbal reflexivization involves a particular type of argument structure configuration, and goes hand-in-hand with a particular type of voice morphology, because verbal reflexivization is a type of Voice syntax.

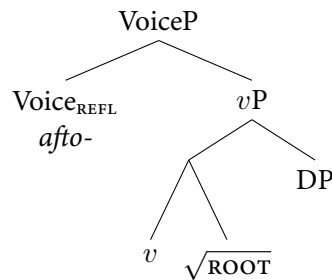
In particular, I propose that *afto*- realizes a particular type of Voice head, Voice<sub>REFLEXIVE</sub>, from

whose presence follows the passive-like syntax of intransitive reflexives; their obligatory co-occurrence with nonactive morphology; and their reflexive semantics.<sup>31</sup>

Though this particular implementation makes crucial use of a delexicalized theory of external argument introduction, the proposal here can be viewed as a recasting of an older idea in the literature of reflexives, namely, the proposal in the literature on Romance that the clitic *se/si* must obligatorily be merged as an external argument (Kayne 1988; McGinnis 2004; Pesetsky 1995: see e.g.). The intuition underlying this restriction was that there can be an intimate relation between reflexivization and the introduction of an external argument; on the proposal advanced here, this follows not because the reflexivizer is an argument in itself, but rather because it realizes a reflexivizing flavor of the external argument introducer, Voice.

Syntactically, I take Voice<sub>REFL</sub> to be a specifier-less head, giving rise to the unaccusative-like syntax of Greek reflexives. Since Voice<sub>REFL</sub> does not introduce a syntactic argument, structures built by combining this head with a transitive *v*P will have a single core argument introduced in the *v*P itself, that is, an internal argument. We moreover expect the absence of a Voice specifier to correlate with A-movement of the internal argument (Burzio 1986, though the exact nature of this correlation is the topic of recent debate, see Šereikaitė 2021 and Akkuş 2021: ch.3).

(70)



Being specifier-less, the Voice<sub>REFL</sub> head will receive the feature [NACT] at PF (see (7) and (8)), guaranteeing that structures built with this head will be systematically realized with nonactive morphology.<sup>32</sup>

<sup>31</sup>The claim here is that Greek(-type voice systems) derive verbal reflexives by means of Voice; not that this is the only way to derive verbal reflexives. Alexiadou et al. (2014) argue against a reflexive Voice analysis of English naturally reflexive verbs. Similarly, Spathas et al. 2015 argue against an analysis of this type for Greek natural reflexives; in this case, issues may arise with the nature of the arguments, as the facts are taken to show that nonactive forms are not ambiguous between passive and reflexive readings, but the tests employed to this end normally test for *lexical* ambiguities, and it is unclear whether they should extend to the case at hand in the first place).

<sup>32</sup>The analysis proposed here has some features in common with early ‘lexical’ analyses of reflexivization (Bouchard 1982; Grimshaw 1982; Wehrli 1986); however, Greek poses issues for purely ‘lexical’ analyses of reflexivization. Firstly, the main point of this paper, namely, that Greek verbal reflexives are derived from an unaccusative structure, is wholly unexpected on analyses that attempt to derive both unaccusatives and reflexives using lexical rules (Chierchia 2004; Reinhart 2016), and thus can only derive unergative reflexives (see esp. Reinhart and Siloni 2004, 2005, where the authors are at pains to claim that unaccusative reflexives do not exist, a conclusion untenable in light of the Greek facts and in any case questionable in its fully general form). Secondly, as stressed in Embick (2004b), the syncretism between verbal reflexives and other passive-like structures found in Greek and many other languages is unaccounted for on an analysis of

This type of analysis straightforwardly accounts for the crucial facts on the distribution of *afto*-verbs. These reflexives are voice-selective, appearing only with nonactive morphology; and they introduce an agent and identify it with the theme (see immediately below). The claim here is that these properties – agent introduction and Voice selectivity – follow straightforwardly if the locus of reflexivity is Voice, the head responsible for agent introduction and for the determination of voice morphology.

In terms of its semantic contribution, I will assign to  $\text{Voice}_{\text{REFLEXIVE}}$  the denotation in (71), also proposed in passing for *afto*- in Oikonomou and Alexiadou (2022) (whose main focus is not on reflexive verbs, and whose overall solution differs somewhat from the one proposed here; see footnote 37).

$$(71) \quad \llbracket \text{Voice}_{\text{REFLEXIVE}} \rrbracket = \lambda f_{\langle s, t \rangle} . \lambda e . f(e) \wedge AG(e) = TH(e)$$

(71) has three important properties. Firstly, reflexive Voice introduces an agent role, but no variable saturating this role; this aspect of the denotation is argued to capture the monadicity of verbal reflexives in section 3.1.7. Secondly, (71) effects role identification: where (one version of) passive Voice would existentially close this role, reflexive Voice identifies it with the theme role, both being tied to the event variable. The reference that (71) makes to particular thematic roles predicts that reflexives built with this head will be severely thematically restricted; in the next subsection, I argue that this prediction is crucially borne out.

#### 4.1 THEMATIC RESTRICTIONS ON REFLEXIVIZATION

Crucial support for the linking of reflexivity to Voice in Greek comes from two observations on the thematic restrictions on reflexivization.<sup>33</sup>

The first observation, made already in Alexiadou (2014b), is that *afto*- reflexivization is necessarily agent-oriented.<sup>34</sup> One corner of the Greek grammar demonstrating the close link between agentivity and *afto*- reflexivization in a particularly striking way involves subject experiencer verbs.

the relevant type, where passives/unaccusatives and reflexives effectively undergo distinct reduction operations; but see Beavers and Udayana (2023) for a case where a single morpheme performs argument suppression, but is indifferent as to which argument is suppressed. Finally, lexicalist operations are forced to stipulate the thematic restrictions on verbal reflexivization (see section 4.1) as a constraint on (the input of) the reflexivization rule (see e.g. Reuland 2018); these restrictions, particularly agent orientation, arguably follow more naturally by tying reflexivity to the head that normally introduces agents, Voice.

<sup>33</sup> *alilo*- reciprocals are subject to the same restrictions; for reasons of space, I do not provide the relevant examples here.

<sup>34</sup> *afto*- never combines with unaccusatives, either unmarked (i) or marked (ii), as noted in Alexiadou (2014b).

- (i) O Janis (\**afto*-) *peθane*.  
the.NOM John.NOM REFL die.PST.3SG  
'John died.'
- (ii) I supa (\**afto*-) *kaike*.  
the.NOM soup.NOM self burn.NACT.3SG  
'The soup burned (\*itself).'

Consider firstly the core properties of subject experiencer verbs like *be afraid of* or *despise* in Greek: these participate in the Voice syncretism, being systematically realized with nonactive morphology (72a)/(73a) and ungrammatical with active morphology (72b)/(73b); they also never passivize (72c)/(73c) or agent-nominalize (72d)/(73d) (cf. [section 3.2.3](#)).

- (72) a. O Janis fova- te { to skotaði / ti Maria }.  
the.NOM John.NOM  $\sqrt{\text{FEAR}}$  3SG.NACT the.ACC dark.ACC the.ACC Mary.ACC  
‘John is afraid of the dark/of Mary.’  
b. \*O Janis fova- i { to skotaði / ti Maria }.  
the.NOM John.NOM  $\sqrt{\text{FEAR}}$  3SG.ACT the.ACC dark.ACC the.ACC Mary.ACC  
c. \*{ To skotaði / i Maria } fova- te apo ton Jani.  
the.NOM dark.NOM the.NOM Mary.NOM  $\sqrt{\text{FEAR}}$  3SG.NACT from the John  
‘\*The dark/Mary is feared by John.’  
d. \*fovi- tis (tu skotaðju)  
 $\sqrt{\text{FEAR}}$  NMLZ the.GEN dark.GEN  
‘fearer of the dark’
- (73) a. O Janis apexθan- ete { ti via / ti Maria }.  
the.NOM John.NOM  $\sqrt{\text{DESPISES}}$  3SG.NACT the.ACC violence.ACC the.ACC Mary.ACC  
}.  
‘John despises violence/Mary.’  
b. \*O Janis apexθan- i { ti via / ti Maria }.  
the.NOM John.NOM  $\sqrt{\text{DESPISE}}$  3SG.ACT the.ACC violence.ACC the.ACC Mary.ACC  
c. \*{ I via / i Maria } apexθan- ete apo ton Jani.  
the.NOM violence.NOM the.NOM Mary.NOM  $\sqrt{\text{DESPISED}}$  3SG.NACT from the John  
‘\*Violence/Mary is despised by John.’  
d. \*apexθan- tis (tis vias)  
 $\sqrt{\text{DESPISE}}$  NMLZ the.GEN violence.GEN  
‘despiser of violence’

The cluster of properties exemplified in (72)-(73) is expected if the relevant Roots typically enter a structure that lacks a canonical agent. If the experiencer subject in (72a)/(73a) does not originate in the specifier of VoiceP, instead merging lower than canonical agents (Alexiadou & Iordachioaia 2014; Anagnostopoulou 1999; Arad 1998; Belletti & Rizzi 1988; Pesetsky 1995; Zombolou & Alexiadou 2014), then Voice will receive [NACT] at PF, explaining the systematic appearance of experiencer verbs with nonactive morphology; we additionally correctly expect these verbs to resist passivization,

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On the surface, this observation is expected: a structure cannot have both no agentive semantics (arguably the hallmark of unaccusativity) and an agent slot, one that is identified with the theme (arguably the hallmark of reflexivity). For roots like  $\sqrt{\text{DIE}}$  in (i), which are never found in an agentive environment, this much will suffice. But an additional ingredient is required to guarantee that (iib) is ungrammatical, since this Root does form transitives. For  $\sqrt{\text{BURN}}$ , this must connect to the fact that this root can build transitives and unaccusatives, but not passives; (Alexiadou 2014a: p. 66) in fact conjectures that this link between passivizability and the ability to be reflexivized by *afto-* holds more generally.

like other structures with derived subjects (Perlmutter 1978; Perlmutter & Postal 1984), and to not be good candidates for agent-nominalization, a process that also involves the introduction of an agent entailment (see also section 3.2.3).<sup>35</sup>

Crucially, experiencer verbs can be reflexivized by means of *afto-* in Greek (Alexiadou 2014b). In (74a)/(75a), an experiencer verb is shown to be freely reflexivized by means of the pronominal anaphor; but prefixing the same verb with *afto-* leads to ungrammaticality (74b)-(75b).

- (74) a. Ke p̄cos ðe fova- te ton eafto tu?  
and who.NOM NEG  $\sqrt{\text{FEAR}}$  3SG.NACT the.ACC self.ACC his  
'Who ISN'T afraid of themselves?'  
b. \*Ke p̄cos ðen afto- fova- te?  
and who.NOM NEG REFL  $\sqrt{\text{FEAR}}$  3SG.NACT
- (75) a. O Janis apexθan- ete ton eafto tu.  
the.NOM John.NOM  $\sqrt{\text{DESPISE}}$  3SG.NACT the.ACC self.ACC his  
'John despises himself.'  
b. \*O Janis afto- apexθan- ete.  
the.NOM John.NOM REFL  $\sqrt{\text{DESPISE}}$  3SG.NACT

The generalization in Greek is then straightforward: like passivization,<sup>36</sup> reflexivization is only possible with verbs with canonical external arguments, specifically agents, lending strong support to the tying together of reflexivization to the agent-introducing head.<sup>37</sup>

<sup>35</sup>This intuition – that in a language where Voice morphology is sensitive to the presence of a canonical external arguments, verbs with non-canonical external arguments will always bear nonactive – is also at the heart of Grestenberger's (2018) analysis of deponency. Under this analysis, deponents in Greek-type languages have surface subjects than originate lower than agents, guaranteeing that they appear with nonactive morphology. For Greek, this guarantees that deponents pattern identically to experiencer verbs. It also correctly predicts that deponents, like subject experiencer verbs, never undergo reflexivization. Fully in line with the discussion so far as this point is, I do not dwell on it here in the interest of putting to the side certain important intricacies on the proper analysis of deponents in Greek and beyond; compare e.g. Grestenberger (2018) with Zombolou and Alexiadou 2014 and Embick (1997: 216ff).

<sup>36</sup>Angelopoulos et al. (2020) argue that Greek passives accommodate a broad range of thematic roles, but the interesting observations they adduce merely reinforce the conclusion, familiar since Marantz (1984), that the exact interpretation of the external argument can vary contextually based on the properties of the VP (Marantz 1984); in the domain of the passive, it is such observations that have led to the adoption of the general term *initiator*, from Ramchand (2008), as the label for the role assigned to the *by*-phrase in Bruening (2013) and much subsequent work. Crucially, Angelopoulos (2019) do not take into account the impossibility of passivizing subject experiencer (and deponent) verbs, in examples such as those provided in the main text; this state of affairs would of course be wholly unexpected if passivization in Greek were truly thematically unrestricted.

<sup>37</sup>Note that this generalization indirectly militates against analyses where reflexivization takes place low in the structure, e.g. by adjunction of *afto-* to the Root (Embick 2004b). To capture the agent orientation facts, this type of analysis would, in one way or another, be forced to introduce agentive semantics in the low position in question; though this is of course not mechanically impossible, it seems less preferable to the Voice-level analysis, at least to the extent to which it is judged desirable to confine agent introduction to the same head/portion of the structure. An alternative would be to assume that *afto-* is merged low, and stands in some sort of dependency with an agent-introducing Voice head: see e.g. Oikonomou and Alexiadou 2022 for a conditioned allosemy approach where nonactive Voice takes on a reflexive denotation in the context of an *afto*-prefixed *vP*; this type of approach will require some sort of selectional relationship to ensure

Moreover, reflexivization of verbs with non-canonical external arguments is another instance where *afto*- reflexives dissociate from pronominal anaphors. The facts just discussed are of immediate interest because they provide yet another argument against fully assimilating *afto*- to overt anaphors; indeed, summarizing similar restrictions in different languages, Reuland (2018: 101ff) takes the unavailability of experiencer reflexivization to be a hallmark of verbal reflexives relative to their pronominal counterparts cross-linguistically.<sup>38</sup>

Note finally that the semantics proposed for *afto*- involves explicit reference not only to the agent, but also to the theme role. This latter component is justified by two observations.

Firstly, consider ditransitive verbs. (76a) shows that a Greek ditransitive can be reflexivized with the pronominal anaphor as an indirect object, either as a genitive/dative goal<sup>39</sup> or as a prepositional goal. Importantly, this type of reflexivization can never be achieved by means of *afto*- (76b) (see also Papangeli 2004: p. 79).

- (76) a. O Janis estile tu eafu tu / ston eafu  
the.NOM John.NOM 3SG.M.GEN send.PST.3SG the.GEN self.GEN 3SG.M.GEN to.the  
tu to paceto.  
self 3SG.M.GEN the.ACC package.ACC  
‘John sent himself the package.’  
b. \*O Janis (to) afto- stalθike to paceto.  
the.NOM John.NOM 3SG.N.ACC REFL send.NACT.PST.3SG the.ACC package.ACC  
Intended: ‘John was self-sent the package.’

The impossibility of (76b), for any ditransitive verb in the language, follows straightforwardly if *afto*- is only capable of linking agents to themes, and not beneficiaries or other types of goals. Note in this connection that reflexivization of the agent and theme *across* a goal is absolutely possible:

- (77) *pro* tis afto- parusiasθike os ðikiyoros  
3SG.F.GEN REFL present.NACT.PST.3SG as lawyer.NOM  
‘S/he presented him/herself to her as a lawyer.’

Secondly, ECM predicates can be reflexivized by means of the pronominal reflexive, but not by means of *afto*-, as in (78). Once again, the impossibility of (78b) is expected if *afto*- must link the agent to the theme; note that *afto*- is not generally impossible with secondary predicates, see section 3.2.1.

that *afto*- is only present in structures with nonactive Voice (cf. in this respect Spathas et al. 2015).

<sup>38</sup>In theories where verbal reflexivization takes place in the lexicon (Reinhart & Siloni 2004, 2005), this restriction against experiencer reflexivization can only be stated as a restriction on the lexical reflexivization operation tasked with presyntactically bundling certain thematic roles. While this is a possible move in the context of such a theory, it is important to note that such thematic restrictions are themselves in no sense evidence for a lexical theory: where a lexical theory can stipulate a stand-alone restriction on the class of verbs that are allowed to undergo a particular lexical operation, a syntactic theory can tie reflexivity to Voice in the sense argued for here.

<sup>39</sup>Indirect object anaphors have been reported to be marked in Greek (Anagnostopoulou & Everaert 1999); the native speaker author and the core consultants do not share this intuition. See also Angelopoulos and Sportiche (2022) for evidence that indirect object anaphors are acceptable for many speakers.

- 1096 (78) a. O Janis theori ton eafto tu iðiko sti  
the.NOM John.NOM consider.3SG the.ACC self.ACC 3SG.M.GEN expert.ACC to.the  
1097 ylosolopia.  
linguistics  
1098 ‘John considers himself an expert in linguistics.’  
1099 b. ?\*O Janis afto- theorite iðikos sti ylosolopia.  
the.NOM John.NOM REFL consider.NACT.3SG expert.NOM to.the linguistics

1100 In summary, *afto*- reflexives effect a type of reflexivization that is, from a thematic standpoint,  
1101 severely restricted: only agents can be the target of reflexivization, and they may be identified only  
1102 with themes, and not more peripheral arguments. Reifying these restrictions in the interpretation of  
1103 Voice<sub>REFLEXIVE</sub> in (71), repeated here as (79), is thus empirically well-motivated.

1104 (79)  $\llbracket \text{Voice}_{\text{REFLEXIVE}} \rrbracket = \lambda f_{\langle s, t \rangle} . \lambda e . f(e) \wedge AG(e) = TH(e)$

1105 It is important to be precise on the extent to which (79) is explanatory. The irreducible aspect  
1106 of (79) is the agent orientation it enforces; this is a feature that seems to recur in verbal reflexives  
1107 cross-linguistically (see ?? below), and the explanatory core of the view advanced here is thus that  
1108 such cases crucially speak in favor of allowing Voice to have a reflexivizing flavor.

1109 While agent orientation is a central part of any Voice-based analysis of reflexivity, the restriction  
1110 to themes found in Greek is not forced in any sense by the Voice analysis. A preliminary cross-  
1111 linguistic review suggests that this may in fact be a welcome result: while voice-selective verbal re-  
1112 flexives in other languages are agent-oriented, they are not always also theme-restricted. For instance,  
1113 Raghotham (2022a, 2022b) shows that, while Telugu verbal reflexives are systematically agent-oriented,  
1114 they are not selective with respect to which role they identify with the agent, thus permitting not only  
1115 agent-theme reflexivity but also agent-beneficiary/goal/location reflexivity. Similarly, Key (2021a,  
1116 2021b, to appear) shows that the voice-selective verbal reflexives of Turkish link agents to either the  
1117 figure or the ground role introduced by a low adpositional (or applicative) structure.

1118 From the perspective of a Voice-based theory of reflexivity, such differences between languages  
1119 are not surprising: as just discussed, tying reflexivity to Voice makes reference to agents unavoidable,  
1120 but leaves other options open. In particular, we might expect parameterization involving which role  
1121 or range of roles is linked to the agent role, but not with respect to the fact that it is the agent role  
1122 that is linked to; we thus do not expect to find, for instance, voice-selective verbal reflexives that link  
1123 goals to themes to the exclusion of the agent. The question of why Greek chooses to be as selective as  
1124 (79) entails is, perhaps, not easily answerable; whether it can be linked to the more general fact about  
1125 the language that non-core arguments are syntactically inert (for e.g. A-movement) is left open.

#### 1126 4.2 EXCURSUS: NOT AN ANTI-ASSISTIVE MODIFIER

1127 The above discussion has presented a reflexivizing semantics for *afto*-, and it is important to en-  
1128 sure that a reflexivizing semantics is what is needed. Clearly, reflexive interpretations could be de-  
1129 rived without a dedicated reflexivizer; let us subsume analyses of this type, where reflexive semantics



1130 emerge from the composition of individually non-reflexive pieces, under the name *emergent reflex-*  
 1131 *ivity* (see e.g. Kastner 2017; Spathas et al. 2015; Wood 2014).

1132 In the spirit of emergent reflexivity, Alexiadou (2014b) and Spathas et al. (2015) propose that  
 1133 Voice-level *afto-* is an anti-assistive modifier, equivalent to *herself* in *Mary built the house herself*;  
 1134 on this analysis, the combination of anti-assistivity with the semantics of a passive yields a reflexive  
 1135 denotation, without the need for a dedicated reflexivizer. Ingenious as this analysis is, it emerges as  
 1136 untenable for Greek upon further scrutiny.

1137 Firstly, if *afto-* asserted the lack of delegation of assistance, it should produce a contradiction  
 1138 when combined with elements that overtly denote delegation or assistance. This is true of the *bona*  
 1139 *fide* Greek anti-assistive modifier:<sup>40</sup>

1140 (80) #Me ti voiθia tis Marias, o Janis dieynos- e ton eafto tu monos  
 1141 with the help the.GEN Mary.GEN the John.NOM  $\sqrt{\text{DIAGNOSE}}$  3SG the self.ACC his alone  
 1142 tu.  
 1143 his  
 1144 ‘#With Mary’s help, John diagnosed himself himself.’

1143 The same prediction, however, is not borne out for *afto-*, which is fully compatible with assistive PPs.

1144 (81) [John and Mary are doctors. John has been suffering from an unknown disease. Together, they  
 1145 come up with the diagnosis.]

1146 Me ti voiθia tis Marias, o Janis afto- diaynos- θ- ik- e.  
 1147 with the help the.GEN Mary.GEN the John self-  $\sqrt{\text{DIAGNOSE}}$  NACT PST 3SG

1147 ‘With Mary’s help, John diagnosed himself.’

1148 Secondly, no aspect of the anti-assistive analysis of *afto-* predicts its complementarity with NRVs.  
 1149 On this type of analysis, examples like (82), repeated from section 2, should be fully acceptable on  
 1150 the meaning ‘Mary washed without help’. That such examples are decidedly infelicitous without  
 1151 contrastive focus suggests that *afto-* and ‘inherent’ reflexivity are, in some sense, carrying out the  
 1152 same function, a fact that does not follow if *afto-* is unrelated to reflexivity. Once again, the true anti-  
 1153 assistive behaves differently (83), further casting doubt on the link between *afto-* and anti-assistive  
 1154 modification.

1155 (82) #I Maria afto- pli- θ- ik- e.  
 1156 the Mary.NOM REFL  $\sqrt{\text{WASH}}$  PFV.NACT PST.NACT 3SG  
 1157 ‘Mary self-washed.’

1157 (83) I Maria pli- θ- ik- e (moni tis).  
 1158 the Mary  $\sqrt{\text{WASH}}$  NACT PST 3SG alone her  
 1159 ‘Mary washed (without help).’

<sup>40</sup>This observation, and the observation on the lack of reflexivization of active predicates below, are also made in Sportiche (2022) in considering a Spathas et al. (2015)-style approach to French *auto-* and English *self-*.

Furthermore, recall from the end of [section 2](#) that Greek has a reciprocal prefix *alilo-*, whose distribution fully parallels *afto-*: it is compatible only with nonactive verbs, and appears in complementary distribution with naturally reciprocal verbs. The parallel distribution of *afto-* and *alilo-* clarifies that the phenomenon at hand picks out *anaphoric* elements in a uniform fashion; crucially, it is difficult to conceive of a plausible anti-assistive semantics for *alilo-* that would emergently yield reciprocity, in the same way that *afto-* purportedly yields emergent reflexivity.

- (84) *afto-* { *amina*, *katastrofi*, *kritiki*, *vioygrafia* }  
 self defense destruction criticism biography  
 ‘self-defense, self-destruction, self-evaluation, autobiography’

Finally, under the analysis in Spathas et al. (2015), the obligatory co-occurrence of *afto-* with non-active morphology must be stipulated. If *afto-* is an independent modifier, it should in principle be able to combine with different Voice heads. But recall that *afto-* is systematically ungrammatical with active morphology (85). All things being equal, an anti-assistive *afto-* should make this example grammatical on the reading ‘Mary advertised herself/John without help’.

- (85) \**I Maria afto- katiyori- s- e (ton eafto tis / ton Jani).*  
 the Mary.NOM self-  $\sqrt{\text{ACCUSE}}$  PFV.ACT 3SG the.ACC self.ACC her the.ACC John.ACC  
 ‘Mary self-accused<sub>ACTIVE</sub> herself/John.’

Spathas et al. (2015: p. 1334) ‘attribute the ungrammaticality of [(85)] to brute-force c-selection; *afto-* c-selects for an unsaturated projection of Middle Voice’. But this approach clearly amounts to treating as accidental the robustly systematic connection between *afto-*, nonactive morphology, and unaccusative syntax. Under this account, *afto-* is an anti-assistive modifier that is Voice-selective only by stipulation: although properly independent of Voice itself, it happens to be able to occur only with the type of Voice that does not project an external argument and triggers the insertion of nonactive morphology at PF. Note in this connection that the language’s *bona fide* anti-assistive modifier shows no Voice-related restrictions whatsoever, freely occurring with active Voice:<sup>41</sup>

<sup>41</sup>Parallels noted by Spathas et al. (2015) include the following. *afto-* does not co-occur with the *bona fide* anti-assistive; but the relevant example (their (42)) is perfectly acceptable for this author and four native speaker consultants. *afto-* generally does not combine with states and achievements, much like the anti-assistive; but these restrictions are also observed in non-anti-assistive structures, namely in noun incorporation (e.g. Basilico 2016), suggesting that the Aktionsart restriction may diagnose not anti-assistivity but rather (the semantic consequences of) certain detransitivized structures. Note also that the incompatibility of *afto-* with states follows from a Voice-level treatment, see [section 4.1](#). Spathas et al. (2015) also point out that *afto-* licenses degree modification; the authors argue that this observation shows that *afto-* is not an identity intensifier, but crucially, it does not show that *afto-* is not a reflexivizer. What is left is an argument from focus alternatives (Spathas et al. 2015: pp. 1307–1311), which however does not yield an internally consistent picture (Spathas et al. 2015: p. 1336).

These complications make a full assimilation of reflexives to anti-assistives of the kind pursued by Spathas et al. (2015) difficult; however, these authors are correct to point out connections between the two phenomena. It is worth considering a meaning-oriented explanation here; for instance, as Dominique Sportiche (p.c.) points out, a reflexive sentence such as *Mary self-washed* may generate an implicature, especially under focus, that *Mary* is the sole agent involved in the event; cf. Charnavel and Sportiche 2021.

1182 (86) I Maria katiyori- s- e to Yiani moni tis.  
 1183 the.NOM Mary.NOM  $\sqrt{\text{ACCUSE}}$  ACT 3SG the.ACC John.ACC alone.NOM her  
 ‘Mary accused John herself’

1184 Though it is perfectly possible to stipulate the connection between *afto*-, unaccusative syntax,  
 1185 and nonactive morphology, what seems preferable is an account that does justice to both the system-  
 1186 aticity of this connection (all *afto*- reflexives show these properties) and its obvious link to the rest  
 1187 of the Greek voice system (*afto*- reflexives are just one of a few classes of verbs participating in Voice  
 1188 syncretism, all sharing the same structural property).

1189 For these reasons, I forgo an analysis fully assimilating *afto*- to anti-assistive modifications, noting  
 1190 that Spathas et al. 2015 are correct to point to connections between the two, even if these ultimately  
 1191 do not warrant a full assimilation of this type (cf. footnote 41. This divergence aside, the results of  
 1192 this paper are very much in line with the core of the proposal in Spathas et al. (2015), where *afto*- is  
 1193 taken to be a Voice-level element involved in an intransitive unaccusative syntax.

#### 1194 4.3 INCORPORATION/A HIDDEN TRANSITIVE SYNTAX?

1195 Recall from section 3.1 the numerous striking divergences between *afto*- reflexives and the Greek  
 1196 reflexive pronoun. The premise of that section has been simple: if *afto*- is a (semantic or syntactic)  
 1197 argument of the verb (or predicate) to which it attaches, it should share properties with elements in-  
 1198 dependently thought to be arguments, particularly argument anaphors. Since *afto*- and *bona fide* ar-  
 1199 gumental reflexives have been shown to dissociate across a wide range of environments, there seems  
 1200 to be every reason to treat *afto*- reflexives as intransitive.

1201 But it is worth entertaining an alternative interpretation of the facts. It is in principle possible  
 1202 that the interpretive facts concerning *afto*- in fact follow from a transitive syntax, one where one of  
 1203 the arguments is somehow defective. This type of approach is compatible with the ‘hidden transitive’  
 1204 analyses (22) and (24), with the additional assumption that *afto*- is a ‘defective’ argument, perhaps  
 1205 by virtue of a process of incorporation as proposed in Rivero (1992).

1206 Before evaluating the plausibility of this type of analysis for Greek, it is worth specifying exactly  
 1207 what it amounts to. There is a way of construing this type of incorporation analysis that will make  
 1208 it predictively equivalent to that proposed in this paper: if the putative incorporation step ‘types’  
 1209 the verb as intransitive in the relevant sense, then it is unclear how this analysis differs from the one  
 1210 proposed here. But if the incorporation analysis amounts to the claim that *afto*- verbs in fact display  
 1211 a transitive syntax, but one that cannot be diagnosed as transitive, it seems that the burden of proof  
 1212 lies with this approach. Viewed in this light, the discussion above does little more than draw the  
 1213 most conservative conclusion possible: if *afto*- systematically fails to pattern as an anaphor, it is not  
 1214 an anaphor.<sup>42</sup> But we can go further than a burden of proof argument, as the incorporation analysis

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<sup>42</sup>The possibilities examined here parallel difficult questions raised in the literature on implicit arguments: when faced with a situation where some argument role is semantically present, not realized overtly, and not active for syntactic processes, it is possible in principle to claim either that the relevant element is syntactically unprojected altogether, or that it is projected but somehow defective relative to other null elements. See e.g. Bhatt and Embick (2017), Landau (2010),

1215 turns out to be heavily disfavored by three types of considerations in Greek.

1216 Firstly, Greek lacks any process of (pseudo-)incorporation of arguments: there is simply no way  
1217 of leaving arguments low and caseless in the language, much less a mechanism of incorporating them  
1218 into the verbal form.

1219 To make matters worse, the one process that the language does avail itself of to yield struc-  
1220 tures that could, pretheoretically, be called ‘incorporation’ turns out to systematically target non-  
1221 argumental elements. Greek shows a process of so-called adverb incorporation (Embick 2004b;  
1222 Rivero 1992), whereby sentences like (87a) alternate with (87b), where the adverb appears to be  
1223 incorporated into the verb.

- 1224 (87) a. Fayame kala ke simera.  
eat.PST.1PL well and today  
1225 ‘We ate well again today.’  
1226 b. Kalo- fayame ke simera.  
well eat.PST.1PL and today

1227 The analysis of the alternation is not crucial here. Rivero (1992) assumes a syntactic process of  
1228 incorporation; as Embick (2004b) notes, a compounding analysis seems more likely. What is crucial,  
1229 however, is the observation that whatever derives (87b) never applies to arguments:

- 1230 (88) a. Fayame psari / psarja.  
eat.PST.1PL fish.ACC fish.ACC.PL  
1231 ‘We ate fish.’  
1232 b. \*psaro- fayame.  
fish eat.PST.1PL

1233 Given the simple fact that Greek lacks argument incorporation, the ‘defective *afto-*’ approach  
1234 amounts to a suspicious conjecture: the process of incorporation this approach needs to make the  
1235 right cut between *afto-* and the reflexive pronoun is a process that only ever targets *afto-* (and perhaps  
1236 its reciprocal counterpart), but does not extend to any other argument in the language. While statable  
1237 in prose, such an approach clearly lacks any explanatory potential.

1238 The plausibility of an incorporation analysis diminishes further in light of a second consideration  
1239 regarding Greek verbal reflexives: as argued in section 3.2, the surface subject of this verbs is a deep  
1240 object. As such, on an incorporation analysis, incorporated *afto-* would have to originate from the *ex-*  
1241 *ternal* argument position. We would have to grant it, then, not only that Greek shows incorporation  
1242 only of anaphoric elements, but also that the relevant phenomena are instances of *agent* incorpo-  
1243 ration. Note now that *bona fide* incorporation of agents is typically ruled out (Baker 1988), with  
1244 languages that apparently allow it in fact showing pseudo-incorporation (Massam 2001) of agents  
1245 (see e.g. Öztürk 2009 on Turkish). In turn, agent pseudo-incorporation is not only another process  
1246 which Greek generally lacks, but also one that, when found, is typically restricted to noun-verb com-  
1247 binations that are judged to be sufficiently *name-worthy* (see Chung and Ladusaw 2020: fn. 10), such

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Legate (2014), A. Williams (2015).

1248 as *bee-stinging* or *dog-biting*; needless to say that Greek *afto-* reflexivization exhibits no such effect,  
 1249 with not obviously name-worthy events such as *self-accusing* being freely expressible.

1250 The incorporation view thus exhibits dim prospects for Greek. It would amount to positing a  
 1251 process of agent incorporation for a language that otherwise lacks one; this process would crucially  
 1252 have to be syntactic, to guarantee that the putatively incorporating element, *afto-*, not be interpreted  
 1253 as an argument (see [section 3.1](#)). For these reasons, I put the possibility of such an analysis to the  
 1254 side.

1255 Finally, it is worth noting that there is no compelling morphological grounds on which to favor  
 1256 an incorporation analysis. At first sight, *afto-* as in (89) seems to (partially, but not totally) resemble  
 1257 the noun making up the Greek reflexive pronoun (89).

- 1258 (89) O Janis afto- ðiafimiz -ete.  
 the John.NOM REFL advertise 3SG.NACT  
 1259 ‘John promotes himself.’  
 1260 (90) O Janis ðiafimiz- i ton eafto tu.  
 the.NOM John.NOM advertise 3SG the.ACC self.ACC 3SG.M.GEN  
 1261 ‘John promotes himself.’

1262 This instance of formal overlap, however, is not probative, at least not synchronically. Firstly, the  
 1263 same phonological sequence is found on synchronically unrelated elements, in particular the lan-  
 1264 guage’s demonstrative (91).<sup>43</sup> Secondly, the overlap between verbal morpheme and anaphoric pronom-  
 1265 inal is even more imperfect in the case of reciprocals (92), where the reciprocal counterpart of *afto-*,  
 1266 *alilo-*, is simply no longer identical to the relevant component of the Greek reciprocal construction,  
 1267 *alo*. In short, the (highly imperfect) overlap between anaphoric pronouns and the corresponding  
 1268 verbal prefixes in Greek is contentful only diachronically, with *afto-* and *alilo-* clearly having once  
 1269 corresponded to incorporated pronouns.

- 1270 (91) afto to vivlio  
 this.NOM the.NOM book.NOM  
 1271 ‘This book.’  
 1272 (92) a. O Janis ke i Maria alilo- ðiorθon- onde sineça.  
 the.NOM John.NOM and the.NOM Mary.NOM RECIP correct 3PL.NACT constantly  
 1273 ‘John and Mary correct each other all the time.’  
 1274 b. O Janis ke i Maria ðiorθonun o enas ton  
 the.NOM John.NOM and the.NOM Mary.NOM correct.3PL the.NOM one.NOM the.ACC  
 1275 alo sineça.  
 other.ACC constantly  
 1276 ‘John and Mary correct each other all the time.’

<sup>43</sup>Note that it is possible to draw interpretive connections between demonstratives and anaphoric elements *sensu lato* (see e.g. D. Ahn 2020); but such connections hold between demonstratives and anaphoricity broadly construed, not reflexivization in particular, and are in any case not necessarily probative as to the syntax.

## 5 CONCLUDING REMARKS: IMPLICATIONS

Though focussed chiefly on a case study from verbal reflexives, the discussion in this paper bears on important broader issues in the domains of reflexivity, voice, and the relationship between the two.

A first important connection involves the nature of argument introduction. The analysis offered above parallels analyses of the passive that involve the introduction of an agent role without the necessary concomitant introduction of a DP saturating that role (e.g. Akkuş 2021; Alexiadou et al. 2015; Bruening 2013; Legate 2014; Legate, Akkuş, Šereikaitė, & Ringe 2020; Schäfer 2008). In fact, it was shown that this type of analysis is the only one available for Greek verbal reflexives, which involve a DP that is ultimately associated with the agent role but does not originate in the syntactic position associated with this interpretation. The analysis and facts presented here thus reinforce previous conclusions on the separation of syntactic argument introduction from thematic role introduction, and enrich the typology of Voice from the perspective of a domain considerably less intensively investigated than passives and unaccusatives, namely verbal reflexives.

A second important question concerns the proper analysis of (Greek-type) Voice syncretism. According to a long-standing intuition, the syncretic nonactive morphology found in Greek-type systems is tied to the introduction of the external argument. This intuition has been implemented in different ways: by taking nonactive morphology to force the creation of a deep-subject-less structure in a framework where the lexical specification of affixes casually drives the syntax (Marantz 1984), or by taking nonactive morphology to be the reflection of such a structure having been created, in frameworks where morphological realization follows, and can be sensitive to, the building of abstract syntactic structure (see among others Alexiadou et al. 2015; Embick 1997, 1998, 2004b; Oikonomou & Alexiadou 2022). This connection between has recently been called into question by researchers opting to emphasize the apparent counterexamples to the regularity of Voice syncretism in Greek (Angelopoulos et al. 2020, connecting with the more general program in Collins (2022)). The syntactic observations presented here suggest that these objections are unwarranted, as they would leave wholly unexplained the fact that reflexive verbs showing a truly passive-like syntax also systematically share their morphology with passives. As such, the analysis advanced here reinforces, and lends further support to, the analysis of Voice syncretism as related to the presence/absence of the external argument.

An additional question concerns whether reflexivity is a unitary phenomenon, at either the syntactic or the interpretive level. Of crucial interest here is the relationship between transitive constructions with a reflexive pronoun (e.g. *John advertised himself*) and their apparent counterparts formed by ‘verbal’ means, such as Greek *afto-*. If the preceding discussion is on the right track, argumental and verbal reflexives cannot be assimilated to each other. This dissociation of verbal reflexives from reflexive pronouns amounts to the claim that there exist at least two distinct types of reflexivity: Voice-based reflexivization and anaphoric binding have been argued above to have different properties in Greek, opening up the possibility that these may correspond to distinct phenomena more generally (with e.g. Safir 2004: ch. 4, at least to some extent, and *contra* e.g. Reinhart and Reuland 1993).

A final consequence concerns the proper analysis of reflexivizing morphology such as the ele-



ment *afto-* in Greek. Two broad classes of treatments of such elements can be envisioned. Under one type of approach, reflexivizers are arguments themselves: they are merged in an argument position and are assigned either a thematic role themselves, or serve as reflexivizing functions. They may additionally ‘incorporate’ into the verbal form in some way; under this analysis, ostensibly intransitive reflexives are really ‘hidden transitives’ (see [section 4.3](#)). Under a different type of analysis, the relevant exponents mark the presence of some functional head in the structure responsible for carrying out reflexivization; they are not themselves arguments. I have argued at length that *afto*-verbs are truly syntactically intransitive, and that *afto-* itself must be treated as an exponent of a reflexivizing Voice head, as opposed to a ‘defective’ reflexive argument. As such, the stance taken here is in line with treatments of other types of Voice morphology as reflective of the presence of a particular functional structure (e.g. Embick 1998; Legate 2014; Pylkkänen 2008; for Greek reflexives, Spathas et al. (2015)), and not as an argument in itself (e.g. Baker et al. 1989; Collins 2005; for Greek reflexives, Rivero 1992; Tsimpli 1989, 2006, and, to some extent, Embick 1997, who takes *afto-*, but not nonactive morphology, to be an argument).

Alongside these theoretical contributions, the paper presents a number of empirical advances, in the form of mounting a battery of diagnostics aimed at diagnosing both the valency of verbal reflexives and the position of their argument(s). This contribution becomes significant in light of the long-standing controversy regarding the unergative and the unaccusative analysis of reflexive verbs, along both empirical and theoretical lines. Empirically, arguing for against these two analyses has been difficult, owing to the fact that diagnostics standardly distinguishing between unaccusatives and unergatives in a given language often turn out not to apply to reflexive verbs. The problem has been all the more acute for Greek, a language that arguably furnishes hardly any reliable diagnostics of this type in the first place, with the syntax of the otherwise intensively researched reflexive verbs having been left almost entirely undiagnosed (with the notable exception of Alexiadou and Schäfer 2014, where, however, only a tentative conclusion is drawn). Theoretically, the precise empirical discussion thus far has enabled two important points. Firstly, it has made possible a rather precise elaboration of what it means for Greek reflexives to be ‘unaccusative’, with ‘transitive unaccusative’ analyses of the kind advanced for Romance being inadmissible for Greek. Moreover, the existence of unaccusative reflexives cross-linguistically has been called into question (Reinhart 2016; Reinhart & Sioni 2004, 2005); this conclusion is simply not tenable. Finally, the paper brings together a range of diagnostics for the valency of verbal reflexives; this in itself is important as these had heretofore remained in disparate parts of the literature, and had not been applied to Greek.

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