Nominalizations, functional structure, and argument structure
by Georgios Magionos
Postgraduate Student Number: 162

Supervisory Committee
Supervisor
Professor Anna Roussou (University of Patras)

Examiners
Assistant Professor Giorgos Kozoglou (University of Rhodes)
Assistant Professor Vassilios Spyropoulos (National and Kapodistrian University of Athens)

Patras, October 2016
Contents

0. Abstract ........................................................................................................... 1

1. Introduction and general theoretical background ........................................ 1
   1.1. A brief history of nominalization and related developments .................. 1
   1.2. The architecture of grammar: GB and MP .............................................. 4
       1.2.1. The architecture of grammar in the GB model ............................... 4
       1.2.2. The architecture of grammar in the MP ....................................... 5
       1.2.3. Integrating DM into the MP ......................................................... 6
   1.3. What is a (lexical) category and how to get one? .................................. 8
   1.4. Approaches to argument structure: Lexicalist and configurational
       approaches ................................................................................................. 10
       1.4.1. Lexicalist approaches to argument structure: Thematic roles and
               alternatives thereof ............................................................................. 11
       1.4.2. Configurational approaches to argument structure and the rise of event
               decomposition ..................................................................................... 14

2. Theoretical background for nominalizations ................................................. 17
   2.1. Lexicalist and syntactic approaches to the analysis of nominalizations ...... 17
       2.1.1. Nominalization as a lexical process ............................................... 17
       2.1.1. Nominalization as a syntactic process ............................................ 18
   2.2. Argument structure in nominalizations and compounds ....................... 19
       2.2.1. Argument structure in nominalizations ........................................... 19
       2.2.2. Argument structure in compounds ............................................... 22
   2.3. Interim summary ....................................................................................... 24

3. Analysis ........................................................................................................... 25
   3.1. Agentive nominalizations and internal arguments .................................. 25
       3.1.1. Agentive nominalization with internal arguments ............................. 27
   3.2. Action denoting nominalizations ............................................................. 33
       3.2.1. -s- (-si) deverbal nominalizations ............................................... 34
             √ + -ev- verbalization + -s- nominalization ........................................ 34
             √ + -en- verbalization + -s- nominalization ........................................ 34
             √ + -ar- verbalization + -s- nominalization ........................................ 35
3.2.2. -m- (-ma / -mos) deverbal nominalizations

3.2.3. -sim- (-simo) deverbal nominalizations

3.3. Middle, reflexive and reciprocal interpretation in nominalizations

4. Discussion and proposals for further research
Abstract

The main aim of this dissertation is to shed light to some aspects of the syntactic phenomenon of nominalization in Standard Modern Greek (SMG). More specifically, to show how certain (acategorical or verbal) roots interact with (nominal) functional elements and what the consequences of this interaction are, when it comes to argument structure. In Chapter 1, I will offer a brief history of nominalization thus far, present what has motivated me to explore this subject and refer to a series of theoretical prerequisites that will be useful throughout the dissertation i.e. the architecture of the grammatical system, the way the category of a given lexical / syntactic item is determined and the interaction between functional structure and argument structure. Chapter 2 will be devoted to more specific issues pertaining to nominalizations, namely the (re-)categorization of certain syntactic items during the syntactic derivation of nominalizations and how argument structure is to be “encoded” in nominalization constructions. In Chapter 3, I will present the main findings of my analysis, followed by discussion and proposals for further research.

Key words: argument structure, functional structure, nominalization, roots, syntactic categories
Chapter 1. Introduction and general theoretical background

1.1. A brief history of nominalization and related developments

The phenomenon of nominalization has been examined since the very first years of transformational-generative syntax. One of its first accounts in the 1960s goes back to Lees’ (1960) seminal work. Lees’ claim was that nominalizations were derived transformationally based on entire sentences, something that back then seemed justified, since Chomsky’s Syntactic Structures model (1957) didn’t include a lexicon where some kind of “lexical” nominalization could take place.

Later on, Chomsky (1965) introduced the lexicon as a part of the base component where lexical entries were stored (1965: 84), but went as far as to claim that nouns such as destruction or refusal in sentences like (1) were not contained in the lexicon as such, but instead were contained in the lexicon as verbs (destroy and refuse respectively) bearing features that determine their phonetic form when they are dominated by a nom(inalizing) head in the syntactic component (pace Lees 1960).

(1) “Their refusal to participate...” (Chomsky 1965: 184)

Chomsky (1970) refined his previous claim, initiating what many have called¹ “the lexicalist approach to word formation”. He argued that there were two kinds of nominals / nominalization processes, based on the difference between gerundive nominals (2b) and derived nominals (2c), even though both might be derived by the same underlying verb (2a):

(2) a. John criticized the book.
   b. John’s criticizing the book.

Chomsky presented a series of differences between the two structures (gerundive vs. derived nominals), namely:

---

¹ Falsely, according to Marantz (1997).
the productivity of the process in question, the generality of the relation between the nominal and the associated proposition, and the internal structure of the nominal phrase  (Chomsky 1970: 187)

and concluded that:

... derived nominals should have the form of base sentences, whereas gerundive nominals may in general have the form of transforms  (Chomsky 1970: 212).

For the next two decades (the beginning of the 1970s up to the end of the 1980s), with the rise of generative morphology, the lexicalist approach to word formation gained in popularity, and deverbal nominalizations were thought to be created in the lexicon by a derivational process as follows:

\[(\text{keep-root} [\text{-er DERIVATIONAL AFFIX}])\]

In the end of the 1980s and the beginning of the 1990s, a series of changes, innovations and improvements to the Government and Binding (GB) model led to a reconsideration of the relationship between the lexicon, the syntax, and the role of (functional) categories and features to the syntactic derivation, something that affected the way we handle the issue of nominalization. The most important amongst them can be summarized as follows (in chronological order):

(4)  

a.  Chomsky (1986) extended the X’ (X-bar) schema, that was already being used in previous versions of the GB model (Chomsky 1981, 1982) for lexical projections, to “verbal” functional projections, i.e. I (Inflection) and C (Complementizer).

b.  Szabolcsi (1983, 1987), Abney (1987), and Horrocks & Stavrou (1987), based on various aspects of the behavior of Noun Phrases (NPs), reached the conclusion that some kind of functional head must also be involved in the nominal domain (“the DP Hypothesis”), giving rise to the Determiner / Article as a head projecting over the NP.

---

2 For a brief history of the lexicalist approach to word-formation, see Scalise and Guevara (2005). For general references on nominal derivation, see Alexiadou (2014a).
c. Grimshaw (1990) argued for a distinction between three types of deverbal nominals: complex event nominals, simple event nominals and result nominals. Her approach has given food for thought to researchers of nominalizations ever since.

d. Hale & Keyser (1993) –contra Williams (1981), Stowell (1981) and others adopting some kind of semantic or θ-roles along with a subcategorization frame– approached the matter of argument structure configurationally, expanding Larson’s (1988) VP-shell analysis for ditransitive constructions. They claimed that θ-roles are determined on the basis of the position arguments merge within the lexical projection of the predicate.

e. Chomsky (1993) introduced the Minimalist Program (MP as of now), which he further elaborated in Chomsky (1995) *et sequitur*. Many changes were made on the architecture of language (e.g. the levels of representation), the items that syntax operated on, and the way the syntactic derivation was driven. The representation of the syntactic derivation was also different: the X-bar was replaced by Bare Phrase Structure (BPS henceforth).

f. Halle & Marantz (1993) introduced the framework of Distributed Morphology (DM hereafter). Its “compatibility” with the MP made possible the simultaneous use of these models to account for nominalizations syntactically, using previously considered morphological machinery, processes and tools.

As we will see in the next section of this chapter, the main points stated above dictate the main line of research of this dissertation. Nominalizations are an interesting kind of “hybrid” constructions, since they combine both verbal and nominal properties. This categorial “peculiarity” gives rise to the issue of how syntactic categories are to be conceived, defined and encoded in the MP/DM framework. In what follows, I will provide some general theoretical prerequisites that will be useful in both Chapter 2 and Chapter 3. More specifically, I will touch upon

(a) the architecture of grammar and the syntactic component
(b) categorization and the role of functional categories to categorization
(c) argument licensing and the asymmetry between internal and external arguments.

1.2. The architecture of grammar: GB and MP

1.2.1. The architecture of grammar in the GB model
In the GB model of generative syntax (see Chomsky (1981, 1982, 1986)) grammar was considered to consist of four levels of representation. This is what Hornstein, Nunes & Grohmann (2005) amongst others have called “the T-Model”. GB’s four levels of representation were the Deep Structure (DS), the Surface Structure (SS), the Phonetic Form (PF) and the Logical Form (LF).

![GB T-Model Diagram]

The DS was the level where the properties of lexical items were projected, ensuring that arguments occupied their \( \theta \)-positions (what Chomsky 1986 called a “pure representation of \( \theta \)-structure”). The SS was formed from the elements of the DS through a series of movement (i.e. Move-\( \alpha \)) operations, resulting to the elements appearing in their surface positions with the Case they were assigned. PF and LF subjected the result of SS to morphophonological and semantic rules respectively and we can see that Move-\( \alpha \) may also take place at the “SS \( \rightarrow \) LF” branch. This kind of movement was called “covert movement”, since its effects were visible at LF but not at PF. One such example of LF-movement was covert wh-movement in wh-in-situ languages like Chinese and Japanese, where the scope of the wh-element is determined at its LF-position.

1.2.2. The architecture of grammar in the MP

In the MP, the distinction between DS and SS is eliminated. The model introduced in Chomsky (1995) and further refined in Chomsky (2000, 2001, 2004, 2008) can be schematized as follows:
Narrow syntax (what happens before Spell-Out) manipulates a predefined set of lexical items (bundles of features), called the Numeration. In the course of a given syntactic derivation, items are Selected from the Numeration (something that lowers the number of items or instances of an item by one, until no more items are left in the Numeration), they Merge and Agree with each other. Movement operations of the GB model have been reduced to Internal Merge since Chomsky (2004: 110), where he mentions that

\[ \text{NS (Narrow Syntax) is based on the free operation Merge. [...] Merge of } \alpha, \beta \text{ is unconstrained, therefore either external or internal. Under external Merge, } \alpha \text{ and } \beta \text{ are separate objects; under internal Merge, one is part of the other, and Merge yields the property of “displacement”} \]

[emphasis added].

The operation Transfer applies to the syntactic derivation, handing pieces of syntactic derivation to the interfaces of LF and PF (accessed by the Conceptual-Intentional and Sensori-Motor systems). The issue of how Transfer occurs (be it in phases, as Chomsky (1998, et sequitur) or not) does not concern us here.

1.2.3. Integrating DM into the MP

Both the GB and MP models adopt the working hypothesis that there is only one source from where the syntactic component draws items during the entire syntactic derivation. The DM approach is based on the general architecture of the MP model, but deviates from it in a series of ways, and most importantly in the way the syntactic derivation is
provided with different kinds of “instructions” from separate inventories. In the next paragraphs I will outline the architecture of the grammar according to the MP model, mostly based on Embick & Noyer’s (2007) overview and Embick’s (2015) recent introductory book.

According to the (non-lexicalist) MP framework, morphology is not a separate grammatical module or a subpart of the Lexicon (that precedes the actual syntactic derivation), but a part of the syntactic derivation, specifically of the “Spell-Out → PF” branch of it, as we can see in the following figure:

According to DM, narrow syntax has access to abstract building blocks (i.e. morphemes), while the actual lexical insertion takes place after Spell Out, giving rise to what is known as “Late Insertion”.

The “distributed” part of this framework is attributed to the different kinds of lists that are accessed at different parts of the syntactic derivation. These lists are called “Syntactic Terminals”, “Vocabulary” and “Encyclopedia” and are accessed by the syntactic component, the “Morphology” subpart of the PF branch and the interpretive domain of the grammar respectively, as shown in the following figure, also by Embick (2015)³:

³ Embick (2015) gives examples for what each of these lists contains and how they interact with the syntactic component.
1.3. What is a (lexical) category and how to get one?

Baker (2003) and Panagiotidis (2015) (amongst others) seem to agree that, in the GB model, the main way to distinguish lexical categories was via the “Amherst system” that Chomsky (1970) proposed, even though alternative distinctions have also been proposed, such as Jackendoff’s (1977) \(-/+\) subj(ect) / obj(ect) system, Déchaine’s (1993) system of [Functional], [Nominal] and [Referential] features and Baker’s (2003) system, that differentiates nominal and verbal elements based on referentiality and specifier/subject-taking properties.

Chomsky’s (1970) “Amherst system” distinguishes 4 lexical categories using a binary value (negative / positive) feature system of two distinctive features: N and V. The resulting taxonomy can be stated as follows:

<table>
<thead>
<tr>
<th></th>
<th>N (feature value)</th>
<th>V (feature value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Verb</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Adjective</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Adposition (preposition or postposition)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
This “lexicalist” view claims that lexical items entering the syntactic derivation are
categorized in the Lexicon and category-alternating processes such as conversion,
derivation, and compounding also take place in the Lexicon.

In the MP model, an equivalent approach is followed when it comes to
categorization, since lexical items are now considered bundles of features and the
features of the items involved in the syntactic derivation determine how they interact
with other items during the syntactic derivation (Adger (2006, 2010) and Adger &
Svenonius (2011) present how the different kinds of features are defined and how
feature systems are structured).

An alternative way to categorize is through processes in the syntactic component
of the grammar. As we saw in section 1.2.3., the DM model comprises three different
kinds of inventories. The syntactic terminals, i.e. the roots, are category-less, but cannot
appear “bare”, as Embick & Marantz (2008) claim:

(10) *Categorization Assumption:* Roots cannot appear without being categorized;
    Roots are categorized by combining with category-defining functional heads [...] 
(Embick & Marantz, 2008: 6)

These category-defining heads are called categorizers and a root can be nominalized,
verbalized or adjectivized merging with specific nominalizers (*n* heads), verbalizers (*v*
hands) or adjectivizers (*a* heads) respectively.

These categorizers might be phonologically null or overt. In this respect, DM can
account for “conversion” (category alternation without the use of derivational affixes)
and instances of category alternation through affixation. Due to the recursive character
of the Merge operation, a single root is capable of combining with more than one
categorizers in the course of the syntactic derivation, be them of the same kind or
different ones.

Another important aspect of categorization in the DM approach that we should
bear in mind is that a categorizer might merge with constructions containing a root on
its own or a root combined with some other elements (see Marantz (2000, 2007) for the
distinction between an inner and an outer domain/cycle of word-formation).
Furthermore, Borer, in a series of publications (2003a, 2003b, 2005a, 2005b, 2013, 2014a, 2014b), proposes an alternative approach to categorization, while also being based on the MP architecture. She contrasts lexicalist approaches, which she considers to be endo-skeletal, meaning that each lexical entry has a series of semantic and argument structure properties that “shape” the final structure this lexical entry is in, with exo-skeletal (XS) approaches, where the reverse happens: the syntactic / event structure defines the interpretation of syntactic items.

The building blocks in the XS model are Listemes or Roots (in her most recent publications). Listemes pair sound and meaning in an abstract fashion, and functional elements i.e. abstract head features and f-morphs (the difference between them is whether they are free elements, such as “will” or some kind of “morpheme” added to the Listeme). Borer (2005a: 30 [emphasis mine]) assumes that

\[\text{no grammatical information is otherwise associated with the relevant encyclopedic listemes, and specifically, that they are not marked for syntactic category, that they do not specify syntactic or morphological insertion environment, and that they are devoid of any morphological marking of any sort, be it derivational or inflectional.}\]

Listemes are categorized by merging with functional / grammatical formatives available in each grammatical system, which are responsible for their categorization.

1.4. Approaches to argument structure: Lexicalist and configurational approaches

The “division of labor” between the (mental) lexicon and the syntactic component, i.e. what kind of processes are attributed to which component, what the building blocks of syntax are, and how the syntactic elements are categorized, extends to the issue of argument structure. Argument structure can be thought of as the “relation between predicates and their arguments” or “the pattern of underlying relations between a predicate and its dependents” (Williams 2015). Borer (2003) argued, using simple schematizations, that there are two main lines of thought on argument structure: endo-skeletal (or lexicalist / projectionist) approaches and exo-skeletal (or constructional / constructivist) approaches. The former heavily depend on the lexical information of syntactic items that “drives” the way their argument structure is built from the inside out, while the latter claim that what we perceive as argument structure emerges from
the way arguments interact with their predicates, while their interpretation is “computed” via the structures they create.

If we were to search the origins of argument structure or semanticosyntactic arguments we would have to search back to Fillmore’s (1968, 1977) “deep structure cases”, “deep cases” or “case relationships”4. Fillmore proposed that the Deep Structure “case” system accounted for what kinds of arguments were involved in the relationships denoted by certain predicates. His list of DS cases was as follows, though he admitted that certain additions should be made (Fillmore (1968: 46-47)):

(11) **Fillmore’s DS case relations**

- Agentive (A), the case of the typically animate perceived instigator of the action identified by the verb.
- Instrumental (I), the case of the inanimate force or object causally involved in the action or state identified by the verb.
- Dative (D), the case of the animate being affected by the state or action identified by the verb.
- Factitive (F), the case of the object or being resulting from the action or state identified by the verb, or understood as a part of the meaning of the verb.
- Locative (L), the case which identifies the location or spatial orientation of the state or action identified by the verb.
- Objective (O), the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself; conceivably the concept should be limited to things which are affected by the action or state identified by the verb. The term is not to be confused with the notion of direct object, nor with the name of the surface case synonymous with accusative.

Fillmore’s DS cases were refined and restated lightly, giving rise to what was is known as thematic roles or theta-roles (θ-roles).

1.4.1. **Lexicalist approaches to argument structure: Thematic roles and alternatives thereof**

---

4 Not to be confused with morphological cases.
As mentioned earlier, lexicalist approaches claim that argument structure is lexically driven and specified. All (verbal) predicates act like half-solved puzzles while in the lexicon: they have certain pieces missing, but there are instructions as to what arguments they can be filled with in the syntactic component.

In the GB model, Stowell (1981), Williams (1981) and Di Sciullo & Williams (1987) among others proposed (based on Gruber’s (1965) analysis) that each verbal predicate is listed in the lexicon specifying what kind of phrases / arguments it combines with (e.g. NPs/DPs, PPs, CPs etc), namely its subcategorization frame, and what semantic attributes these phrases / arguments must have, namely the theta-roles of its arguments.

According to this approach there’s an inventory of certain theta-roles that most seem to agree on⁵. In the GB era, a series of conditions ensured that all arguments of a predicate were realized syntactically; their absence, as in cases of passivization or nominalization) was also accounted for syntactically. Argument realization was dictated by the Projection Principle, the Θ-Criterion and the Case Filter (all proposed in Chomsky (1981)):

(12) **The Projection Principle**: Representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items. Chomsky (1981:29)

(13) **The Θ-Criterion**: Each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument. Chomsky (1981: 36)

(14) **The Case Filter**: *NP if NP has phonetic content and has no Case. Chomsky (1981: 49)

Baker’s UTAH (The Uniformity of Theta Assignment Hypothesis) paved the way for more syntactic approaches, while taking lexically encoded theta roles for granted, claiming that thematic relationships can be explained by the arguments’ positions relative to the predicate (the way they were “mapped”):

---

⁵ Introductory syntax books such as Haegeman 1994, Adger 2003, Radford 2004 and Carnie 2014 include chapters that focus on θ-roles and provide lists of them with examples.
The Uniformity of Theta Assignment Hypothesis: Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. Baker (1988: 46)

Dowty (1991), Reinhart, and Reinhart & Siloni (selected references are given below) grouped and simplified theta roles, following different lines of thought. Dowty (1991) focused on the fundamental differences between two main thematic roles: the agent and the patient, and introduced what he called the ‘proto-agent’ and the ‘proto-patient’ roles. These two proto-roles were characterized by some specific properties (e.g. instigating an action or change of state vs. undergoing it, being in motion vs. being motionless etc). Each argument was rated on its “agent-ness” or “patient-ness”, and according to the rating it received its position in a given sentence (through Dowty’s Argument Selection Principle and its Corollaries, which will not be stated here). To put it simply, an argument bearing most properties of a proto-agent was positioned in the subject position and the argument or arguments bearing most properties of a proto-patient were placed in object position (the number of proto-patient properties defined their position as direct or indirect objects).

Reinhart (2003) and Reinhart & Siloni (2003, 2005) proposed another kind of conception of the theta system, trying to capture different generalizations about theta roles and the realization of arguments. They proposed a decomposition of theta roles using a variable system of two variables ([m]ental state and [c]ause change) with binary values (+/-), that can be summarized in the table below, taken from Reinhart (2003) and replicated in Everaert et al. (2012):

<table>
<thead>
<tr>
<th>θ-cluster</th>
<th>Traditional label</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+c +m]</td>
<td>Agent</td>
</tr>
<tr>
<td>[+c -m]</td>
<td>Instrument</td>
</tr>
<tr>
<td>[-c +m]</td>
<td>Experiencer</td>
</tr>
<tr>
<td>[-c -m]</td>
<td>Theme / Patient</td>
</tr>
<tr>
<td>[+c]</td>
<td>Cause</td>
</tr>
<tr>
<td>[+m]</td>
<td>Sentient (?)</td>
</tr>
<tr>
<td>[-m]</td>
<td>Subject matter / Locative source (Typically Oblique)</td>
</tr>
<tr>
<td>[-c]</td>
<td>Goal / Benefactor</td>
</tr>
</tbody>
</table>
(16) Reinhart’s θ-clusters based on c / m variables

This decompositional approach allowed them to state generalizations that could hold cross-linguistically and systematized the way that arguments with certain properties get realized accordingly (the so called “mapping problem”). Reinhart and Siloni (2003, 2005) also introduced and analyzed what they called “The lex(icon)-syn(tax) parameter”. According to this parameter:

(17) *Universal Grammar allows thematic arity operations to apply in the lexicon or in the syntax.* Reinhart & Siloni (2005: 391)

With thematic arity they mean the number of arguments a predicate takes and they claim that argument structure can be affected lexically or syntactically.

1.4.2. Configurational approaches to argument structure and the rise of event decomposition

In this section, I will present the basic advancements that lead to a more syntactic viewpoint on argument structure from the mid-1980s onwards.

Marantz (1984), based on idiomatic expressions, claimed that the predicate and its internal argument are in a closer relation and the external argument is interpreted based on the combination of the predicate and its internal argument(s), i.e. the same predicate can offer different kinds of interpretations to its external argument depending on the internal one.

Larson (1988), based on double object constructions, proposed that what we consider as a sole undivided verbal head must be considered a VP-shell. The lower VP comprises of the verb and its internal arguments, while the upper V head is responsible for the licensing of the external argument. As we will see below, this idea was adopted and modified by Chomsky (1995).

The early to mid-90s were a fruitful period for the further refinement of argument structure, due to analyses by Hale & Keyser (1993), Kratzer (1994, 1996) and Chomsky (1995). Hale & Keyser (1993) tried to give an answer to the question of why there are
so few thematic roles, answering that actually what we perceive as thematic roles can be reduced to the relations between predicates and the phrases that they involve in their projections. Via different configurations, they account for different kinds of verbal constructions: unergatives, transitives, unaccusatives, ditransitives, passives and so forth.

In Bare Phrase Structure (BPS), Chomsky (1995) proposed the vP analysis building on Larson’s (1988) VP-shell and the insights provided by Hale & Keyser (1993). According to his approach, there are two verbal heads: a lower more lexical V that merges with the internal argument(s) and is responsible for the general meaning of the action denoted by the sentence and an upper more functional light v head that is responsible for licensing the external argument.

Kratzer (1994, 1996), following a more semantic approach, also reaches a similar conclusion, namely that subjects should be “severed from the verb”, proposing that this is achieved through a special head called Voice, something similar to the (little) v proposed by Chomsky. In later analyses, Voice and v were differentiated (see Pylkkänen (2002, 2008), Harley (2013) and Marantz (2013) for relevant discussion).

Since then, there have been analyses where argument structure and the realization of arguments are analyzed in an event-decompositional way (as event structure and participants in an event respectively)

Pylkkänen (2002, 2008) extended the inventory of the syntactic component, in order to account for the way that extra, non-core arguments are added during the derivation (pace Kratzer (1994, 1996) she considers the external argument not to be a part of the event) via simple merging operations or through applicative heads / applicatives.

As we saw earlier, Borer (2005a, 2005b, 2013) proposed an alternative approach to event structure: according to her approach a predicate is to be analyzed as an Event Phrase, with an Aspectual layer licensing the internal argument(s).

Ramchand (2008) agrees with Pylkkänen (2002, 2008) and Borer (2005a, 2005b, 2013) that what we consider as purely syntactic structures is to be attributed to event structures, but disagrees on how different kinds of event structure are to be “represented”. She adopts a tripartite distinction of event structure differentiating three layers / subevents: the initP (initiation / initiator), procP (process) and the resP (result) successively embedded in each other. Each verb class (i.e. transitive, ergative and so on) involves some or all of these projections.
These advancements from the early 90s onwards seem to lead to the following conclusions:

a) Argument structure is far more intricate and fine-grained than we previously thought (this can be understood from the expansion of the main VP to a VP-shell and the subsequent vP analysis that rephrases this expansion)

b) The external argument is merged higher in the structure and is not directly connected with the main predicate (the external argument is “severed” from the main verbal predicate and is considered the specifier of a vP or a VoiceP)

c) Event-decompositional approaches, such as Pylkkänen’s (2002, 2008), can prove more useful in cases where the “basic” syntactic machinery is not capable of explaining non-standard cases of arguments.

The chapter that follows will be devoted to approaches to the derivation of nominalizations (i.e. whether they are derived lexically or syntactically) and argument structure in nominalizations.
Chapter 2. Theoretical background for nominalizations

In the previous chapter, I offered a brief history of nominalizations and mentioned a series of more general theoretical questions that intertwine with nominalizations. Related to this is the question of what is lexically and what is syntactically derived, with implication for the architecture of grammar, the categorization of syntactic items and the projection of argument structure. In this chapter, I will address these questions in the context of nominalizations and outline two possible lines of answering them.

2.1. Lexicalist and syntactic approaches to the analysis of nominalizations

2.1.1. Nominalization as a lexical process

Lexicalist approaches “reduce” nominalization to a derivation process or a compounding process, involving one or two lexemes respectively. Adopting Aronoff & Fudeman’s (2011) terminology, when I refer to lexemes I mean “theoretical constructs that correspond roughly […] to the term word”. Therefore, derivation can be thought of as a process that turns a lexeme to another lexeme with different meaning and / or category through the addition of a morpheme or a series of morphemes (as in the examples in (1)), while compounding can be thought of as a process that merges two or more lexemes (with or without derivation taking place), resulting to another lexeme (as in the examples in (2))

(1)  
   a. play\textsubscript{V} + -er\textsubscript{N} \rightarrow player\textsubscript{N} (both meaning and category change after derivation takes place)  
   b. re\textsubscript{V} + play\textsubscript{V} \rightarrow replay\textsubscript{V} (only meaning change while the category remains the same)  
   c. play\textsubscript{V} + \emptyset \textsubscript{N} \rightarrow play\textsubscript{N} \rightarrow (“conversion” or “zero derivation”, as there is no overt morphological marking of category change)

(2)  
   a. card\textsubscript{N} + player\textsubscript{N} \rightarrow card-player\textsubscript{N}  
   b. card\textsubscript{N} + playing\textsubscript{N} \rightarrow card-playing\textsubscript{N}  
   c. wild\textsubscript{A} + card\textsubscript{N} \rightarrow wildcard

In both derivation and compounding, the issue that arises is how to interpret the final formation on the basis of the combined elements (be them lexemes or a lexeme
and one or more morphemes). Williams (1981a) formulated the “Right-Hand Head Principle” to account for that. According to this principle, the rightmost element of a morphological formation acts as a “head”, giving it its category and morphosemantic properties.

Ralli (2005, 2007, 2013) claims that this principle also holds for Standard Modern Greek and its dialects. According to Ralli, morphological constructions in SMG are “built” in the lexicon and surface at the syntactic component as such, with morphology being a different grammatical module from syntax. Under this approach, there wouldn’t be much to say about a nominalization, other than that some morphological element that bears the [+verbal] property is the rightmost element of the construction before it is inflected accordingly. As we will see in subsection 2.3.2., θ-roles traditionally attributed to the internal arguments of a verbal predicate can be saturated in compounds, but this is done lexically.

2.1.1. Nominalization as a syntactic process

Another way to approach nominalizations is through a framework that considers them syntactic rather than morphological. DM is such a framework. As I will show in the third chapter, depending on the information that each morpheme bears and the functional structure under which it is embedded, it has a different position in the syntactic structure and a different interpretation. One of the advantages of such an approach is that it can account for argument structure alternations in nominalizations in a more satisfactory way than lexicalist approaches, since the final result depends on the functional layers that merge with a verbal(ized) root morpheme before the nominalizing element.

Following Panagiotidis (2015), who is based on Bresnan (1997), Malouf (2000), and Borsley & Kornfilt (2000), I adopt the generalizations that mixed projections (including nominalizations)

can be partitioned into two categorially uniform subtrees such that one is embedded as a constituent of the other (Panagiotidis 2015: 137)

and that

mixed projections externally behave as nominal constituents. (Panagiotidis 2015: 137)
As we saw in the previous chapter and the preceding sections, ever since the first accounts of nominalization as a syntactic phenomenon there seems to be a consensus that nominalization is the outcome of embedding a verbal piece of structure under a nominalizing (functional) layer. Borsley & Kornfilt (2000) dealt with nominalization structures as mixed (extended) projections and offered a proposal concerning such structures, which was later restated as the Functional Nominalization Thesis (FNT) in Kornfilt & Whitman (2011: 1298):

(3) **The Functional Nominalization Thesis**: Nominal properties of a nominalization are contributed by a nominal functional projection. The nominalization has verbal properties below the nominal functional projection, nominal properties above it.

The FNT accounts for the fact that crosslinguistically there exist different kinds of nominalizations, in which the height of the nominal functional head and the amount of verbal structure differs. Although Kornfilt & Whitman (2011) offer a typology that differentiates between VP nominalizations, vP nominalizations, TP nominalizations and CP nominalizations, this dissertation will only be interested in the former ones (VP and vP nominalizations).

2.2. Argument structure in nominalizations and compounds
2.2.1. Argument structure in nominalizations
Panagiotidis (2015), following Grimshaw (1990), states that instinctively the fundamental difference between (prototypical) nouns and verbs is that verbs project argument structure, while nouns do not. He also claims, based on deverbal nominals, that such an overstatement is to be toned down: verbs obligatorily express argument structures, while nouns optionally do so.

In her seminal book, Grimshaw (1990) claims that the nominal domain is not characterized by homogeneity and that there is a kind of “ambiguity” in some nominals. Excluding nominal elements that are purely referential (e.g. Jim, a cat, the Barbados etc.), we can find nominals that denote actions / events or results. Grimshaw distinguishes them into event nominals (simple event nominals and complex event nominals) and result nominals, based on whether or not they have an argument
structure. She also mentions that other kinds of terms have been used to capture this dichotomy: concrete vs. abstract nouns or result vs. process nouns.

Alexiadou (2001) and Alexiadou & Rathert (2010) summarize the criteria that Grimshaw (1990) proposed to differentiate between complex event and result nominals. I provide the examples that illustrate these criteria below:

(4) Grimshaw’s diagnostics and relevant examples

<table>
<thead>
<tr>
<th>Complex event nominals</th>
<th>Result nominals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complex event nominals take arguments obligatorily</td>
<td>i. Result nominals do not take arguments obligatorily</td>
</tr>
<tr>
<td>2. Event reading / interpretation</td>
<td>ii. Non-event reading / interpretation (they are considered the result / outcome of an event or action)</td>
</tr>
<tr>
<td>3. Modification by agent-oriented modifiers is allowed in these nominals</td>
<td>iii. Such nominals disallow modification via agent-oriented modifiers</td>
</tr>
<tr>
<td>4. Their subjects are arguments</td>
<td>iv. Their subjects are possessives</td>
</tr>
<tr>
<td>5. By-phrases are arguments</td>
<td>v. By-phrases are non-arguments</td>
</tr>
<tr>
<td>6. Implicit argument control</td>
<td>vi. No implicit argument control</td>
</tr>
<tr>
<td>7. Can be modified by aspectual modifiers</td>
<td>vii. Cannot be modified by aspectual modifiers</td>
</tr>
<tr>
<td>8. Modifiers like frequent or constant appear with singular</td>
<td>viii. Modifiers like frequent or constant appear only with plural</td>
</tr>
<tr>
<td>9. Must be singular</td>
<td>ix. May be plural</td>
</tr>
</tbody>
</table>

4.1. Argument structure vs. lack thereof
CEN: The examination of the patients was a lengthy procedure.
RN: The examination’s results will be announced tomorrow.

4.2. Event vs. result reading
CEN: Her examination by Doctor Smith lasted about an hour.
RN: His examination showed no postoperative complications.

4.3. Modification by agent-oriented modifiers or no such modification allowed
CEN: John’s intensive / thorough examination by the doctor was proven crucial to the treatment of his disease.
RN: *The results of her thorough examination will be announced soon.

4.4. Subjects=arguments vs. subjects=possessives (where by subject we mean a prenominal genitive)
CEN: The doctor’s evaluation of her case was of outmost importance
RN: The doctor’s evaluation was better than mine.

4.5. By-phrases as arguments vs. by-phrases as non-arguments
CEN: Her examination by our local doctor
RN: Her picture by J. K. Douglass

4.6. Implicit argument control vs. no implicit argument control
CEN: Her choice of questions in order to pass all final year students
RN: Her choice in order to pass all final year students

4.7. Modification by aspectual modifiers vs. no such modification allowed
CEN: The examination of the papers for six hours has deteriorated her migraine condition.
RN: *The exam for four hours

4.8. Modification by frequent or constant with singular vs. modification by frequent or constant with plural
CEN: The frequent examination of the papers is a tiring procedure
RN: Frequent exams provide information on the students’ process

4.9. Exclusively singular vs. possibility of being plural
CEN: an examination / one examination / the examination of the papers
RN: She had taken (three / eight / eleven) exams, before she realized that this subject didn’t suit her.
While these diagnostics offer guidelines when distinguishing between these two kinds of nominals, this does not necessarily mean that all of them hold cross-linguistically.

Borer (2003) proposed alternative names when it comes to the two main categories of nominals of Grimshaw (1990): she uses AS-nominals (argument structure nominals, see complex event nominals) and R-nominals (referential nominals, see result ones). While these terms have been used interchangeably, Borer’s analysis is more “syntactic”, since she claims that such constructions are created not in the lexicon, but in the syntactic component.

2.2.2. Argument structure in compounds

Grimshaw’s analysis is based on instances of category changing, where arguments are either realized as prenominal genitives (e.g. John’s arrival) or as some kind of Prepositional Phrase (PPs) (e.g. the examination of the students by Mr. Lewis, where the subject/external argument is realized as a by-phrase and the internal argument is realized as an of-phrase), but this is not the only option available.

Concerning SMG, Di Sciullo & Ralli (1999) (also quoted in Ralli (2005, 2007, 2013) and further illustrated) claim that in deverbal compounds, such as the ones following, we have theta-role saturation; this means that the second constituent of the construction acts like a predicate whose theta-role is satisfied by the first constituent of the construction.

(5) Instances of theta-role saturation in deverbal compounds (Ralli 2013: 188-189)

<table>
<thead>
<tr>
<th>Compound</th>
<th>First constituent</th>
<th>Semantic / theta-role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ποντικοφάγωμα</td>
<td>ποντικ(ι)</td>
<td>agent</td>
</tr>
<tr>
<td>podikο'fagomega</td>
<td>po'dici</td>
<td>rat / mouse</td>
</tr>
<tr>
<td>rat eating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>φίδοστρεσσιμο</td>
<td>φίδι(ι)</td>
<td>experiencer</td>
</tr>
<tr>
<td>fido'sirsimo</td>
<td>'fidi</td>
<td>snake</td>
</tr>
<tr>
<td>snake crawling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ξενοδοκατητητης</td>
<td>ξενοδοκατητητης</td>
<td>beneficiary</td>
</tr>
<tr>
<td>ksenodokathtitis</td>
<td>ksenos</td>
<td>stranger / foreigner</td>
</tr>
<tr>
<td>stranger work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>καρδιοκατακτηνης</td>
<td>καρδιοκατακτηνης</td>
<td>theme</td>
</tr>
<tr>
<td>kardiokataktyntis</td>
<td>kardiokataktyntis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>heart conqueror</td>
<td>heart</td>
<td>instrument</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>οξυγονοκόλληση</td>
<td>οξυγόνο</td>
<td></td>
</tr>
<tr>
<td>oksiyonokolisi</td>
<td>oksi'gono</td>
<td>oxygen</td>
</tr>
<tr>
<td>oxygen gluing (=welding)</td>
<td></td>
<td>instrument</td>
</tr>
<tr>
<td>χρυσοκέντητος</td>
<td>χρυσός</td>
<td>material</td>
</tr>
<tr>
<td>xriso'ceditos</td>
<td>xri'sos</td>
<td></td>
</tr>
<tr>
<td>gold embroidered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>αιματοκύλισμα</td>
<td>αίμα</td>
<td>location</td>
</tr>
<tr>
<td>emato'cilizma</td>
<td>'ema</td>
<td></td>
</tr>
<tr>
<td>blood steeping</td>
<td>blood</td>
<td></td>
</tr>
<tr>
<td>ουρανοκατέβατος</td>
<td>ουραν(ός)</td>
<td>source</td>
</tr>
<tr>
<td>uranoka'tevatos</td>
<td>ura'nos</td>
<td></td>
</tr>
<tr>
<td>sky brought-down(from)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>αγροτοδαισιοδώσηση</td>
<td>αγρότ(ης)</td>
<td>goal</td>
</tr>
<tr>
<td>agridotodi'otosisi</td>
<td>a'grotis</td>
<td></td>
</tr>
<tr>
<td>farmer loanigiving</td>
<td>farmer</td>
<td></td>
</tr>
<tr>
<td>πολτοποίηση</td>
<td>πολτ(ός)</td>
<td>result</td>
</tr>
<tr>
<td>poltro'piisi</td>
<td>pol'tos</td>
<td></td>
</tr>
<tr>
<td>pulp making / turning to</td>
<td>pulp</td>
<td></td>
</tr>
</tbody>
</table>

As Ralli (2013) states, this kind of formation is constructed in the morphological domain and there is no (head) movement involved. This seems somehow counterintuitive when we consider that most of these theta-roles in the table are attributed to internal arguments (i.e. theme, goal, beneficiary, instrument, source) and the examples for the external ones are not the most representative. More precisely, in ποντικοφάγωμα the noun ποντίκι could either be an agent or a theme depending on the interpretation of φάγωμα, and in φιδοσύρσιμο a snake that is crawling does not have an experiencer interpretation since the verb σέρνομαι denotes some kind of motion and not a feeling, an experience or the perception of a stimulus. Another issue that is to be resolved is whether the compounding operation takes place before or after the suffixation process that combines the second constituent with a derivational suffix.

If we adopt a DM approach to compound formation, there must be another account of how these arguments are combined with the head whose complements they are. Given the Mirror Principle (as stated in Baker (1985: 375, 1988: 13))

(6) **The Mirror Principle**: Morphological derivations must directly reflect syntactic derivations (and vice versa).
the complements of the second constituent are actually merged in their base-position and there must be some kind of movement or linearization operation that leads to the final order of these elements with respect to the categorizing head (more information on that will be given in the third chapter of this dissertation) (cf. Harley (2011) and Alexiadou & Iordăchioaia (2015) on deverbal nominals involving movement operations).

2.3. **Interim summary**

In the preceding sections, I presented various approaches concerning:

(a) the architecture of the grammatical system
(b) categories and categorization
(c) argument structure
(d) the conception of nominalization as (re)categorization
(e) argument structure with respect to nominalization.

(i) Concerning (a), in this dissertation I will follow a DM approach.

(ii) Since I stated in i. that I will use a DM approach, it goes without saying that I consider categorization a process that takes place in the syntactic component of the grammatical system.

(iii) If ii. is on the right track, nominalization must be analyzed as an instance of functional recategorization. Verbal layers of various sizes are embedded in nominal layers, leading to different kinds of nominalizations, depending on the height the nominal layer merges with the nominal one.

(iv) A configurational approach to argument structure is also adopted in this dissertation.
Chapter 3. Analysis

In this Chapter, I will be interested in a series of nominalizations that involve some kind of argument structure (either overtly or implicitly) and see how Voice alternations and argument structure alternations such as the ones attested in the causative - anticausative alternation can be analyzed using a DM framework, as in Alexiadou, Anagnostopoulou and Schäfer (2015), but with reference to nominalization. Previous syntactic analyses of nominalizations in Standard Modern Greek will be taken in account (such as the ones in Alexiadou (2001), Angelopoulos (2012), Ntelitheos (2012), Michelioudakis & Angelopoulos (2013) and Angelopoulos & Michelioudakis (2015) and so forth) and I will offer alternatives to these analyses on the basis of up-to-date theoretical advancements.

3.1. Agentive nominalizations and internal arguments

Let us start by considering the following examples:

(1) a. Ο Γιάννης δίνει αίμα
    o 'ʝanis 'dini 'ema
    the John.NOM donate.3SG blood.ACC
    “John donates blood.”

    b. Ο Γιάννης είναι δότης αίματος (και μυελού των οστών)
    o 'ʝanis 'ine 'δotis 'ematos (ce mie'lu ton o'ston)
    the John.NOM be.3SG donor.NOM blood.GEN (and bone marrow.GEN)
    “John is a donor of blood (and bone marrow).”

    c. Ο Γιάννης είναι αιμοδότης
    o 'ʝanis 'ine emo'dotis
    the John.NOM be.3SG blood donor.NOM
    “John is a blood donor.”

---

6 In this chapter, the examples are arranged in four lines: in the first one, the example is written in SMG, the second line has the phonetic transcription of the example using the conventions provided by the I.P.A. (i.e. International Phonetic Alphabet), the third is the glosses, and the fourth is the English translation.
All the examples in (1) refer to the same activity (i.e. donating blood) and, based on the approaches I offered in the previous Chapters, I claim that they are all derived through different configurations and functional embedding of the same roots, namely √δίν and √em, and that in all of them the root √δίν is verbalized, before being subjected to a nominalization process. The issue of external arguments in nominalizations will be analyzed later in this Chapter. In this section, I focus on the relationship between the root and its complement.

Some methodological issues arise at the point of first merge(s). In particular, Alexiadou (2014b) and Alexiadou, Anagnostopoulou & Schäfer (2015) mention, following Acquaviva (2008) and Lohndahl (2014) amongst others, that roots cannot take complements on their own and project RootPs, while others (amongst them Marantz (2001) and Harley (2014)) claim that roots can take arguments and project RootPs. I will adopt the former approach, according to which roots must be categorized prior to their combination with their complements (be it in purely verbal constructions or nominalizations).

Bearing this in mind, I next turn to the analysis of the examples in (1). Let us start by considering the verbal predicate δίνω, in (1a), repeated below:

(2) …δίνει αίμα7
…'δίνει 'έμα
…donate.3SG blood.ACC
…“donates blood.”

In this construction, we can identify the following steps. First, the root √em first merges with the n categorizer, assuming that rootPs are disallowed and bare roots must be categorized to be legible (cf. the Categorization Assumption in (10) of the first Chapter). Second, the nP √em merges with a D shell where its inflectional ending is determined (pace Alexiadou (2009) one could claim that the inflectional suffixes that

---

7 It is worth noticing that, even though “δίνω” is generally considered a 3-place predicate in Standard Modern Greek of the type DP __ DP PP (e.g. Ο Γιάννης έδωσε το βιβλίο στη Μαρία ≈ “John gave the book to Mary”) or DP __ DP DPGEN (e.g. Ο Γιάννης έδωσε το βιβλίο της Μαρίας ≈ “John gave the book of Mary”), in the aforementioned example it acts like a 2-place predicate, as the indirect object is not included and the direct object is bare (i.e. does not have an overt determiner). This could be attributed to the fact that “δίνω αίμα” has an idiomatic interpretation and √em bears the specification mass / non-countable in its nominal version.
attach to the nominal root are generated in the NumberP projection –not included in my simplified figure below– of the DP). Third, the root √ðin, having merged with the appropriate verbalizer, takes the DP √em(a) as its complement and through an Agree operation values the case feature of the DP. Finally, the Voice head (with an “active” value) merges with the vP8.

![Diagram of the derivation of 'ðini 'ema]

(3) The derivation of 'ðini 'ema

Having outlined the derivation of the verbal predicate in (1a), we are in a position to considered its nominalized counterparts.

3.1.2. Agentive nominalization with internal arguments

Another possibility to denote the meaning of the purely verbal configuration “'ðini 'ema” is to nominalize the verbal(ized) root √ðin and have the complement √em in genitive case, as in (1b). Adopting Alexiadou’s (2001, 2009) analysis, one could consider the Aspect head responsible for the valuation of √em with respect to the feature of case in nominalizations, but this does not necessarily have to hold because genitive is considered structural in cases where both constituents are nominal(ized). In the sections that follow, I will be using certain morphemes as if they have already been inserted for reasons of presentation (i.e. some other root could be present instead of

---

8 Following Alexiadou (2014c), I adopt a system of three possible voices –active, middle and passive–, because the dual active/non-active distinction does not seem to account for instances in SMG and SMG nominalizations where middle Voice is involved.
\(\sqrt{\text{em}}\) and \(\sqrt{\text{din}}\) during insertion and other morphemes could be present in the functional heads) and I will not be interested in showing the specifics of the final linearization of morphemes, since I would like to place my emphasis on the functional heads that are involved in the nominalizations I analyze and their contribution to different argument structure constructions in nominalizations.

Another issue that is to be resolved is the fact that, even though the verbalized root has a given phonological form (\(\sqrt{\text{din}}\)), its nominalized form is different (\(\sqrt{\text{do}}\)). A morphological lexicalist approach would evoke stem allomorphy and allomorphical variation, i.e. the fact that a given morpheme can have different realizations, depending on the embedding context; in this approach, the final form is retrieved from the lexicon already pre-formed. Since such an option is not available in the DM framework, the change in form must be accounted for in a non-lexicalist way. Alexiadou (2001, 2009) proposes that such instances of stem alternation (i.e. the fact that a root has different realizations according to its environment) must be analyzed via readjustment rules. Embick (2015: 202) defines these rules as

\textit{(morpho)phonological rules that are triggered by certain morphemes, or that are specified to apply to certain morphemes and not others.}

In this case, the morpheme responsible for triggering this change is the nominalizer, since deverbal nominals and adjectives of the root \(\sqrt{\text{din}}\) have the phonological form [\(\sqrt{\text{do}}\)].

Concerning the verbal functional shell that precedes the nominalization by the -\textit{tis} morpheme, there has been considerable discussion (Angelopoulos (2012) offers a comprehensive overview of both lines of thought) on whether or not an Aspect head is involved in the syntactic derivation. Following Alexiadou & Schäfer’s (2008, 2010) analyses about the equivalent -\textit{er} nominals in English, I will include an Aspect head in the derivation since Modern Greek has two kinds of -\textit{tis} deverbal nominals (namely

\footnote{One could follow an approach such as Angelopoulos’ (2012) based on Harley’s (2009) and derive the final linearization via successive head movement or an approach along the lines of Embick (2015) that}
instrumental and agentive) and Alexiadou & Schäfer use the Aspect head to differentiate between them (i.e. instrumental -er and agent -er nominals):

(4)  juicer – στίφτης / αποχυμωτής
     'stiftis / apoçimo’tis

As Alexiadou & Schäfer (2008) argue, a diagnostic on whether an -er deverbal nominal is agentive or instrumental (eventive or non-eventive / episodic or dispositional respectively) is the complement structure. Thus, according to their 2010 analysis, the Aspect head of “δοτις” must bear the feature +episodic. A Voice head is also present in the derivation, since most episodic -er / -tis deverbal nominals refer to external arguments (agents or causers) – e.g. in copular constructions, such as the one in the example 1.b. Aspect embeds Voice, which in turn embeds the vP shell (cf. Rivero (1990) and Alexiadou (1997) with respect to adverb positions), so the derivation of “δοτις ’ematos” would have to look something like this:

---

10 Another solution would be to consider that the v head comes in two “flavors”, a [+agentive] one and a [-agentive] one, or that nominalizations that denote entities do not project an AspectP nor a vP as Sleeman & Brito (2010) propose.
The derivation of 'ðotis 'ematos based on Alexiadou & Schäfer’s analysis

As in the verbal derivation of the previous section, both √em(a) and √ðin have to be categorized before they merge, and this happens through what was previously named “zero derivation”, i.e. a phonologically null morpheme is added to them that categorized them. The nP √em(a) is embedded in a DP shell (for reasons of simplicity I have skipped a series of intermediate nominal projections, cf. Alexiadou, Haegeman & Stavrou (2007) for relevant discussion). The v head takes the DP √em(a) as its complement and is then embedded under the Voice shell. The specification of Voice is that of +active, since “’ðotis ’ematos” refers to a human (Agent) donating blood. For the same reason, Aspect is specified as +episodic, since there is an agent not an instrument (i.e. device) that provides blood. The instrument reading is nevertheless possible, as in the following example, so in SMG -tis nominalizations the diagnostic of Alexiadou & Schäfer (2008, 2010) doesn’t seem to hold:

(6) Ο δότης αίματος της χάλασε και η νοσοκόμα έφερε άλλον.
Her blood donor (i.e. a device providing her with blood) broke and the nurse brought another one.

Finally, the verbal (up to this point) construction is nominalized through the overt nominalizer -tis. The new NP is further embedded under a functional DP shell. Another available option is to create a structure where √em(a) is merged with the verbalized root √δin through movement (internal merge). This would give us the form αμοδότης, as in (1c). In the lexicalist framework, this is an instance of the morphological process of compounding, and most specifically of deverbal compounding (e.g. Ralli (2013) and the references therein). At the same time, there are syntactic approaches available, as is the case with incorporation. Baker (1985, 1988) uses the term “incorporation” to refer to processes by which independent words become part of complex word constructions. The term “noun incorporation” is used when a noun incorporates into a verbal element through X⁰ movement (head movement). There has been considerable dispute on whether incorporation processes are available in Standard Modern Greek or not. Rivero (1992) and Alexiadou (1997) argue for an incorporation analysis based on adverb incorporation (e.g. καταλαβαίνω (“to understand”) vs. ξανα-καταλαβαίνω (to understand again)), while Kakouriotis, Papastathi & Tsangalidis (1997) and Smirniotopoulos & Joseph (1997, 1998) argue against an incorporation analysis.

In the DM framework, Ntelitheos (2012), Angelopoulos (2012), Michelioudakis & Angelopoulos (2013) and Angelopoulos & Michelioudakis (2015) analyze instances of noun incorporation and PP (i.e. Preposition Phrase) incorporation both synchronically and diachronically, and provide possible reasons as to why such an operation can be analyzed syntactically. Ntelitheos (2012), following Sportiche’s analysis (1999, 2005), proposes that the trigger for movement is the fact that bare NPs do not bear enough referential information through functional layers to be licensed as internal arguments (they are not “quanticized”). As a consequence, a movement operation takes place. On the other hand, Angelopoulos (2012) turns to Roberts’ (2010) analysis on defective goals and claims that movement is triggered by the fact that the “complement” acts as a “defective goal”, because roots have no categorial features and
incorporation is taking place as their empty set of features is a proper subset of every feature set, something that is also used as an argument in Michelioudakis & Angelopoulos (2013) and Angelopoulos & Michelioudakis (2015).

Should one adopt Alexiadou’s (2014d) and Alexiadou, Anagnostopoulou & Schäfer’s (2015) position (namely that roots can’t take complements on their own) there seems to be a problem with the analysis proposed by Angelopoulos (2012), Michelioudakis & Angelopoulos (2013) and Angelopoulos & Michelioudakis (2015), who claim that roots take complements and incorporation is triggered due to their complement’s categorilessness. Instead, a functionally driven explanation like Ntelitheos’ (2012) could be more suitable with my analysis thus far.

Another line of thought that could justify incorporation in such nominalization constructions, but will not be pursued here, has to do with labelling; Chomsky (2013, 2015) proposes a minimal search labeling algorithm (i.e. instructions to the interfaces concerning the category of a syntactic object that is consisted of two merged syntactic items for reasons of interpretation) that captures both head-phrase and phrase-phrase constructions. He uses the conventions “SO = \{H, XP\}” and “SO = \{XP, YP\}” to capture these constructions: “syntactic object comprised by a head and a phrase merged in an unordered set” and “syntactic object comprised by two phrases merged in an unordered set” respectively. In the former case (i.e. \{H, XP\}) things are straightforward with the head being the label, but the in the latter case (namely \{XP, YP\}) the ambiguity must be resolved somehow. Chomsky claims that there are two possible ways to do so: if the heads of the given phrases share a feature, this feature provides the syntactic object’s label. If this is not the case, the syntactic object must be modified. At this point, Chomsky resorts to Moro’s approach of Dynamic Antisymmetry (1997, 2000 et sequitur), according to which a movement operation can resolve such ambiguities. An analysis like Barrie’s (2011) could be extended in SMG, since categorizers in nominalizations only provide a category to a root, while other functional layers are responsible for further grammatical information (case, number, definiteness etc).

If a functional underspecification approach, such as the one pursued in Ntelitheos (2012), was used, the derivation would have to be as follows:

Both roots must be categorized before the derivation continues due to the Categorization Assumption. Due to the fact that no further functional layers are involved to render the nP a DP (with a series of different layers), a movement operation is triggered to and √em(a) is incorporated into the vP giving rise to em(a)-ðim. The vP
is embedded in a VoiceP (with the value +active), since we have the interpretation of an implicit external argument (something that can be demonstrated with a copular verb in SMG). The VoiceP is further embedded in an AspectP specified as +episodic, since the same logic that we saw in the previous derivation applies and there could be a +instrumental version, where emo’dotis refers to a device instead of a person responsible for donating blood (cf. vimato’dotis (βηματοδότης); pacer / pacemaker).

(7) Ο αιμοδότης της χάλασε και η νοσοκόμα έφερε άλλον.

The blood-donor.NOM possessive clitic.FEM.SG break.PERF.3SG and the nurse.NOM bring.PERF.3SG another(one).ACC

“Her blood-donor (i.e. a device providing her with blood) broke and the nurse brought another one.”

Finally, the nominalizer -τις merges with the AspectP and the resulting nP is merged with D, giving rise to a DP.

This section was devoted to nominalizations referring to external arguments (Agents or instruments) that correspond to referential DPs. In the next section, I will proceed with nominalizations of different kinds that denote actions, but do not necessarily share the same internal structure before merging with the nominalizing morpheme.

3.2. Action denoting nominalizations

Following Alexiadou (2001, 2009) and Angelopoulos (2012), I will mainly focus on three categories of action-denoting nominalizations, namely -s- nominalizations (e.g. ‘plisi, ikano’piisi, ’desmefsi etc), -m- nominalizations (e.g. va’silema, ’filayma, ’alayma and so on) and -sim- nominalizations (e.g. ’plasimo, ’skasimo, ’treksimo amongst others), and I will try to present some cases of nominalizations derived from roots that undergo transitivity alternations. I will present how these three kinds of nominalizations (-s-, -m- and -sim-) can be combined with the most frequent overt verbalizers mentioned in Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Revithiadou & Panagiotidis (2015). The issue of after-reflexivization in nominalizations and its regularity (or lack thereof) will be tackled, after I introduce the issue of external arguments in nominalizations in the next section.
3.2.1. -s/-si deverbal nominalizations

Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Revithiadou & Panagiotidis (2015) argue that many Greek verbs contain special morphemes that are responsible for denoting that they are verbal in nature, and that these morphemes, i.e. verbalizers, are distinct from morphemes denoting other morphosyntactic categories (e.g. Voice, Aspect and so on). They claim that what was traditionally considered a “verbal derivational suffix” is to be analyzed syntactically and mention the most frequent exponents of the syntactic v head, namely -ev-, -iz-, -(i)az-, -on-, -ar- and -en-. In what follows, I will present how the verbalizing elements that they discuss can be combined with the nominalizing elements in Alexiadou (2001, 2009) and Angelopoulos (2012), that is -s-, -m- and -sim-, starting with -s- nominalizations. It is worth mentioning that not all verbalizers mentioned in Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Revithiadou & Panagiotidis (2015) create nominalizations and not all combinations are equally productive.

\[ + -ev\text{- verbalization} + -s\text{- nominalization} \]

\(-ev\text{-}s\text{-} \) deverbal nominalizations are attested in Standard Modern Greek, as the example in (8) shows, but the Voice specification can vary.

(8) \[ \sqrt{\text{αστυνομ}}^{11} > \text{αστυνομευ} > \text{αστυνομευςη} \]
\[ \sqrt{\text{police (categoriless)}} > \text{police (v)} > \text{policing (n)} \]

\[ + -en\text{- verbalization} + -s\text{- nominalization} \]

The class of -en-s- (deverbal) nominalizations in Standard Modern Greek is not a productive one, because verbalization with -en- is not a productive process in general

---

11 I consider \(\sqrt{\text{αστι}}\) a single root even though in earlier stages it could be analyzed as complex formation of two roots, namely \(\sqrt{\text{αστι}}\) (city) and \(\sqrt{\text{νομευ}}\) (guard), because to native speakers of Standard Modern Greek its internal structure is probably opaque (contra Ralli (2013), that refers to such constructions as “deverbal compounds with bound stems”, considers them analyzable by native speakers).

12 As mentioned in Spyropoulos, Revithiadou & Panagiotidis (2015) /v/ changes to [f] due to (regressive) voice assimilation with /s/.
and -Vn-s- nominalizations are the residues of older processes. Furthermore, even though some verbs have been “incorporated” in the -en- verbalization process in SMG, in previous periods of the Greek language they might have been derived otherwise e.g. λεπταίνω / le'pteno (to cause something to become thin or small) and παχαίνω / pa'çeno (to cause something to become fat or big in size or to become fat or big in size) were λεπτύνω and παχύνω respectively, and their residual nominalized forms λέπτυνση and πάχυνση (from λέπτυνσις and πάχυνσις) are attested, while πάχαι and λέπται (ν)ση that should be attested, are not.

√ + -ar- verbalization + -s- nominalization

√-ar- verbalized forms do not combine with the -s- nominalizer, but the nominalizer -isma / -izma is used instead (Babiniotis (1998) does not mention this nominalizing element, but Triantafyllidis (1998) and Charalabakis (2014) do). One must decide whether or not this nominalizing element is to be further analyzed as -is-ma, as well as the status of -ar- and its selectional restrictions.

If the derivation in -arisma nominalizations such as σπονσοράρισμα, μανατζάρισμα and μοντάρισμα is actually -ar-is-ma and both -ar- and -is- are considered verbalizers, it is redundant, due to having two consecutive verbalizers, therefore we could claim that -ar- is not an actual verbalizer (contra Ralli (2012), Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Revithiadou & Panagiotidis (2015)), but an element that “marks” non-native roots and serves syllabic or phonotactic purposes. Should that be the case (-ar- having no stable categorizing value), the inflectional suffixes would be responsible for the verbalization in the verbal domain and -is- would systematically be selected as a verbalizer when -ar- is part of a nominalization, since internal inflection during recategorization is not permitted in Standard Modern Greek (cf. Ralli 2005, 2007, 2013). Alternatively, we could postulate some sort of selection / morphophonological restriction of the -ar- verbalizer in the PF component according to which it only merges with the nominalizer -isma (with -isma not being further decomposed pace Triantafyllidis (1998) and Charalabakis (2014))

√ + o(n) verbalization + -s- nominalization

When it comes to nominalizations based on -on- verbalized roots an interesting generalization seems to arise: most instances of -o(n)-s-i nominalizations also have a -o(n)-m-a nominalization, up to the point that in the Standard Modern Greek (SMG)
dictionaries that I mentioned earlier (Babiniotis (1998), Triantafyllidis (1998) and Charalambakis (2014)) the definitions of -o-s-i nominalization include the -o-m-a ones and vice versa, e.g. just a few of them from the letter A of the digital version of the Triantafyllidis dictionary:

(9) ἀντάμωση / ἀντάμωμα (a'damosi / a'damoma): “meeting”
    ἀγκίστρωση / ἀγκίστρωμα (a'gistrosi / a'gistroma): “hooking”
    ἀποβλάκωση / ἀποβλάκωμα (apo'vlakosi / apo'vlakoma): “stupification”

Angelopoulos (2012) presents some points to strengthen his claim that in the -s-i nominalizations, the v head bears the value “passive”, namely
(a) the fact that they license by-phrases (based on findings by Alexiadou, Anagnostopoulou & Schäfer (2006), Alexiadou (2009) and Anagnastopoulou & Samioti (2012)), as in (10):

(10) Ἡ ψηφιοποίηση των καναλιών από τον υπολογιστή
    i psifiopiisi ton kanali'lon apo ton ipolojisti
    the digitization.NOM the channels.GEN by the computer.ACC
    “The channels’ digitization by the computer”
    Example (65b) from Angelopoulos (2012)

(b) the fact that they license instrumental Prepositional Phrases (PPs) (based on analyses by Anagnostopoulou & Samioti (2009, 2012)), as in (11):

(11) Ἡ κατάβαση του βουνού με ποδήλατο είναι επικίνδυνη
    i ka'tavasi tu vu'nu me po'dilato ine epi'cinidini
    the descent.NOM the mountain.GEN. by bike is dangerous.FEM.SING.NOM
    (epi'cinidini agrees with ka'tavasi, which is also FEM.SING.NOM)
    “Descending the mountain by bike is dangerous”

(c) the fact that -s-i cannot nominalize unaccusative roots.

(12) λιώνω > *λιώση
    'λόνο > 'λοσι
“(to) melt” > “melting”

If we consider the Voice head and not the v head responsible for the realization of the external argument (whatever that may be), the first point does not seem to hold, while instrumental PPs can also appear in cases where the Voice is active (e.g. in -tis nominalizations where the voice is active, such as the one that follows)

(13) Ο Πάνος ήταν θεριστής με δρεπάνι, ενώ ο Τάκις θεριστής με σκίθη
ο 'panos itan theri'stis me dre'pani, e'no o 'takis itan theri'stis me 'sciθi
the Panos.NOM be.PAST mower.NOM with sickle.ACC, whereas the
Takis.NOM be.PAST mower.NOM with scythe.ACC.

“Panos was a mower with sickle, whereas Takis was a mower with scythe”

The third point of Angelopoulos (2012) is important, since it gives rise to the issue of the behavior of nominalizations derived from verbs that can alternate between an unaccusative and an ergative version, but this is the topic of a following section.

√ + i(z) verbalization + -s- nominalization

Most -iz- verbalized roots are nominalized through -m- nominalizers, and most -iz-si nominalizations traced in the online version of the Triantafyllidis dictionary seem to be of earlier periods e.g.

(14) αιχμαλώτιση (exma'lotisi): “capture” or “capturing”
(εξ)(ακόντιση ((eks)a'kodisi): “throwing”
αναβάπτιση/αναβάφτιση (ana'vaptisi/ana'vaftisi): “rebaptism”

The same (i.e. -m- nominalization) applies to the last category of √-iz- verbalized forms that Spyropoulos, Panagiotidis & Revithiadou (2015) mention, namely sound-mimic verbs e.g.

(15) γουργούρισμα (γυρ'γυrizma): “purr”
μουρμούρισμα (mur'murizma): “murmur”
μπουμπούνισμα (bu'bunizma): “thunder”
\( \sqrt{+} (i)az \) verbalization + -s- nominalization

The \( \sqrt{+} (i)az + si \) nominalizations are also rare, with the -m- versions being more commonly found. Some of the rare instances of -ia(z)-si deverbal nominalizations I was able to find in the first letters of the online version of the Triantafyllidis dictionary are:

\[(16) \quad \alpha γαλλίαση (αγαλλίαση): \text{“relief”} \]
\[\quad \alpha κρωτηρίαση (ακρωτηρίαση): \text{“mutilation” or “amputation”} \]
\[\quad \deltaηλητηρίαση (δηλητηρίαση): \text{“poisoning”} \]

**Interim Summary on -s- (-si) nominalizations**

Based on the (derivational suffixes acting as) verbalizers mentioned in Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Panagiotidis & Revithiadou (2015), we saw that the pattern \( \sqrt{-} \)-verbalizer-si nominalization is fairly restricted in SMG, and that the \( \sqrt{-} \)-verbalizer-m nominalization exists in most cases where an \( \sqrt{-} \)-verbalizer-si nominalization is attested. In the next sections, I will examine the \( \sqrt{-} \)-verbalizer-m- versions of the aforementioned verbalizers, further explore the behavior of roots involved in the unaccusative alternation. As of the status of the -s- nominalizer and the kind of Voice that is involved in -s- nominalizations, I propose that in the domain of nominalizations the Voice specification can only be deduced from the nPs or DPs that take part in the derivation and the semantic properties of the root that somehow delimit the possibilities of the derivation (see Alexiadou, Anagnostopoulou & Schäfer (2006 a, b) for a quadripartite subcategorization of roots based on their encyclopedic semantics).

3.2.2. -m- deverbal nominalizations

\( \sqrt{+} \) -ev- verbalization + -m- nominalization & \( \sqrt{+} \) -en- verbalization + -m- nominalization

\( \sqrt{-} \)-ev-m- nominalizations are rare (the online version of the Triantafyllidis dictionary mentions less than 80 of them with the \( \sqrt{-} \)-ev-m-a version being the most productive by far), while \( \sqrt{-} \)-en-m are not attested at all in Standard Modern Greek dictionaries, so I will not focus on them.

\( \sqrt{+} (-ar- verbalization) + -iz- verbalization + -m- nominalization \)
The main reason I unified the -ar- and -iz- deverbal nominalization cases is because I assume that the -ar- element is not capable to “license” a nominalization process on its own, and that’s why there aren’t any instances where a √+ -ar- verbalization + m nominalization exists. The only cases of nouns ending in -arma / -armos in the online version of the Triantafyllidis Dictionary were either produced in earlier periods of the Ancient Greek language, therefore they could not be considered instances of the -ar-m- X schema of nominalization, or were loans e.g.

(17) κάθαρμα (katarma): “scum”

πταρμός (ptarmos): “sneezing”

κάρμα (karma): “karma” (loan word from Sanskrit)

Whereas -ar-m- nominalizations are virtually non-existing, the -ar-is-m-a nominalization is a productive pattern, since this element (i.e. -ar-) incorporates to loan words meaning “to be involved with the action denoted by the root X or to use X”.

ar-is-m-a nominalizations, being derived from roots that do not necessarily refer to actual activities, can be used to show that -m- nominalizations are not a uniform category, but can be split in two categories (or even more): -m- nominalizations with a passive value Voice specification and -m- nominalizations with a non-passive value Voice specification or no Voice specification whatsoever (an insight that both Alexiadou (2009) and Angelopoulos (2012) capture, but based on different aspects of -m- nominalizations; contra Angelopoulos I don’t claim that there is no Voice head involved, but that the Voice head that is involved can have different values.

I will show, with the following examples involving loan roots coming from internet use and the up-and-coming social networks use, that the semantic information of the root can affect the Voice feature of the nominalization (for more examples like the ones that follow, see the Appendix):

(18) a. λαϊκάρισμα < λαϊκάρω (from the verb “to like” + -ar-)

lai'karizma < lai'karo

“liking” <“(to) like”

(18) b. σναπτσατάρισμα < σναπτσατάρω (from Snapchat + -ar-)

snaptsa'tarizma < snaptsa'taro
“snapchating” < “(to) snapchat”

(18)  c. ταγκάρισμα < ταγκάρω (from the verb “to tag” + -ar-)
ta’garizma < ta’garo
“tagging” < “(to) tag”

(18)  d. τουιτάρισμα < τουιτάρω (from the verb “to Tweet” + -ar-)
tui’tarizma < tui’taro
“tweeting” < “(to) tweet”

Some of the examples mentioned above cannot bear a non-active Voice specification, due to the fact that even in the verbal domain, there is no kind of transitivity involved and some kind of agent is licensed e.g. σναπτσατάρισμα and τουιτάρισμα refer to the activity of someone using the respective websites. In the examples that follow, I use some agentivity diagnostics (i.e. manner adverbials, agent oriented adverbials and instrumental PPs), to show that the nominalized versions of the verbal constructions bear equivalent properties.

Manner adverbial modification in verbal constructions vs. manner adverbial / manner adjective modification in nominalizations

(19)  a. Ο Νίκος σναπτσατάρει επίμονα (για / επί) μισή ώρα
ο 'nikos snaptsa’tari e’pimona (ja / e’pi) mi’si ’ora
the Nick.NOM snapchat.3SG persistently (for) half.ACC hour.ACC
“Nick snapchats persistently for half an hour.”

(19)  b. Το σναπτσατάρισμα του Νίκου επίμονα (για / επί) μισή ώρα
to snaptsa’tarizma tu ’niku e’pimona (ja / e’pi) mi’si ’ora
the snapchating.NOM the Nick.GEN persistently for half.ACC hour.ACC
“Nick’s snapchatting persistently for half an hour.”

(19)  c. Το επίμονο σναπτσατάρισμα του Νίκου (για / επί) μισή ώρα13

---

13 Alexiadou (1997, 2001), Alexiadou & Stavrou (1998) and Alexiadou, Haegeman & Stavrou (2007) argue that, when a nominalization has an event reading, it can be modified by a manner adverb,
to e'pimo snopta'tarizma tu 'niku (ja / e'pi) mi'isi'ora
the persistent.NOM snapchatting.NOM the Nick.GEN for half.ACC
hour.ACC

“Nick’s persistent snapchatting for half an hour.”

Agent oriented adverbial modification in verbal constructions vs. agent oriented
adverbial / agent oriented adjective modification in nominalizations

(20) a. Ο Νίκος σναπτσατάρει συνειδητά όταν μιλάει η Μαρία
ο 'nikos snopta'tari siniði'ta 'otan mi'lai i ma'ria
the Nick.NOM snapchat.3SG consciously when speak.3SG the Mary.NOM

“Nick consciously snapchats when Mary speaks.”

(20) b. Το σναπτσατάρισμα του Νίκου συνειδητά όταν μιλάει η Μαρία
to snopta'tarizma tu 'niku siniði'ta 'otan mi'lai i ma'ria
the snapchating.NOM the Nick.GEN consciously when speak.3SG the
Mary.NOM

“Nick’s snapchating consciously when Mary speaks.”

(20) c. Το συνειδητό σναπτσατάρισμα του Νίκου όταν μιλάει η Μαρία
14 to siniði'to snopta'tarizma tu 'niku 'otan mi'lai i ma'ria
the conscious.NOM snapchating.NOM the Nick.GEN when speak.3SG the
Mary.NOM

“Nick’s conscious snapchating when Mary speaks.”

while this is not the case with result nominals. The fact that manner adjective modification is also possible
can be attributed to the nominal layer of nominalizations.
14 The same reasoning that we saw in the examples in (19) applies to these examples as well,
concerning adverb / adjective modification of a nominalization. An additive selectional restriction that
holds in this kind of modification (i.e. agent oriented) is that the root that acts as the external argument
must bear a feature denoting sentience / agentivity. Therefore, a sentence with a non-sentient root as an
external argument, such as the one that follows, would trigger ungrammaticality both in the verbal
construction and in the respective action denoting nominalization:
*Ο φοίνικας σναπτσατάρει συνειδητά / *το σναπτσατάρισμα του φοίνικα συνειδητά / *το συνειδητό
σναπτσατάρισμα του φοίνικα
ο 'finikas snopta'tari siniði'ta / to snopta'tarizma tu 'finika siniði'ta / to siniði'to snopta'tarisma tu 'finika
the palm tree.NOM snapchat.3SG consciously / the snapchating.NOM the palm tree.GEN consciously / the
conscious.NOM snapchating.NOM the palm tree.GEN

“The palm tree snapchats consciously” / “the palm tree’s snapchating consciously” / “the palm tree’s
conscious snapchating”
Instrumental PP modification in verbal constructions and nominalizations

(21) a. Ο Νίκος σναπτσατάρει με το καινούριο τάμπλετ του
    the Nick.NOM snapchat.3SG with the new.ACC tablet.ACC possessive
    clitic SG.MASC.
    “Nick snapchats with his new tablet.”

(21) b. Το σναπτσατάρισμα του Νίκου με το καινούριο τάμπλετ του
    the snapchating.NOM the Nick.GEN with the new.ACC tablet.ACC
    possessive clitic SG.MASC.
    “Nick’s snapchatting with his new tablet”

In other examples I mentioned earlier, such as λαϊκάρισμα, πονάρισμα, and ταγκάρισμα, -m- seems to behave in different ways, even though the form of the nominalization remains the same:

(22) Το πρόσφατο λαϊκάρισμα του Σπύρου ενόχλησε τη Μαρία
    the recent.NOM liking.NOM the Spyros.GEN annoy.3SG.PAST the Mary.ACC
    “The recent liking of Spyros annoyed Mary.”

In (22), there is not enough information to help us deduce the value of -m- concerning the Voice specification. The fact that both examples (23) and (24) are possible shows Voice differences:

(23) Το πρόσφατο λαϊκάρισμα του Σπύρου από τη Στέλα ενόχλησε τη Μαρία
    the recent.NOM liking.NOM the Spyros.GEN by the Stela.ACC
    annoy.3SG.PAST the Mary.ACC
    “The recent liking of Spyros by Stela annoyed Mary.” (In this case, λαϊκάρισμα
    refers to “being liked” and Spyros is the one being liked, so we can assume that
    the Voice specification of the nominalization λαϊκάρισμα is +Passive).
Το πρόσφατο λαϊκάρισμα του Σπύρου ενόχλησε τη Μαρία, αλλά (το λαϊκάρισμα) του Θωμά την κολάκευσε.

“Spyros’ recent liking annoyed Mary, but Thomas’ (liking) flattered her.” (In this case, λαϊκάρισμα refers to “liking” and both Spyros and Thomas liked Mary, so the Voice specification of λαϊκάρισμα can be considered +Active).

Considering their derivation, the two instances of λαϊκάρισμα have similar derivations up to the Voice head: The root √laik merges with the element -ar- that denotes it is a loanword (or verbalizes it for the first time, if we adopt the approach in Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Panagiotidis & Revithiadou (2015)). The √laik-ar-complex is remerged with the verbalizer -isma (or is verbalized once more, cf. previous section). An Aspect head is merged with the vP laik-ar-is- and thus we have an event reading and the licensing of the internal argument in genitive. In the λαϊκάρισμα as in “liking” interpretation (cf. example (24)) the Voice head is specified as [+active] and the DPs του Νίκου and του Θωμά are being interpreted as agents, whereas in the λαϊκάρισμα as in “being liked” interpretation (cf. example (23)) the Voice head is specified as [+passive] and the DP του Νίκου is being interpreted as an patient of the “liking” incident and the equivalent of an English by-phrase, i.e. από τη Στέλλα, is licensed. The -m- nominalizer is merged with the VoiceP and the structure thus far is being embedded in a DP layer.

√ + -on- verbalization + -m- nominalization

Since a series of -on- verbalized roots take part in the causative / anticasusative alternation, this section shows how these roots behave when they are involved in a nominalization process. Simply put, the causative / anticasusative alternation refers to instances where a verb has the same form, with no overt voice morphology being involved (as for example in the passive alternation), when (a) a DP undergoes some kind of change of state a root denotes (as in (25.a.)), and (b) both the DP that undergoes a change of state and the agent or causer of this change of state are mentioned. e.g. in (25.b.) and (25.c.) respectively:
(25) a. Το βάζο έσπασε
    to ‘vazo ’espase
the vase.NOM break.3SG.PAST
“The vase broke.” (The DP Το βάζο undergoes the change of state of breaking and no agent or causer is mentioned).

(25) b. Ο Γιάννης έσπασε το βάζο
    o ‘janis ’espase to ‘vazo
the John.NOM break.3SG.PAST the vase.ACC
“John broke the vase.” (The DP Το βάζο undergoes the change of state of breaking and the DP ο Γιάννης is mentioned as the agent of this change of state).

(25) c. O άνεμος έσπασε το βάζο
    o ‘anemos ’espase to ‘vazo
the wind.NOM break.3SG.PAST the vase.ACC
“The wind broke the vase.” (The DP o άνεμος cannot “qualify” as an agent, so it is considered the causer of the change of state in this example).

As Rappaport Hovav (2014) argues there have been various approaches to this alternation depending on whether one chooses to see it lexically or syntactically and on what one considers to be the “base” form from which the other alternating form is derived. In this section, I will adopt a syntactic approach (i.e. I claim that the derivation of this alternation takes place in the syntactic component) and I will consider that there is no base form, but that the unaccusative and transitive versions are two distinct derivations (due to the fact that different heads are involved in different argument licensing processes).

Some instances of -on- verbalized roots denoting change of state are (for more, check the Appendix):

(26) a. ζαρώνω (za‘rono): to wrinkle something or to wrinkle
    Η Μαιρούλα ζάρωσε τα φορέματα της Ελένης φορώντας τα στις κούκλες της. vs. Τα ρούχα της Ελένης ζάρωσαν.
“Little Mary wrinkled Helen’s dresses by wearing them to her dolls.” vs. “Helen’s dresses wrinkled.”

(26) b. κρυώνω (kri’ono): to cause something to chill or to chill

Ο ζαχαροπλάστης κρύωσε τη μους σοκολάτα. vs. Η μους σοκολάτα κρύωσε.

“The confectioner chilled the chocolate mousse.” vs. “The chocolate mousse chilled.”

(26) c. λαδώνω (la’dono): to make something oily or to become oily

Ο Νεκτάριος λάδωσε τα μαλλιά της Αμαλίας με τα χάδια του. vs. Τα μαλλιά της Αμαλίας λαδώνουν εύκολα

“Nektarios oiled Amalia’s hair with his caresses.” vs. “Amalia’s hair oil easily.”

The same reasoning that I applied in the previous subsection concerning the -ar-iz-ma nominalization case applies to the -on-ma case as well, i.e. according to the specification of the Voice head we can have different readings:

(27) Το πάγωμα του γλυκού

το 'paɣoma tu ɣli’ku

the freezing.NOM the sweet.GEN

“The sweet’s freezing.”

The aforementioned example, as example (22), can refer to both the sweet freezing on its own and someone purposely freezing the sweet, and the best way to differentiate between the two possible interpretations is through agent-oriented adverbials and instrumental PPs, that can be used when the Voice is active and an external argument is licensed (either implicitly as in (28) - (30) or explicitly as in (31) - (33)):

Agent-oriented adverbial

(28) Το πάγωμα του γλυκού προσεκτικά μην κρυσταλλώσει

to 'payoma tu ɣli’ku prosekti’ka miŋ krista’losi / mi grista’losi
“The sweet’s freezing cautiously, so that it won’t crystallize.”

Agent-oriented PP

(29) Το πάγωμα του γλυκού με προσοχή μην κρυσταλλώσει
to ’payoma tu γλυ'ku me proso'ci miŋ krista'losi / mi grista'losi
the freezing.NOM the sweet.GEN with caution.ACC not to crystalize.3SG
“The sweet’s freezing with caution, so that it won’t crystallize.”

Instrumental PP

(30) Το πάγωμα του γλυκού με την ειδική φόρμα
to ’payoma tu γλυ'ku me tin iδi'ci 'forma
the freezing.NOM the sweet.GEN with the special.ACC mould.ACC
“The sweet’s freezing with the special mould.”

The examples (28) - (30) only make sense when an agent DP such as the ones in (31) - (33) is present and Voice is valued as +passive (hence the by-phrases):

Agent-oriented adverbial

(31) Το πάγωμα του γλυκού από τον ζαχαροπλάστη προσεκτικά μην κρυσταλλώσει
to ’payoma tu γλυ'ku a'po ton zaxaro'plasti prosekti'ka miŋ krista'losi / mi grista'losi
the freezing.NOM the sweet.GEN by the confectioner.ACC cautiously not to crystalize.3SG
“The sweet’s freezing by the confectioner cautiously, so that it won’t crystallize.”

Agent-oriented PP

(32) Το πάγωμα του γλυκού από τον ζαχαροπλάστη με προσοχή μην κρυσταλλώσει
to ’payoma tu γλυ'ku a'po ton zaxaro'plasti me proso'ci miŋ krista'losi / mi grista'losi
the freezing.NOM the sweet.GEN by the confectioner.ACC with caution.ACC not to crystalize.3SG
“The sweet’s freezing by the confectioner with caution, so that it won’t crystallize.”

**Instrumental PP**

(33) Το πάγωμα του γλυκού από τον ζαχαροπλάστη με την ειδική φόρμα
to 'payoma tu 'gli'ku a'po ton 'zaxaro'plasti me tin i'di'ci 'forma
the freezing.NOM the sweet.GEN by the confectioner.ACC with the
special.ACC mould.ACC

“The sweet’s freezing by the confectioner with the special mould.”

When an example like (27) (repeated below as (34) for practical reasons) refers to an entity undergoing a change of state on its own (i.e. the sweet freezes on its own), an analysis must be provided that accounts for that interpretation.

(34) Το πάγωμα του γλυκού
to 'payoma tu 'gli'ku
the freezing.NOM the sweet.GEN

“The sweet’s freezing.”

Since the verbal class of anticausatives is not morphologically uniform in Standard Modern Greek, we must first recognize the (sub-)class of SMG anticausatives in which most of the verbs in (26) belong and then account for their nominalized forms. Alexiadou, Anagnostopoulou & Schäfer (2015) differentiate between three classes of verbs that are involved in the causative / anticausative alternation: marked anticausatives, unmarked anticausatives and anticausatives that can surface both as marked and unmarked: marked anticausatives involve morphology that is often associated with detransitivization, unmarked anticausatives have the same form as their transitive counterparts, while the third class consists of verbs that can have two forms.

Furthermore, according to Alexiadou, Anagnostopoulou & Schäfer (2015: 66), there had been three lines of thought when it comes to anticausatives: the first one treats anticausatives as (semantically) reflexive predicates (they mention analyses such as Chierchia’s (1989/2004) and Koontz-Garboden’s (2009) as belonging to this line of thought), the second one is that differences in form must reflect differences in meaning (e.g. Alexiadou & Anagnostopoulou (2004) argue that partial and complete change are
related to active and non-active variants of third-class anticausatives), while the third one claims that the distinction between internal and external causation (i.e. whether an event is caused internally or externally) is expressed through morphological marking, with marked anticausatives expressing external causation and unmarked anticausatives expressing internal causation. e.g.

(35) Το κτίριο γκρέμισε vs. Το κτίριο γκρεμίστηκε
    the building collapse.3SG.PAST.ACT vs. the building collapse.3SG.PAST.NON ACT
    (The unmarked -active- version denotes internal causation, hence the example in (36a) is considered antigrammatical, while the marked -non-active- one in (36b) is grammatical with a by-phrase denoting an agent.)

(36) a. *Το κτίριο γκρέμισε από τον Νίκο
    the building collapse.3SG.PAST.ACT by the Nick.ACC
    “The building collapsed by Nick”

(36) b. Το κτίριο γκρεμίστηκε από τον Νίκο
    the building collapse.3SG.PAST.NON ACT by the Nick.ACC
    “The building was collapsed by Nick”

After they mention counterexamples to those lines of analyses, they claim that the difference between the classes of anticausatives can be explained through different Voice specifications or the absence of Voice. More specifically, when it comes to unmarked anticausatives, they claim that they lack Voice, while marked anticausatives contain a special type of Voice, called ‘expletive non-active Voice’. Alexiadou, Anagnostopoulou & Schäfer (2015), distinguish between thematic Voice and expletive Voice on the basis of whether an external argument is introduced and acts as a variable for the event that is expressed by the verbal phrase or not. Building on Schäfer (2008), they adopt a two variable feature system (namely of a D-feature and a λx feature) as in the figure that follows:
37. Thematic and expletive Voice systems

*Figure taken from Alexiadou, Anagnostopoulou & Schäfer (2015: 109)*

In thematic active Voice (37a) a DP is merged as a specifier of the VoiceP, checking the D-feature of Voice and it is interpreted as a participant in the event expressed in the vP, while in thematic non-active Voice (37b) there is no D-feature on Voice, so no specifier, but we still have an external argument variable (in this case we have an existentially bound implicit argument, that can be optionally included as a by-phrase).

Concerning the expletive voices, we have an active Voice (37c) that licenses a specifier (i.e. has a D-feature), but not an external argument variable (i.e. this argument is not interpreted as a participant in the event that the embedded DP denotes), and a non-active Voice (37d) that licenses neither. Voices are spelled out accordingly and the DPs licensed in the active Voices in (37a) and (37c) are different: thematic active Voice licenses “regular” referential DPs, while expletive active Voice licenses SE-reflexives in Romance and Germanic languages.\(^\text{15}\)

Adapting their system to explain the cases of nominalizations that I mentioned in (26) when they are used with an anticausative reading, I analyze these examples as instances of unmarked anticausatives before their nominalization, since they are not productive as marked anticausatives (consequently, they cannot belong to the marked / unmarked class either).\(^\text{16}\) In SMG the Voice head has a morphological spell out in the

\(^{15}\) On the specifics of how these SE-reflexives are interpreted as bound variables cf. Schäfer (2008) and Alexiadou, Anagnostopoulou & Schäfer (2015: 108 - 114).

\(^{16}\) The examples in (26) do not have productive marked anticausative forms so, when they are marked as non-active, the reading is that of a reflexive middle or a passive construction. e.g.

Η Μαρία λαδώνεται / λαδώθηκε, για να μαυρίσει γρηγορότερα
verbal domain and gives us information on the presence or absence of an external argument and how it must be interpreted, so not including a Voice head in our derivation is not an option. The solution of postulating an expletive Voice specification, as Alexiadou, Anagnostopoulou and Schäfer (2015) propose, seems to account for the fact that in the nominalization of anticausatives there is no external argument (agent or causer) whatsoever and the entity undergoing a change of state does so on its own.

The analysis of a nominalized form of an unmarked anticausative of an -on-verbalized root would be as follows. Let’s use the example το λάδωμα των μαλλιών (“the hair’s oiling”) that is derived from an anticausative construction, i.e. τα μαλλιά λάδωσαν meaning that someone’s hair became oily / greasy.

Before the derivation continues, both √lað (acategorical root meaning “oil”) and √mali (acategorical root referring to “hair”) must be categorized due to the Categorization Assumption. √mali is nominalized and embedded in a DP shell that is responsible for its morphophonological exponence as a plural form (NumberP) and the presence of the determiner το as the D heading the DP, while √lað is verbalized through the -on- verbalizer. √mali acts as the complement of √lað-on- and a vP projects. A Voice head with the specification “expletive non-active” is merged with the vP, so the reading is that √mali underwent a change of state without an external argument being responsible for or causing this change of state. The verbal derivation is nominalized through the -m- nominalizer and the DP that acts as the vP complement is valuated as genitive concerning its case. The deverbal nominal then acts as a complement to the D το, giving rise to the DP το λάδωμα των μαλλιών.

√ + -(i)az-verbalization + -m-nominalization
√-(i)az-m-os and √-(i)az-m-a nominalization is a relatively productive derivation and the same things that we saw in previous sections hold for that kind of deverbal nominals: depending on the semantic properties of a root some readings are more probable than others, so the Voice specification can be deduced based on the DPs that

---

i ma'ria la'done' / la'do'ice, ja na ma'vrisi 'yi'vo'rotera
The Mary.NOM oil.3SG.MEDIOPASSIVE.NON PAST /oil. 3.SG.MEDIOPASSIVE.PAST in order to tan.3SG faster

Reading 1: “Mary oils herself / oiled herself to tan faster.” (reflexive middle Voice specification)
Reading 2: “Mary gets oiled / got oiled (i.e. by someone else) to tan faster.” (thematic passive Voice specification)
interact with the root and their semantic characteristics (i.e. whether or not they are animate / sentient or they can be modified by elements that usually modify agents or causers). As in the \(\sqrt{-o(n)}\)-m- deverbal nominalizations, there are some roots that when verbalized with the -(i)az- verbalizer they participate in the causative / anticausative alternation, e.g.\(^{17}\).

(38) a. \(\alpha\deltaει\acute{\alpha}ς\omega\) (\(\alpha\delta\acute{j}a\z{o}\)): to empty something or to get emptied
   
   Οι ληστές \(\alpha\δει\acute{\alpha}σαν\) το σπίτι του Παπαδόπουλου. vs. Έφυγαν τα παιδιά τους και \(\alpha\δει\acute{\alpha}σα\) το σπίτι.
   
   “The burglars emptied Papadopoulos’ home.” vs. “Their children left and the house emptied”

(38) b. \(\muο\deltaι\acute{\alpha}ς\omega\) (\(\mu\delta\acute{j}a\z{o}\)): to make someone / something numb or to become numb

   Ο οδοντίατρος \(\mu\o\deltaια\acute{s}α\) την αριστερή πλευρά του προσώπου της με την ένεση. vs. Το χέρι της \(\muο\δια\acute{s}α\), γιατί κοιμήθηκε πάνω του όλο το βράδυ.
   
   “The dentist numbed the left side of her face with the injection.” vs. “Her arm numbed, because she slept on top of it all night long.”

(38) c. \(\o\rι\mu\acute{\alpha}ς\omega\) (\(\o\ri\acute{m}a\z{o}\)): to make something mature or to mature

   Οι \(\a\tυ\acute{\chi}ε\z{\i}ς\) τον \(\o\rHmm\acute{s}α\). vs. \(\O\r\acute{m}\acute{s}α\) \(\a\p\acute{o}\) \(\at\acute{o}n\) \(\e\acute{m}\acute{e}i\e\acute{n}\) \(\mu\o\n\acute{\eta}\ t\z{\i}ς.
   
   “The misfortunes matured him.” vs. “She has matured, ever since she lived on her own.”

The anticausatives mentioned above belong to the unmarked (only) anticausatives class, so a similar analysis to the one proposed for the nominalization of unmarked -\(o(n)\)- anticausatives of (26) at the end of the previous section applies: when a nominalization using one of the verbalized roots of (36) has an anticausative reading, we can postulate an expletive non-active Voice specification with the DP that surfaces with genitive case acting as the complement of the vP embedded under Voice.

3.2.3. \(-\text{sim-} \text{deverbal nominalizations}\)

\(^{17}\) For more examples see the Appendix.
I agree with Angelopoulos (2012: 50) who claims that, even though the nominalizers -m- and -sim- are considered allomorphic realizations of the same suffix and their morphological exponence during insertion is phonologically conditioned (namely, if the root is monosyllabic the -sim- nominalizer is inserted, while the -m- nominalizer is inserted when the root consists of two or more syllables), the -sim- and -m- nominalizers have different interpretations when they are merged with the same root, behaving as two separate morphemes. In such cases the -m- nominalization refers to the result of the action the root denotes, while the -sim- nominalization refers to the action that takes place. e.g.

(39) το χτίσμα / το χτίσιμο
to 'xtizma / to 'xtisimo
“the building” / “building”

The nominalization χτίσμα refers to an actual building and cannot license argument structure, while the nominalization χτίσιμο refers to the actual process of building something. That’s why in 40a the DP του ναού is interpreted as a possessor and in 40b it is interpreted as a theme.

(40) a. Το χτίσμα του ναού της Αρτέμιδος είναι κοντά.
to 'xtizma tu na'u tis ar'temidois 'ine ko'da
the building.NOM the temple.GEN the Artemis.GEN be.3SG nearby.
“Artemis’ temple’s building is nearby.”

(40) b. Το χτίσιμο του ναού της Αρτέμιδος στην Έφεσο κράτησε πάνω από έναν αιώνα.
to 'xtisimo tu na'u tis ar'temidois stin 'efeso kratise 'pano a'po 'enan e'ona
the building.NOM the temple.GEN the Artemis.GEN last.3PL.PAST over a century.ACC
“Building Artemis’ temple in Ephesus lasted over a century.”

The nominalizations χτίσμα and χτίσιμο cannot be used interchangeably, so the examples in (41) are ungrammatical:

(41) a. *Το χτίσιμο του ναού της Αρτέμιδος είναι κοντά.

    to 'xtisimo tu na'u tis ar'temidos 'ine ko'da
    the building.NOM the temple.GEN the Artemis.GEN be.3SG nearby.
    “Building Artemis’ temple is nearby.”

(41) b. *Το χτίσμα του ναού της Αρτέμιδος στην Έφεσο κράτησε πάνω από έναν αιώνα.

    to 'xtizma tu na'u tis ar'temidos stin 'efeso 'kratise pano a'po 'enan e'ona
    the building.NOM the temple.GEN last.3PL.PAST over a century.ACC
    “Artemis’ temple’s building in Ephesus lasted over a century.”

No overt verbalizer precedes the -sim- nominalizer (unlike instances of -m- nominalization), and that can be explained if we consider its presence phonologically determined: an overt verbalizer would make the construction it merges with disyllabic and would trigger -m- nominalization. Adopting Baker’s (2003) and Panagiotidis’ (2015) insight (amongst others) I claim that there must be a verbalizing element, even though it is phonologically null, because in order for a noun to have argument structure it must be verbal at some point of its derivation. The presence of some kind of external

19 An example like 41b can be marginally accepted by some Greek speakers because the root χρ(α)τ- refers both to duration (that’s why it is roughly translated as “(to) last” in examples 40b and 41b and durability (as in the example that follows) amongst others.

Αυτό το κινητό μου κράτησε τρία ολόκληρα χρόνια, μέχρι που παρουσίασε προβλήματα η οθόνη.
af'to to cini'to mu 'kratise tria o'lokli'ra xro'ni, me'chi pi' paro'siasi'pe pro'blima'ta i o'thoni
this the mobile.NOM possessive clitic.1SG.GEN. endure.3SG.PAST three.ACC
until that develop.3SG.PAST problem.PL.ACC until that develop.3SG.PAST problem.PL.ACC the screen.NOM
“This mobile of mine’s endured for three whole years, until the screen developed problems”.

The use of χτίσμα in 41b could be considered acceptable, if given enough context that would point to κράτησε: having the interpretation of endured. In the example that follows “over a century” would not refer to the action of building, but the action of enduring:

To χτίσμα του ναού της Αρτέμιδος κράτησε πάνω από έναν αιώνα, μέχρι που το πυρπόλησαν επιδρομείς.
ot 'xtizma tu na'u tis ar'temidos 'kratise pano a'po 'enan e'ona 'mexri pu to p'polisæn ep'i'dromis
the building.NOM the temple.GEN the Artemis.GEN endure.3PL.PAST over a century.ACC until that
clitic.NEUT.ACC burn down.3PL.PAST invader.NOM.PL.
“Artemis’ temple’s building endured over a century, until invaders burnt it down.”
argument in -sim- nominalizations or the presence of nominalizations whose interpretation is that of an anticausative points to a Voice head also being present in -sim- nominalizations.

All the Voice options we saw in the previous sections about -s- nominalizations and –m- nominalizations are available in -sim- nominalizations and the interpretation of the Voice head depends on whether or not some sort of external argument is licensed (Active vs. Passive Voice) and the kind of action the verbalized root denotes (if there is some kind of change of state involved, an anticausative reading can also be possible).

Most -sim- nominalized verbal roots only have active and passive Voice specifications (about 80% of the ones I was able to find in Triantafyllidis’ Online Dictionary), but some of them (the remaining 20%) allow an active and expletive non-active Voice, with the passive Voice specification not being possible in all of them. Some of the verbal roots that alternate between a transitive and anticausative construction when nominalized via -sim- are:\n
\[\text{(42) a. } \betaράζω (vrazo) > βράσιμο (vrasimo)\]
\[Ο \text{ μάγειρας έβρασε το νερό (causative) vs. Το νερό έβρασε (anticausative) vs. Το βράσιμο του νερού} \]
\[“The chef boiled the water.” vs. “The water boiled” vs. “The water’s boiling”\]

\[\text{(42) b. } \lambdaιώνω (ʎono) > λιώσιμο (ʎosimo)\]
\[Ο \text{ ζαχαροπλάστης έλιωσε την καραμέλα (causative) vs. Η καραμέλα έλιωσε vs. Το λιώσιμο της καραμέλας} \]
\[“The confectioner melted the caramel.” vs. “The caramel melted” vs. “The caramel’s melting”\]

\[\text{(42) c. } \sigmaβήνω (zvino) > σβήσιμο (zvisimo)\]
\[Ο \text{ πυροσβέστης έσβησε τη φωτιά (causative) vs. Η φωτιά έσβησε (anticausative) vs. Το σβήσιμο της φωτιάς} \]
\[“The firefighter extinguished the fire.” vs. “The fire extinguished.” vs. “The fire’s extinguishing.”\]

\[\text{20 For more examples like these see the Appendix.}\]
Depending on the semantic information of the root, the properties and number of arguments that participate in the event the verbalized root denotes all possible Voice interpretations we saw in previous sections can appear in -sim- nominalizations. The derivation of a -sim- nominalization should be as follows: The root merges with a verbalizer (in order to have an event / action reading and the licensing of argument structure concerning internal arguments the root must be combined with a verbal element): this verbalizer is phonetically null and can be represented by a null morpheme. Existing internal arguments act as complements to the vP. In the verbal domain the Voice specification of a verbal root can be traced through morphological marking, but in the case of nominalization the presence or absence of an external argument (be it thematic or expletive) is what defines the Voice of the construction: if a thematic external argument is licensed the Voice is active, if a non-thematic external argument is licensed (e.g. in anticasatives) the Voice is expletive non-active, while if we have an entity undergoing the event the root-verbalizer construction mentions without an external argument present (as a by-phrase) the Voice is passive. The -sim-nominalizer merges with the Voice P (thus, the direct internal argument surfaces with dependent / structural genitive case). D merges with the nP (√-sim-), giving rise to a DP.

3.3. Middle, reflexive and reciprocal interpretation in nominalizations
3.3.1. Dispositional middle interpretation in nominalizations
As Alexiadou (2014b) mentions, the term Voice has three distinct meanings in the literature: (a) alternations in a verb’s argument structure, (b) the morphological marking of such an alternation on the verb’s category and (c) the syntactic head responsible for licensing a verb’s external argument. Furthermore, a morphological non-active Voice realization (morphological marking) in the PF can be attributed to many Voice specifications in the syntactic component and have different interpretations in Standard Modern Greek (Manzini, Roussou & Savoia (2016) mention such examples both for Standard Modern Greek and Albanian). In the previous sections, I presented cases where a nominalization had an active, passive or anticasative interpretation, but other interpretations are also available.
Tsimpli (1989) mentions three possible constructions with non-active verbal specification: passive, middle and reflexive\(^{21}\). Lekakou (2005) agrees with Tsimpli (1989) that the difference between middles and passives in Standard Modern Greek is the aspect with which they surface (i.e. perfective in passives and imperfective in middles) and the fact that middles ascribe a dispositional property to their understood object, but claims that other than that Standard Modern Greek middles behave as (generic) passives.

A dispositional middle interpretation in nominalizations can occur when they take part in copular constructions that ascribe dispositional properties to the nominalizations complement and have a generic meaning concerning their external arguments (in such cases they can’t be considered result nominals or R-nominals, since they license argument structure):

(43) a. Το διάβασμα της Οδύσσειας από το πρωτότυπο είναι δύσκολο
   the reading.NOM the Odyssey.GEN from the original (i.e. text).ACC be.3SG difficult.NOM
   “Odyssey’s reading from the original is difficult.”

(43) b. Το σκαρφάλωμα του βουνού είναι επικίνδυνο λόγω των συχνών κατολισθήσεων
   the climbing.NOM the mountain.GEN be.3SG dangerous.NOM due to the frequent.GEN.PL rockfall.GEN.PL
   “The mountain’s climbing is dangerous due to the frequent rockfalls.”

(43) c. Το ξεπέρασμα έντονα τραυματικών εμπειριών θεωρείται χρονοβόρο
   the overcoming.NOM extremely traumatizing.GEN.PL experience.GEN.PL consider.3SG.PAST time-consuming.NOM

\(^{21}\) By “middle” Tsimpli refers to the dispositional middle construction. According to Levin (1993: 26) the main properties of this construction are: lack of a specific time reference, an understood but unexpressed agent and (in most cases) adverbial or modal modification.
“Extremely traumatizing experience’s overcoming is considered time - consuming”

(41) d. Το ξέχασμα τόσο γελοίων επώνυμων όπως το δικό της είναι αδύνατο to ’ksexazma ’toso je’lion e’ponimon ’opes to di’ko tis ’ine a’dinato the forgetting.NOM such ridiculous.GEN surnames.GEN like hers be.3SG impossible.NOM

“Ridiculous surname’s –such as hers– forgetting is impossible.”

3.3.2. Reflexive and reciprocal interpretations in nominalizations
Alexiadou & Schäfer (2013), Alexiadou (2014a), Alexiadou, Anagnostopoulou & Schäfer (2015), and Spathas, Alexiadou & Schäfer (2015) analyze af-to- / auto-prefixation in the verbal domain as an instance of reflexivization. According to their analyses, passive and (reflexive) middle Voice are quite similar, but they are distinguished by the fact that the former exhibits Disjoint Reference Effects, while the latter does not necessarily do so. In these publications, they distinguish between two classes of non-active reflexive verbs, namely Naturally Reflexive Verbs (NRVs) and Naturally Disjoint Verbs (NDVs). NRVs’ semantic roles are expected to refer to the same entity, while NDVs’ semantic roles are expected to be distinct. NRVs mostly involve grooming verbs and motion verbs and are interpreted either as reflexives or as passives by surfacing with a non-active Voice (as in (44a) and (44b) respectively), while NDVs with non-active Voice are interpreted as passives (as in (45)):

Ambiguous reading
(44) Ο Παύλος ξυριζόταν / ξυρίστηκε
ο ’pavlos ksiri’zotan / ksi’ristike
the Pavlos.NOM shave.3SG.NON ACT.PASS.NON PERF / shave.3SG.NON ACT.PASS.PRF

“Pavlos was shaving / was shaved”

Reflexive reading
(44) a. Ο Παύλος ξυριζόταν / ξυρίστηκε πρώτη φορά χωρίς βοήθεια
ο ’pavlos ksiri’zotan / ksi’ristike ’proti fo’ra xo’ris vo’iθia
Pavlos NOM shave.3SG.NON ACT.PASS.NON PERF / shave.3SG.NON ACT.PASS.PERF first.ACC time.ACC without help.ACC

“Pavlos was shaving for the first time without help (i.e. without somebody else helping him).”

Passive reading

(44) b. Ο Παύλος ξυριζόταν / ξυρίστηκε από τον επώνυμο κομμωτή Παπαδόπουλο
the Pavlos.NOM shave.3SG.NON ACT.PASS.NON PERF / shave.3SG.NON ACT.PASS.PERF by the famous.ACC barber.ACC Papadopoulos.ACC

“Pavlos was shaved by the famous barber Papadopoulos”

Passive reading

(45) Ο ταραξίας τιμωρούνταν / τιμωρήθηκε για παραδειγματισμό
the troublemaker.NOM punish.3SG.NON ACT.PASS.NON PERF / punish.3SG.NON ACT.PASS.PERF for making-an-example-out-of-him.ACC.

“The troublemaker was being punished / punished to make an example out of him.”

The example in (44) of a NRV can refer to both someone shaving himself (44a) and being shaved by someone else (44b), whereas the example in (45) of a NDV can only be interpreted as the troublemaker being punished by someone else. Spathas, Alexiadou & Schäfer (2015 and references therein) claim in that order for a NDV surfacing with a non-active Voice (like (45)) to be interpreted as a reflexive, the antiassistive intensifier αυτό- must be used along with a middle Voice specification (as in (44)):

Reflexive reading

(46) Η πιστή αυτοτιμωρούνταν / αυτοτιμωρήθηκε για να εξιλεωθεί για τις αμαρτίες της
i pi'sti aftotimo'rudan / aftotimo'riθice ja na eksileo'θi ja tis amar'ties tis
the believer.FEM.NOM self-punish.3SG.NON ACT.PASS.NON PERF / punish.3SG.NON ACT.PASS.PERF (for) to atone.3SG for the sins.ACC clitic.3SG.FEM.

“The believer was being self-punished to atone for her sins.”

I propose that a similar analysis can be extended to reflexives in Standard Modern Greek nominalizations: if a verbalized root with a non-active Voice specification has a NRV interpretation it is ambiguous between a passive and a reflexive reading, whereas a verbalized root that has a NDV interpretation is considered non-reflexive, until the prefix *after-* is added to it (the examples (47) - (50) are interpreted similarly to the examples (44) - (46)):

**Reflexive reading**

(47) Το ξύρισμα του Παύλου πρώτη φορά χωρίς βοήθεια

to 'ksirizma tu 'pavlu 'proti fo'ra xo'ris vo'ithia

the shaving.NOM the Pavlos.GEN. first.ACC time.ACC without help.ACC

“The Pavlos’ shaving first time without help (i.e. without somebody helping him).”

**Passive reading**

(48) Το ξύρισμα του Παύλου από τον επώνυμο κομμωτή Παπαδόπουλο

to 'ksirizma tu 'pavlu apo ton e'ponimo komo'ti papa'dopulo

the shaving.NOM the Pavlos.GEN. by the famous.ACC barber.ACC Papadopoulos.ACC

“The Pavlos’ shaving by the famous barber Papadopoulos.”

**Passive reading**

(49) Η τιμωρία του ταραχία για παραδειγματισμό

i timo'ria tu tara'ksia ja paradimati'zmo

the punishment.NOM. the troublemaker.GEN for making-an-example-out-of-him.ACC.

“The troublemaker’s punishment to make an example out of him.”

**Reflexive reading**

(50) Η αυτοτιμωρία της πιστής για να εξιλεωθεί για τις αμαρτίες της
i aftotimo'ria tis pi'stis ja na eksileo'oi ja tis amar'ties tis
the self-punishment.NOM the believer.FEM.GEN (for) to atone.3SG for the
sins.ACC clitic.3SG.FEM.
“The believer’s self-punishment to atone for her sins.”

Concerning reciprocals, Dimitriadis (2008a, 2008b) mentions some cases of
verbs such as αγκαλιάζω (to hug), γνωρίζω (to meet), φιλάω (to kiss), τσακώνω (to grab) that can be interpreted as (symmetric) reciprocals when they do not have an active
Voice specification and two or more entities are involved: e.g.

(51) Ο Τάκης φίλησε τη Μαρία vs. Ο Τάκης και η Μαρία φιλήθηκαν
the Takis.NOM kiss.3SG.PAST.PERF the Mary.ACC / the Takis.NOM and the
Mary.NOM kiss.3SG.NON ACT.PAST.PERF
“Takis kissed Mary.” vs. “Takis and Mary kissed (each other).”

The difference between the first and second half of (51) is that in the first half Mary
just undergoes the kissing, while in the second half Mary kisses Takis back. As example
(52) shows, when such a verb is nominalized and two (or more) adjoined DPs in
genitive follow, a reciprocal reading arises, without the use of alilo-:

(52) Το φίλημα του Τάκη και της Μαρίας
the kiss.NOM the Takis.GEN and the Mary.GEN
“Takis and Maria’s kissing.”

When a predicate denotes a non-symmetric action (due to its semantic /
encyclopedic properties) it can have a reciprocal reading if it is marked with a non-
active (namely middle) Voice with the prefix alilo- (Alexiadou (2014a) and Spathas,
Alexiadou & Schäfer (2015) mention this use of alilo- leaving its analysis open for
further discussion) and this can extended to nominalizations e.g. in example (53)
someone else could be pushing both Takis and Mary and a passive reading could be
possible, whereas in example (54) alilo- gives rise to a reciprocal reading necessarily.
(53) Το σπρώξιμο του Τάκη και της Μαρίας (e.g. από τον κλέφτη)
the pushing.NOM the Takis.GEN and the Mary.GEN (by the thief.ACC)
“Takis and Maria’s pushing (by the thief).”

(54) Το αλληλοσπρώξιμο του Τάκη και της Μαρίας
the each other-pushing.NOM the Takis.GEN and the Mary.GEN
“Takis and Maria’s pushing each other.”
Chapter 4. Discussion and proposals for further research

In this dissertation’s first chapter I mentioned the reasons that made me study nominalizations and presented the themes on which I expanded in the second chapter. These main themes were:

a. the grammar’s architecture and what consequences it has on the way we analyze sentences and words
b. category and functional categorization, and
c. approaches to argument structure.

The second chapter was devoted to:

i. the two main approaches to the analysis of nominalizations, i.e. lexical vs. syntactic approaches (expanding on (a) and (b) I mentioned above), and
ii. argument structure in compounds vs. argument structure in nominalizations (building on the lexical vs. syntactic approaches of (i))

As for the third chapter, I used findings by different researchers that had been interested in nominalizations, verbalization of roots in the DM framework and argument structure either in general or with regards to nominalization in the DM framework. More specifically, I used the most common overt SMG verbalizers that Panagiotidis, Spyropoulos & Revithiadou (2013) and Spyropoulos, Revithiadou & Panagiotidis (2015) mention and I presented how they combined with the three nominalizers used by Alexiadou (2001, 2009) and Angelopoulos (2012). Besides the two main readings of action denoting nominalizations (i.e. active and passive) that had been used up to this point, I offered some examples where other readings were possible: anticausative nominalizations, dispositional middle nominalizations, reflexive (middle) nominalizations and reciprocal nominalizations, expanding findings concerning the verbal domain.

As for my proposals for further research, they are threefold. Firstly, the expansion of ideas pertaining to the verbal domain to nominalizations should be more extensive. Secondly, there should be more diachronic research on nominalizations, such as Angelopoulos (2012) and Angelopoulos & Michelioudakis’ (2015), since this kind of research can shed light to the functional make-up of nominalizations and incorporation processes. Thirdly, there is a need for more systematic research cross-linguistically, to have a more complete view on the of nominalization strategies in different languages.
References


Linguistics in Honor of Sylvain Bromberger (pp. 111-176). Cambridge, MA: MIT Press


Ralli, A. (2013). *Compounding in Modern Greek (Studies in Morphology 2)*. Dordrecht: Springer


71


Workshop “Divisions of Linguistic Labor”, The La Bretesche Workshop. Ms. UCLA


Appendix
(1) -isma nominalizations that are ambiguous between an active and a non-active reading depending on the context (cf. Chapter 3: Example 18)

a. \( \text{λαγκάρισμα} \) < \( \text{λαγκάρω} \) (from the verb “to lag” + -ar-)
   la'garizma < la'garo
   “lagging” < “(to) lag”

b. \( \text{λαϊκάρισμα} \) < \( \text{λαϊκάρω} \) (from the verb “to like” + -ar-)
   lai'karizma < lai'kar<br>
   “liking” < “(to) like”

c. \( \text{πονάρισμα} \) < \( \text{πονάρω} \) (from the verb “to pown/pwn” + -ar-)
   po'narizma < po'naro
   “powning / pwning” < “(to) pown / pwn”

d. \( \text{σιντάρισμα} \) < \( \text{σιντάρω} \) (from the verb “to seed” + -ar-)
   si'darizma < si'daro
   “seeding” < “(to) seed”

e. \( \text{σναπτσατάρισμα} \) < \( \text{σναπτσατάρω} \) (from Snapchat + -ar-)
   snaptsa'tarizma < snaptsa'taro
   “snapchating” < “(to) snapchat”

f. \( \text{σπαμάρισμα} \) < \( \text{σπαμάρω} \) (from the verb “to spam” + -ar-)
   spa'marizma < spa'maro
   “spamming” < “(to) spam”

g. \( \text{ταγκάρισμα} \) < \( \text{ταγκάρω} \) (from the verb “to tag” + -ar-)
   ta'garizma < ta'garo
   “tagging” < “(to) tag”

h. \( \text{τουιτάρισμα} \) < \( \text{τουιτάρω} \) (from the verb “to Tweet” + -ar-)
   tui'tarizma < tui'taro
   “tweeting” < “(to) tweet”
i. φεῖσμπουκάρισμα < φεῖσμπουκάρω (from the verb “to Facebook” + -ar-)
feizbu'karizma / feisbu'karizma < feizbu'karo / feisbu'karo
“Facebooking” < “(to) Facebook”

(2) Examples of -on- verbalized roots that take part in the causative / anticausative alternation (cf. Chapter 3: Example 26)

a. δυναμώνω (ðina'mono): to strengthen something / someone or to become stronger

Ο Γιάννης δυνάμωσε τον άρρωστο γιο του με βιταμίνες. vs. Ο γιος του Γιάννη δυνάμωσε αμέσως.

“John strengthened his sick son with vitamins.” vs. “John’s son strengthened immediately.”

b. ζαρώνω (za'rono): to wrinkle something or to wrinkle

Η Μαιρούλα ζάρωσε τα φορέματα της Ελένης φορώντας τα στις κούκλες της. vs. Τα ρούχα της Ελένης ζάρωσαν.

“Little Mary wrinkled Helen’s dresses by wearing them to her dolls.” vs. “Helen’s dresses wrinkled.”

c. θολώνω (θo'lono): to cause something to blur or to blur

Η σουπιά θόλωσε το νερό με το μελάνι της. vs. Το νερό θόλωσαν.

“The squid blurred the water with its ink.” vs. “The water blurred.”

d. κρυώνω (kri'ono): to cause something to chill or to chill

Ο ζαχαροπλάστης κρύωσε τη μους σοκολάτα. vs. Η μους σοκολάτα κρύωσε.

“The confectioner chilled the chocolate mousse.” vs. “The chocolate mousse chilled.”

e. λαδώνω (la'ðono): to make something oily or to become oily

Ο Νεκτάριος λάδωσε τα μαλλιά της Αμαλίας με τα χάδια του. vs. Τα μαλλιά της Αμαλίας λαδώνουν εύκολα.
“Nektarios oiled Amalia’s hair with his caresses.” vs. “Amalia’s hair oil easily.”

f. μεγαλώνω (meγα'lono): to grow someone up or to grow up

Η Νατάσα μεγάλωσε τις κόρες της με μεγάλες θυσίες. vs. Οι κόρες της Νατάσας μεγάλωσαν ευτυχισμένες.

“Natasha grew her daughters up with great sacrifices.” vs. “Natasha’s daughters grew up happy.”

g. φουντώνω (fu'dono): to flare something up or to flare up

Ο καστανάς φούντωσε τη φωτία με το φυσερό του. vs. Η φωτία φούντωσε ξανά, αφού έφυγαν οι πυροσβέστες.

“The chestnut seller flared the fire up with his pair of bellows.” vs. “The fire flared up again, after the firemen left.”

(3) Examples of -(i)az- verbalized roots that take part in the causative / anticausative alternation (cf. Chapter 3: Example 38)

a. αδειάζω (a'deja'zo): to empty something or to get emptied

Οι ληστές άδειασαν το σπίτι του Παπαδόπουλου. vs. Έφυγαν τα παιδιά τους και άδειασε το σπίτι.

“The burglars emptied Papadopoulos’ home.” vs. “Their children left and the house emptied”

b. γαριάζω (γα'rja'zo): (especially of bright-colored clothes) to discolor something due to bad washing or to get discolored due to bad washing

Η Ελένη δεν είχε πλύνει ξανά στο χέρι και γαρίασε όλα τα ρούχα της. vs. Αυτά τα ρούχα να τα προσέχεις, γαριάζουν εύκολα.

“Helen hadn’t washed by hand before and (she) discolored all her clothes.” vs. “You should take care of those clothes, they discolor easily.”

c. γλιτσιάζω (gli'tsja'zo): to cover something with slime or to get covered with slime

Ο Άλκης γλίτσιασε το σορτσάκι του, καθώς έπαιζε στα χωράφια. vs. Ο δρόμος γλίτσιασε μετά την καταγίδα.
“Alkis slimed his shorts, as he played in the fields.” vs. “The road slimed after the storm”

d. γουβιάζω (γυ'vazo): to dent something or to dent

Ο Τάκης γούβιάσε την πόρτα του αμαξιού με το μηχανάκι του. vs. Η οροφή του αμαξιού είχε γουβιάσει μετά το χαλάζι.

“Takis dented the car’s door with his motorcycle.” vs. “The car’s roof had dented after the hail.”

e. μελανιάζω (mel'azo): to bruise someone / something or to bruise

Ο πατριός της τη χτύπησε τόσο δυνατά που τη μελάνιασε. vs. Είναι αλλεργική στο κρύο νερό: με το που μπαίνει στη θάλασσα μελανίαζει.

“Her stepfather beat her so hard that he bruised her.” vs. “She is allergic to cold water; as soon as she gets into the sea she bruises.”

f. μουδιάζω (mu'dazo): to make someone / something numb or to become numb

Ο οδοντίατρος μούδιασε την αριστερή πλευρά της με την ένεση. vs. Το χέρι της μουδιάζει, γιατί κοιμήθηκε πάνω του όλο το βράδυ.

“The dentist numbed the left side of her face with the injection.” vs. “Her arm numbed, because she slept on top of it all night long.”

g. ωριμάζω (ori'mazo): to make something mature or to mature

Οι ατυχίες τον ωρίμασαν. vs. Ωρίμασε από όταν έμεινε μόνη της.

“The misfortunes matured him.” vs. “She has matured, ever since she lived on her own.”

(4) Examples of -simo nominalizations of verbalized roots that take part in the causative / anticausative alternation and are thus ambiguous between the two interpretations (cf. Chapter 3: Example 42)

a. βράζω ('vrazo) > βράσιμο ('vrasimo)

Ο μάγειρας έβρασε το νερό (causative) vs. Το νερό έβρασε (anticausative) vs. Το βράσιμο του νερού

b. κλείνω ('klino) > κλείσιμο ('klisimo)
   Η δασκάλα έκλεισε την πόρτα (causative) vs. Η πόρτα έκλεισε (anticausative)
   vs. Το κλείσιμο της πόρτας

c. λιώνω ('łono) > λιώσιμο ('łosimo)
   Ο ζαχαροπλάστης έλιωσε την καραμέλα (causative) vs. Η καραμέλα έλιωσε
   vs. Το λιώσιμο της καραμέλας

d. μπλέκω ('bleko) > μπλέξιμο ('bleksimo)
   Ο πρώην της νύφης έμπλεξε την κατάσταση (causative) vs. Η κατάσταση
   έμπλεξε (anticausative) vs. Το μπλέξιμο της κατάστασης
   “The bride’s ex-boyfriend tangled the situation (metaphorical use, i.e.

e. πήζω ('pizo) > πήξιμο ('piksimo)
   Η γιαγιά της Μαρίας έπηξε το τυρί (causative) vs. Το τυρί έπηξε
   (anticausative) vs. Το πήξιμο του τυριού
   “Mary’s grandmother thickened the cheese.” vs. “The cheese thickened” vs.
   “The thickening of the cheese.”

f. σβήνω ('zvino) > σβήσιμο ('zvisimo)
   Ο πυροσβέστης έσβησε τη φωτιά (causative) vs. Η φωτιά έσβησε
   (anticausative) vs. Το σβήσιμο της φωτιάς
   “The firefighter extinguished the fire.” vs. “The fire extinguished.” vs. “The
   fire’s extinguishing.”

g. σπάω ('spao) > σπάσιμο ('spasimo)
   Η Μαρία έσπασε την μπαλκονόπορτα (causative) vs. Η μπαλκονόπορτα
   έσπασε vs. Το σπάσιμο της μπαλκονόπορτας
door’s breaking.”
h. στρίβω ('strivo) > στρίψιμο ('stripsimo)
    O μπάτλερ έστριψε το πόμολο (causative) vs. Το πόμολο έστριψε (anticausative) vs. Το στρίψιμο του πόμολου

i. τρίβω ('trivo) > τρίψιμο ('tripsimo)
    Η Κατερίνα έτριψε τα μπισκότα για το τσιζκέικ της (causative) vs. Αυτά τα μπισκότα τρίβουν εύκολα vs. Το τρίψιμο των μπισκότων
    “Catherine crumbled the cookies for her cheesecake.” vs. “These cookies crumble easily.” vs. “The cookies’ crumbling.”

j. τρίζω ('trizo) > τρίζω ('triksimo)
    Η Μαρία τρίζει τα δόντια της όταν κοιμάται (causative) vs. Τα δόντια της τρίζουν vs. Το τρίξιμο των δοντιών
    “Mary grinds her teeth when she sleeps.” vs. “Her teeth grind” vs. “The teeth’s grinding.”

k. φράζω ('frazo) > φράζω ('fraksimo)
    “Έφραξε τον σωλήνα στον τοίχο με τσιμέντο (causative) vs. Ο σωλήνας έφραξε vs. Το φράξιμο του σωλήνα
    “He/she/it (a pronoun in third singular person) sealed the tube on the wall with cement.” vs. “The tube sealed.” vs. “The tube’s sealing.”

l. φτιάχνω ('ftçaxno) > φτιάχνω ('ftçaksimo)
    Ο Παντελής έφτιαξε την κεραία ψηφιακού σήματος (causative) vs. Η κεραία έφτιαξε (anticausative) vs. Το φτιάξιμο της κεραίας