A CONSTRUCTION MORPHOLOGY ACCOUNT OF AGENT NOUNS IN MODERN GREEK

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Abstract

In this paper, we deal with the formation of agent nouns in Modern Greek. We present the formal and semantic properties of Greek masculine and feminine agent nouns and compare them to relevant cross-linguistic data. We argue that: a) both masculine and feminine agent suffixes are attached directly to verbal stems, b) masculine and feminine agent nouns should be considered as *coderivatives* and c) the feminine suffixes *-tria* and *-tra* are competing suffixes with overlapping domains. Moreover, we discuss some controversial issues related to agent noun formation, such as the formalization of cases that display co-occurrence of two derivational processes and the pragmatic restrictions imposed on agent noun coining. We make use of a Construction Morphology framework (Booij 2005a), which handles agent noun formation adequately and offers interesting insights to Morphological Theory in general.

Key-words: agent nouns, coderivatives, polysemy, pragmatic restrictions, Construction Morphology

1. Introduction

In this paper we take a thorough look at deverbal noun formations in Modern Greek (so forth Greek) which -prototypically- denote the agent. By examining this category, we aim at two things. First, we aim at providing evidence that Construction Morphology (Booij 2005a), a theory of morphology in which word formation is accounted for by morphological schemas (or templates), has theoretical advantages over Word Formation Rules (WFRs, Aronoff 1976) for the analysis of word formation, in general, and, in particular, for the analysis of this category. Analyses that treat deverbal agent nouns in a WFRs account have the following problems: a) they fail to examine the systematic correlation between form and meaning and b) they do not provide adequate solutions for specific problematic cases. In this study, we argue that within a Construction Morphology framework, the aforementioned problems find an adequate solution.

Second, we aim at examining the polysemy of these formations. Previous studies of the semantic properties of such formations (Ralli 2003b, Kakouriotes 1993, among others) either do not provide a formal account at all or provide an

analysis at the argument structure level. Based on recent analyses for English and Dutch (Booij & Lieber 2004, Booij 2007b), we claim that these formations have various interpretations, which should not be formalized at the argument structure level. As regards the polysemy of these nouns, we propose that the correlation between form and meaning can be modelled adequately by means of hierarchically ordered word formation schemas. With this analysis we try to solve the empirical problems and give strong evidence for the autonomous character of morphology as a module of the grammatical organization.

Moreover, we intend to offer a comparison of these formations to relevant cross-linguistic data and concentrate on a number of points that have remained unresolved in previous analyses. More specifically, we pay close attention to: a) the direction of derivation of deverbal agent nouns denoting female agent, b) the relationship between the feminine suffixes *-tria* and *-tra* and c) some pragmatic restrictions imposed on the agent noun coining. We are by no means the first in recent years to study these problems. Indeed, our analysis owes a great deal to previous treatments (Di Sciullo & Ralli 1999, Kakouriotes 1993, Ralli 1992, 1996, 2003b, 2005), but, as we hope to show, goes beyond them in explaining the aforementioned problematic points.

The paper is structured as follows: in section 2, we briefly sketch out Construction Morphology, as developed by Booij (2005a), and examine the formation and polysemy of masculine agent nouns ending in *-tis*. In section 3, we focus on specific problems concerning female agent coining, as well as the formation and polysemy of feminine agents ending in *-tria* and *-tra*. Finally, section 4 summarises our conclusions.

2. Deverbal Agent Nouns in *-tis*

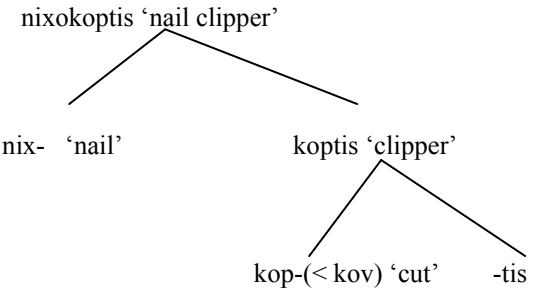
In this section, we present Greek deverbal agent nouns in *-tis*, following a fundamental tenet of Construction Morphology (especially Booij 2005a). We provide a full-fledged analysis of Greek agent nouns (drawing data from Anastasiadi-Symeonidi 2002[1]). Moreover, we compare Greek data to relevant cross-linguistic one, in order to shed light on several theoretical issues concerning agent noun formation.

Looking at previous studies on the subject, Ralli (1992, 1996) and Di Sciullo & Ralli (1999) were the first, within a Word Formation Rules (WFRs) framework, to stress the importance of affixation (both derivational and inflectional) in argument/θ-role saturation inside deverbal compounds. In particular, they claim that overt inflectional affixation is related to the presence of a rich variety of θ-roles that can be saturated inside compounds. They propose the following representation,

[1] From a methodological point of view, it should be mentioned that the data was picked out carefully and was, then, checked in Google.

which illustrates the internal structure of a deverbal compound like *nixokoptis* 'nail clipper':

(1)



According to the authors, in a compound like the one analysed above, the derivational suffix *-tis* saturates the agent θ-role of the verb. Although this is a consistent theoretical analysis of the formal properties of deverbal compounds, it does not deal with: a) the systematic correlation between the suffix *-tis* and its meaning(s) and b) cases which display co-occurrence of two derivational processes, namely prefixation and suffixation, e.g. *apo-ximo-tis* 'juicer'[2]. In what follows, we will discuss these issues within a Construction Morphology framework, which proves to be more efficient.

2.1. The formation of Agent nouns in *-tis*

Before we begin our analysis, let us first briefly sketch out the Construction Morphology theory as developed by Booij (2005a). As Booij puts it:

> "Construction Morphology is a theory of Morphology in which word formation is accounted for by *morphological schemas* (patterns) of varying degrees of abstraction in a *hierarchical lexicon*. Word formation patterns can be seen as abstract schemas that generalize over sets of existing complex words with a systematic correlation between form and meaning. These schemas also specify how new complex words can be created".

A word formation pattern, in which a particular affix is used, is considered to be a morphological construction consisting of a variable stem slot and a specified affix. For instance, agent nouns in English and Dutch could be represented by the following partially lexically specified productive pattern, referred to as a *constructional idiom* (Booij 2005a, b):

[2] As there is no verb **apoximono* 'to juice', for such formations no derivation $[\text{apoximo}]_V tis]_N$ can be assumed, unless we assume the creation of a possible word (Ralli, p.c.).

(2)

$[[X]_V$ *er*$]_N$ ‘one who Vs’

According to this schema, new words are coined through the formal operation of *unification*. For instance, this schema can be unified with the verb *bake*, thus leading to the deverbal noun *baker* ‘one who bakes’. Constructional idioms constitute an intermediate level between an *abstract constructional schema*, which is part of the hierarchical lexicon representing the pairing between formal structure and semantic structure, and an individual *instantiation*. The relation among the three levels can be represented as a *tree* with the constructional schema as the dominating node and individual words as the lowest nodes of the tree, which inherit the properties of the dominating nodes. For instance, the word *baker* might be represented in the lexicon as follows (Booij 2005b):

(3)

$[[X]_X\ Y]^3{}_Y$ ‘Y with relation R to X’

|

$[[X]_V$ *er*$]_N$ ‘one who Vs’

|

$[[Bak]_V$ *er*$]_N$ ‘one who bakes (professionally)’

The inherited properties count as redundant information on the lower node. Moreover, the word *baker* inherits properties from its base lexeme BAKE to which it is also linked (Booij 2005b):

(4)

$[[X]_X\ Y]_Y$ ‘Y with relation R to X’

|

$[[X]_V$ *er*$]_N$ ‘one who Vs’

|

$[[Bak]_V$ *er*$]_N$ ‘one who bakes (professionally)’

$[$BAKE$]_V$

We turn next to Greek agent nouns, in order to examine their formal properties. The suffix *-tis*[4] is attached to verbal stems, and more specifically to the following

[3] The variables X and Y stand for phonological strings and the variables x and y (subscripted) for lexical categories.

verbal stem allomorphs[5]: a) the one that appears in the aspectual context of [+perfective], e.g.: [[oryano]$_V$*tis*]$_N$ 'organizer', [[psix]$_N$(o)[6][θerapef]$_V$*tis*]$_N$ MASC 'psychotherapist' and b) the *s-stem*[7], e.g. [[traγuδis]$_V$*tis*]$_N$ 'singer', [[δikas]$_V$tis]$_N$ 'judge'. The derivatives of *-tis* suffixation are always nouns of masculine gender belonging to the 2nd inflectional class[8]. This word formation process is very productive in Greek (Ralli 2007b).

Deverbal suffix *-tis* has two allomorphs with different stress location; unstressed /-tis/ is attached to monosyllabic verbal stems, while stressed /-tís/ is attached to polysyllabic ones (Drachman et al. 1995)[9], e.g.: [[kléf]$_V$*tis*]$_N$ MASC 'thief', but [[kaθaris]$_V$*tís*] $_N$ MASC 'cleaner'. However, Ralli (2003b) claims that, since the allomorphic variation is realized as a stress difference (-tis/ -tís), the suffixal allomorphs should be lexically marked for their stress patterns[10].

For the analysis of *-tis* formations with word formation patterns, we should first point out that Greek suffixes are category determining (Ralli 2005). Thus, we need an abstract constructional schema (as the dominating node) in which we can express the default properties of all suffixed words:

(5)

[[X]$_X$ *Y*]$_Y$ 'Y with relation R to X'

According to this template, in cases of suffixation the category of the base word is not identical to that of the suffixed word. However, in certain cases, the category of base word and output word may be the same, and thus, the indices would be identical. Under this abstract constructional schema, at the intermediate level, we put the *constructional idiom* of *-tis* formations. This word formation pattern is partially lexically specified, and formalizes the general meaning of the complex words in *-tis* in pair with their formal properties**,** i.e. *syntactic category* of the formation, *stem* of the verb, *gender* and *inflectional class* of the noun:

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[4] We will make no distinction between the derivational suffix (-ti-) and the inflectional one (-s).

[5] See Ralli (2005) for the analysis of Greek verbal sub-classes.

[6] Most Greek compounds have a compound marker -o- (Ralli 2007a).

[7] Suffix *-tis* may be attached to verbs ending in -iz (-is), e.g.: [[kaθaris]$_V$*tis*]$_N$ 'cleaner'. In these cases the by-product suffix -istis should not be confused with the denominal suffix –*istis*, e.g. marks-istis 'marxist'.

[8] See Ralli (2000) for a detailed analysis of the inflectional classes of Greek nouns.

[9] As stated by the authors, there might be some exceptions, e.g. *kri-tís*.

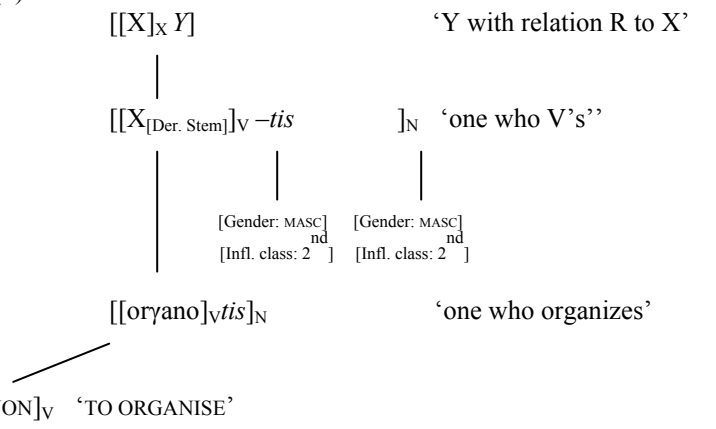
[10] Unless otherwise mentioned, *-tis* stands for both stressed and unstressed allomorphs in our analysis.

(6)

$[[X_{[\text{Der. stem}]}]_V$ *tis*$]_N$ [Gender: MASC] [Infl. class: 2nd] 'one who Vs'

This schema reminds us of Ralli's (2002) idea that the Greek suffix *–tis,* as any other nominal derivational suffix, is category determining and has specific morphosyntactic properties (*gender*, *inflectional class*). Individual words with the suffix *-tis* form the lowest nodes of the trees and inherit the properties of the dominating nodes. For instance, we present the inheritance tree of the word *oryanotis* 'organizer', according to which all formations of this kind could be analysed:

(7)



2.2. Cases with co-occurrence of two derivational processes

In the previous section, we presented the inheritance tree for the coining of simple *-tis* formations, like $[[\text{or}\gamma\text{ano}]_V$*tis*$]_N$ and $[[\text{ka}\theta\text{aris}]_V$*tis*$]_N$. However, there are also many complex *-tis* formations with *prefixes* or *bound elements*[11] as a first constituent, e.g.: *ek-vias-tis* 'blackmailer', *tile-parusias-tis* 'broadcaster', and formations consisting of more than one stem, e.g.: *xart-o-pek-tis* 'gambler', *agora-poli-tis* 'someone who buys and sells', *forto-ekforto-tis* 'someone who loads and unloads cargo'.

Each of these cases is represented in an abstract schema, which is unified with the constructional idiom of *-tis* formations (see (6)) in order to coin new words. The schema $[[X_{[\text{Der. Stem}]}]_V$*tis*$]_N$ can be unified, for instance, with the schema for deverbal

[11] It is beyond the scope of this analysis to examine the formal and semantic properties of these formations. See Ralli (2003a, 2004), Booij (2005b) and Iacobini (1998) for a thorough analysis.

compounds $[[[X]_N o[Y]_V]_V$, thus leading to the agent noun $[[[xart]_N o[pek]_V]_V tis]_N$ 'gambler'[12]:

(8)

$$[[Z]_N o[Y]_V]_V + [[X]_V tis]_N = [[[Z]_N o[Y]_V]_V tis]_N$$

Such compound formations were also adequately analysed in a WFRs framework (see example under (1)). However, consider cases like $[[apo[ximo]_V]_V tis]_N$ 'juicer' or $[[apo[nitro]_V]_V tis]_N$ 'denitrificator'. In such cases, there is neither an attested verb **apoximono* or **aponitrono* nor an attested noun *ximotis or *nitrotis, respectively. Therefore, we have to assume the co-occurrence of two derivational processes, which in WFRs terms would be hard to receive a formal account without resorting to a ternary structure[13].

In contrast, Construction Morphology can account for the systematic co-occurrence of two or more word formation patterns by using the formal operation of template unification (Booij 2005a):

(9)

$$[Y\ [X]_V]_V + [[[X]]_V\ \text{-}tis]_N$$

What follows from the above is that word formation schemas are a useful theoretical tool for the analysis of agent nouns in Greek.

2.3. The polysemy of agent nouns in *-tis*

So far we have discussed the formal properties of *-tis* formations in relation to their general meaning and proposed a constructional idiom for their coining. In what follows, we will look in some detail at the *polysemy*[14] of *-tis*. Our aim is to present the interpretational differences within sets of *-tis* formations and correlate them with cross-linguistic data. We will discuss the possible formal accounts of polysemy and argue (following Booij 2005, 2007b) that a constructional theory of word formation enables us to give an insightful formalization of polysemy patterns in complex words. We begin with a summary of the range of Greek data, which are classified according to their interpretation:

(10)

Animate Agent: $[[δikas]_V tis]_N$ 'judge', $[[vasanis]_V tis]_N$ 'torturer', $[[alonis]_V tis]_N$ 'thresher', $[[akrovolis]_V tis]_N$ 'skirmisher'.

[12] These words might be called *synthetic compounds*, since they seem to be cases of compounding and derivation at the same time (Booij 2005a).

[13] A possible solution to the problem, which makes no use of rules, is either to suppose an analogical formation (Ralli p.c.).

[14] As stated in Booij (2007a:220): "we speak of polysemy when a morpheme or a word has more than one meaning, but with some systematic relation between these different meanings".

Non-animate agent: $[[\delta iali]_V tis]_N$ 'resolvent', $[[seli\delta odik]_V tis]_N$ 'bookmark'.
Instrument: $[[nixokop]_V tis]_N$ 'nail clipper', $[[trif]_V tis]_N$ 'grater'.

Similar patterns of polysemy can be found cross-linguistically, implying that these formations should be analyzed in a common way:

(11)

a. English (from Booij & Lieber 2004)

INTERPRETATION	DERIVED NOUN
Animate Agent	writer, driver
Instrument	opener, printer
Patient/Theme	fryer, keeper
Location	diner, sleeper
Means	stroller

b. Dutch (from Booij 1986, 2007a, b)

INTERPRETATION	DERIVED NOUN
Animate agent	bakk-er 'baker', schrijv-er 'writer'
Non-animate agent	houd-er 'container', wijz-er 'pointer'
Instrument	maai-er 'mower', zoem-er 'buzzer'
Object	voor-lader 'front-loader', roker-tje 'lit. smoker, cigar/cigarette'

c. French (Rosenberg 2007):

INTERPRETATION	DERIVED NOUN
Animate Agent	*cheurch-eur* 'finder'
Non Animate Agent	*compt-eur* 'counter'
Instrument	*tât-eur* 'false key'
Recipient (under Locative)	*cuis-eur* 'boiling pot'

Before we provide a formal pattern for the various interpretations of relevant Greek formations, we should make some remarks on the aforementioned data. First, deverbal agent nouns in *-tis* have prototypically the semantic interpretation of *Agent*, which is assigned to entities with the semantic feature [+human]. This can be concluded from the productivity of these formations and the semantic idiosyncrasies of the other interpretations. Second, there are many Greek formations which can be

interpreted in between Agents and Instruments. Following previous analyses concerning cross-linguistic data (see (11) above)[15], we propose the establishment of the intermediate category Non-animate Agent for Greek data, as well. This category stands between *Agent* and *Instrument* and corresponds roughly to automatic devices (Booij 1986). Consider the following examples in Greek:

Derived Noun	**Animate Agent**	**Non-animate Agent**	**Instrument**
epekserɣastis	X	√ 'a machine that elaborates'	? 'a machine with which we elaborate'
sisoreftis	X	√ 'a machine that accumulates'	? 'a machine with which we accumulate'
δonitis	X	√ 'a machine that vibrates'	? 'a machine with which we vibrate'

Table 1

Moreover, the boundaries among the categories of Animate Agent, Non-animate Agent and Instrument are not always clear in Greek:

Derived Noun	**Animate Agent**	**Non-animate Agent**	**Instrument**
xronometritis 'time counter'	X	√	√
epitaxintis 'accelerator'	X	√	√
metritis 'counter'	√	√	√
monotis 'insulator'	X	√	√
efoδiastis 'supplier'	√	√	?

Table 2

The same blurred distinction can be considered in relevant cross-linguistic data:

[15] Due to space limitations we cannot present the analyses of these languages thoroughly.

(12)

a. Dutch (Booij 1986): *zender* may denote an Animate Agent 'sender', a Non-animate Agent 'radio/TV station' and an Instrument 'transmitter'.
b. English (Longman Dictionary of the English Language): *diner* may denote both an Animate Agent 'someone who dines' and Location 'dining car or restaurant that resembling a dining car in shape'; *organizer* may denote both an Animate Agent 'one who organizes' and a Non-animate Agent 'something that organizes'.
c. French (Le Nouveau Petit Robert de la Langue Française): *compteur* 'counter' may denote an Animate Agent (rare), a Non-animate Agent and an Instrument.

In a synchronic perspective[16], the most important aim of a morphological theory, which considers the word as a form-meaning pair, is first to provide an adequate analysis of these different interpretations and second to explain the regularities of the semantic patterns that are attested cross-linguistically. In the light of these considerations, we will argue that a constructional theory of word formation enables us to give an insightful account of polysemy patterns in complex words.

In a hierarchical lexicon approach we assume separate sub-schemas for different interpretations (i.e. Animate Agent, Instrument and Non-animate Agent). These sub-schemas can be considered to function at the level at which new nouns are coined (Booij 2005a)[17].

Non-animate Agents and – some cases of – Instruments can be considered as less typical Agents by using the mechanism of sense extension (Booij 2005a). The conceptual category Agent can be extended according to the following schema:

(13)

Animate Agent > Non-animate Agent > Instrument

However, the interpretation of Instrument is not always explained by this mechanism. Consider the following examples:

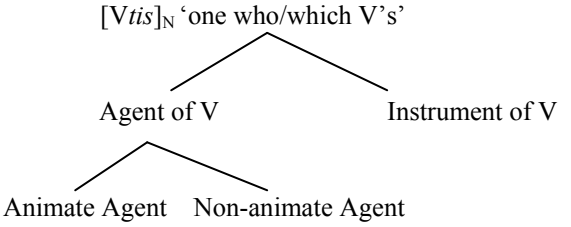
(14)

arθrotis 'organ for articulation'
onirokritis 'dream reader'
δieretis 'divisor'

[16] See Rainer (2005) for an interesting diachronic analysis of the various interpretations of agents.
[17] According to Ralli's (2005) analysis, suffixes are listed in the Lexicon with their semantic properties; these properties then percolate to the whole formation.

In such cases the instrumental interpretation of a word is not necessarily connected to an agentive interpretation of the same word and, as a consequence, it cannot be adduced to the same interpretational sub-schema. Following Booij (2005a), we argue that it is not only individual words, but, also, the constructional schema for deverbal nouns in *-tis* that has become polysemous in Greek. Thus, we have to assume a separate sub-schema for instrumental deverbal nouns[18]. A first account of Greek agent nouns in *-tis* is the following:

(15)



This hierarchy specifies the different meanings of deverbal nouns in *-tis*, but does not deal with the semantic relationships between the (prototypical) Agent interpretation and the other ones. We should clarify that individual nouns may be linked to more than one of these sub-schemas, because polysemy is observed even at the level of an individual word (see table1 above).

To conclude, Construction Morphology formalizes the different interpretations of agent nouns by using sub-schemas. These sub-schemas are conventionalized in the Lexicon from existing words and can straightforwardly explain the pairing between form and meaning, without making use of the argument structure.

3. Female Agent Nouns in *-tria* and *-tra*

In section 2, we presented the formal and semantic properties of the suffix *-tis* and proposed a morphological analysis based on word formation patterns. In this section, we deal with the derivation of female agents in *-tria* and *-tra*. More specifically, we discuss the direction of derivation of feminine nouns denoting female agents and the relationship between the suffixes *-tria* and *-tra* (§3.1). Then, we argue that the formal and semantic properties of the suffixes *-tria* and *-tra* can be adequately formalized within a Construction Morphology framework (§3.2).

3.1 The suffixes *-tria* and *-tra*

What is not a priori clear about feminine nouns that prototypically denote the agent is whether they are derived from the corresponding masculine or they are directly

[18] Such an existence of a number of sub-schemas for a single word formation process is also referred to as *semantic fragmentation* (Rainer 2005).

derived through suffixation to the verbal stem. Ralli (2005) in her thorough analysis of Greek suffixes holds the former opinion, because all deverbal nouns denoting female agent have a male counterpart, except for the noun *genitria* FEM 'generator'. Therefore, Ralli assumes the existence of two denominal suffixes, namely *-ria* and *-ra*, which are attached to the nominal stem of the masculine form for the derivation of female agents: [oryanon(o)]$_V$ 'organize' > [[oryano]$_V$ *ti(s)*]$_N$ MASC 'organizer', > [[[oryano-t-[19]]$_N$ *ria*]$_N$ FEM 'organizer'.

In what follows, we argue that feminine nouns are derived by direct suffixation of the suffix *-tria* (or -tra) to the verbal stem without 'intermediary' derivation of masculine nouns. As a consequence, *-tria* and *-tra* should be considered as deverbal suffixes with formal and semantic properties of their own. These suffixes always give rise to feminine agent nouns belonging to the 3rd inflectional class. In a synchronic analysis[20], the following observations can serve as arguments for the determination of the *direction of derivation*[21] of feminine nouns:

a) Gaps in the productivity of the masculine

A first remark supporting our view is that there are many deverbal female agent nouns without a male counterpart. Consider some examples listed below:

BASE	**FEMALE AGENT**	**MALE AGENT**
kloθo 'to twine'	*klos-tria* 'a woman or a machine that twines'	*klos-tis
yazono 'to stitch'	*yazotria* 'a woman who stitches'	*yazo-tis
miroloyo 'to lament'	*miroloyitria* 'a woman who laments'	*miroloyi-tis
pleko 'to knit'	*plektria* 'a woman who knits'	*plek-tis

Table 3

In cases like those mentioned above, we observe gaps in the productivity of the suffix *-tis*, which imply that there is a suffix *-tria* which attaches directly to the verbal stem. These gaps are systematic in some sets of lexemes, due to pragmatic conditions. More specifically, the activities denoted by verbs like those listed in Table 3 are traditionally related to women (Koutsoukos & Pavlakou 2007). This is also the case in other languages; take for instance Dutch, where for example the noun *huishoudster* 'female house keeper' has been formed by attaching the suffix –

[19] According to Ralli, -t- is an allomorph for the *-ti* suffix.

[20] According to Naumann & Vogel (2000) there are two perspectives for the determination of the direction of derivation, the diachronic of the actual formation of the derivative and the synchronic of the morphotactic and semantic motivation of the derivational pair.

[21] The direction of derivation can be identified with a semantic and morphological growth which acts upon a base to form a derived word (Iacobini 2000: 866).

ster to the verbal stem *huishoud* 'to house-keep', as there is no noun **huishouder* 'house-keeper' (Booij 2002).

b) *Different semantic properties*

Further support for the claim that female agents are derived directly from verbal stems is provided by the fact that – in a range of data – they have different semantic properties than their male counterparts, as the following examples illustrate:

BASE	MASCULINE	FEMININE
tilefono 'to make a call'	*tilefoni-tis* [-human] 'telephone answering machine'	*tilefoni-tria* [+human] 'female telephone operator'
enisxio 'to boost'	*enisxi-tis* [-human] 'amplifier'	*enisxi-tria* [+human] 'a woman who boosts'
potizo 'to water'	*potis-tis* [+human] 'irrigator'	*potis-tria* [-human] 'drinking trough'
θermeno 'to heat'	*θermas-tis* [+human] (rare) 'boilerman'	*θermas-tria/ θermas-tra*[22] [-human] 'heater'
skalizo 'to dig'	*skalis-tis* [+human] 'man who digs'	*skalis-tria/skalis-tra* [-human] 'an instrument for digging'

Table 4

As table 4 suggests, there are masculine nouns with the semantic feature [-human] that correspond to feminine nouns with the semantic feature [+human], and vice versa. In such cases, feminine formations have different semantic properties from their masculine counterparts; this makes it hard to argue that feminine forms are derived from the corresponding masculine. Therefore, we should adopt two different word formation patterns for feminine and masculine agent nouns.

c) *A blend suffix for the denotation of male agents*

Data coming from the acquisition of Greek as L1 (Kati 2001), as well as casual speech data provide further evidence that favors our point of view. Consider the following formations:

[22] As we will argue in what follows, suffixes *-tria* and *-tra* are competing suffixes with overlapping domains.

Masculine Form	**Feminine Form**	**Blend Form**
pseftis MASC 'liar'	*pseftra* FEM	*pseftris* MASC < $[psef]_V$ *-tris*
proδotis MASC 'betrayer'	*proδotra* FEM	*proδotris* MASC < $[proδo]_V$ *-tris*
xestis MASC 'coward'	*xestra* FEM	*xestris* MASC < $[xes]_V$ - *tris*

Table 5

In formations in Table 5 a blend suffix consisting of the feminine and the masculine form is used for the denotation of male agents. The derivation of such formations is hard to explain in terms of Ralli's (2005) analysis, according to which the feminine form is derived from the corresponding masculine. However, we observe that what reminds us of the feminine suffix, that is *-tr-*, is closer to the base. As a consequence, if one followed that analysis, they would have to assume a reverse direction of derivation for these cases, which would be uneconomical. Thus, we should assume that both masculine and feminine agent suffixes are directly attached to the verbal stem.

What follows from the above is that *-tria* and *-tra* are deverbal suffixes which simply correlate paradigmatically with the masculine suffix *-tis*. Following Booij's (2002) analysis of Dutch agents in *–er* and *–ster*, we claim that masculine and feminine forms are considered *coderivatives*.

We turn next to another controversial issue, the relationship between the suffixes *-tria* and *-tra*. The suffix *-tra* is traditionally considered an allomorph of *-tria* for informal or highly marked register (see for instance the *Dictionary of Modern Greek Koine*), because they can be -freely- interchanged without a difference in meaning, e.g. *pariγoritria* and *pariγoritra* 'female conforter' [+human], *ifantria* and *ifantra* 'female weaver' [+human], *potistria* - *potistra* 'drinking trough' [-human]. However, this is not quite accurate, as it results from the observation that the two suffixes can display a difference in the semantic feature [human], when attached to the same verbal base, e.g.: *pales-tria* 'female wrestler' but *pales-tra* 'palaestra'; also: boxing ring', *polemis-tria* 'female warrior' but *polemistra* 'crenellation'. In pairs like those just mentioned, the suffix *-tria* assigns the semantic feature [+human], while *-tra* assigns the semantic feature [-human] to the base (Koutsoukos & Pavlakou 2007). Consequently, we propose that *-tria* and *-tra* are competing suffixes with overlapping domains; these competing suffixes have *partial* meaning differentiation, given that the suffix *-tria* mainly forms animate agent nouns, while *-tra* forms -mainly- non animate agent nouns or instruments[23], e.g. *θermastra* 'heater', *aplostra* 'clothes rack', *kuδunistra* 'baby's rattle', *ksistra* 'scraper'.

[23] In languages with masculine and feminine gender distinction, there is a tendency to assign feminine gender to nouns denoting automatic devices, e.g. French: *agrafeuse* (v. agrafer) 'stapler', *batteuse* (v. battre le grain) 'thresher', Spanish: *copiadora* (v. copiar) 'photocopier', *lavadora* (v. lavar) 'washing machine'.

In a nutshell, it is more economical to assume a deverbal derivation for female agents and consider *-tria* and *-tra* as competing suffixes with overlapping domains and partial meaning differentiation. These considerations raise the issue of how to represent the formal and semantic properties of the suffixes *-tria* and *-tra*.

3.2 Formal and semantic properties of agent nouns in *-tria* and *-tra*

In the previous section, we discussed some problematic issues concerning the suffixes *-tria* and *-tra*. In this section, we adopt a construction morphology account for *-tria* and *-tra* formations. The coining of deverbal nouns denoting female agents will be represented in an inheritance tree. The dominating node of this tree will be an abstract schema in which we can express the default properties of all suffixed words:

(16)

$[[X]_X\ Y]_Y$ 'Y with relation R to X'

Under this abstract schema, at the intermediate level, we put two constructional idioms which formalize the general meaning of the complex words in *-tria* and *–tra* along with their formal properties that will be specified at that level**,** i.e. *syntactic category* of the formation, *sub-class* of the verb, *gender* and *inflectional class* of the noun:

(17)

$[[X_{\text{Der. Stem}}]_V$ *tria* $]_N$ 'a female who Vs'

[Infl. class: 3rd] [Infl. class: 3rd]
[Gender: FEM] [Gender: FEM]

(18)

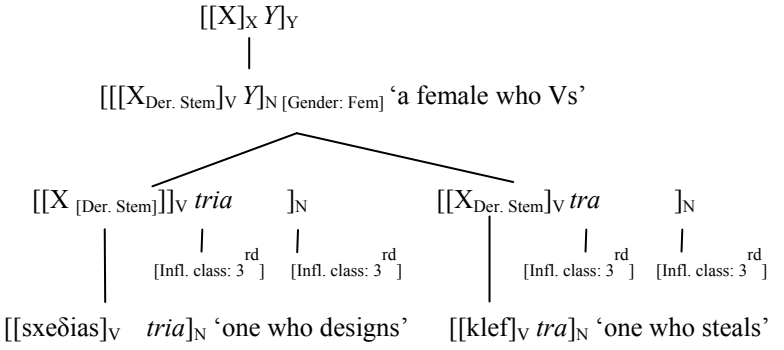
$[[X_{\text{Der. Stem}}]_V$ *tra* $]_N$ 'a female who Vs'

[Infl. class: 3rd] [Infl. class: 3rd]
[Gender: FEM] [Gender: FEM]

These schemas express that in Greek both suffixes determine the category and the morphosyntactic properties (*gender*, *inflectional class*) of complex words (Ralli 2002, 2005). As shown in 3.1, -tria and -tra are competing suffixes with overlapping domains. Therefore, the constructional idioms presented under (17) and (18) are considered to be sub-schemas of a more abstract constructional idiom for the coining of female agents. As always, at the lowest nodes of the inheritance tree, individual words with the suffix *-tria* and *-tra* are formed and inherit the properties of the nodes

by which they are dominated. An inheritance tree of the coining of two particular words is the following:

(19)



This inheritance tree is the formation pattern according to which all agent nouns in *-tria* and *-tra* could be analysed. A main theoretical advantage of this analysis is that it formalizes the relationship between the two suffixes in a consistent way. In what follows, we present an analysis of the semantic properties of *-tria* and *-tra*. Formations in *-tria* and *-tra* have the following interpretations:

(20)

Animate Agent: *nosilef-tria* 'nurse', *paraδulef-tra* 'housemaid'
Non-animate Agent: *ɣeni-tria* 'generator', *aplos-tra* 'clothes rack'
Instrument: *potis-tria* 'drinking trough', *sfugaris-tra* 'mop'

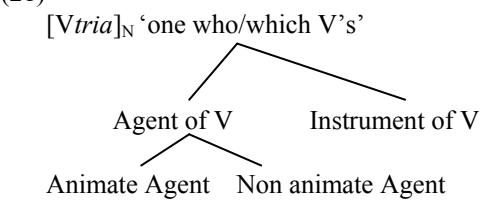
Formations in *-tra* often have more than one meaning (polysemy). Consider the following examples:

VERB	ANIMATE AGENT	NON-ANIMATE AGENT	INSTRUMENT
γneθo 'to spin wool'	*γnes-tra* 'woman who spins wool'	-	*γnes-tra* 'instrument round which the wool is spinned'
skotono 'kill'	*skotos-tra* '(slang) careless driver (no sex distinction)'	*skotos-tra* 'dangerous road/ car/ engine'	-
rufo 'suck'	*rufix-tra* '(slang) person who drinks a lot'	*rufix-tra* 'whirlpool'	-

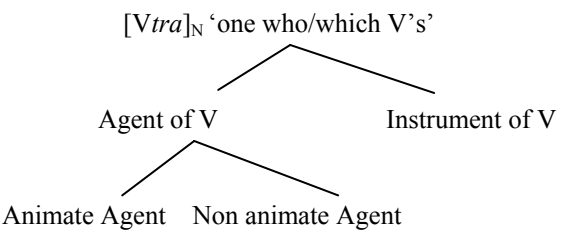
Table 6

Following the theoretical analysis of polysemy presented in 2.2, we assume sub-schemas for the three different interpretations of *-tria* and *-tra*, namely Animate Agent, Non animate Agent and Instrument. An illustration of these interpretations can be found under (21) and (22):

(21)



(22)



4. Conclusions

In this article, we examined the derivation of agent nouns in Greek. We offered a consistent data description and discussed a number of issues related to agent noun

formation within a Construction Morphology framework. More specifically, we presented the formal and semantic properties of the suffixes *-tis*, *-tria* and *-tra* and argued that these suffixes are directly attached to verbal stems to derive agent nouns. Moreover, we proposed a paradigmatic relation between the masculine suffix *-tis* and the feminine *-tria*/ *-tra*, as well as a formalization of the relationship between the two feminine suffixes. Besides, we implied that Pragmatics can impose restrictions on word formation. It should be noticed that our findings are in terms with cross-linguistic data.

By making use of a Construction Morphology framework, we were able to adequately treat the gaps of previous analyses. Moreover, the theoretical tool of word formation patterns served to explain the various semantic interpretations of agent nouns. Last but not least, the study of agent nouns from the viewpoint of Construction Morphology offers interesting insights to Morphological Theory. In particular, it is quite clear that Morphology which, as Booij (2007) puts it, is the grammar of words, should be considered as an autonomous module of Grammar, in the sense that it deals with the internal constituent structure of words.

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Περίληψη

Στο παρόν άρθρο εξετάζονται τα ουσιαστικά που δηλώνουν το δράστη στη Νέα Ελληνική. Συγκεκριμένα, παρουσιάζονται οι δομικές και σημασιολογικές ιδιότητες των ουσιαστικών αυτών και στα δύο γένη και συγκρίνονται οι συγκεκριμένες δομές με αντίστοιχες από διαγλωσσικά δεδομένα. Υποστηρίζεται ότι τόσο τα αρσενικά όσο και τα θηλυκά ουσιαστικά που δηλώνουν το δράστη σχηματίζονται απευθείας με επιθηματοποίηση στη ρηματική βάση. Στο πλαίσιο της περιγραφής εξετάζονται ορισμένα αμφιλεγόμενα ζητήματα σχετικά με το σχηματισμό ουσιαστικών που δηλώνουν δράστη, όπως είναι η συνεμφάνιση δύο παραγωγικών διαδικασιών ή οι πραγματολογικοί περιορισμοί που επενεργούν στο σχηματισμό των ουσιαστικών αυτών. Η ανάλυση γίνεται βάσει του μοντέλου Construction Morphology (Booij 2005).

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