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Abbreviations

ACC=accusative
DEF=definite
FEM=feminine
GEN=genitive
IC=inflection class
ICI=first inflection class
ICII=second inflection class
MASC=masculine
N=noun
NEU=neuter
NOM=nominative
PL=plural
SG=singular
V=verb
VOC=vocative
1=first person
2=second person
3=third person

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Chapter 24

Morphological theory and synchronic variation[1]

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1. Variation: assumptions and premises

Variation is a property of living languages and a fundamental notion in linguistics. It reflects the fact that languages do not appear to be structurally homogeneous, at least superficially, and insights can already be found in Sapir (1921: 147), where it is pointed out that variation characterizes languages not only cross-dialectally but also as far as idiolects, that is, varieties spoken by individual speakers, are concerned. According to

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Weinreich, Labov and Herzog (1968) variation is the norm rather than the exception cross-linguistically, and Labov's (1972) pioneering work has demonstrated that patterns of variation enrich our understanding about the way change occurs.

The study of variation is closely related to historical linguistics (see e.g. Hüning this volume), where research is interested in the genesis of variation and tries to identify the processes that have triggered innovations, as for instance analogy. Nevertheless, variation should be distinguished from change, since an innovative form may remain side-by-side with a previously existing form for a very long period. On the contrary, research on synchronic variation is centered on discovering the varying forms and structures of a specific linguistic system in a particular period and aims to deliver hypotheses on the factors that determine and constrain the observable phenomena. As a corollary, the researcher could test the strategies that underlie grammatical structures and thus, improve the theoretical model he/she works on.

Variation is due to various causes, both language-internal and external. It is often manifested as sociolinguistic variation, or as geographic variation represented by dialectal diversity. It may also be register variation in the spoken/written dimension, as pointed out by Bisang (2011: 255), which partially overlaps with social factors, in the sense that writing often favors certain linguistic structures to the disadvantage of others. Social factors such as social status, age, gender, educational background, etc. can affect the linguistic behavior of speakers, but their examination goes beyond the scope of this work which proposes to investigate morphological variation in its synchronic dimension as a phenomenon of principally language-internal nature. Nevertheless, it does not neglect the

perspective of morphological variation triggered by language-external factors, as for instance, the crucial role that language contact may play to linguistic change.

More specifically, in this paper, morphological variation is conceived of as referring to variable word forms or competing word-formation structures/patterns of a particular linguistic system, whose creation, retention and distribution are governed by language-internal factors and constraints or by contact with another language. These variable forms and patterns involve morphologically complex words and manifest themselves through a variety of roots/stems, affixes or other kinds of word structure. Language-internal factors often reflect mechanisms of change such as analogy, grammaticalization, reanalysis, etc. As will be seen below, it is difficult to trace a separation line between these diachronic factors and the synchronic, language-internal ones, such as differences in productivity, selectional properties, phonological conditions imposed by the base, etc. The paper also focuses on the dimension of language contact, since intense contact may create innovative structures or enhance variation that has started for language-internal reasons. In a language-contact situation, borrowed material from a dominant language may co-occur, side-by-side, with native material of an affected language, depending on the distribution of power and linguistic prestige in a given situation. As argued by Léglise and Chamoreau (2013:1), the exact role and interplay of the notions of 'variation' and 'contact' have not yet been fully explored. Therefore, among other things, the paper proposes to provide insights for filling this gap.

It is worth noting that morphological variation relates to complexification of morphology and grammar in general, since it creates redundancy, in the sense that more

than one unit or more than one structure are utilized to express the same notion.[2] Nonetheless, variation could also be seen as an intermediate stage to a simplification process, since the addition of innovative, transparent forms or structures may lead to a more regular re-arrangement of grammatical structures and the prevalence of innovations may head an ultimate replacement of irregular or opaque forms Space limitations do not allow me to provide a detailed analysis of the relation between variation and the issues of complexification and simplification. However, hints will be given in section 2, with illustrative examples from dialectal variation.

To provide the reader with a clear picture of morphological variation and a better understanding of the argumentation, I will use examples from Modern Greek (hereafter Greek), a fusional language which is sufficiently described and analyzed, both diachronically and synchronically. It is rich in morphological structure, displays variation across the entire range of morphological processes, shows a particularly developed dialectal variety, and has been in contact with also well-described but typologically different languages, such as the semi-fusional Romance and the agglutinative Turkish. Data is drawn not only from the standard language but also from dialects, which diverge in significant and interesting ways and offer a rich and fertile territory where morphological variation can be profitably studied. For instance, dialectal variation allows us to draw conclusions on what lies behind the differences of morphological systems or helps us to determine which phenomena are correlated with particular options and how these options are mapped onto the morphology of the language the dialects belong to.

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[2] See Trudgill (2009) for the notions of complexification and simplification in grammar.

The paper is structured as follows: In section 1, I introduced the concept of morphological variation. In section 2, I discuss in detail several types of morphological variation in the major morphological processes, that is, inflection, derivation and compounding, and I demonstrate how language-internal tendencies alone, or assisted by language-external factors, can create variation in inflectional paradigms, derivatives and compound structures. The paper concludes in section 3 with a summary of claims and proposals, and hints for future research.

2. Variation in morphological processes

Variation in all its facets manifests itself both in morphological processes and components. There is variation in the form of units participating in morphological formations, but also variation in structures, in that a morphologically complex word may display competing internal structures with no difference in meaning. In this section, I argue that variation is not accidental and show that it can be due to various factors, mainly language-internal ones though to a certain extent, to language-external factors as well.

2.1 Variation in inflection

As already noted, competition of different forms and structures is widespread in natural languages. It may occur even in the most productive morphological process, such as inflection, where specific nouns or verbs can inflect in more than one way (see Rainer 1989 and Plag 1999). For instance, Paster (2008: 178-179) provides evidence for overabundance (in the sense of Thornton 2012) and optional multiple exponence in the nominal morphology of Maay, a Cushitic language spoken in southern Somalia, where consonant-final nouns display three different realizations: one form ending in *-o*, one

ending in *-yal*, and a third bearing both *-o* and *-yal* (e.g. *yahas* 'crocodile' > *yahas-o / yahas-yal / yahas-o-yal* 'crocodiles'). Similarly, in Lesbian, the Greek dialect of the northern Aegean island of Lesbos, a considerable degree of overabundance is manifested in the verbal paradigm of the imperfect tense of deponent verbs (e.g. *káθ-u-mi*[3] 'I sit' -> *káθ-u-mna / kaθ-ó-mna / káθ-u-mdan / káθ-u-mdun / kaθ-ó-mdan / kaθ-ó-mdun* 'I was sitting', where *kaθ-* is the stem, *-o-/-u-*[4] is the thematic vowel and *-mna/-mdan/-mdun* the varying endings), as illustrated on the dialectal map of the *Laboratory of Modern Greek Dialects* of the University of Patras (www.lesvos.lmgd.philology.upatras.gr).

Variation in inflection seems to run against the Paradigm Economy Principle proposed by Carstairs (1987), and generally the Language Economy Principle, which is often translated as Biuniqueness (one form / one meaning, Stork 2004).[5] However, according to Rainer et al. (2008: 11) the idea that morphological pleonasm should disappear is too simplistic, and profound research is needed in order to determine which conditions apply to the operation of economy. Interestingly, Stolz (2008: 245) affirms that

[3] Greek forms are given a broad phonological transcription and stress is noted when needed for the argumentation purposes.

[4] The form variation of the thematic vowel is only phonological because in this dialect, unstressed /o/ becomes /u/ (see also ft. 9). Thus, there is no real morphological variation but what varies is the stress position, which may trigger a change of /o/ into /u/. On the contrary, *-mna, -mdan,* and *-mdun* are morphological variants. See 2.2.1 for details concerning the *-dan* forms.

[5] For deviations from Biuniqueness, see also Arkadiev and Klamer (this volume).

pleonastic morphology 'dies hard' and proposes that it can be characterized as natural if it corresponds to the overall structure of the examined language.[6]

In what follows, I show that explanatory factors such as a tendency for paradigm leveling, the increase of productivity of certain operations, or even heavy contact with another language may cause or enhance variation in inflection, resulting in complexification, reduction, or reformulation of paradigms. Resistance to innovative tendencies in favor of inherited forms and patterns leads to the creation of long-standing variation in certain specific contexts.

2.1.1 Paradigmatic leveling

Consider the inflectional paradigm of mediopassive imperfect tense (past imperfective) of inflection-class II verbs (ICII)[7] in Aivaliot, a Greek dialect of western Asia Minor - today

[6] Stolz (2008: 225) reports a remarkable case of double case-number-gender marking on Lithuanian definite adjectives, where the definiteness marker appears between two identical portmanteau morphemes (e.g. *nauj-ą-j-ą* lit new-ACC.SG.MASC-DEF-ACC.SG.MASC 'the new').

[7] Synchronically, the Greek-based Aivaliot has two main verbal inflection classes depending on the presence or absence of a systematic *X ~ Xi* stem allomorphy (e.g. *tim ~ timi* of the verb *timó* 'to honour'). ICII verbs originate from the old "contract" verbs (see Ralli 2005 for more details on Greek inflection classes).

western Turkey.[8] It exhibits variation in the 1st and 2nd person singular, where forms in *-dan* alternate with older forms in *-na*.

(1) *vastiémi* 'to be held'

1SG	vasti-ó-mna	/ vasti-ó-mdan	'I was being held'
2SG	vasti-ó-sna	/ vasti-ó-stan	'you were being held'
3SG	vasti-ó-dan		etc.
1PL	vasti-ó-mastan		
2PL	vasti-ó-sastan		
3PL	vasti-ó-dan		

Here, *vasti-* is the stem allomorph in the mediopassive context, *-o-* is the thematic vowel, and *-mna/mdan, -sna/-stan, -dan, -mastan, -sastan* are the portmanteau mediopassive-past-person-number endings.

The innovative 1SG and 2SG forms, *vastiómdan* and *vastióstan*, have resulted from a tendency towards intra-paradigmatic leveling, triggered by the diffusion of *-Dan* (with initial /d/ or /t/, depending on the phonological context)[9] to all paradigmatic cells. Historically, *-Dan* originated from the 3rd person plural ending (*-nto* in Ancient Greek)

[8] Aivaliot was spoken in the Asia Minor area of Kydonies (Aivali), before 1923. Today, it is confined in dialectal enclaves of the Aegean island of Lesbos, inhabited by Aivaliot refugees. For information about this dialect, see www.mikrasia.lit.upatras.gr and Ralli (2012a, 2016, 2017).

[9] *-Dan* is subject to voice assimilation, according to which /t/ appears after non-voiced /s/ and /d/ after voiced /n/ and /m/.

which marked the features of past, mediopassive, third person and plural number. Its extension to the entire plural paradigm was probably prompted by a tendency to formally mark the distinction between the present and the imperfect mediopassive, according to which the first ends in /i/ while the second ends in /a/, as exemplified in (2):

(2) *vastié/ómi* 'to be held'

	a. Present		b. Imperfect	
1SG	vasti-é/ó-mi	'I am held'	vasti-ó-mna/-mdan	'I was being held'
2SG	vasti-é/ó-si	'you are held'	vasti-ó-sna/-stan	'you were being held'
3SG	vasti-é/ó-ti	etc.	vasti-ó-dan	etc.
1PL	vasti-ó-mastin		vasti-ó-mastan	
2PL	vasti-é/ó-stin/-ósastin		vasti-ó-sastan	
3PL	vasti-ó-din		vasti-ó-dan	

vasti- is the stem allomorph of the mediopassive context, -e-/-o- are thematic vowels, *-mi,-si,-ti,-mastin,-stin/-sastin/-din* the mediopassive-person-number endings, and *-mna/-mdan, -san/-stan, -dan, -mastan, -sastan, -dan* the mediopassive-past-person-number endings.

Propagation of *-Dan* to all cells caused a reduction of the range of its features. For instance, its spread to the singular number prompted the loss of the association with the plural. However, the phenomenon as a whole cannot be considered as a simplification of the paradigm because of the long-term coexistence of alternating forms in the first and second person of the singular number.

Note that another type of variation exists in the present tense, this time with respect to the thematic vowel and the second person plural form. First, there is a proliferation of *-o-*

in the singular number, where it tends to become the prevalent form (3b). This may be due to an intra-dialectal tendency to enhance the formal distinction between the two inflection classes in the mediopassive voice, ICI and ICII, ICII being characterized by an *-o-* thematic vowel throughout the paradigm of the present tense. Compare the following examples:

(3) a. ICI sózumi 'to be saved'[10] b. ICII vastié/ómi 'to be held'

sóz-u-mi 'I am saved'	vasti-é/ó-mi 'I am held'
sóz-i-si 'you are saved'	vasti-é/ó-si 'you are held'
sóz-i-ti etc.	vasti-é/ó-ti etc.
suz-ó-mastin	vasti-ó-mastin
suz-ó-stin/-sastin	vasti-é/ó-stin/-ósastin
suz-ó-din	vasti-ó-din

Second, there seems to be a preference for pairing the 1PL and 2PL cells, as depicted by the present plural forms *vastiómastin* and *vastiósastin*, where the innovative form in *-sastin* tends to expulse the older one in *-stin*. This pairing, also exhibited in the singular number of the imperfect tense as illustrated in (2), seems to contradict Joseph's (2011: 412-414) claim that speakers tend to provide a generalization over the subjective second and third

[10] In Aivaliot, as in most Northern Greek dialects, /e/ and /o/ are raised to /i/ and /u/, respectively, because of a general phonological law raising mid-vowels in unstressed position. Moreover, another law deletes unstressed /i/ and /u/, unless they originate from unstressed /e/ and /o/. Thus, the underlying forms of *sózumi, sózisi, sóziti* are *sózome, sózese, sózete*. For vowel deletion, see also ft. 4.

person forms by grouping together their paradigmatic cells in the formation of verbal forms.[11]

2.1.2 Heteroclisis

Inflectional variation closely relates to heteroclisis, that is, to the property of a lexeme to inflect according to more than one inflection class (Stump 2006). For Stump, heteroclisis should not be seen as arbitrary and lexically stipulated, but as structured and systematic. Nevertheless, athough for Stump the phenomenon is mainly aligned with some morpho-syntactic feature distinction, for Maiden (2009), it may have an original trigger other than morphology (e.g. phonology), but it is closely associated with the purely morphological properties of a language, namely patterns of stem allomorphy and other major organizational characteristics of paradigms. More particularly, Maiden investigates the heteroclitic paradigms of two verbs, *a coase* 'to sew' and *a tese* 'to weave', drawn from certain Romanian dialects (mostly from Ottenian of south-western Romania), which, in a number of cells, have lost their third conjugation inflectional characteristics in favour of those of the first conjugation. He shows that intra-paradigmatic diffusion of a conjugation-class change has been prevented from spreading to the entire inflection of these verbs, because of an idiosyncratic morphomic pattern of distribution reflecting a formal opposition between the stem allomorphs used in preterite, past participle, old conditional and pluperfect, jointly, and those in the other paradigms (present, imperfect, subjunctive,

[11] This claim has been formulated on the basis of a feature scheme proposed by Benveniste (1946), regarding person oppositions in terms of the features +/-personal and +/-subjective.

imperative, infinitive, gerund). He concludes that the prediction that heteroclisis follows stem alternation, without a morpho-syntactic conditioning, is worth exploring (2009: 84).

Along these lines, I intend to show that heteroclisis in the Greek varieties is morphologically motivated and correlates to stem allomorphy. Consider, for instance, in both Lesbian and Aivaliot, the two dialects mentioned above, the masculine nouns in *-is*[12] (/i/ is phonologically deleted in unstressed position, see ft. 9) which display inflectional variation in the plural number, where there are two alternating forms, one inflected according to the original ICII and an innovative form inflected according to ICI. For an illustration, take the inflectional paradigms of the nouns *karv(u)ɲár(i)s* 'coal man' and *dzubáɲ(i)s* 'shepherd': [13]

(4)

	a. *karv(u)ɲár(i)s*			b. *dzubáɲ(i)s*		
	ICII	->	ICI	ICII	->	ICI
NOM/ACC/VOC.SG	karvɲár-s			dzubáɲ-s		
GEN.SG	karvɲár-ø			dzubáɲ-ø		

[12] As shown by Ralli et al. (2004), with the exception of nouns ending in the latinate suffix *-ari(s)*, nouns which transparently bear a derivational suffix are exempted from heteroclisis.

[13] The underlying stem allomorphs (before the application of the dialectal phonological law of /i/ and /u/ deletion in unstressed position, see ft. 9) for both nouns are *karvuniari* ~ *karvuniariδ-* and *dzubaɲi and dzubaɲiδ-*. The fact that the stem allomorphs contain a final /i/ which is phonologically deleted in unstressed position is, among other things, proved by the palatalization of the nasal /n/ which always occurs in front of /i/.

NOM/ACC/VOC.PL	karvɲárð-is	karvɲar-í	dzubáɲð-is	dzubaɲ-í
GEN.PL[14]	----		----	

where *karvɲar-* and *dzubaɲ-* are the surface stem allomorphs in the singular number and *karvɲarð-* and *dzubaɲð-* those used in plural.

As (4) shows, heteroclisis exists in the most marked number, that is in plural, where the extended allomorphic form, that is, the stem in -ð- tends to be substituted by the shorter allomorph, that is, the stem without -ð-. Allomorphic reduction triggers a shift from ICII to ICI, that is, a transfer to the inflection class of nouns characterized by the absence of allomorphic variation. A change of inflection class also instigates a stress shift from the penultimate to the final syllable, driven by a need to have distinct forms in singular and plural. In fact, if stress had remained on the penultimate syllable (e.g. **karvɲár-i, *dzubáɲ-i*), then /i/ would have been deleted in unstressed position (ft. 9) and the two output forms would overlap, that is, the existing GEN.SG forms *karvɲár/dzubáɲ* and the hypothetical NOM/ACC/VOC.PL form (also *karvɲár/dzubáɲ*).

Crucially, the presence of heteroclisis in the plural of Aivaliot nouns conforms to Stump's (2006: 290) claim that when two inflection classes are involved in heteroclisis, the 'intrusive' class is generally expected to occupy the most marked set of cells (in our case, the plural number). Nevertheless, it also confirms Maiden's assertion that heteroclisis is morphologically conditioned and related to stem allomorphy, since reduction of stem allomorphy in the Lesbian/Aivaliot masculine nouns in *-is* may determine an inflection class (in our case ICI) as more privileged towards the other and define it as the intruder.

[14] The overt form of genitive plural has been lost from most dialectal nouns.

Stem allomorphy is particularly heavy in Greek and its dialects, due to the long history of the language, and it is one of the decisive factors for assigning both nouns and verbs to inflection classes.[15] As noted by Ralli (2006), the property of many Greek nouns to have distinct allomorphs in singular and plural may also act as a blocking factor to innovation, probably because allomorphy preserves traces of the old inflection. Thus, in the examples depicted in (4), it may explain the resistance to an overwhelming prevalence of the ICI form and the long coexistence of variants (the first attestation is from the 17th century), that is, the older ICII forms and the innovative ICI ones, in the plural number.

2.1.3 Inflectional variation and language contact

In this section, Cappadocian, another Asia Minor dialect, exemplifies how a language-contact situation may trigger or enhance inflectional variation. Cappadocian came under Turkish influence following the Seljuk invasion in the 11th century, and the subsequent conquest of Asia Minor by the Ottoman Turks in the 14th century (see, among others, Dawkins 1916 and Janse forthcoming). Consider the following sample of Southeast Cappadocian nominal inflection (5b), compared to the corresponding Standard Modern Greek (SMG) forms (5a), taken from Janse (forthcoming) and Ralli (2009):

[15] According to Ralli (2005, 2006), Greek nouns are distributed in eight inflection classes on the basis of their gender values and the presence or absence of stem allomorphy. For verbs, see ft. 7.

(5) a. SMG b. Southeast Cappadocian[16]

	fito.NEU ‘plant’			
	Singular	Plural	Singular	Plural
NOM/ACC/VOC	fit-o	fit-a	fito-ø	fit-a/fit-ja/fito-ja
GEN	fit-u	fit-on	fit-u/fit-ju/fito-ju	fit-u/fit-ju/fito-ju
	jineka.FEM ‘woman’			
	Singular	Plural	Singular	Plural
NOM/ACC/VOC	jineka-ø	jinek-es	neka-ø	neka-ja / nek-es
GEN	jineka-s	jinek-ón	neka-ju	neka-ju / nek-ez-ju
	anθropos.MASC ‘man’			
	Singular	Plural		
NOM	anθrop-os	anθrop-i	atropos-ø	atropoz-ja
ACC	anθrop-o	anθrop-us	atropos-ø	atropoz-ja
GEN	anθróp-u	anθrop-on	atropoz-ju	atropoz-ja-ju

As depicted in (5b), Cappadocian nouns display a high degree of variation. More particularly, the features of plural and genitive are not fused together under the usual portmanteau morpheme *-on*, as in SMG (5a) but are realized by distinct markers, which, in some cases, are added to the base, one after the other, as for instance in *nek-ez-ju* ‘woman-PL-GEN ‘women’ and *atropoz-ja-ju* ‘man-PL-GEN. To be more specific, in (5a) the plural of ‘plant’, ‘woman’ and ‘man’ is obviously built on the combination of a stem (*fit-, jinek-* and

[16] Southeast Cappadocia (the towns of Semendere and Ulağaç) is the area with the most significant linguistic changes.

anθrop-) and a portmanteau inflectional suffix expressing the features of case and number. In contrast, in (5b), there is a variety of forms ranging from the original *fit-a* 'plants' and *nek-es* 'women' to the innovative *fit-ja, fito-ja, fit-ju, fito-ju, neka-ja, neka-ju, nekez-ju, atropoz-ja, atropoz-ja-ju*, depending on the case. There seem to be three major points of interest. First, in Cappadocian inflection, grammatical gender has lost its formal distinction in masculine, feminine and neuter values - at least in most nominal paradigms - in favor of the neuter form. This change has facilitated the spread of a plural marker *-ja*, originating from a reanalysis of Greek neuter nouns in *-i* (e.g. *mat(i)*[17] 'eye.SG', *matj-a* 'eye.PL', reanalyzed as *mat-ja*), to nouns such as *atropos* 'man' and *neka* 'woman' (for this change see also Janse 2004 and Ralli 2009). Although the original gender distinctions have not completely faded in Cappadocian (see Dawkins 1916 and Karatsareas 2009, 2011), the demise of morphologically discrete gender values brings Cappadocian closer to Turkish, where gender is not distinguished grammatically. Second, the Greek strategy to build inflected forms on the basis of stems (Ralli 2005) seems to have lost its pervasive application, as revealed by the existence of plural forms such as *fito-ja*, *neka-ja* and *atropoz-ja*, which are based on the entire word form, as used in the nominative singular. This change is also reminiscent of Turkish, as exhibited in (6), where the inflection of the word 'man' is given in both Turkish and Southeast Cappadocian.

(6)	a. Turkish	b. Southeast Cappadocian
NOMSG	adam	atropo**s**

[17] As in other Northern Greek Dialects, the Cappadocian unstressed /i/ surfaces in stressed position.

GENSG	adam-ın	atropoz-ju
NOMPL	adam-lar	atropoz-ja
GENPL	adam-lar-ın	atropoz-ja-ju

Third, there are traces of an innovative agglutination pattern [BASE-PL-GEN], as shown by the plural form *atropoz-ja-ju* and *nek-ez-ju*, where the original fusional character of inflection (portmanteau endings in *-i* and *-es*, respectively) has been replaced by an agglutinative one, typical of Turkish (see (6a) above), where the plural marker (*-ja-* or *-ez*) is followed by a distinct genitive case marker *-ju*. This change suggests a restructuring of the inflectional endings: *-ju* must have been deprived from its original singular number value, since it appears to be preceded by a plural marker (*-ja*), and *-ja* itself could no longer depict its nominative/accusative/vocative syncretic case values (see (5a)), because it is followed by the genitive marker *-ju*. One cannot conclude though that the entire Cappadocian nominal system has turned agglutinative, since there are many nouns which do not show any agglutination. What (5b) illustrates instead is a hint of a possible ongoing change in the late 19th and 20th century, where many innovative forms coexist with previously existing ones. Crucially, fusion still appears in some Cappadocian nouns, as shown by the inflected form *fita* (5b), which combines the bound stem form *fit-* with the portmanteau ending *-a*. On the basis of the above observations, Cappadocian could, thus, be considered as a typical example of a language where variation may be interpreted by appealing to a language-external cause, that is, contact. Nevertheless, according to Karatsareas (2011) the change in gender and Cappadocian nominal inflection in general goes back to a common Greek-based linguistic ancestor of most Asia Minor varieties. He claims that it had started for language-internal reasons but has been accelerated because of

heavy contact with Turkish.[18] Regardless of the assumed extent of Turkish influence on Cappadocian inflection, that is, whether it instigated or just enhanced change, one should not neglect the important role of language-contact as a factor in the existence of variation.

2.2 Variation in derivation

It is often the case that a derivational process for creating words of a specific category may exploit more than one formative, depending on various reasons. For instance, Eggert (2008) investigates the high degree of variation exhibited in the construction of French inhabitant names, where about 10 different suffixes are productively used. He concludes that the selection of a particular suffix is not made at random but is principally related to the formal shape of the base/stem. He convincingly shows that, although not all possible cases can be predicted, one can delineate the use of certain suffixes to the exclusion of others. In the next section, I examine a similar case in Greek regarding the formation of feminine nouns denoting professions, where different suffixes may be employed, the specific choice of which depends on the type of the base they are combined with. Obviously, this is a different type of variation from the one discussed in section 2.1. In inflection, the same stem may take different inflectional suffixes resulting into

[18] Karatsareas does not consider contact with Turkish as the initiating trigger of changes, but sees it as a catalyst that pushed ahead developments already under way. He claims that the earliest manifestations of these developments predate the Turkish invasion and go back to Medieval Asia-Minor Koiné, the common ancestor of the Asia Minor dialects (among which, Pontic, Pharasiot and Cappadocian).

overabundance in Thornton's (2012) terms, while in derivation, there is variation in the strategy itself.

2.2.1 Producing feminine professional nouns

As reported by Triantaphyllides (1963: 328), the Greek suffixes for creating feminine professional nouns are chiefly the following: the agentive *-tria* (*xoref-tria* 'female dancer') and its low-register form *-tra* which often bears a pejorative connotation (e.g. *xartopex-tra* 'female card player'); *ina*[19] (e.g. *δikastina* 'female judge'); *-isa* (*majir-isa* 'female cook'); *-u* (e.g. *taksidz-u* 'female taxi driver'). Competing with the use of an overt derivational suffix, the language has two more operations for building the feminine form of professional nouns: (a) conversion, according to which masculine stems become feminine (e.g. *δaskal-os* 'teacher' vs. *δaskala*[20] 'female teacher'); most often, converted nouns do not display a different ending from the original masculine forms but they are assigned the feminine gender with the help of a feminine article (e.g. *o.*M *iθopios* 'the actor' vs. *i.*F *iθopios* 'the actress'). (b) Phrasal-compound formation[21] by pre-posing the feminine word *jineka* 'woman' to masculine nouns (e.g. *jineka vuleftis* 'woman deputy'). Conversion with or without the assistance of the feminine article is a native strategy, as shown by a plethora of examples throughout the long history of Greek (Triantaphyllides 1963: 328-329). The

[19] *-ina* is of Italian origin. It is not exclusively used for building feminine professional nouns, but also appears for the formation of nouns denoting female animals (e.g. *provatina* 'sheep.FEM' < *provato* 'sheep.NEU').

[20] The *-a* of *δaskala* is not a derivational suffix but part of the feminine stem (Rali 2005).

[21] For a detailed information about phrasal compounds in Greek, see Ralli (2013a,b).

second operation, entailing the application of phrasal compounding, implies the combination of two independent words, as opposed to the combination of stems or a stem and a word, as is the case with typical Greek compounds (Ralli 2013). This last strategy is relatively recent: it has been imported from languages Greek has in been in contact with , that is, French, English, or Italian (e.g. French *femme auteur* 'woman author', English *woman deputy,* Italian *donna poliziotto* 'woman policeman'), at the beginning of the last century (see Anastasiadis-Symeonidis 1994 for details).

The diversity of derivational operations makes the construction of Greek feminine professional nouns a very interesting topic, since the selection of a particular operation is largely determined by linguistic, but also extralinguistic, constraints. Crucially, the appearance of a specific suffix depends, to a large extent, on the properties of the base, and very few cases can be characterized as unpredictable. More specifically, the grammatical category of the stem divides the above-mentioned suffixes into two major categories: suffixes attached to nouns and suffixes combined with verbs. *-ina, -isa* and *-u* belong to the first category (7)[22], while *-tria* or *-tra* are part of the second (8).

(7)a. efoplisti(s)[23] > efoplist-ina
shipowner woman-shipowner

b. astinomik(os) > astinomik-ina

[22] There are some extremely rare exceptions, where a nominal base is not presupposed:

(i) nixtoperpat(o) > nixtoperpat-u (masculine noun: *nixtoperpatiti(s)*)
walk at night woman night walker

[23] For clarity reasons, overt inflectional endings are included in parentheses and hyphens divide the stem from the derivational suffix.

policeman policewoman

c. mavraɣoriti(s) > mavraɣorit-isa

black marketeer woman black-marketeer

d. taverniari(s) > taverniar-isa

tavern owner woman tavern-owner

e. taksidzi(s) > taksidz-u

taxi-driver woman taxi driver

f. peripter(as) > peripter-u

kiosk owner woman kiosk owner

(8)a. δiorθon(o) > δiorθo-ti(s) δiorθo-tria

to correct corrector woman corrector

b. erminev(o) > erminef-ti(s) erminef-tria

perform performer woman performer

c. xartopez(o) > xartopex-ti(s) xartopex-tra

play cards card player woman card player

d. rav(o) > raf-ti(s) raf-tra

to sew tailor woman tailor

In fact, as recently shown by Koutsoukos and Pavlakou (2009: 117-119), *-tria* is directly attached to verbal bases in order to produce feminine agentive nouns, without the intermediary derivation of masculine nouns (nouns ending in the masculine suffix *–ti(s)*). Their main argument is that feminine nouns do not always have the same semantic properties with their male counterparts (e.g. *enisxi-tis* [-human] ‘amplifier’ < *enisxi(o)* ‘to

boost' vs. *enisxi-tria* [+human] 'woman who boosts') and that there are feminine nouns in *-tria* without a masculine counterpart (e.g. *plektria* 'woman who knits' vs. **plektis*).

Note that a subdivision within the group of feminine nouns with an overt suffix is also possible, this time on structural criteria, since *-ina, -isa* and *-u* seem to be sensible to the type of word-internal structure of masculine professional nouns. Systematically, *-u* selects nouns bearing the native professional suffix *-a(s)* in their masculine form (e.g. *milon-a(s)* 'miller' vs. *milon-u* 'woman miller') or the Turkish-based suffixes *-dzi(s)* (e.g. *gafa-dzi(s)* 'blunderer' vs. *gafadz-u* 'woman blunderer') and *-li(s)* (e.g. *bela-li(s)* 'trouble maker' vs. *belal-u* 'woman trouble-maker'). Similarly, *-isa* shows a preference for bases exhibiting the native agentive *-ti(s)* (e.g. *man-ti(s)* 'clairvoyant' vs. the feminine *mant-isa*) or the latinate *-ari(s)* (e.g. *ajelaδ-ari(s)* 'cowboy' vs. *ajelaδar-isa* 'cowgirl'). As for *-ina*, it shows no particular preference for suffixed bases, but in some cases, formations in *-ina* are interchangeable with those in *-isa* (e.g. *nomarxi(s)* 'prefect' vs. *nomarx-ina / nomarx-isa* 'woman prefect').

It is worth noticing that in Greek derivation, morphological variation may persist because of socio-linguistic factors. It is often the case that innovative forms prevail in informal linguistic situations, while predilection for an ancient-like style of language favors older forms as being more prestigious than the commonly used informal ones. For instance, the conversion strategy with the use of the feminine article (e.g. *i*.F *vuleftís* 'the woman deputy') often appears in formal registers, while the common form with the *-ina* suffix (*vuleftina*), is rather associated with an informal language style. As for the relatively recent phrasal-compound creation, *jineka vuleftis* 'woman deputy', it competes with the converted form in the same contexts (*i*.F *vuleftís*), but it tends to become prevalent due to

an increasing influence of English. As already mentioned in section 1, space limitations do not allow me a detailed account of the socio-linguistic trigger of morphological variation and its impact on the use of variable forms.

2.2.2 *Derivational variation and language contact*

In what follows, I will offer evidence that language-internal tendencies may create or constrain variation among innovative derivative forms introduced by language contact. To this purpose, I investigate the adoption of Turkish verbs in Aivaliot, which are integrated into Aivaliot morphology as loanblends (Haugen 1950), in that they contain a copied part from Turkish and a Greek part with, optionally, an integrating element *-iz-* and the person/number inflectional ending. Interestingly, the integrating element is nothing but the Greek verbalizer *-iz-* which productively produces verbs out of native nouns. Its use or non-use distributes verbal loans into two groups, each group belonging to a distinct inflection class (IC): those with the verbalizer *-iz-* inflect according to ICI (9), while those without the verbalizer (10) belong to ICII. Consider the following examples:

(9)a. Aivaliot	Turkish	Greek/Aivaliot verbalizer	Greek/Aivaliot inflection
burdiz(u)	bur(mak)[24]	-iz-	-u.1SG[25]
to twist	to twist		
b. kudurdiz(u)	kudur(mak)		

[24] *-mAk* is the Turkish infinitival marker.

[25] In Modern Greek, there are no overtly expressed infinitives. Citation forms are given in the first person singular of the present tense.

to be particularly active to go mad

c. daldiz(u) dal(mak)

to be absent-minded to dive/plunge/be absent-minded

(10)a. Aivaliot Turkish Greek/Aivaliot verbalizer Greek/Aivaliot inflection

katsird(o) kaçır(mak) ø -o.1SG

to escape to take away/kidnap

b. savurd(o) savur(mak)

to throw to throw

c. axtard(o) aktar(mak)

to overturn to transfer/mix

Interestingly, there are also several alternating types, suggesting a random selection between the two integration strategies, as (11) illustrates:

(11) Aivaliot Turkish

ICI ICII

axtardiz(u) / axtard(o) aktar(mak)

to overturn to transfer/mix

sakindiz(u) / sakind(o) sakın(mak)

to move aside, avoid to avoid

psxurdiz(u) / psxurd(o) püskürt(mek)

to sprinkle, spray

Along the lines of Ralli (2012a), I suggest that variation in the integration strategies, that is, with or without the use of an integrating element, is due to the interference of some

basic morphological properties of the recipient language, that is, Greek/Aivaliot, which govern and constrain the shape of the borrowed forms.

As commonly accepted (Matras 2009: 158), lexical borrowing with respect to verbs is based on the third person singular of the past tense (Matras 2009: 158). Thus, the borrowed Turkish form in Aivaliot is that in *-DI*, as depicted in (12):

(12)Turkish past tense of *burmak* 'to twist' -> Aivaliot formation *burd(i)-iz-u*

1SG bur-dɪ-m

2SG bur-dɪ-n

3SG bur-dɪ-ø

1PL bur-dɪ-k

2PL bur-dɪ-nɪz

3PL bur-dɪ-lar

where, *bur-* is the root, *dI* marks the past tense and the suffixes following *DI* are the personal endings.

The choice of the third person singular is not surprising: it is widely observed in borrowing across languages, and, in this particular case, it is favored by the absence in Aivaliot (and generally in Greek) of an overtly expressed infinitival form. What is interesting though is the reanalysis of the fully inflected 3SG type, which has turned into a non-inflected and non-tensed stem in order to be combined with the Aivaliot inflectional endings, as well as the exclusion of the present-tense form and the adoption of the past-tense (aorist) one. As proposed by Ralli (2012a), the particular reanalysis has occurred because of the requirements of Greek morphology to form words by combining stems, that is, bound elements, with inflectional endings. As for the choice of the particular stem, it is

due to the fact that deverbal derivation in Greek is usually based on the so-called 'aorist stem', that is on the stem allomorph which is used in the context of past tense and perfective aspect. Loan-verb formation does not escape this property, since it also belongs to derivation.

An important question which arises now is why the two integration strategies, that is, with or without the integrating element, occur side-by-side, and often alternate with respect to the same verb. Again, the explanation is found in the morphological properties of the recipient language. As already mentioned, the examples in (10) differ from those in (9) in that they lack the verbalizer *-iz-* and they inflect according to ICII (verbs in (9) belong to ICI). Crucially, Greek verbal inflection classes are distinguished only in the present and the imperfect tenses, while there is no formal difference in the past perfective context (aorist tense). In the same way, verbs bearing the verbalizer *-iz-* (ICI) and those without (ICII) display the same stem final vowel /i/ in the aorist tense, as revealed by the comparison of (13a) and (13b):

(13)a. ICI xoriz-i '(s)he dances' Aorist (past perfective) xori-se '(s)he danced'

b. ICII ektim-a '(s)he estimates' Aorist (past perfective) ektimi-se '(s)he estimated'

Since verb borrowing from Turkish is based on the past tense, where the Greek stem allomorphs are formally identical as far as the stem final vowel is concerned (at least with respect to ICI verbs in –iz- and those of ICII), the loanblend is ambiguous for inflection class. Therefore, both strategies for marking the other tenses – with or without an

integrating element – are equally compatible and can be used by Aivaliot speakers.[26]

2.3 Variation in compounding

Compounding is a particularly interesting domain because it exhibits structural variation, that is, variation in the way the two constituents are combined. In what follows, I show two cases of compound variation, triggered by language-internal reasons and enhanced by contact. Both cases are related to the notion of headedness which plays a crucial role in compounding, since the head transfers its category and other morphosyntactic and semantic properties to the compound as a whole (Scalise & Fábregas 2010), and the presence or absence of a head constitutes the distinction between endocentric and exocentric compounds.

2.3.1 Fluctuating between endocentric and exocentric compounds

The Greek language is particularly rich in compounds, endocentric and exocentric, root and synthetic, determinative and coordinative (Ralli 2013). Compounds are morphologically built. The main characteristics are single stress (compounds are

[26] In cases where only one strategy is adopted, there is a slight preference for the use of the integrating element. This may also be due to language-internal reasons, since verbs of ICI are more productively built than those of ICII.

phonological words), stem constituency[27], right-headedness, and a compulsory presence of an internal compound marker *-o-* linking the two constituents. Compounds containing a dependency relation (modification, attribution or complementation) between their constituents display a particularly rigid order, according to which the head follows the non-head. However, a handful of examples seem to contradict this inflexible order, as (14) illustrates:

(14)a. kefaloponos	versus	b. pon-okefalos
lit. head ache		lit. ache head
'head ache'		
lemoponos		ponolemos
lit. nech ache		lit. ache neck
'neck ache'		
oδondoponos		ponoδondos
lit. tooth ache		lit. ache tooth
'tooth ache'		
karδioxtipi		xtipokarδi
lit. heart beat		lit. beat heart
'heart beat'		

[27] The main morphological patterns of Greek compounds are [stem stem] (e.g. [[*nixt-o-luluδ*]-*o*] 'night flower') and stem word (e.g. [*domat-o-salata*] 'tomato salad'). See Ralli (2013a) for more details.

In fact, the examples of the first column (14a) freely alternate with those of the second (14b), while there is no semantic difference between the two. In an effort to explain this rare variation, Ralli (2013) proposes that the examples in (14a) are typical endocentric formations, created according to the common N N pattern, where the first noun modifies the second. For example, *kefaloponos* is the ache (noun *pon-os* 'ache-INFL') of the head (the noun stem *kefal-*), and the interpolated *-o-* between the two constituents is the compound marker. On the contrary, the examples of (14b) are exocentric formations, built analogically to an archaic V N compound pattern, which still subsists today although not productively used, according to which a first verbal constituent (e.g. the verbal stem *pon-* 'to ache') is followed by its complement (e.g. the noun stem *kefal-*).[28] Being exocentric, the formations of (14b) are combined with a zero derivational suffix which transforms the structure into a noun (e.g. [[V-o-N]$_V$-ø]$_N$-os]$_N$) - the final *-os* (similarly to 14a) being the case (nominative)-number (singular) inflectional ending.[29] The hypothesis about the exocentric V N structure of (14b) is supported by the fact that *pon-* and *xtip-* are two of the

[28] V N was particularly productive in Ancient Greek, while today, V N exocentric formations are either relics or analogically produced. For example, [[[*mis*$_V$-*o*-*jin*$_N$]-*i*]$_N$-*s*] 'misogynist' is an ancient formation, while [[[*xas*$_V$-*o*-*mer*$_N$]-*i*]$_N$-*s*] 'who loses (*xas-*) its day (*mer-*), loafer' is a modern creation.

[29] According to Ralli (2013a) and Ralli & Andreou (2012), exocentric formations are also headed, but they differ from endocentric ones in that their head is a derivational suffix which is located outside the combination of the main compound constituents. This suffix may be overtly realized, as in [[[*mis*$_V$-*o*-*jin*$_N$]-*i*]$_N$-*s*] 'who hates women, misogynist' or non-realized, as in [[[*pon*$_V$-*o*-*kefal*$_N$]-ø]$_N$-*os*] lit ache head 'head ache'.

rare Greek cases which share a common stem in both their noun and verb realizations. Compare, for instance the inflected types of the first person singular of the present tense *xtip-o* 'I beat' and *pon-o* 'I ache' with the corresponding nouns in their nominative singular form *pon-os* 'ache' and *xtip-os* 'beat'.

The morphological variation described above is due to language-internal causes: it results from the categorial ambiguity of stems, such as *pon-* and *xtip-*, and the availability of two compound structures, the very productive N N pattern and the less productive but still available V N pattern. For this type of variation speakers show no particular preference for one of the two structures. However, the scarcity of cases where verb stems coincide with nominal ones in Greek, and the rarity of exocentric compounds based on V N combinations make alternations such as those of (14) particularly unusual.

2.3.2. Compound variation and language contact

Compared to inflection and derivation, compounding is the least affected domain in language-contact situations. Dialectal evidence shows that the Greek property of right-headedness strongly prevails even in those dialects affected by languages with left-headed compounding like, for instance, in Heptanesian, the dialect of the Ionian islands which has been under Italo-Romance influence due to a Venetian domination of the islands for about two to four centuries, depending on the island.

However, there are some sporadic instances of left-headed N N formations, most of which are found in Greko, the Greek dialectal variety spoken in Southern Italy (Grekanico) in the area of Calabria. Consider the following examples from Greko, SMG and Aivaliot:

(15)a. Greko b. SMG c. Aivaliot

fiḍḍámbelo	ambelófilo	abilóflu
lit. leaf vine	lit. vine leaf	lit. vine leaf
klonósparto	spartóklono	spartóklunu
lit. twig crop	lit. crop twig	lit. crop twig
ššilopótamo	potamóksilo	putamókslu
lit. wood river	lit. river wood	lit. river wood
sporomáratho	maraθósporos	maraθóspurus
lit. seed fennel	fennel seed	fennel seed

The left-headed types of (15a) are particularly striking, since Greko, being a dialect of Greek origin, is not expected to exhibit left-headed compounds. In fact, the corresponding formations in SMG and the other dialects, e.g. Aivaliot, are right-headed. A plausible hypothesis would be to assume that Greko has been influenced by Romance, that is, Italian and the local Romance varieties where N N compounds are mainly left-headed, as depicted by the examples of (16), taken from Scalise (1992):

(16) N N Italian compounds

scuola guida	<	scuola	guida
driver school		school	driver
capostazione	<	capo	stazione
station master		master	station
pescecane	<	pesce	cane
lit. fish dog ‘shark’		fish	dog

Crucially though, left-headedness does not appear in Griko, the Salento variety of Grekanico, and it has not completely replaced right-headedness in Greko compounding, since there are still occurrences with the head on the right. In some scarce examples, the same noun may be located on the left or on the right, depending on the example one deals with. For instance, *skordófiḍḍo* 'garlic leaf' and *fiḍḍámbelo* 'vine leaf' have the same head, *fíḍḍo*, but in the case of *skordófiḍḍo*, *fíḍḍo* is located on the right, whereas, *fiḍḍámbelo* exhibits left-headedness.

Instead of postulating a change introduced by contact with Romance, I side with Andreou (forthcoming) that in Greko, left-headedness has been inherited from Ancient Greek, where it was a structural possibility, although it has been less productive than right-headedness. For instance, examples of left-headed N N compounds can be found Ancient Greek writers such as Aeschylus (e.g. *θεοινος* /theoinos/ Fr. 382 'God of wine' < *the-* 'God' + *oinos* 'wine'). On the basis of this hypothesis, one can assume that in Greko, the phenomenon has been enhanced through heavy contact with Romance, contrary to what happened in SMG and Aivaliot, where Romance had only a small influence. In other words, intense language-contact has fostered and strengthened compound variation which was created by language-internal reasons. It is significant that rare examples of left-headed compounds can also be detected in some other Modern Greek dialects which still keep a number of archaic features and have been under Romance influence, as for instance, in Cypriot (e.g. *rizafti* lit. ear's (*afti*) root (*riz-*)), a dialect affected by both French and

Venetian.[30] Refuting the hypothesis that Romance has caused the introduction of left-headedness in these dialects is further supported by the fact that the change in the position of head constitutes only a partial structural change in compounding, since the general structure of Greko compounds remains morphological: as opposed to Italian N N compounds which are composed by two independent words (16), Greko compounding conforms to Greek compounding patterns in that it combines stems and shows a compound marker between the compound constituents. Additional proof for the claim that left-headed N N compounding may originate from Ancient Greek comes from Griko, where there are no left-headed compounds, although Griko has also been heavily affected by Romance. As shown by Rohlfs (1977) and Karanastasis (1997), Greko has been more isolated than Griko, and hence it has kept archaic Greek features, among which, I suppose, the left-headed N N structures.

3. Summary

In this paper, I have offered a panorama of case studies dealing with variation in inflection, derivation and compounding. I have concentrated on monolingual and dialectal data, and suggested that language-internal factors prevail in producing and constraining morphological variation. To this end, I have drawn evidence from Greek, a language that displays a considerable degree of variation, particularly dialectal, and has been sufficiently studied on both diachronic and synchronic grounds. I have further investigated the emergence of variation in language-contact settings, namely, in those Greek dialects that

[30] The examples of this section are drawn from Andreou (2015) where more evidence is provided about Greko, Cypriot and Ancient Greek.

have been affected by typologically different languages, such as the agglutinative Turkish and the semi-fusional Romance. I have argued that ongoing variation may pre-date contact, and thus, that it is hard to tell whether linguistic variation in contact settings is due to contact, to internal linguistic processes or to both. Integrating the study of linguistic variation with those of theoretical morphology, dialectology and contact-induced change is an ambitious goal. I hope to have provided hints for future research aiming at advancing the study of morphological variation.

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