Coordination in Compounds

Angela Ralli

Summary

Compounds are generally distinguished into those which involve a dependency (subordinate and attributive) relation of one constituent upon the other and those where there is coordination, for which there is much controversy on delimiting the exact borders. This article offers an overview of compounds belonging to the second type, for which the term 'coordinative' is adopted, as more general and neutral, drawn from a wide range of terms that have been proposed in the literature. It attempts to provide a definition on the basis of structural and semantic criteria, describes the major features of coordinative compounds and discusses crucial issues that play a significant role to their formation and meaning, such as those of headedness, the order of constituents, and compositionality. Showing that languages vary with respect to the frequency and types of coordinative compounds, being unclear in which way these constructions are distributed and used cross-linguistically, it tries to give a classification with extensive exemplification from genetically and typologically diverse languages.

Keywords: morphology, compounding, coordination, classification, language variation

1. Definition

1.1 The class of coordinative compounds

This article investigates compounds, the constituents of which are in a coordination relation. Although difficult to provide a precise definition of coordination due to existing mismatches between structural and semantic coordination (see, among others, Arcodia Grandi and Wälhli 2010: 177, Haspelmath 2004: 37)[i], it treats as coordinative compounds those which obey three basic criteria:

Criterion 1: The basic constituents of the compounding structure share the same grammatical category.

Criterion 2: There is no dependency of one constituent upon the other and a recurrent cross-linguistic tendency for zero-marking coordination often occurs, even though coordinators may appear in some compounds of the world languages.[ii]

Criterion 3: On semantic grounds, the members are in a hyperonymic relation or in a hyponymic one. In the first case, the constituents denote closely associated concepts and the meaning of the whole is more general than the meaning of the parts (super-ordinate-level, e.g. Mandarin *dāo-qiāng* lit. sword-spear 'weapons'). In the second case, the referent of the compound is situated in between the notions expressed by the constituents (e.g. Modern Greek[iii] (hereafter Greek) *prasinoγalanos* [prasin-o-γalanos][iv] lit. green (*prasin-*) - light blue (*γalanos*) 'greenish blue color'). The creation of such 'intermediary' meanings is possible only when the properties denoted by the constituent parts are related (for instance, in the Greek example both words denote colors).

In the literature, compounds bearing an internal coordination relation are given several names. They appear as 'dvandva' (from the Sanskrit word dvam.dva[v] meaning 'two.two, pair', see, among others, Whitney 1889, Marchand 1969, Katamba 1993,

Bauer 2008, Ralli 2009a,b), co-compounds (Bhatia 1993, Wälchli 2005)[vi], coordinate (Quirk et al. 1985, Bisetto and Scalise 2005, Renner 2008, Renner and Fernandez-Dominguez 2011), coordinated (Bauer 2008, Manolessou and Tsolakidis 2009), coordinating (Quirk et al. 1985, Arcodia 2010), copulative (Whitney 1889, Bloomfield 1933, ten Hacken 2000, Olsen 2001, Plag 2003, Lieber 2005, Booij 2005), coordinative (Ralli 2013, Bauer 2017, Booij 2017), as well as parallel (Li and Thompson 1981). As correctly pointed out by Arcodia (2010: 863), the different names only partly refer to the same compounds. For instance, Wälchli's (2005) co-compound term excludes English examples like *washer-dryer*, this compound type being included in Booij's copulative items, while Fabb (1998) and Lieber (2005) lump together dvandva and copulative compounds.

In this article, the term 'coordinative' is adopted, as more general and neutral to denote the category of compounds involving coordination, where none of the constituents is considered to be 'more important' than the other, even though there is no general agreement on what coordinative compounding may involve and what its semantics might be (see Olsen 2001 and Bauer 2017 for relevant discussion).

Complex numerals such as *thirty-five*[vii] are not taken into consideration as well as subordinative and attributive compounds (called also 'determinative', Bloomfield 1933: 235), that is, compounds exhibiting a semantic dominance of one constituent over the other. For instance, formations like *apple tree* and *girl friend*[viii] are excluded from consideration in this work, since they do not involve any coordination relation but have a head (*tree* or *friend*, respectively) and a modifying element (*apple* or *girl*). Similarly, there is a rather attribution relationship between the members of the compound *doctor woman*, since its meaning is 'a doctor who belongs to the female sex', although it is assigned to coordinated compounds by Bisetto and Scalise (2009).

There are also difficulties into including in the coordinative category compounds defined as 'appositional' by Marchand (1969: 61-62), 'multifunctional' by Renner (2008: 608) and 'coordinative appositional' by Olsen (2015: 368), the parts of which are in an appositional relationship, denoting either individuals/professions (e.g. English *singer-songwriter, programmer-analyst*), or objects/places (e.g. English *bomber-fighter*, *washer-dryer*, French *wagon-restaurant*). Their combinations have a single referent to which two different properties are attributed. Olsen specifies that their coordination is 'accidental', as opposed to compounds whose members are in a 'natural coordination', where natural coordination, is intended to be the relation of two entities which are logically, lexically or associatively connected (Wälchli 2005), such as in the Tok Pisin compound *su-soken* lit. shoe-sock 'footwear', provided by Mühlhäusler (1979: 177).

Admittedly, the appositional type is viewed as the most frequent category of English coordinative compounds in a number of works, such as those by Olsen (2001) and Renner (2008). As noted by Wälchli (2005: 18), there is a long tradition into confounding coordinative and appositional formations, under the name of 'copulative' compounds (see, for instance, Bloomfield 1933), especially in studies treating compounds of European languages[ix], although the distinction between the two categories is retained in Jespersen (1942) and Bauer (1978). Bauer (2008: 1) interprets the misapplication of the class of coordinative ("dvandva" in his paper) compounds in western linguistics to the lack of equivalent to Sanskrit dvandva constructions in most European languages. He also acknowledges that the terms used to denote dvandva compounds in western literature represent different semantic types of formations, for instance the subordinative *girl friend* and the appositional *singer-songwriter* (Bauer 2008: 4). In a more recent study (Bauer 2017: 86), he considers appositional compounds

to belong to marginal types of coordinative compounds. In the same vein, Olsen (2001: 279) observes that the discussion on copulative compounds in many works (among others, Neuss 1981, Erben 1982, Breindl and Thurmair 1992, Fleischer and Barz 1995) does not render clear whether they form a separate category from determinative compounds or whether they constitute a sub-category of them. She adds that most authors contrast coordinative and determinative compounds on the basis of their meaning, considering the structure of the former to be a rare or a semi-productive pattern (Bauer 1978, Lang 1984, Eichinger 2000)[x], while Altmann and Kemmerling (2000) characterize them as a marginal phenomenon (Olsen 2001: 312). Crucially, Adam (2001: 82) denies their compoundhood and, on the basis of purely structural criteria, the same position is also taken by Ralli (2013: 255) for the Greek corresponding constructions (e.g. *iθopios-tragudistis* 'actor-singer'), since they combine two independent words, Greek compounds being one-word morphological formations. Finally, it is worth pointing out that, by investigating a number of fusional, agglutinating and isolating languages, Arcodia, Grandi and Montermini (2009) have concluded that appositive compounds do not seem to behave differently from subordinative ones.

The discussion in this section reveals that there is much controversy on delimiting the borders of compounding involving coordination. Therefore, in this article, attention will be given to core cases of coordinative compounds, putting on the sideline the appositive ones as more marginal.

1.2. Semantics and transparency

As far as interpretation is concerned, compounds treated here as coordinative are those whose internal constituents have an equal weight on semantic grounds (Lieber

2005: 378, Arcodia, Grandi and Wälchli 2010: 177). However, along the lines of Søgaard (2005), it is important to note that pragmatic and language-specific factors may often intervene in the attribution of meaning. As a result, the same structure may express different meanings, depending on the period one deals with. Consider, for instance, the Ancient Greek compound *androgynos* [andr-CM-gyn-INFL[xi]] lit. man (*andr*-) - woman (*gyn(ɛ:*)) 'effeminate man'. The same structure with the same constituents -although of a different gender value since the ancient form is masculine while the modern one is neuter- appears as *androjino* [andr-CM-jin-INFL] in the early medieval period, denoting the superordinate meaning of 'couple' (see, among others, Lampe 1961, Kriaras 1969-2016, Manolessou and Tsolakidis 2009).[xii] Given the semantic ambiguities that often exist between the interpretation of a compound and the specific meaning of its lexemes, one may wonder if it would have been wiser to adopt a scalar view of these meanings, instead of trying to attribute to each of them a predermined one. Note, however, that the semantic interpretation of both the compound output and its internal constituents is often a matter of the diachronic period of their appearance, for which there is a relative deficit with respect to our knowledge and understanding of the pragmatic context affecting their meaning.

With respect to the semantic relation of their constituents, English coordinative compounds are mainly 'heteroreferential' (Renner 2008), that is, constructions the members of which do not refer to the same entity. However, in other languages, there are cases (see section 2) involving the combination of synonyms.

The degree of compositionality of coordinative compounds follows a cline from the most transparent to the less transparent ones and varies from language to language. Although it is not always easy to define the compositionality of a compound in general, it may be determined according to two parameters: semantics and opacity of structure.

Generally, coordinative compounds are very transparent, especially those combining synonymous constituents (e.g. Greek *madilotsembera* (Dodekanesian dialect) [madil-CM-tsember-INFL] 'handkerchiefs-headkerchiefs'), but some lexicalized meanings are also possible to develop (e.g. Greek dialect of Epirus *voiδaloγa* [*voiδ(ia)-aloγ*-INFL] lit. oxen-horses 'draft animals'). Fully lexicalized compounds are not semantically transparent and their structure is not productively built. Typical examples of non-compositional, lexicalized compounds are the Turkish examples *gelgit* lit. come (*gelmek*) - go (*gitmek*) 'tide', or *çekyat* lit. pull (*çekmek*) - lie down (*yatmak*)[xiii] 'sofa bed', in which the combination of two verbs results into a noun, or the Punjabi *daal-roTii* lit. lentils (*daal*) - bread (*roTii*) 'livelihood'. Also, as noted by Olsen (2014, 2015), sometimes a 'semantic integrator' has to be postulated, in that a common conceptual frame must be subsumed in order to build the meaning of the compound (e.g. the Turkish *yer gök* lit. land- sky 'world').

1.3 Structure and typological distribution

On formal grounds, coordinative compounds are not isomorphic across languages. Thus, while in Greek they are words, both phonologically (they bear a single stress) and morphologically (they have a single inflectional ending and are not accessible to syntactic operations), in a language like Turkish (Göksel 2009), they may display phrasal properties. Compare, for instance, the Greek compound *aδelfoksáδerfi* 'brothers-cousins' with the Turkish one *analarkızlar* 'mothers-daughters'. According to Göksel (2009) *anakız* is a coordinative compound whose both constituents are inflected (plural marker -*lar*) when pluralized. This is never the case for Greek coordinative compounds, where inflection (-*i*) is only added to the right periphery of the construction:

(1)a. Turkish versus b. Greek

analarkızlar	aδelfoksáδelfi
ana-PL-kız-PL	aδelf-CM-ksaδelf-PL
‘mothers-daughters’	‘brothers-cousins’.

With respect to headedness, there is much controversy in the literature whether coordinative compounds are headed (see Scalise and Fábregas 2010 for an overview). For instance, for ten Hacken (2000: 359) and Booij (2005: 80) there is no overt formal or semantic head, while for others (e.g. Fabb 1998, Kageyama 2009, 2010) both constituents function as heads, given the fact that their category is not different from that of the whole, and their meanings equally contribute to the interpretation of the compound. Assuming that coordinative compounds are not headless, Bisetto and Scalise (2005) have proposed that they may be distinguished into endocentric and exocentric ones on the basis of their meaning. In this spirit, the Turkish *oyuncu-yönetmen* ‘actor (*oyuncu*)-director (*yönetmen*)’ would be classified as endocentric. On the contrary, the Amdo Tibetan *ri th□□* lit. long-short ‘length’ (Norbu et al. 2000: 163) or the Khmer *kh□h tr□w* lit. wrong-right ‘morality’ (Ourn and Haiman 2000: 484) would be considered as exocentric, since their meaning is of a different nature. However, exocentricity, as defined by Ralli and Andreou (2012), should be determined categorially, in that the formation as a whole belongs to a different grammatical category from the categories of the internal constituents. If this is the case, coordinative V V compounds like the Amdo Tibetan *ri th□□* ‘length’, the Khmer *kh□h tr□w* ‘morality’ and the Turkish *çekyat* ‘sofa-bed’ should be comprised in the exocentric class on categorial terms.

Languages vary with respect to frequency and types of coordinative compounds. Interestingly, while N N and Adj Adj formations are not unknown in

European languages, Greek displays an additional innovative pattern of verbs consisting of two verbs (e.g. *aniγoklino* [aniγ-CM-klino][xiv] 'open (*aniγ*-) - close (*klino*)'). As suggested by Ralli (2009b), this formation pattern did not exist in Ancient Greek but was established around the 13th -14th c. AD. Crucial evidence for this is provided by the fact that V V compounds are absent from a dialect which had been cut off the main body of the Greek speaking world before this period, that is, from Grekanico (Karanastasis 1984-1992), spoken in South Italy (Salento and Calabria). In addition, as far as the frequency of coordinative compounds is concerned, it is important to note that there may be a significant intra-language variation across styles, registers and dialects. For instance, while V V verbal compounds are extremely productive in colloquial Greek, they are rare in a formal style of language. Moreover, they usually abound in Modern Greek dialects, other than Grekanico and the Asia Minor Cappadocian (Dawkins 1916), the latter displaying only few instances of these formations. Therefore, as Wälchli (2005: ch. 6) correctly remarks, investigating the frequency level of coordinative compounds would not be an easy task.

It is not clear in which way coordinative compounds are distributed and used cross-linguistically, that is, geographically, genetically or structurally. Contrary to many appearances, the phenomenon does not seem to be entirely areal or genetic.[xv] For instance, as shown in several studies, East Asian languages (e.g. Chinese (Packard 2000, Li and Thompson 1981), Japanese (Kageyama 2009), Vietnamese (Nguyen 1997), etc.) abound in coordinative compounds, while they are not frequent in the major European languages (e.g. English, German, Romance and Slavic languages). As already said, and contra the claim of areal distribution, all types of coordinative compounds (N N Adj Adj, V V, and some Adv Adv) massively exist in Greek - especially in Modern Greek dialects (Manolessou and Tsolakidis 2009, Ralli 2009b,

2013)- which is genetically distant from the East Asian languages and has never entered in contact with them. Coordinative compounds also constitute a characteristic phenomenon of the Indo-European and genetically parent Tokharian (an extinct Indo-European language, once spoken in the Tarim Basin of present-day northwestern China), as well as in Sanskrit, where, under the name of 'dvandva', they constitute a basic category of compounding in the old Indian grammatical descriptions, as in that of Pānini of 6th c. BC (Katre 1987). Note also that there is a huge difference between the highly coordinative compounding Sanskrit and the weakly coordinative compounding Tamil (Asher 1989), a Dravidian language[xvi], notwithstanding the fact that both Sanskrit and Tamil are languages of the Indian peninsula. A similar situation exists in the Spanish peninsula, where Basque (Hualde and Ortiz de Urbina 2003: 351) with its moderate coordinative compounding contrasts with the extremely weak in this phenomenon Romance Spanish.

In an effort to explain the high frequency of dvandva compounds in Sanskrit, Fanselow (1985: 303) has attributed their occurrence to the rich morphological system of the language. In a similar vein, Ralli (2009b: 59-60) has suggested that language-internal morphological factors have been the cause for the introduction of the V V pattern in late Medieval Greek (although there are 2-3 occurrences already in the 2nd c. AD, as reported by Nicholas and Joseph 2009). She has proposed that the appearance of this innovative pattern has filled an empty slot in the existing patterns of the extremely rich Greek compounding, this pattern being the only one missing from the system.[xvii]

2. Types of coordinative compounds

In this section, some of the major types of coordinative compounds are mentioned, on both semantic and structural grounds. A classification -although not exhaustive- is provided on the basis of both their grammatical category and meaning; it draws heavily on Wälchli (2005), Bauer (2008, 2017), Renner (2008), Manolessou and Tsolakidis (2009), Detmold and Weiss (2012), but does not completely follows any of these. As Wälchli (2005: 136-138) remarks, a semantic classification of compounds can only be approximate, since there are several ways to categorize linguistic phenomena. In his work, coordinative compounds are classified according to the semantic relationship that holds between the parts and the whole. In contrast, the classification adopted in this article follows the semantic relationship between the constituent parts. Illustrative examples are used from languages that are both genetically different and typologically distant. To this purpose, on many occasions, East-Asian examples contrast the Greek ones.

2.1 N N compounds

N N coordinative compounds constitute the most frequent category across languages and constitute the prototypical type of Sanskrit dvandva compounds. In this category, constituents expressing family relationships seem to be a common type.

(2) Greek: jinekopeða [jinek-CM-peð-PL] lit. woman-children ‘women-children’

(Manolessou and Tsolakidis 2009: 27)

Korean: pwu-ca ‘father-son’ (Sohn 1994: 417)

Sanskrit: pitāputrāh ‘father-son’ (Burrow 1955: 218)

Turkish: karı koca lit. wife-husband ‘couple’ (Johanson 1998: 50)

In these compounds, the presence of inflection varies, depending on the language. For instance, in the Turkish example there is no plural marking. On the contrary, the plural marker *-a* is obligatory in Greek, but it is added at the right periphery of the compound, because Greek compounds are morphological formations not allowing any word-internal inflection.

Pluralized are also some Greek coordinative compounds referring to a group of entities (pluralia tantun), which involve countable common nouns:

(3) maxeropiruna [maxer-CM-pirun-PL] lit. knive-forks 'cutlery'

anderosikota [ander-CM-sikot-PL] lit. intestine-livers 'intestines-livers'

Nevertheless, pluralization is not obligatory in N N Greek compounds involving uncountable entities, since the formation may appear either in the singular or in the plural number, depending on the context:

(4)a. avγolemono [avγ-CM-lemon-SG] lit. egg-lemon 'sauce made of egg and lemon'

b. avγolemona [avγ-CM-lemon-PL] lit. egg-lemons 'sauces made of egg and lemon'

Crucially, identity in the grammatical category of the constituents is not always a safe criterion (Criterion 1) for determining coordination in compounds, mainly in N N ones and to a lesser extent in Adj Adj compounds, because in languages, nominal constituents may appear in both determinative and coordinative constructions. For an illustration, compare the Greek compounds under (5):

(5)a. determinative compounds

N N vunokorfi [vun-CM-korfi] 'mountain top'

Adj Adj aksiaγapitos [aksi-aγapitos[xviii]] 'worth (to be) loved'

versus

b. coordinative compounds

N N alatopipero [alat-CM-piper-INFL] lit. salt-pepper 'sauce made of salt and

pepper’

Adj Adj γlikopikros [γlik-CM-pikros] lit. sweet-bitter ‘bittersweet’

In contrast, Criterion 1 applies to V V and Adv Adv compounds, as in the following Greek examples:

(6)a. V V aniγoklino [aniγ-CM-klino] ‘open-close’

b. Adv Adv liγo poli lit. a little much ‘more or less’

A common type in European languages is that of coordinating names, proper, geographical or ethnic (7). It belongs to coordinative compounds as fulfilling the third criterion for defining coordination in compounds:

(7) English: Bosnia-Hercegovina

Hewlett-Packard

French: Alsace-Lorraine

Greek: Paronaksia [Par-CM-Naks-SUFF] ‘(Aegean islands of) Paros (and) Naksos’

Aravoizraelites [Arav-CM-Izrael-SUFF][xx] ‘Arabs-Israelis’

Note that, for Wälchli (2005: 7-8), these formations are not coordinative but fusional as not keeping their separate identities. In this article, they are included in the coordinative category, following Bauer (2008: 5) who states that, when fused together, the entities involved in the specific constructions can still preserve their own identity.

On semantic grounds, N N coordinative compounds can be distinguished into the following frequent categories: additive, the most prototypical for Wälchli (2005: 137-139 (8)), collective (9), antonymic (10) and synonymic (11). Other categories may also be discerned, but they are less frequent and more idiosyncratic, depending on the language (see Wälchli 2005 and Bauer 2008, 2017 for details). Some of these groups may also involve verbs, adjectives and adverbs (see relevant sections). For an illustration, consider the following examples, taken from various sources:

(8) additive

English: mind-brain (Olsen 2001: 317)

Japanese: eda-ha ‘branches-leaves’ (Tsujimura 1996: 152)

Sanskrit: ajāváyah ‘sheep-goats’ (Bauer 2017: 85)

(9) collective

Mandarin: huā-mù lit. flower-tree ‘vegetation’ (Li and Thompson 1981: 50)

Punjabi: bas-kaar lit. bus-car ‘vehicles’ (Bhatia 1993: 320)

Vietnamese: bàn ghê lit. table chair ‘furniture’

It is worth mentioning that, by definition, the group of collective compounds contains only nouns, since its members have a collective referent, the properties of which usually derive (but not exclusively) from the properties of the constituent parts. Many collective compounds may also count as additive.

(10) antonymic

Greek: meronixto [mer-CM-nixt-SG] ‘day-night’ (Ralli 2013: 158)

Malayalam: rapakalum ‘night-day’ (Bauer 2017: 85)

Punjabi: such-dukh ‘happiness-sorrow’ (Bhatia 1993: 320)

Sanskrit: jayaparājaya ‘victory-defeat’ (Bauer 2017: 85)

These compounds could also fall in the specific category of the generalizing relationship because of the addition of two opposite meanings. They are also called ‘alternative’ since the relation holding between the constituents is disjunctive in nature, and sometimes ‘scalar’ because the constituents can represent the extreme poles of some abstract scale (Wälchli 2005: 152-153, Arcodia 2010: 869).

(11) synonymic

Greek (Peloponnesian dialect): arnoprovata [arn-CM-provata] ‘lambs-sheep’

(Manolessou and Tsolakidis 2009: 32)

Lezgian: kar-k'walax lit. job-work 'job, business' (Haspelmath 1993: 108)

Medieval Greek: erotaγapi [erot-aγapi] lit. love-love 'erotic love'

(Manolessou and Tsolakidis 2009: 32-33)

Coordinating synonyms may sometimes be used as a disambiguating strategy or for emphatic purposes (see, for instance, the Medieval Greek example in (11)).

Again, it is often difficult to distinguish synonymic from additive coordinative compounds.

2.2 Adj Adj compounds

A subset of the semantic categories described for N N coordinative compounds can apply to combinations involving coordinated adjectives. The most common ones are the categories of additive (12), antonymic (13) and synonymic (14) compounds:

(12) additive

French: tragicomique 'tragicomical' (Bauer 2008: 12)[xxi]

German: taubstumm 'deaf-dumb' (Paul 1916: 7)

Greek: psiloliγnos [psil-CM-liγnos] 'tall-thin' (Ralli 2013: 163)

(13) antonymic

French: aigre-doux 'bittersweet'

Greek: γlikopikros [γlik-CM-pikros] lit. sweet-bitter 'bittersweet' (Ralli 2013: 158)

Italian: dolceamaro lit. sweet (dolce) - bitter (amaro) 'bittersweet'

Punjabi: garam-sard 'hot cold' (Bhatia 1993: 320)

In the literature, there is a controversy regarding the 'bittersweet' type of compounds, as well as those combining color adjectives (e.g. Greek *asprokokinos*

[aspr-CM-kokinos] lit. white-red ‘white and red’, German *schwarz-weiss* ‘black (and) white’). For Wälchli (2005: 78), they have an intersective meaning and should be excluded from the co-compound category. In contrast, for Bauer (2008: 12-13), these compounds denote simultaneously the qualities of ‘being bitter (or white)’ and of ‘being sweet (or red)’ and thus, they are dvandvas, of the so-called ‘compromise’ type. Other similar examples would be the English *northwest*, the Italian *nord-est* ‘north-east’, the Greek *vorioanatolikos* [vori-CM-anatolikos] ‘north-east’, etc.

(14) Synonymic

Khmer: chap r□hah lit. quick-fast ‘fast’ (Ourn and Haiman 2000: 485)

Punjabi: sabz baraa lit. green-green ‘deep green’ (Bhatia 1993: 323)

Synonymic compounds may often occur in a language when there is a type of diglossia or bilingualism (Bauer 2008: 10). In fact, Standard Modern Greek, which has been built on a long diglossia tradition (see Browning 1969 and Horrocks 2010 for details), and where ancient words are generally regarded as highly prestigious, displays cases of this type of adjectival compounds. Consider, for instance, the example *melanomavros* [melan-CM-mavros] lit. black-black ‘pitch black’, where the first member (*melan-*) is an Ancient Greek stem while the second is a common Greek adjective (*mavros*).

Interestingly, many Adj Adj coordinative compounds containing ethnic names, scientific terms, or even common words (15) are either neoclassical or pseudo-neoclassical formations created analogically to neoclassical ones. They are particularly common in European languages, where they can be used as attributes of a noun base, as the following examples depict:

(15) French: (guerre) franco-allemande

‘Franco-German (war)’

(zone) artisanoindustriale

'craftsman-industrial (area)'

(union) économico-monetaire

'economic-monetary (union)

Italian: (guerra) italo-greca

'Italo-Greek (war)'

(ufficio) medico-legale

'medical-legal (office)'

(bandiera) bianco-azzura

'white-blue (flag)

Greek: elinoitalikos (polemos)

lit. Greco-Italian (war) 'Italo-Greek war'

ximioθerapeftici (meθοδος)

'chemotherapeutic method'

cianolefki (simea)

lit. light.blue-white (flag) 'white-blue flag'

Most of these cases are built on an Ancient Greek pattern (Adrados 2005, Ralli 2013, to appear), whose first constituent is a stem (not necessarily Greek) ending in the Greek linking element *-o-* , the latter being inherited from Neo-Latin around the 17th century (at least for Italian), as pointed out by Grossmann and Rainer 2009, and the second constituent is a native or a non-native item.[xxii]

Closely associated to the absence of head or double headedness (see section 1.3) is the question of the order of the compound components (see also section 2.3). In the most transparent cases of coordinative compounds (non-lexicalized ones), the

constituent order should be relatively free. In fact, this is the case of many Adj Adj formations in Greek, such as *stenomakros* [sten-CM-makr-INFL] 'narrow-long' or of those involving color names, such as *mavroaspros* [mavr-CM-aspr-INFL] 'black-white', which freely alternate with *makrostenos* 'long-narrow' and *aspromavros* 'white-black'. However, in other cases of fully compositional compounds, the order seems to be fixed. Preventing reversal of the order of constituents can be due to pragmatics or lexicalization. Nevertheless, phonology can also play a role: according to Ralli (2013: 168) the inflexible order in many Greek compounds is due to phonological reasons. For instance, native speakers show a preference for an order where the shorter element precedes the longer one (e.g. *anglojermanos* [angl-CM-jermanos] 'English (*angl-*) - German (*jermanos*)', *kutoponiros* [kut-CM-poniros] 'silly (*kut-*) - cunning (*poniros*)' but **jermanoanglos* 'German-English', **ponirokutos* 'cunning-silly').

2.3 V V compounds

Coordinative compounds consisting of verbs do not represent a single process, but combine verbs that are in a natural coordination in Wälchli's (2005: 5) sense, that is, verbs that are closely related in meaning, such as in the following examples:

(16) Greek: benovjeno [ben-CM-vjeno] 'go.in-go.out' (Ralli 2009b, 2013)

Hungarian: súg-búg 'whisper-murmur' (Kenesei et al. 1998)

V V coordinative compounds frequently occur in East and Southeast Asian languages like Mandarin Chinese, Japanese, Korean and Vietnamese:

(17) Chinese: bian-bie 'distinguish-differentiate' (Packard 2000)

Japanese: naki-sakebu 'cry-scream' (Kageyama 2009)

Korean: olu-naylita 'ascend-descend' (Sohn 1999)

Vietnamese: po-salpita lit. see-look.about 'look after' (Nguyen 1997)

According to Wälchli (2005) the frequency of these formations diminishes as we move westward, and there is a huge difference between the highly V V co-compounding languages of East and Southeast Asia and the mainly weakly co-compounding languages of Europe.[xxiii] Thus, the obvious question that could be raised is whether there is an areal distribution with respect to V V constructions. In fact, while nominal coordinative compounds are not unknown in Indo-European languages, V V ones are not usually attested, with the exception of Greek (Ralli 2009b) and certain Russian dialects (Wälchli 2005). As already mentioned in section 1.3, the productivity of Greek V V coordinative compounds constitutes an innovation in the language, since these constructions did not exist in Ancient Greek: they were absent from both Mycenaean (around 14th - 13th c. BC, Meissner and Tribulato 2002) and Classical Greek (5th – 4th c. BC, Tribulato 2015), although N N and Adj Adj formations were not unknown.

Note that, in the literature, some English examples, such as *stir-fry*, *spell-check*, *freeze-dry*, *sleep-walk*, etc., have been considered to constitute V V coordinative compounds (Trask 1993, Bussmann 2002, Renner 2008). However, the issue of their productively built structure remains controversial, and several studies have ignored them (e.g. Wald and Besserman 2002). Although Renner (2008: 611) accepts them as coordinate compounds, he recognizes the difficulties which arise with respect to their status, in that some examples (e.g. *cook-chill*, *push-pull*) are institutionalized as deadjectival noun compounds, and in certain cases, the verbal category of their first member is not always obvious. As stated by Kiparsky (2009), most of these compounds do not display a coordinative association between the two verbs, but rather a subordination relationship. Thus, Kiparsky (2009) excludes them from the list of V V coordinative compounds. Moreover, in several morphological analyses, many

examples (e.g. *spell-check)* are not analyzed as primary formations, but as the products of conversion or back formation, created on the basis of nominal compounds (see, among others, Marchand 1969). In the same vein, the few instances that are attested in German (e.g. *kennenlernen* 'get to know', *spazierengehen* 'go for a walk') are characterized by Becker (1992: 20) as 'improper' formations', in the sense that they do not play a central role in German compounding. Similarly, for Oniga (1992: 103), the few Latin V V occurrences containing *facere* 'to do' at the right-hand position (e.g. *calefacere* 'make hot') are all subordinative, where the first verb is subordinated to the second.

An intriguing question regarding V V formations is the order of the compound components, which is generally fixed. Consider the following Greek examples:

(18)a. aniγoklino [aniγ-CM-klino] versus *klinaniγo [klin-aniγo]

'open-close' 'close-open'

b. troγopino [troγ-CM-pino] versus *pinotroγo [pin-CM-troγo]

'eat-drink' 'drink-eat'

Ralli (2013: 169-170) has suggested that it may be the case that for native speakers, the meaning of the first verb is considered to prevail over the other. According to this hypothesis *troγo* 'eat' (18b) may be seen by Greek speakers as having a predominant role over drinking (*pino*). Similar considerations exist for other languages with V V coordinative compounds. For instance, with respect to the order of verbal constituents in Chinese V V constructions, Li (1993) has claimed that it is established on the basis of temporal iconicity, reflecting precedence of different events. The same suggestion regarding temporal iconicity is also made by Andriotis (1960) and Kiparsky (2009) to account for the fact that Greek formations like **klinanigo* (18a) 'close-open' are not acceptable, since 'closing something' presupposes that the object which is going

to be closed has to be open first. However, Greek displays certain counterexamples, such as *alonotherizo* [alon-CM-θerizo] 'thresh-reap' and *pandrevaravoniazo* [pandrev-aravoniazo] 'marry-engage', where iconicity would predict the reverse. And in fact, on the basis of Japanese data, Fukushima (2005: 572) has shown that temporal iconicity alone is not a sufficient factor for explaining the fixed order of verbs in V V coordinative compounds. Thus, the fixed order of the compound internal constituents may be due to some kind of conventionalization, which could be typical of the order that a language prefers for coordinative compounding.

With respect to semantics, the two coordinated verbs express compatible (often synonymous) or opposite meanings and can be classified into four groups, on the basis of the relationship that holds between the first and the second verb: additive (19), synonymic (20), antonymic (21), while, although rare, one may also find and generalizing ones (e.g. Greek *ksimerovraδjazome* [ksimer(on)-CM-vraδjazome] lit. be overtaken by night - be overtaken by day 'spend all time'). Most of the times, it is difficult to distinguish additive V V compounds from synonymic ones (Wälchli 2005: 144).

(19) additive

Greek: zimomajirevo [zim(on)[xxiv]-CM-majirevo] 'knead-cook' (Ralli 2009b: 57)

Japanese: naki-sakebu 'cry-shout' (Kageyama 1999: 301)

(20) synonymic

Greek: kliδomadalono [kliδ(on)-CM-madalono] 'lock-bolt' (Ralli 2009b: 57)

Korean: olk-mayta lit. bind-tie 'fasten' (Sohn 1994: 425)

If the two verbs are synonymous the compound denotes the joint activity over some period and, in most cases, with a notion of emphasis (Kiparsky 2009).

Compounds involving antonymic verbs usually express an iterative alternation, and occur more often than the constructions whose constituents are of compatible meanings:

(21) antonymic

Greek: pijenoerxome [pijen-CM-erxome] lit. go-come ‘come (and) go’

(Ralli 2009b: 57)

2.4 Adv Adv compounds

Coordination of adverbs in compounding is not very frequent cross-linguistically. Wälchli (2005: 139-141) considers most of them to belong to the generalizing type. Consider the following indicative examples:

(22) Greek: bros piso lit. in front of - back ‘back and forth’

pano kato lit. up - down ‘up and down, approximately’

simera avrio lit. today - tomorrow ‘today and tomorrow’

arγa γriγora lit. late - soon ‘sooner or later’

Khalka: end tend lit. here - there ‘here and there’ (Wälchli 2005: 140)

Mandarin: za→o-wa→n lit. early - late ‘sooner or later’ (Li and Thompson 1981: 82)

Mordvin: t’ese-toso lit. here - there ‘everywhere’ (Wälchli 2005: 139)

verðev-alov lit. up - down ‘up (and) down’ (Wälchli 2005: 140)

According to Wälchli (2005; 139) the generalizing type seems to be the most widespread across languages, existing even in those where coordinative compounds are not easily found in texts, for instance, in Tagalog.

3. Epilogue

In this article, coordinative compounds have been defined as those word forms the constituents of which share the same grammatical category, involve coordination and semantically are in a hyperonymic or hyponymic relation. The major problems concerning their definition and delimitation have been discussed and controversial cases, such as that of appositional compounds, were tackled but not extensively treated. Various issues concerning the structure and semantics of coordinative compounds have been examined, such as headedness, the order of constituents and compositionality. Their frequency, variation and distribution across languages are also tackled and a classification was provided on both structural and semantic grounds.

List of languages

Amdo Tibetan

Ancient Greek

Basque

Dutch

English

French

German

Hellenistic Greek

Hungarian

Italian

Japanese

Khalka

Khmer

Korean

Latin

Lezgian

Malayalam

Mandarin Chinese

Medieval Greek

Modern Greek

Mordvin

Mycenaean Greek

Punjabi

Russian

Sanskrit

Spanish

Tamil

Tok Pisin

Turkish

Vietnamese

Further reading

Arcodia, Giorgio, Nicola Grandi, Fabio Montermini. 2009. Hierarchical NN compounds in a cross-linguistic perspective. *Rivista di Linguistica* 21 (1): 11-33.

Arcodia, Giorgio Francesco, Grandi, Nicola and Bernhard Wälchli. 2010. Coordination in compounding. In Sergio Scalise and Irene Vogel (eds.), *Cross-disciplinary issues in compounding*, 177-198. Amsterdam: John Benjamins.

Bauer, Laurie. 2008. Dvandvas. *Word Structure* 1: 1-20.

Bauer, Laurie. 2017. *Compounds and compounding.* Cambridge: Cambridge University Press.

Olsen, Susan. 2001. Copulative compounds: a closer look at the intereface between syntax and morphology. In Geert Booij and Jaap van Marle (eds.) *Yearbook of Morphology* 2000, 279-320. Dordrecht: Kluwer Academic Publishers.

Olsen, Susan. 2015. Composition. In Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen and Franz Rainer (eds.), *Word formation: An international handbook of the languages of Europe*, vol II, 364-385. Berlin: Walter de Gruyter.

Ralli, Angela. 2009b. Modern Greek V V dvandva compounds: a linguistic innovation in the history of the Indo-European languages. *Word Structure* 2(1): 49-68.

Ralli, Angela. 2013. *Compounding in Modern Greek*. Dordrecht: Springer.

Renner, Vincent. 2008. On the semantics of English compounds. *English Studies* 89 (5): 606-613.

Wälchli, Bernhard. 2005. *Co-compounds and Natural Coordination*. Oxford: Oxford University Press.

References

Altmann, Hans and Silke Kemmerling. 2000. *Wortbildung fürs Examen*. Wiesbaden: Westdeutscher Verlag.

Adrados, Francisco Rodriguez. 2005. *A history of the Greek language. From its origins to the present.* Leiden: Brill.

Andriotis, Nikolaos. 1960. Ta parataktika rimatika sintheta stin elliniki glossa [Coordinative verbal compounds in the Greek language]. *In Memoriam of Manolis Triantaphyllidis*, 43-61. Thessaloniki: University of Thessaloniki.

Arcodia, Giorgio Francesco. 2010. Coordinating compounds. *Language and Linguistics Compass* 4 (9): 863-873.

Arcodia, Giorgio, Nicola Grandi, Fabio Montermini. 2009. Hierarchical NN compounds in a cross-linguistic perspective. *Rivista di Linguistica* 21 (1): 11-33.

Arcodia, Giorgio Francesco, Grandi, Nicola and Bernhard Wälchli. 2010. Coordination in compounding. In Sergio Scalise and Irene Vogel (eds.), *Cross-disciplinary issues in compounding*, 177-198. Amsterdam: John Benjamins.

Asher, Ronald. 1989. *Tamil*. London: Routledge.

Bauer, Laurie. 1978. *The grammar of nominal compounding with special reference in Danish, English and French*. Odense: Odense University Press.

Bauer, Laurie. 2008. Dvandvas. *Word Structure* 1: 1-20.

Bauer, Laurie. 2011. Typology of compounds. In Rochelle Lieber and Pavol Štekauer (eds.), *The Oxford Handbook of Compounding*, 343-356. Oxford: Oxford University Press.

Bauer, Laurie. 2017. *Compounds and compounding.* Cambridge: Cambridge University Press.

Becker, Thomas. 1992. Compounding in German. *Rivista di Linguistica* 4 (1): 5-35.

Bhatia, Tej, K. 1993. *Punjabi.* London: Routledge.

Bisetto, Antonietta and Sergio Scalise. 2005.The classification of compounds. *Lingue e Linguaggio* 4 (2): 319-332.

Booij, Geert. 2005. *The grammar of words*. Oxford: Oxford University Press.

Booij, Geert. 2017. Inheritance and motivation in construction morphology. In Gisborne Nikolas and Andrew Hippisley (eds.), *Defaults in morphological theory*, 18-39. Oxford: Oxford University Press.

Breindl, Eva and Maria Thurmair. 1992. Der Fürstbischof im Hosenrock. *Deutsche Sprache* 1: 32-62.

Browning, Robert. 1969. *Medieval and Modern Greek*. London: Hutchinson University Library.

Burrow, Thomas. 1955. *The Sanskrit language*. London: Faber and Faber.

Bussmann, Hadumod 2002. *Lexikon der Sprachwissenschaft*. Stuttgart: Kröner.

Dawkins, Richard. *Modern Greek in Asia Minor*. Cambridge: Cambridge University Press.

Erben, Johannes. 1983. *Einführung in die deutsche Wortbildungslehre*. Berlin: Erich Schmidt Verlag.

Eichinger, Ludwig. 2000. *Deutsche Wörtbildung*. *Eine Einführung*. Tübingen: Niemeyer.

Fabb, Nigel. 1998. Compounding. In Andrew Spencer and Arnold M. Zwicky (eds.), *Handbook of morphology*, 66-83. Oxford: Blackwell.

Fanselaw, Gilbert. 1985. What is a possible complex word. In Jindrich Toman (ed.), *Studies in German grammar*, 289-318. Dordrecht: Foris.

Fleischer, Wolfgang and Irmhild Barz. 1995. *Wortbildung der deutschen Gegenwartssprache*. Tübingen: Niemeyer.

Dawkins, Richard. 1916. *Modern Greek in Asia Minor*. Cambridge: Cambridge University Press.

Detmold, Gaye Çinkiliç and Helmut Weiss. 2012. Kopulativkomposita. *Linguistische Berichte* 232: 417-435.

Göksel, Asli. 2009. Compounds in Turkish. *Lingue e Linguaggio* 2: 213-236.

Grossmann, Maria and Franz Rainer. 2009. Italian adjective-adjective compounds: between morphology and syntax. *Italian Journal of Linguistics* 21 (1): 71-96.

Haspelmath, Martin. 1993. *A grammar of Lezgian*. Berlin: Mouton de Gruyter.

Haspelmath, Martin. 2002. *Understanding morphology*. London: Arnold.

Haspelmath, Martin. 2004. Coordinating constructions: an overview. In Martin Haspelmath (ed.), *Coordinating constructions*. Amsterdam: John Benjamins, 3-39.

Horrocks, Geoffrey. 2010. *Greek. A history of the language and its speakers*. London: Wiley Blackwell.

Hualde, José Ignacio and Jon Ortiz de Urbina. 2003. *A grammar of Basque*. Berlin: Mouton de Gruyter.

Jespersen, Otto. 1942. *A Modern English grammar on historical principles*. 6: *Morphology*. Copenhagen: Munksgaard.

Johanson, Lars. 1998. The structure of Turkic. In Lars Johanson and Eva Agnes Csato (eds), *The Turkic languages*, 30-66. London: Routledge.

Kageyama, Taro. 1999. Word formation. In Natsuko Tsujimura (ed.), *The handbook of Japanese linguistics*, 297-325. Malden MA and Oxford: Blackwell.

Kageyama, Taro. 2009. Isolate: Japanese. In Rochelle Lieber and Pavol Štekauer (eds.), *The Oxford Handbook of Compounding*, 512-526. Oxford: Oxford University Press.

Kageyama, Taro. 2010.Variation between endocentric and exocentric word structures. *Lingua* 120 (10): 2405-2423.

Karanastasis, Anastasios. 1984-1992. *Istorikon leksikon ton ellinikon idiomaton tis Kato Italias* [Historical Dictionary of the Greek dialects of South Italy]. Athens: Academy of Athens.

Katamba, Francis. 1993. *Morphology*. Basingstoke: Macmillan.

Katre, Sumitra Mangesh. 1987. *Astādhyāyī of Pānini*. Austin: University of Texas.

Kiparsky, Paul 2009. Verbal co-compounds and subcompounds in Greek. *MIT Working Papers in Linguistics* 57: 187-195.

Kornfilt, Jaklin. 1997. Turkish. London: Routledge.

Kriaras, Emmanouel 1969-2016. *Leksiko tis Ellinikis Dimodous Grammateias. 1100-1669* [Dictionary of the Greek vernacular literary texts], ed. by Ioannis Kazazis. Thessaloniki : Centre of the Greek Language.

Lampe, William Hugo 1961. *A patristic Greek lexicon*. Oxford: Oxford Clarendon Press.

Lang, Ewald. 1984. *The semantics of coordination*. Amsterdam: John Benjamins.

Li, Yafei 1993. Structural head and aspectuality. *Language* 69: 480–504.

Li, Charles and Sandra Thompson. 1981. *Mandarin Chinese. A functional reference grammar*. Berkeley: University of California Press.

Lieber, Rochelle. 2005. English word-formation processes: observations, issues and thoughts of future research. In Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word Formation*, 375-427. Dordrecht: Springer.

Manolessou, Io and Symeon Tsolakidis. 2009. Greek coordinated compounds: synchrony and diachrony. *Patras Working Papers in Linguistics* 1: 23-39.

Marchand, Hans. 1969. *The categories and types of present-day English word-formation*. München: Beck.

Masini, Francesca and Anna Thornton 2008. Italian V-e-V lexical constructions. In Angela Ralli, Geert Booij, Sergio Scalie and Athanasios Karasimos (eds.), *On-line Proceedings of the 6th Mediterranean Morphology Meeting*. http://mmm.lis.upatras.gr/index.php/mmm/article/view/2409

Meissner, Torsten and Olga Tribulato 2002. Nominal composition in Mycenaean Greek. *Transactions of the Philological Society* 100 (3): 289–330.

Mühlhäusler, Peter. 1979. *Growth and structure of the lexicon in New Guinea pidgin*. Camberra: Australian National University.

Neuss, Elmar. 1981. Kopulativkomposita. *Sprachwissenschaft* 6: 31-68.

Nicholas, Nick and Brian Joseph. 2009. Verbal dvandvas in Modern Greek. *MIT Working Papers in Linguistics* 57: 171-186.

Norbu, Kalsang, Karl A. Peet, dPal Idan bKra shis and Kevin stuart 2000. *Modern Amdo Tibetan*. Lewiston, NY: Mellen.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech and Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London: Longman.

Olsen, Susan. 2000. Composition. In Geert Booij, Christian Lehmann and Joachim Mugdan (eds.), *Morphologie – Morphology*, 897-916. Berlin: Mouton de Gruyter.

Olsen, Susan. 2001. Copulative compounds: a closer look at the intereface between syntax and morphology. In Geert Booij and Jaap van Marle (eds.) *Yearbook of Morphology* 2000, 279-320. Dordrecht: Kluwer Academic Publishers.

Olsen, Susan. 2014. Coordinative structures in morphology. In Antonio Machicao y Priemer, Andreas Nolda and Athina Sioupi (eds.) *Zwischen Kern und Peripherie*. *Untersuchungen zu Randbereichen in Sprache und Grammatik*, 269-286. Berlin: Mouton de Gruyter.

Olsen, Susan. 2015. Composition. In Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen and Franz Rainer (eds.), *Word formation: An international handbook of the languages of Europe*, vol II, 364-385. Berlin: Walter de Gruyter.

Oniga, Renato 1992. Compounding in Latin. *Rivista di Linguistica* 4(1): 97-116.

Ourn, Nocurng and John Haiman. 2000. Symmetrical compounds in Khmer. *Studies in Language* 24: 483-514.

Packard, Jerome. 2000. *The morphology of Chinese. A linguistic and cognitive approach*. Cambridge: Cambridge University Press.

Paul, Hermann. 1916. *Deutsche Grammatik*. Halle a.S: Niemeyer.

Petropoulou, Evanthia. 2011. *English and Greek neoclassical compounds*. Ph.D. Dissertation, University of Patras.

Plag, Ingo. 2003. *Word-formation in English*. Cambridge: Cambridge University Press.

Ralli, Angela. 2005. *Morfologia* [Morphology]. Athens: Patakis.

Ralli, Angela. 2008a. Compound Markers and Parametric Variation. *Linguistic Typology and Universals (STUF)* 61: 19-38.

Ralli, Angela. 2009a. Isolate Hellenic: Modern Greek. In Rochelle Lieber and Pavol Štekauer (eds.), *The Oxford Handbook of Compounding*, 453-464. Oxford: Oxford University Press.

Ralli, Angela. 2009b. Modern Greek V V dvandva compounds: a linguistic innovation in the history of the Indo-European languages. *Word Structure* 2(1): 49-68.

Ralli, Angela. 2013. *Compounding in Modern Greek*. Dordrecht: Springer.

Ralli, Angela. To appear. Greek in contact with Romance. In *Oxford Research Encyclopedia of Linguistics*. Oxford: Oxford University Press.

Ralli, Angela and Athanasios Karasimos. 2009. The Bare-stem constraint in Greek compound formation. *Gengo Kenkyu* 135: 29-48.

Ralli, Angela and Marios Andreou. 2012. Revisiting exocentricity in compounding: Evidence from Greek and Cypriot. In Ferenc Kiefer, Maria Ladani and Peter Siptar (eds.), *Current Issues in Morphological Theory*, 65-82. Amsterdam: John Benjamins.

Renner, Vincent. 2008. On the semantics of English compounds. *English Studies* 89 (5): 606-613.

Renner, Vincent. 2013. On English *cum*, a borrowed coordinator turned complex-compound marker. *Morphology* 23: 57-66.

Renner, Vincent and Jesús Fernandez-Dominguez. 2011.Coordinate compounding in English and Spanish. *Poznán Studies in Contemporary Linguistics* 47 (4): 873-883.

Scalise, Sergio and Antonietta Bisetto. 2009. The classification of compounds. In Rochelle Lieber and Pavol Štekauer (eds.), *The Oxford Handbook of Compounding*, 49-82. Oxford: Oxford University Press.

Scalise, Sergio and Emiliano Guevara. 2006. Exocentric compounding in a typological framework. *Lingue e Linguaggio* 2: 185-206.

Sohn, Ho-min. 1994. *Korean*. London: Routledge.

Søgaard, Anders. 2005. Compounding theories and linguistic diversity. In Zygmunt Frajzyngier, Adam Hodges and David Rood (eds.), *Linguistic diversity and Language Theories*, 319-337. Amsterdam: John Bejamins.

Ten Hacken, Pius. 2000. Derivation and compounding. In Geert Booij, Christian Lehmann and Joachim Mugdan (eds.), *Morphologie – Morphology*, 349-360. Berlin: Mouton de Gruyter.

Thornton, Anna. 2009. Italian verb reduplication between syntax and the lexicon. *Italian Journal of Linguistics* 21 (1): 235-261.

Trask, Robert L. 1993. *A Dictionary of grammatical terms in linguistics*. London: Routledge.

Tribulato, Olga. 2015. *Ancient-Greek verb-initial compounds*. Berlin: Walter de Gruyter.

Tsujimura, Natsuko. 1996. *An introduction to Japanese linguistics*. Malden, MA: Blackwell.

Wackernagel, Jacob. 1905. Altindische Grammatik II. 1. Einleitung zur Wörtlehre. Nominalkomposition. Göttingen: Vandenhoeck and Ruprecht.

Wälchli, Bernhard. 2005. *Co-compounds and Natural Coordination*. Oxford: Oxford University Press.

Wald, Benji and Lawrence Besserman. 2002. The emergence of the verb-verb compound in twentieth century English and twentieth century linguistics. In Donka Minkova and Robert Stockwell (eds.), *Studies in the History of the English Language. A Millennial Perspective*, 417-447. Berlin: Mouton de Gruyter.

Whitney, William Dwight. 1889. *Sanskrit grammar*. Leipzig: Breitkopf and Härtel.

Acknowledgements

I owe sincere thanks to Dr. Io Manolessou and two anonymous reviewers for valuable comments and criticisms on an earlier version of this article. All errors that remain are mine alone.

Notes

[i] According to Haspelmath (2004: 37) '[I]t remains difficult to operationalize the basic undisputed intuition that coordination involves symmetry, while subordination involves asymmetry'.

[ii] In many languages, the lack of a coordinator between the members of compounds is probably due to the morphological nature of these constructions, which does not allow the presence of syntactically-relevant elements word internally. However, examples of coordinators inside compounds are not absent. See, for instance the presence of the coordination conjunction *kai* in some rare Ancient Greek compounds (e.g. *kalokagathos* [kalo-k(ai)$_{COORD}$-agathos] 'nice and good') or that of the Latin *cum* in present-day English constructions such as *poet cum philosopher*, where, as mentioned by Renner (2013), *cum* has lost its original status and should be considered as a hybrid syntactic-morphological unit, functioning as a compound marker. Moreover, Italian has combinations of two verbs involving a conjunction, such as *tira e molla* lit. pull and let_go 'playing fast and loose', *va e vieni* lit. go and come 'going and coming', *usa e getta* lit. use and throw away 'disposable'. These V-e-V structures are used as nouns or adjectives and have been analyzed as complex lexemes by Masini and Thornton (2008) and Thornton (2009). They share some properties with Italian compound nouns involving the combination of two verbs (e.g. *saliscendi* lit. go_up.go_down 'latch', *bagnasciuga* lit. wash-dry 'water-line, foreshore'), as for instance, a recurrent semantic relation between the internal constituents. However, they do not constitute clear cases of V V compounds and Masini and Thornton (p.182) admit that at least a number of them should be treated as nominalizations of virtual serial verbs". See also endnote xxiii for the Italian V V combinations.

[iii] The term "Greek" will denote Modern Greek in general. "Ancient Greek" will refer to the language before our era, Hellenistic Koine to the language of the Hellenistic period (ca. 3rdc. BC – 3rd c. AD), early and late Medieval Greek to that of the Byzantine period (till the mid-15th c.).

[iv] The compound-internal *-o-* in Greek compounds is a linking element, considered to be a compound marker. It is compulsory in all compounds whose first constituent is a stem, but it is deleted when the second constituent begins with a vowel (see Ralli 2008, 2013 for details).

[v] Note that the Sanskrit word involves reduplication, and word reduplications in Sanskrit (the so-called 'āmredita') had been considered as subparts of dvandvas (Wackernagel 1905: 142-148, and more recently Bauer 2008: 2). However, I agree with Wälchli (2005: 167) who has suggested that full reduplication does not involve coordination, in the narrow understanding of the term, and does not derive from coordination diachronically. Moreover, full reduplication can be very common in languages which do not display coordinative compounding. He suggests that the two notions should be kept distinct.

[vi] Although already employed by Bhatia (1993), the term 'co-compound' was not in common use in linguistics until the seminal work of Wälchli (2005: 1), who defines co-compounds as those formations whose parts are in a natural coordination relation.

[vii] Bauer (2008: 17) also excludes them from his description of dvandvas, arguing that "the meaning of numbers arises from the demands of the system of which they are part of, while the dvandvas… present an expression-type whose prime *raison d'être* is external to the systems in which they are found"

[viii] Note, however, that *girl friend* is considered to belong to the dvandva type by Katamba (1993) and Fabb (1998).

[ix] Greek constitutes an exception. It displays an extensively developed coordinative compounding, which productively covers verbs, nouns and adjectives (see Ralli 2013 for details).

[x] For Marchand (1969: 124), the only structural difference between English determinative and coordinative compounds is the position of stress. However, in the genetically-parent Greek (both languages are Indo-European), there may be other differences in structure, for instance, a flexible order of constituents characterizing Adj Adj compounds (see section 2.2).

[xi] Greek inflection is noted only when its form differs from that of the second constituent when used in isolation.

[xii] Ancient Greek words are transcribed in the Ancient Greek pronunciation, while Modern Greek ones in todays' pronunciation. Note also that the word final *-os* of Ancient Greek, or the correspondent *-o* in Modern Greek, are inflectional endings encompassing the features of case and number. They are different from those of the right-hand compound members, when taken separately.

[xiii] *-mAk* is the inflectional ending of the Turkish infinitive, which takes the form of *-mak* or *-mek*, depending on the operation of vowel harmony.

[xiv] Greek V V coordinative compounds share the same inflectional ending with the second verb constituent, contrary to N N and Adj Adj formations, where the inflection of the compound may differ from that of the second constituent. See Ralli (2009b, 2013) for more details on the relation between compounding and inflection.

[xv] However, Wälchli (2005) has shown that there is a continuous diminishment of coordinative compounding from East to West throughout Eurasia.

[xvi] Asher (1989) reports only few rare examples in Tamil.

[xvii] As further noted by Nicholas and Joseph (2009), their introduction had been facilitated (if not triggered) by the existence of coordinative compounds belonging to other grammatical categories (e.g. N N ones), since Ancient Greek, as well as to that of some rare examples of nominal compounds consisting of two deverbal nouns in Hellenistic Koine (e.g. the example *auksomeiōsis* [auks(ēsis)-CM-meiōsis] 'increase - decrease' of the Hellenistic period) which gave rise to two technical terms, *auksomeiō* 'increase-decrease' (< *auks(anō)* 'increase' *meiō* 'decrease') and *prosthaphairō* 'add-subtract' (< *pros(ti)th(ēmi)* 'add' + *aphairō* ' subtract'), attested in a mathematical treatise of the Hellenistic period (2nd c. AD, Claudius Ptolemy, *Almagest* 1,1,500 and 1,1 528). For more details on Greek V V coordinative compounds, see section 2.3 of this article and Ralli (2009b).

[xviii] See endnote 4 for the absence of the compound marker and endnote 11 for glossing inflection in Greek compounds.

[xx] *-ia* and *-ites* involve a combination of derivational and inflectional suffixes. In the specific compounds, they provide the noun category, the feminine gender and the nominative/accusative singular (*-ia*) or the masculine gender and the nominative/accusative plural (*-ites*) (see Ralli 2005 for details).

[xxi] *Tragicomique* has been derived by haplology from the neoclassical formation *tragicocomique* 'tragique.comique'. Haplology is not rare in Greek-based compounds, like *tragicomique*, involving two similar consecutive syllables. As pointed out by an anonymous reviewer, this compound could also belong to the antonymic group.

[xxii] With respect to the Italian formations, the reader is referred to a thorough study by Grossmann and Rainer (2009), where several issues regarding the structure and the use of these items are examined, among which, the status of the compound internal *-o-*, which remains controversial in the literature. For example, Booij (2005) has proposed that it should not be treated as an independent linking element in neoclassical or pseudo-neoclassical formations of languages other than Greek, but could be reanalyzed as part of the first constituent. On the contrary, Petropoulou (2011) has suggested that for speakers knowing Greek, *-o-* can be considered as a separate linking vowel.

[xxiii] As observed by an anonymous reviewer, Italian displays a number of V V constructions, the pattern of which dates from at least the 14th century, such as *dormiveglia* lit. sleep-wake 'drowse', *vinciperdi* lit. win-lose 'kind of game, *battisoffia* lit. beat-blow 'palpitations' (Thornton 2009). However, these constructions are not like the V V ones described in section 2.3 because their input lexemes originate from imperative forms and their output category is not a verb but a noun, more precisely an action noun.

[xxiv] *-on-* put in parenthesis is a derivational suffix which is erased due to the *Bare-stem constraint* (Ralli and Karasimos 2009), according to which Greek compounds require the first stem constituents of their compounds to be as bare as possible.