Verbal Dvandvas in Modern Greek

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While Greek is rich in compounds, one familiar type from Indo-European, namely dvandva compounds meaning 'X and Y', is essentially nonexistent in Ancient Greek. However, such compounds start occurring in post-Classical Greek and are fairly productive by early Modern Greek. The innovative dvandvas involve nouns, a type well attested elsewhere in Indo-European, but also verbs, such as *aniɣo-klino* 'I open and close', a rarer and possibly unique type within Indo-European. We here place Modern Greek verbal dvandvas in the larger context of verbal combinations (ranging from true complementation to serialization), arguing that these are true compounds, created in the morphological component. We classify them by their morphology and their semantics and offer some remarks on their historical development.

1. Introduction

Modern Greek shows a particular construct, which can at first be neutrally termed a "composite", in which multiple verbs occur, as exemplified in (1): [1]

(1) aniɣoklini 'he opens and closes'
   pijenoerxete 'he goes and comes, he goes to and fro'.

These composites superficially parallel other X + X composites, such as those in (2):

(2)   a.   Noun + Noun:

    andro-jino 'couple' (literally: "man – woman" (or at least the roots thereof)
    maxero-piruna 'cutlery' (literally: "knife – fork")

   b.   Preverb + Preverb, attached to a verb:

    sim-peri-ferome 'behave' (cf. *peri-ferome* 'hang around', *ferome* 'behave')
    ip-ek-misθono 'sublet' (cf. *ek-misθono* 'to rent out', *misθono* 'hire')

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[1] Following the lead of Kiparsky (this volume), we cite these forms in the third person singular (3SG) to avoid potential analytic confusion that the usual citation form in Greek, the first person singular (1SG), might occasion (i.e. *aniɣoklino* looks like it has 1SG inflection on the first member). See below on inflection in these forms.

c.   "incorporated" adverbs (Rivero 1992, Smirniotopoulos & Joseph 1998):

ksana-poli-troγo 'I eat greatly again' (cf. *poli-troγo* 'I eat greatly', *ksana-troγo* 'I eat again')

They thus appear to offer a particular instance of a more widely-instantiated recursive type of word formation.

These V-V composites turn out to be a mixed bag semantically and possibly morphologically, yet at the same time it seems as if it ought to be possible to unify them under a single rubric. Interestingly, too, from a family-typological standpoint, they are a rare type among Indo-European languages: N-N composites as coordinative compounds are common in Sanskrit (so-called 'dvandva' compounds (e.g., *mitra-varuṇa-* 'Mitra and Varuna") but V-V composites are not at all common across Indo-European; English offers examples such as *blow-dry* or *kick-box* (see Wälchli 2005 for examples and discussion) but some aspects of the Greek type may make them unique in the family. Furthermore, and perhaps relatedly, as far as Greek is concerned, V-V composites are nonexistent in Ancient Greek and represent a post-Classical innovation (so Jannaris 1897: §1157).

Therefore, these V-V composites display some interesting properties that invite careful examination. Some key questions concerning these composites are those in (3):

(3)   a. What exactly are they?
        b. What relation do they have to other multi-verb combinations?
        c. What might have motivated their appearance in post-Classical Greek?

Accordingly, in this paper we attempt to answer these questions, or to at least provide a start toward answering them fully. We thus enumerate the relevant properties these composites show and characterize these multi-verb combinations phonologically, morphologically, and semantically, offering an analysis of their formation along with some thoughts on their historical development.

2. Some Relevant Properties

First, we note that phonologically and morphologically, these "composites" are true compounds. They have a single stress (thus, *pijenoérxete* not **pijénoérxete*) and moreover, they have a single inflection site, on the right edge of the second member (thus 2SG *pijeno-érxese* not **pijenis-érxese*. Further, the occurrence of the linking vowel *-o-* (*pijen-o-érxese*) is exactly what is found in other modern compounds, e.g. Verb-Noun compounds like *xas-o-ðíkis* '"lose-trial", a lawyer who always loses trials' (cf. *exase ti ðiki* 'he lost the trial'), Noun-Verb compounds like *xart-o-pézo* 'play cards' (cf. *xartí* 'card'), and Adverb-Verb compounds like *kak-o-férome* 'behave badly' (cf. *kaká* 'badly'). We conclude

therefore that these multi-verb composites are indeed compounds, and we label them thus hereafter.[2]

These compounds are overwhelmingly binary, typically consisting of just two members, Verb + Verb, more specifically Verb-Stem + Verb. However, some speakers allow such compounds with more than two members, e.g. *pino-traγuðo-xorevi* 'drink, sing, and dance'.[3]

As the possible extension of the formation to three members suggests, these multiple-verb compounds are somewhat productive, and certainly are well-represented in the lexicon. Nonetheless, there are only about a dozen common instances, besides those in (1). A few of these more common ones are listed in (4):

(4) anavosvini   'flicker = ignite and extinguish'
     anevokatevazi   'bring up and take down'
     anevokateveni   'go up and go down'
     benovjeni   'go in and go out'
     kliðabaroni   'lock and bolt'
     strifojirizi   'whirl around'
     xaskojela   'guffaw = gape and laugh'

In the next section, we extend the data set and apply the proposed semantic classification.

3. **Extending the Data Set**

We give in (5) a list of documented instances of Greek V-V composites, compiled from various grammatical and lexicographical sources (Babiniotis 1996, Hatzidakis 1977–80 [1906–07]: I 196ff, Filindas 1910:II 402, Jannaris 1897 §1157, and Triantafyllidis 1941, plus some input from Stavropoulos 1988). In this listing, an asterisk indicates that the form occurs in more than one source; where the form is dialectal, as opposed to occurring in Standard Modern Greek, the dialect is indicated:

(5) A fuller list of V-V compounds attested for Modern Greek

     alono-θerizi 'thresh and reap'
     anavo-svini 'flicker' (lit. "ignite" + "extinguish")
     anevo-katevazi 'bring up and take down'
     anevo-kateveni* 'go up and go down'
     aniγo-klini* 'open and close'
     aniγo-sfalna* 'open and close'
     afkso-miute 'fluctuate, go up and down, rise and fall, increase and
          decrease alternately'

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[2] This is a conclusion already reached by Hatzidakis (1997–80) [1906–07]. Before Hatzidakis, the linking vowel was spelled as a 1sg inflection—i.e. V1 and V2 were analyzed as inflecting independently.

[3] See Kiparsky, this volume, to whom we owe this interesting example.

jelo-klei 'laugh and cry'
jelo-xaxarizi /jelo-xaxanizi 'laugh' (lit.: "laugh" + "laugh")
jeno-sperni (Epirus) 'breed (and) sow'
gremo-tsakizete* 'tumble'
kli∂-abaroni* 'lock and bolt'
kli∂o-mandaloni* 'lock and bolt'
kloθo-jirizi* 'hang around' (lit.: "spin (wool)/drag one's feet" + "turn, roam")
liso-∂eni 'loosen and tie'
beno-vjeni* 'go in and go out'
pezo-jela* 'dally, frolic, banter' (lit.: "play + laugh)
perno-∂javeni* 'pass by frequently' (lit. "pass" + "pass")
perpato-jirevi "walk" + "search"
pieno-jajerni (Cretan) 'go and return' (*jajerno* = Cretan for *jirizo*)
pijeno-erxete* 'go and come'
pijeno-ferni 'take and bring back'
rambo-kuna (Naxos; Carapthos; Crete; Cos): "daydream + move" (variously meaning 'be idle', 'live licentiously', and 'stagger from weakness'
rigo-tremi / rigo-tromazi (Puristic) 'shudder' ('shudder' + 'tremble / be afraid')
skafo-kla∂evi 'tend to garden' (lit.: "dig" + "prune")
sirno-skotizete "drag" + "worry"
siro-ma∂izi/ suro-ma∂a 'grab someone by the hair' ('drag' + 'pluck, pull off (hair/feathers)')
suromali(a)zi* 'grab someone by the hair' ('drag' + 'pluck, pull off hair')
strefo-jirizi/ strifo-jirizi * 'whirl around' (lit.: "turn" + "turn")
tremo-koskinizi "shake" + "sift"
tremo-labi 'flicker' (lit. "tremble" + "shine")
tremo-pezi 'flicker' (lit. "tremble" + "play; be tentative")
tremo-svini* 'flicker' (lit. "tremble" + "extinguish")
trigo-pata 'press grapes' (lit.: "harvest grapes" + "tread")
trogo-pini* 'eat (and) drink'
tsibo-fila 'peck' (lit.: "pinch" + "kiss")
xarokopo-trogi 'have a celebratory banquet' (lit.: "celebrate" + "eat")
xasko-jela* 'guffaw' (lit: "gape" + "laugh")[4]

While these 42 V-V compounds do not exhaust the range of possible forms (see, e.g., Kiparsky (this volume) for some novel instances), they offer a good starting point for further classification, discussion, and analysis.

4. Classifying V-V Compounds Semantically

The compounds in (5) can be classified into several groups from a semantic standpoint. First, there are several that have a coordinate meaning, 'X and Y',

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[4] Some other verbs have been claimed as instances in the literature, but we dispute the claim; for instance, in *riɣo-maxo* (as a synonym of *riɣo-tremo*), *-maxo* is a denominative suffix.

where the terms in the compound relate to one another as semantic inverses, i.e. one verb is the logical opposite of the other (thus more or less 'X and anti-X' or 'X and not-X'); these are given in (6):

(6)   Coordination of inverses

        anavo-svini
        anevo-kateveni
        anevo-katevazi
        aniɣo-klini
        aniɣo-sfalna
        afkso-miute
        liso-∂eni
        beno-vjeni
        pieno-jajerni
        pijno-erxete
        pijeno-ferni

        In addition, there are a few that have coordinative semantics but not involving inverse elements; rather, there is antonymy or some sort of associative relationship between the two members; these are listed in (7):

(7)   Other coordination: antonymy or associative relation, but not inverse

        jelo-klei
        perpato-jirevi
        skafo-kla∂evi
        troɣo-pini

        More robustly represented are V-V compounds that involve synonymous verbs. These compounds do not show coordinative meanings literally, but rather have a degree of emphasis to them; these are given in (8):

(8)   V-V with Synonyms

        alono-θerizi 'thresh – reap'
        jelo-xaxarizi /jelo-xaxanizi 'laugh – laugh'
        jeno-sperni
        gremo-tsakizete
        kli∂-abaroni
        kli∂o-mandaloni
        perno-∂javeni
        riɣo-tremi / riɣo-tromazi

        Finally, there is a substantial number of V-V compounds in which the first member provides a specification of the manner in which the meaning of the second member is carried out; these are listed in (9):

(9)   Manner specification V-V compounds

kloθo-jirizi
pezo-jela
rambo-kuna
sirno-skotizete
siro-maðizi
strefo-jirizi
strifo-jirizi
suro-maða
tremo-koskinizi
tremo-lambi
tremo-pezi
tremo-svini
triγo-pata
tsimbo-fila
xasko-jela
xarokopo-troji

Of these, the type in (6), with antonyms combined so that the meaning of the compound is alternation of action, first X then the inverse of X, repeatedly constitute true "dvandva", i.e. coordinative, compounds. The same holds for the type in (7), with verbs closely associated in a cultural "script", as with *troγo-pini*, which does not mean 'eat then drink, then eat again then drink again' but rather 'engage in repeated eating and drinking'. The others seem to be extensions of that type along certain lines. For instance, the synonymous type of (8) shows V1 alternating with V2 (= V1), and thus that V1 recurs; since repetition often conveys emphasis in Greek, as in *psilos psilos* 'very tall' (literally "tall tall"), a bleaching of the notion of alternation here would leave just emphasis. The manner type of (9) is perhaps harder to justify as an extension of a true dvandva type, but can be made sense of through a reconsideration of the key morphological property these V-V compounds show, namely that V1 is morphologically unmarked. Accordingly, we revisit that feature of these compounds in the next section.

5. Revisiting a key morphological property

As noted above, in these V-V compounds, the first member is morphologically unmarked, and there is inflection only on the second member. Further, the first member appears to be, if possible, in a root form. By "morphologically unmarked", we mean that there is no derivational morphology—thus *klið(*-on-)abar-on-i*—and no tense-mood-aspect marking—thus *xask(*-iso-)jelase*).[5] Moreover, if perfective and imperfective stems are suppletive, the imperfective is used—thus *beno-*

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[5] There is one form we know of, namely *liso-ðeno*, that appears to have a marked perfective first member instead of being formed with the imperfective stem of the verb *lino* in combination with *ðeno*. It appears this form has been influenced analogically by the phonologically similar N-V compound *aliso-ðeno* 'bind in chains'.

vjeni not **biko-vjike*.[6] In what follows, we classify the forms in section 4 by their morphology.

(10) a. *Full verbs in each slot:*

anavo-svini
aniɣo-klini
aniɣo-sfalna
jelo-klei
jelo-xaxarizi /jelo-xaxanizi
jeno-sperni
kloθo-jirizi
liso-∂eni
beno-vjeni
pieno-jajerni
pijeno-erxete
pijeno-ferni
perno-∂javeni
perpato-jirevi
pezo-jela
riɣo-tremi / riɣo-tromazi
sirno-skotizete
siro-ma∂izi
skafo-kla∂evi
strefo-jirizi
strifo-jirizi
suro-ma∂a
tremo-koskinizi
tremo-labi
tremo-pezi
tremo-svini
triɣo-pata
troɣo-pini
tsibo-fila
xasko-jela

b. *Truncated element as first member:*

alono-θerizi
anevo-kateveni
anevo-katevazi
afkso-miute
gremo-tsakizete
kli∂-ambaroni

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[6] In this way, the V-V compounds are unlike V-N compounds, which are often perfective: *xaso-ðikis* 'lawyer who loses trials' (cf. Ancient Greek *phygo-dikos* 'fugitive from justice'), *spas-arxiðis* 'irritating, "ball-buster"', *klapso-muris* 'crybaby, "cry-face"'.

kli∂o-mandaloni
rambo-kuna
xarokopo-troji

In several instances in (10), the first member could be construed as a noun, not a verbal form; thus *kli∂* in *kli∂o-mandalono* could be from the noun *kli∂i*; without derivational morphology, the V1 root is the noun root (*kli∂-*), so the compound may in fact rather be N-V (i.e. *abarono me kli∂i* 'lock with a key', not from the verbal *kli∂ono + abarono*, with *kli∂ono* 'lock by key'). Such is also the case with *trigo-pata, alono-qerizi,* and *gremo-tsakizete*. This fact may well be crucial concerning the historical development of the V-V type as a Post-Classical innovation: it allowed N-V compounds, which were attested in Classical Greek, to be reanalyzed as V-V compounds.[7]

That said, in the earliest and most frequent instances of the dvandva type, either the nominal corresponding to V1 has added derivational morphology (*anavo-svini* reflects the verb *anavo* and not the noun **anav-ma > anamma*), or the V1 has explicit tense morphology (*pij-en-oerxete*, containing an imperfective infix absent from Classical *hyp-ago:, hyp-e:ga*). So this reanalysis may have reinforced the spread of the construction, but is probably not its origin.

6. Relation of V-V Compounds to Other Constructs in the Language

As noted in section 1, there are other multi-verb combinations in Greek that in various respects are reminiscent of the V-V compounds under examination here. Even though it turns out that no one of them alone offers a suitable basis for deriving the compounds, it is nonetheless interesting to explore what relations, if any, there might be between these and the compounds.

First, Greek has some paratactic structures, ones that would otherwise be complementation or coordination but which occur in each case asyndetically, with no overt mark of subordinating or coordinating element. For a few of the V-V compounds, these offer reasonable semantic matches, but fail to account for some key features. Thus, zero-complementation is not usual in Greek, but it seems to occur in Verb-Verb syntagms such as that in (11), if it is not merely embedded direct speech:

(11) parakalíste   aníkste   tin pórta
      request/2PL.PASS open/PL.IMPV the-door/ACC
      'You are requested: "Open the door"'.

Also, under some analyses of *na*-subordination (e.g. Philippaki-Warburton & Veloudis 1984, in which *na* is a mood marker), subordinate *na*-clauses regularly have a zero-complementizer per se, but still do have some mark of subordination (via the *na*). The relevance of such complements, if that is indeed what (11) and *na*-subordination are, to V-V compounds is that the manner specification V-V compounds could be construed as a type of subordination, e.g. *xasko-jelo* 'guffaw' could literally be 'laugh when gaping', with the action of

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[7] As suggested by Wächli (2005: 271n.3)).

gaping (*xask-*) providing the backdrop, and thus semantically subordinated to, the action of laughing (*jel-*).

While this may not be the most relevant sense of "subordination", far more congenial to the meaning of some V-V compounds is the zero-coordination seen in (12), since there several actions are concatenated:

(12) irθa,   i∂a,   nikisa
      came/1SG saw/1SG won/1SG
      'I came, I saw, I conquered'.

Moreover, there are a few conventionalized uses ("constructions") of zero-coordination, as in (13) which parallel V-V compounds semantically:

(13) a.   pini   pini
            drinks/3SG drinks/3SG
            'He drinks a lot' (lit. "he-drinks he-drinks"; cf. Eng. 'he drinks and
                  drinks (and drinks'))

      b.   exun   ∂en exun
            have/3PL NEG have/3PL
            'whether they have (it) or not' (lit. "they-have [and] not they-have")

Note for instance that the repeated type of (13a) parallels the emphatic synonymous V-V compounds of (8) above and the 'X-*not*-X' type of (13b) is like the antonymic V-V compounds. Still parataxis is not applicable as a parallel to all V-V compounds and in any case, moving synchronically from clear syntactic juxtaposition to true compound status requires more than simply showing potentially parallel semantics; the multiple inflection in (11)-(13), for instance, would need to be resolved into a single inflectional site.

There is paratactic subordination as an alternative to syntactic subordination in a few constructions or with a few verbs, e.g.:

(14) a.   ton   i∂a   ke pijene
             him/ACC saw/1SG and went/3SG.IMPVE
            'I saw him going' (lit. "him I-saw and he-was-going")

      b.   ton   i∂a   na pijeni
            him/ACC saw/1SG SBJNC go/3SG.PRES
            'I saw him going' (lit. "him I-saw that he-is-going")

showing that nonembedded substitutes for subordination are possible. Still, it is hard to see how this could extend in a natural way to V-V composites, even if the asyndetic options of (13) were somehow to form a blend with the type of (14), since in this case, not only the morphology but also the semantics are completely at odds with what is seen in the V-V compounds.

A multi-verb combination that is somewhat more promising in terms of offering a link of sorts to V-V compounds is verb serialization. Joseph (1990), working with a notion of serialization as "a sequence of two uninterrupted verb phrases, preferably with a minimum of inflection on at least one of the two

(presumably the nonhead), that represent a single event" (this last being an admittedly problematic notion), argues for serial-like ("serial-oid") constructions in Greek involving concatenated imperatives – and instantiated only with imperatives. Some examples are given in (15):[8]

(15) a.   éla   pés   mu
        come/SG.IMPV tell/SG.IMPV me/GEN
        'C'mon tell me!'

    b.   pijene ∂es
        'Go and look'

    c.   ja   piase   ftiaks'   to
        HORT get/SG.IMPV make/SG.IMPV it
        'Get started making it' (cf. English "get working!")

Here the absence of overt marking for coordination/complementation and the limited inflection (imperatives are always second person in Modern Greek) can be taken as suggestive of a possible link with V-V compounds. Moreover, there is some association between the serial elements involved here (cf. *troγopino*), and just as these serialoids seem to refer to a single event, so too do the manner specifying V-V compounds (thus guffawing is a single event, even if it might to be viewed having two component parts, laughing and gaping). However, these serialoid formations do not show antonymy and in fact do not involve semantically coordinate elements (V1 is often merely conveys the aspect of V2). Moreover, although they are restricted as to mood or person, they do have full aspect/tense marking on both verbs, so that morphologically they are not really comparable to the V-V compounds.

        Perhaps of relevance here too are the nominalised antonym imperatives: *to pijenela* 'comings and goings', *to surta-ferta* 'bringing to and fro', *s to apse-svise* 'in a flash ("light!" + "extinguish!"), immediately', *to rapse-ksilose* 'tinkering ("stitch" + "unstitch")'. These are especially suggestive of the V-V compounds because they show matching antonymic semantics, even matching antonyms: *pijenela = pijenoerxete*, *apse-svise = anavosvini*, *surta-ferta ~ pijenoferni*. Moreover, they show separate aspect/tense though not person or number marking (*pijenet-elate*) and represent a single nominalization. So they are clearly treated as a compound unit, even if phonologically they are not compounds in that they show two stresses. Interestingly too, there are synonym (actually reduplicated) counterparts: *to fae-fae* 'continually eating', *to γrapse-*

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[8] This account excludes what we can call "true" concatenated imperatives that express multiple events, e.g.

i.   trékse,   vrés   mu   líγo aláti
       run/IMPV.SG find/IMPV.SG me/GEN little salt
       'Run (and) find me a little salt'.

γrapse 'continually writing', that appear to be expressive and thus akin to the emphatic nature of the synonymous V-V compounds.

Nonetheless, even with these parallels, it does not seem possible to reduce the V-V compounds to or collapse them with some single existing type of juxtaposed or multiple verb construction, even if some of those constructions might have played a role diachronically (see the next section). It thus seems that they simply need to be treated as the compounds that they are, that is, as the product of a compounding rule, a morphological (thus, essentially lexical) process, that creates V-V stems out of existing V's, for instance via reference to a template of the form [Verb +Verb]$_{Verb}$). Although there is some debate in the literature as to whether compounds are syntactically derived or morphologically, we treat them here as morphological, and see several advantages to a more lexical treatment.

That is, one finds certain features of these compounds that would not expected to occur in a fully syntactic account. For instance, a syntactic account should combine stems that have already been filled in for V-nodes, and any truncation needed to get the actual composite form is thus an extra and ad hoc step. Thus the abbreviated verbal first members that occur in V-V compounds (such that they look almost like nominal bases), e.g. *kliðo-mandaloni*, with first member *kliðo-* and not *kliðono-* can be attributed to the general absence of inflection from first members of compounds. Moreover, the meanings of some V-V compounds are not all compositional, e.g. *kloθo-jirizi* 'hang around' is literally "spin (wool)/drag one's feet" + "turn/roam", and *gremo-tsakizete* 'tumble' is literally "tumble" + "fall over". And we have noted (in the entry in (5)) the range of idiomatic meanings that *rambokuna* "daydream" + "move" has acquired in dialect. In fact, the range of interpretations found would be consistent with range found with other kinds of compounds in other languages, and thus presumably can be seen as being filled in pragmatically.

For instance, Jespersen (1943: 137-38) say of compounds that they "express a relation between two objects or notions, but say nothing of the way in which the relation is to be understood. That must be inferred from the context or otherwise. Theoretically, this leaves room for a large number of different interpretations of one and the same compound … The analysis of the possible sense-relations can never be exhaustive." And Downing (1977: 840-41) states that "Because of the important differences in the functions served by compounds, as opposed to the sentence structures which more or less accurately paraphrase them, attempts to characterize compounds as derived from a limited set of such structures can only be considered misguided. A paraphrase relationship need not imply a derivational one." This is the situation found with the V-V compounds, so treating them synchronically as morphologically (lexically) derived compounds is consistent with the properties they show and with the properties of compounds cross-linguistically.

7. A Glance at the History of V-V Compounds

Working from the semantic classification given above, it is a reasonable working hypothesis that in terms of their history, the alternation dvandvas (those in (6)) are historically prior to the others, since they provide a starting point for the

derivation of the others. That is, associative dvandvas (those in (7)) can be seen to be analogically based on antonyms: e.g. *anavosvini => tremosvini, benovjeni => troγopini*. And, the alternation may have creatively been extended to synonyms (those in (8)) in that if V1 alternates with V1, that implies that V1 recurs (i.e. *pijeno + erxete => perno + perna => pernoδiaveni*); if the notion of alternation per se was bleached from such a compound, what would be left is the notion of emphasis (as occurs with reduplication in serial verbs), e.g. *kliδabaroni*.

Still, such an account is somewhat speculative. As it happens, there is evidence from early post-Classical Greek and Early Modern Greek that both synonyms and antonyms occur early. The first attestation of V-V dvandvas in Greek is in Claudius Ptolemy (ii AD), in a mathematical treatise where one finds the forms in (16):

(16) a. auksomeio:somen ta prokeimena duo selidia… (*Almagest* 1,1.500)

> 'let us vary ("increase and decrease") the preceding two mathematical tables, …'

b. prosthaphelontes to kata me:kos diaphoron… (*Almagest* 1,1.528)

> 'once we have added and subtracted the difference in length…'

These forms already have all the characteristics we expect of dvandvas. That is, they show inflection of only V2: *prosth-aphelontes* not **prosth(esantes)-aphelontes*. Moreover, V1 is in a root form: *(pros-)the-* for *tithe:mi*, not *tith-* or *thes-*.[9] Semantically, there are antonymic components and an iterative, alternating meaning. On the other hand, there is an aspect-unmarked aorist form in the participial *prosthaphelontes*, and Plethon (xv AD), imitating Ptolemy, has a perfect imperative *prosthaphe:ire:stho:* (*De Astronomia* 44). So there is really no strong preference for imperfective in these instances of the dvandva.

It is fair to assume that the Ptolemaic V-V dvandva comes from a nominal (N-N) dvandva. The *Almagest* has one instance each of *prosth-aphaireo:* and *auksomeioo:* but six instances of the dvandva noun *auksomeio:sis* 'increase and decrease' and 90 instances of the dvandva noun *prosthaphairesis* 'addition and subtraction'. Nominal dvandvas are questionable in Classical Greek,[10] and become significant only in the Hellenistic period. Thus it appears that once N-N dvandvas became possible in Greek, for whatever reason, V-V dvandvas also became possible, most likely as backformations. The N-N dvanvdas here involve nominalizations, so the backformation is really a de-nominalization.[11]

The next dvandvas encountered in the textual record of pre-Modern Greek

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[9] Note that the lack of present reduplication illustrates this even more drastically than in the Modern Greek compounds.

[10] Adjectival dvandvas (Adj-Adj) are more secure; cf. Sapphic *glukupikros* 'bitter-(and)-sweet'. (Debrunner 1917:40, 46).

[11] N-V compounds, which provide the morphological precedent for X-V compounds in general and V-V dvandvas in particular, are also substantially postclassical (Debrunner 1917:35)—with the exception of Homeric participial forms like *dakru-kheo:n* 'pouring tears', that are closer to N-N compounds. See discussion by Kiparsky.

are the Medieval/Early Modern forms seen in (17):

(17)   sfalizoromanizusin 'lock and bolt': *Ptochoprodromos* IV 139, ms. C. (after xii AD) (cf. Modern *kliðomandaloni*)

na sterɣoafirosis 'consent and swear': *Libistros* alpha 96 (xiii–xiv AD)

anevokateveni 'go up and down': *Entertaining Tale of Quadrupeds* 1047, 1060, 1070 (ca. 1364) (Modern *anevokateveni*)

aniɣokli 'open and close': *Book of Birds* 469, mss. CVPL (xiv AD) (Modern *aniɣoklini)*

otan kloθoɣiristo 'when I twirl around': *Book of Birds* 521 (xiv AD) (Modern *kloθoɣirizi)*

klotsopatusin 'kick and step on': *Book of Birds* 477, mss. AZ (after xiv AD)

ipiɣenoerxeton, ipiɣenoerxodan, ipiɣenorxeton, ipiɣenorxodan 'go to and fro': *Chronicle of Morea* 5069, 5073, 8501 (Modern *pijenoerxete*)

ebenovɣenis 'come in and out': *Chansons populaires* 420 (xv–xvi AD) (Modern *benovjeni*)

epernoðiavena 'pass by frequently': *Chansons populaires* 382 (xv–xvi AD) (Modern *pernoðiaveni*)

One might speculate that Ptolemy's V-V dvandvas are the historical antecedent to these later dvandvas, and that may well be the case, but there are some differences. For Ptolemy, the dvandvas are technical terms, whereas these later formations are colloquial in character (like their modern counterparts—indeed, most instances have survived in use in the Modern language).[12] Moreover, Ptolemy's forms presuppose nominalization, whereas the later, and the Modern, forms do not (thus there is no nominal dvandva **pijemoerxomos* or **aniksoklisimo*). Also, there are no known V-V compounds in the intervening period, even though learned Byzantine writing (and vernacular romances imitating them) delighted in extravagant NNN* compounds (e.g. John Damascene *Hymn on the Pentecost* 119 *aktisto-sumplasturɣo-sinθronos* 'sharing a throne with the fellow Creator, and uncreated', pseudo-Basil of Caesarea *Letters* 365 *astrapo-vrondo-xalazo-riθro-ðamastos* 'overcome by lightning, thunder, hail, and floods'; *Libistros* alpha 4567 *simforo-pono-krator* 'ruler of my pain and trouble', *Libistros* alpha 2721 *karðio-pono-θlivos* 'crushing the heart through pain')

As suggested by our classification in section 5, some modern forms unambiguously have a verbal root in V1, so they cannot originate in nominalization (cf. *kloθojirizi*, but not **klostojirizi*; *anavosvini* which is not based on a nominal **anav-isis* or **anav-ma*; or *pijenoerxete* but nothing based on the attested nominalization *pijem-os*). On the other hand, some V-V compounds have a denominative V1, as with *kliðabaroni* < *klið-ono* + *abar-ono*, discussed

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[12] Ptolemy's *auksomeio:somen* turns up in our Modern Greek list as *afksomiute*; but as the inflection of the latter makes clear, it is a loan from pre-Modern Greek.

above in section 5. Thus even if the V-V compounds are not derived from nominalizations in all cases, it seems that composite forms involving nouns may have been implicated in other ways too in their development. In fact, some instances of V1 may have been manipulated to look more like a noun, in both V-N and V-V compounds, as shown in (18):

(18) a. skafo-klaðevo "dig and prune", not *skavo-klaðevo* or *skapso-klaðevo*, with the imperfective stem *skav-* or the perfective *skaps-*. The verb is originally *skapto:* < nominal *skaph-* + *to:*; 'linguistic atavism' (i.e. the coincidental undoing of a linguistic change: Ruge 1985) makes V1 look like N *skafi* again.

   b. kleftokotas 'chicken thief' ("thief" + "chicken"), not the expected *klepsokotas* "thieve" + "chicken" (also motivated by equivalent NN *kotokleftis*)

   c. strifojirizo 'whirl around' possibly as portmanteau of *strofi* 'a turn' and *strivo* 'to turn')

More needs to be said about their history, and it can be surmised that some of the multiple verbal combinations discussed in section 6 could have provided some input as well. Thus at this point, the general outlines of the development of V-V compounds suggest that several factors and several different antecedent formations may have played a role in their emergence.

8. Some Open Questions

There are still many open issues concerning these compounds, both synchronically and diachronically -- such as principles governing the ordering of elements in the true dvandvas,[13] the extent of productivity for this compound type, and more details about the history of these formations -- though Kiparsky (this volume) importantly provides answers to a good many of these.[14] We trust, though, that bringing this interesting verbal compound type into the light of modern linguistic investigation and asking the right sorts of questions about it is the first step to a full understanding of them and their place in Greek grammar.

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[13] We note that alongside the relatively common *jelo-klei* 'laugh-(and)-cry', the nonce-form *klafsi-jela* 'cry-(and)-laugh' < Classical *klausigelo:s* 'crying and laughing' can be documented (heard, for instance, on a April 2007 broadcast in Melbourne of a Greek play.

[14] And we hope to offer fuller explanations and a more detailed historical account as well in Nicholas, Joseph, & Kiparsky (forthcoming).

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