# Noun formation by verb reduplication in Italian

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## Abstract

This paper presents novel data from a construction in Italian, the V-V N-compound (VVn), where agentive nouns are formed by doubling the base form of a verb. The VVn will be shown to be restricted by both syntactic and phonological restrictions. On the basis of these, a syntactic account will be given, where the VVn is a particular subtype of normal agentive VN-compounds, namely one which takes a non-lexical item as its internal argument. The conflicting morphological structure will lead to replication of the verb root to ultimately form the VVn.

## 1. Introduction

In Italian, nouns can be formed by reduplicating a verb, what I will call V-V N-compounds (VVn). A famous example was provided by former Italian prime minister Silvio Berlusconi's parties, also called the *bunga-bunga*, a scandal widely reported on Italian and European media in 2010. *Bunga*, or *bungare* as a verb, does not really exist. Regardless, the general meaning of such nominals is one of intense repetition so that there was a lot of *bunga*-ing going on at those parties. The VVn is formed by doubling the base form of a verb, which coincides with the 2nd singular imperative form.[1,2]

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[1]I am a native speaker of Italian (southern Tuscan regional standard); the judgements are my own and were checked with two further native speakers.

[2]A remark should be made that this is somewhat playful language. The most productive environment is the exclamative introduced by *è tutto un* 'it's all a' as in (1a), which may be uttered at low level football matches, where the lack of skills leads the players to be exaggeratedly physical. When a VVn is not part of the exclamative, my feeling is that they need to be previously introduced so that they become 'a thing' to refer to. (1b), e.g., could be introduced by a sentence like *muoh, ogni volta che andiamo a quel bar beviamo il mondo…lo voglio chiamare il trinka-trinka sto bar* 'wow, every time we go to that bar, we drink A LOT…I want to call this place the *trinka-trinka*.'

(1)   *V-V N-compounds*

    a.    É  tutto un tonfa-tonfa qua!
          it's all   a  hit-hit     here
          'There's a lot of hitting going on here.'

    b.    Oh, ma si    vole    anda' al     trinka-trinka?
          hey but REFL want.3SG go.INF to.the drink-drink
          'Shall we go to the 'drink-a-lot' (bar)?'

The reason why I think this construction is interesting, is that two obvious analyses one can give to this construction both face serious challenges. One idea is that the root is multiply merged in the syntax to express a multitude of events and another that the verb is simply copied by phonology. Let us consider first the simple syntactic approach. Taking an approach based on Distributed Morphology (Halle & Marantz 1993),[3] one could posit the structure in (2). Two instances of the same verbal root are merged together and then the result is merged with the nominalising head *n*.[4] If it mattered that the verbal roots be verbs, the roots may first be merged with the category *v*.

(2)            *n*P

        *n*          RootP

           Root$_{132}$    Root$_{132}$
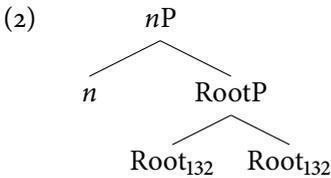
The challenge, however, is that V-V compounds generally do not exist in Italian in the same way as they do in other languages and neither does (V-) reduplication, i.e. V-V compounding and reduplication are not productive processes in Italian. For one, even though verbs are doubled to form a noun, the same doubling cannot be used to express verbal morphology, cf. Italian (3a) vs. Haitian (3b) (Harbour 2008: 854).

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[3] For a general overview see Harley & Noyer (1999), Embick & Noyer (2007), Bank et al. (2012).

[4] I will largely ignore the difference between analytical and synthetic compounds and the related issues of head movement, here, and limit myself to considerations about the structure that is base-generated for these nouns. For discussion of synthetic vs. analytical N-N compounds in DM see e.g. Harley (2008).

(3)  a.  *Il  giocatore tonfa tonfa.
         the player    hits  hits
         (Intended) 'The player plays very physically.'
     b.  Bouki ap    kouri kouri
         Bouki PROG run   run

In addition, phonological restrictions exist concerning the number of syllables of the verb. This makes a pure syntactic approach dubious if phonological information is not present in syntax and not able to influence merge. This seems to suggest that some kind of replicative process that can be restricted by phonological constraints must be at work here. However, treating the doubling as the result of a purely morpho-phonological operation also faces a serious problem: there are syntactic restrictions on the kind of verbal roots that may participate in this process. This leads back to the syntactic approach and to an apparent paradox. I will propose to solve this paradox by showing that the construction exhibits an interesting parallel to another process of noun formation in Italian, which consists in compounding a transitive verb with an object – the Romance equivalent of English *truck driver* compounds.[5]

## 2.  Properties of VVn formation

There are mainly two restrictions on VVn formation: a syntactic one and a phonological one, both restricting the set of possible verbal roots to be used for this construction.[6]

### 2.1.  Metrics

The phonological restriction regards the metrics of the root. Only bisyllabic verbs can participate in the process. This is shown by the ungrammaticality of the examples in (4).

(4)  a.  *uno sgranocchia-sgranocchia [zgɾa.nɔk.kja-zgɾa.nɔk.kja]
         a    crunch-crunch

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[5]See Snyder (in press: chap. 6.1) for a selective review.

[6]In addition, the fact whether the verb inflects regularly or not plays a role: as far as I could think, there is no irregular verb that can be used in this construction.

b.   *un trasporta-trasporta [tras.pɔɾ.ta-tras.pɔɾ.ta]
     a   transport-transport

c.   *un raccatta-raccatta [ɾak.kat.ta-ɾak.kat.ta]
     a   pick.up-pick.up

In addition, this restriction does not seem to be lexical but rather the outcome of some form of repair. In fact, trisyllabic verbs that begin with a vowel that can be deleted by hiatus – or assimilated to [a], though somewhat more marginally – can be successfully employed to form VVn compounds. This is shown in (5). If this is the correct analysis, this also indicates that the left form is the base and the right one is the reduplicant: it is the right form which is reduced to a bisyllabic form, complying with the requirement.

(5)   a.   un ingolla-ingolla [iŋ.gol.laŋ.gol.la]
           a swallow-swallow
      b.   ?un arreda-arreda [ar.reː.dar.reː.da]
           a furnish-furnish

## 2.2.   Argument structure

The syntactic restriction is on the verb's argument structure. In fact, only transitive and unergative verbs can be used in this process. The unaccusative *cascare* in (6a) and the true ditransitive *mostrare* in (6d) lead to ungrammatical results; the unergative *correre* in (6b) and the transitive *mangiare* in (6c) are fine.

(6)   a.   *un casca-casca
           a fall-fall
      b.   un corri-corri
           a run-run
      c.   un mangia-mangia
           an eat-eat
      d.   *un mostra-mostra
           a show-show

For homophonous causative/anti-causative pairings, only the causative but not the unaccusative reading is available when used in the VVn. In (7), the verb

*schiantare* 'explode/make explode' can only be interpreted as 'make explode' (7a), not as 'explode' (or its idiomatic meaning 'die') (7b).[7]

(7)  a.  uno schianta-schianta
         a  make.explode-make.explode

     b.  *uno schianta-schianta
         a  die-die

Especially the syntactic restriction seems peculiar at first. What differentiates transitive and unergative verbs from unaccusative verbs is that they both have an external argument. What differentiates them from a true ditransitive is a bit less obvious. For one, transitive verbs take only one internal argument. In parallel, many unergative verbs can be viewed as taking one implicit internal argument – a cognate object. Daniel Harbour (p.c.) notes that unergative motion verbs with an implicit specific goal may contrast with unergative motion verbs lacking this goal or telicity. The former might then pattern with transitive verbs in having both an external and an internal argument, while the latter are simple unergatives lacking an internal argument. VVns seem to make a case for exactly such a divide: The unergative *volare* 'fly' can be interpreted either as having or as not having an implicit cognate object. In the former case it contains a goal/telicity, while in the latter it means more something like 'float'. When *volare* is used in a VVn, only the telic meaning is available, i.e. one where there is a lot of (intentional) flying from A to B involved. So, e.g., (8) can only describe a scenario where a lot of spaceships are (quickly) flying around the speaker, but not one where a lot of spaceships are steadily surrounding the speaker (intentionally) floating in mid-air.

(8)  È tutto un vola-vola.
     it's all a fly-fly
     'There's a lot of flying/#floating going on.'

## 2.3.   A conclusion

On its own, the syntactic restriction on VVn formation seems rather odd. Here, I would like to argue that it makes sense if the parallel to another connection is

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[7] As a remark to further strengthen this point, I believe that when a VVn is formed creatively from pseudo-words, the immediate reading of the invented verb is that of a transitive predicate.

drawn, namely what I will call the V-N N-compound (VNn) for parallelism's sake. This is the Romance version of an agentive *-er* compound. An example is given in (9).

(9)    un tira-petard-i
       a   throw-firecracker-PL
       'Someone/something that throws firecrackers'

The obvious similarity is that the VNn also involves compounding a verb in its singular imperative form to create a noun. The obvious difference is that, here, it is compounded with a generic plural object. An interesting parallel is that in both constructions the verbs have the argument structure of a transitive. This has a straightforward reason for the VNn as you need a transitive verb to license an object, but not so much for the VVn, where no object is expressed. I take this similarity to be telling and propose that the two complex nouns should be collapsed to share one and the same basic structure. Such an approach gives an immediate explanation for the syntactic restriction on the VVn compound if the base structure is one containing an internal argument. Daniel Harbour (p.c.) points out that one prediction of this approach is that it should not be possible to express the internal argument of a VVn. The prediction is borne out:

(10)    a.    *È  tutto un mangia-mangia di banane.
              it's all    a  eat-eat            of bananas
              'There's a lot of eating of bananas going on.'
        b.    *È  tutto un trinka-trinka            di grappini.
              it's all    a  drink.much-drink.much of grappa.DIM
              'There's a lot of heavy drinking of grappa shots going on.'

The approach is further supported by the contrast with the examples in (11), which have the same meaning as the one in (10), but where the nouns are formed on the basis of an infinitive. Now, expressing the internal element is again possible.[8]

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[8] Also, with the infinitive, there are no syntactic restrictions with regard to the verbs argument structure. For example, the unaccusative in (i) is grammatical.

(i)    È  tutto un casca-re per terra.
       it's all    a  fall-INF for ground
       'There's a lot of falling on the ground.'

(11)  a.  È   tutto un mangia-re di banane.
          it's all    a   eat-INF      of bananas
          'There's a lot of eating of bananas going on.'
      b.  È   tutto un trinka-re        di grappini.
          it's all    a   drink.much-INF of grappa.DIM
          'There's a lot of heavy drinking of grappa shots going on.'

I conclude that the doubling of the verb happens to fill the empty object position. In addition, I take the fact that the metrical restriction on VVns can be satisfied by repairing the second instance of the verb through regular phonological operations as further evidence that the syntax of the compound does not have any lexical restrictions at all and that the doubling happens post-syntactically.[9]

## 3.  Analysis

### 3.1.  Derivation

In the following, I will assume that words are constructed in syntax, along the lines of Distributed Morphology. I will assume that both the VVn and the VNn involve merging a verbal root with a nominal object. The core difference between a VVn and a VNn lies in the kind of object that is merged.
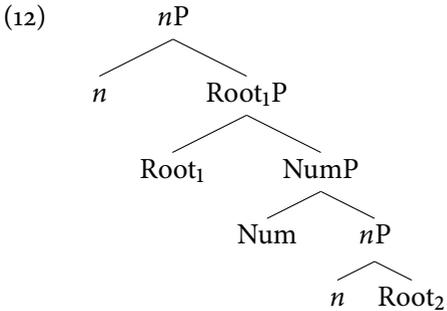
#### 3.1.1.  *VNn*

In the case of the VNn, a specific root is chosen. This noun will have a generic reference. Also, because the nouns are plural in this construction, I assume that
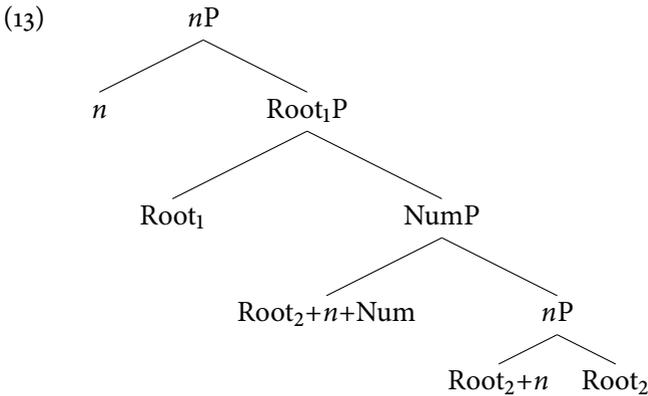
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[9] As Johannes Hein (p.c.) notes, the above data is also coherent with an analysis where the verb is de-transitivized. On such a view, the verb would be either merged with an object and then with a de-transitivizing morpheme, or directly with the de-transitivizing morpheme to occupy the object position (similar to Baker et al. 1989 on passive). This morpheme would then be spelled out by replicating the verbs PF. I will leave this approach open as I cannot see any clear advantage or more precise prediction that this approach would make over the one following in section 3, apart from being a more construction-internal stipulation. In fact, on the one hand, the de-transitivizing approach will stipulate an irregularity, namely to have a de-transitivizing morpheme in Italian, at the same point where the analysis following in section 3 will stipulate an impossibility for regular VI. On the other hand, the precise implementation of the metrical restriction will suffer from similar problems. Note again, that just merging the same root twice, once as a predicate and once as a cognate object, will avoid initial stipulations, but also give less of an angle to explain how regular phonology can influence the grammaticality of the construction.

they merge with $n$ and Num, successively, before they merge with the verbal root, cf. (12). The whole structure will then merge with $n$ to form a noun.

(12)

```
              nP
          ╱       ╲
         n       Root₁P
               ╱       ╲
            Root₁     NumP
                    ╱      ╲
                  Num      nP
                         ╱    ╲
                        n    Root₂
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The nominal root then head-moves to $n$ and Num, successively, resulting in the structure in (13).[10]

(13)

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                 nP
            ╱         ╲
           n         Root₁P
                  ╱          ╲
               Root₁         NumP
                          ╱         ╲
                  Root₂+n+Num        nP
                                  ╱      ╲
                             Root₂+n    Root₂
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[10] Two remarks on the structure in (13): (i) Since this is not of primary interest in this paper, I will omit the internal structure of the adjunction sites as more steps of head movement and fusion must occur, e.g. fusion of $n$ and Num (and potentially Gen if gender is assumed to be its own functional projection in Italian). I will therefore adopt the notation X+Y instead. (ii) I assume that the verbal root and the nominal complex do not undergo any further steps of head movement to $n$. For one, it would be vacuous because $n$ is not spelled out in these constructions. Furthermore, maintaining the desired word order V-N-$n$ is problematic because head-movement of the N+$n$ complex to $n$ must apply prior to head-movement of the V+$v$ complex. Such a derivation would violate the Head Movement Constraint (HMC; Travis 1984, Baker 1988) as the $n$+N complex would skip V+$v$. A derivation obeying the HMC would lead to the incorrect order N-V-$n$ instead.

Vocabulary Insertion (VI) for the noun *tira-petardi* 'throw-firecrackers' will yield the following result, exemplified on the structure in (14).[11]

(14)

$n$P

$n$ ⇕ ∅

Root$_1$P

Root$_1$ ⇕ /TIRA/

NumP

Root$_2$+$n$+Num ⇕ /PETARD-i/
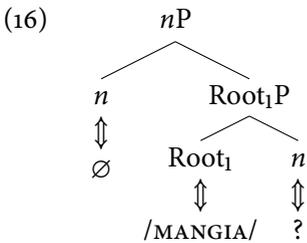
$n$P

Root$_2$+$n$    Root$_2$
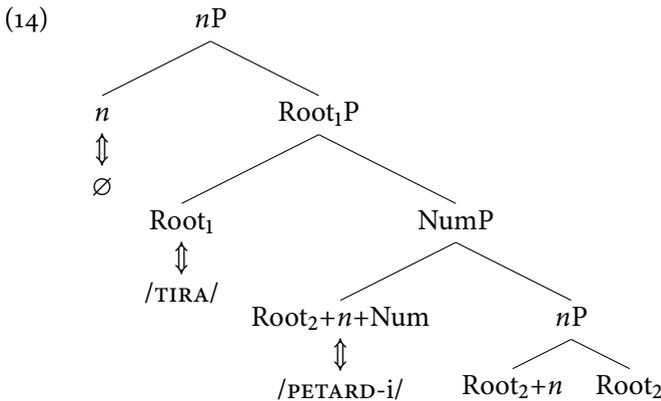
### 3.1.2.    VVn

As a general view, in the case of the VVn, a generic non-lexical item is chosen and directly merged with the verbal root. This element can be viewed as a kind of variable whose sole purpose is to satisfy the verbal root's need to merge with an object and allow the right interpretation at LF. Crucially, I will assume that this element lacks a corresponding entry in the phonological domain and that this 'phonological emptiness' will be both the trigger and the carrier of the reduplication at PF. Specifically, since the verbal root selects for a noun, I will further assume that this element is just an *n* head. The resulting structure is given in (15).[12]

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[11] I give an empty VI for the higher *n* in (14). This can be also viewed as a silent equivalent of the agentive nominalizer /-er/ in English. I will ignore why it is silent here and the possibly connected question whether the verb root moves to the agentivizing suffix (cf. the brief review in Snyder in press).

[12] An immediate question here is why the root projects and not *n*. I will assume here that *n* is vacuously satisfied. This gives the desired effect of it being a noun with no particular lexical meaning. I assume that this will be interpreted as a variable at LF. This is similar to proposals where a D (Landau 2010, van Urk 2013, Legate 2011), or a $\phi$ (Roberts 2010) enter the derivation without a complement and function as arguments.

(15)

$n$P
├ $n$
└ Root$_1$P
    ├ Root$_1$
    └ $n$
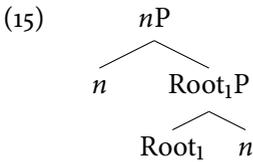
Parallel to the derivation of the VNn, I assume that there are no instances of head movement at this point. Vocabulary Insertion can now proceed. I assume that the VI module does not know how to spell out $n$ in this configuration, where it is the sister of a projecting root. The VI for the noun *mangia-mangia* 'eat-eat' is shown in (16).

(16)

$n$P
├ $n$
│  $\updownarrow$
│  $\varnothing$
└ Root$_1$P
    ├ Root$_1$
    │  $\updownarrow$
    │  /MANGIA/
    └ $n$
       $\updownarrow$
       ?

To repair this output, the PF of /MANGIA/ is copied to its sister, yielding /MANGIA/-/MANGIA/. This can be viewed as a morpho-phonological readjustment rule, post-syntactic operation, or morphotactic constraint, of the kind that have been proposed in the DM literature (cf. e.g. Halle & Marantz 1993, Embick & Noyer 2001, Arregi & Nevins 2012). This structure is then sent to the PF module, where regular phonological constraints of Italian apply. This includes hiatus resolution, which can be fed by copying, e.g. with tri-syllabic verb roots that begin with a reducible vowel, as discussed above.

At this point, I can envisage two ways in which the derivation can proceed, one being a purely phonological route, the other a morpho-phonological constraint on copies. They are both aimed at explaining the ungrammaticality of VVns where the form on the right has more than two syllables.

*Solution 1 – Pure metrics:* One possibility is that the source of ungrammaticality of VVns which are formed on the basis of tri-syllabic and larger verb roots which cannot be reduced, is a purely phonological one. For example, the metrics may be responsible: the ungrammatical examples listed in section 2.1 lead to a structure where there are two adjacent unstressed syllables word-internally.

This is an often suboptimal structure. This account makes an immediately testable prediction, namely that pluri-syllabic verb roots which do not lead to a clash (or better a lapse) lead to grammatical VVns. Unfortunately, this prediction is not borne out. The verb *saltarellare* 'to hop', has four syllables with alternating stress in its base form, cf. (17a). The resulting VVn in (17b) does not contain any two adjacent unstressed word-internal syllables. Nonetheless, the form is ungrammatical.

(17)    a.    [ˌsal.ta.ˈrɛl.la]
        b.    *un [ˌsal.ta.ˌrɛl.la.ˌsal.ta.ˈrɛl.la]

*Solution 2 – Copying is costly:* The second approach is based on the somewhat stipulative assumption that copying is costly, in some sense, with the consequence that copies are preferably avoided. One particular instantiation of this could go as follows: (i) the PF module recognizes the copy as such, (ii) there is a constraint in Italian, which bans copies from being larger than a foot, (iii) rule (ii) cannot be repaired. If (ii) applies after or simultaneously with hiatus resolution, it follows that VVns such as *ingolla-ingolla* are ungrammatical. For clarity, the derivation would go as follows: the root *ingolla* is merged with an *n* which was vacuously satisfied, i.e. did not select for anything itself. At VI, the root receives the phonological representation /ɪɴɢᴏʟʟᴀ/, but *n* cannot be spelled out. As a repair, the verb root's PF /ɪɴɢᴏʟʟᴀ/ is copied to its sister node. At PF, the second instantiation of *ingolla* is recognized as a copy and should therefore not exceed the size of a foot. Hiatus resolution, however, can apply and save the final output so that *un ingolla-ingolla* ([iŋ.gol.laŋ.gol.la]) is grammatical. Again, this approach is basically a reformulation of the facts. It makes some predictions, too, however. For instance, it would make the prediction that, in Italian, processes which involve copying on a morpho-phonological level are restricted to outputs which are no bigger than one foot.

## 4.    Conclusions

In this paper, novel data from a construction in Italian, the VVn, were proposed, where nouns are formed by doubling the base form of a verb. The investigation of these nouns showed that both syntactic and phonological restrictions on the range of verb roots which can participate in this process exist. The syntactic restriction requires the verb to be either a transitive verb or an unergative verb

with an implicit object. The phonological restrictions requires the doubled verb to have no more than two syllables. This latter restriction can be fed by regular phonology, such as vowel deletion to resolve a hiatus. It was argued that the former restriction speaks against a purely morpho-phonological treatment of the phenomenon, and that the latter speaks against a purely syntactic treatment. As a consequence, and to account for the restrictions on the one hand, and the productivity of the construction on the other hand, it was proposed that the VVn has the same syntax as agentive V-N compounds: a verb root selecting for a nominal object. The difference was proposed to lie in the choice of object. The verb root in a V-N compound selects for a structure [Num [n Root]]. In the VVn, it selects for a vacuously satisfied *n*, which was further proposed to be a generic, non-lexical nominal element interpreted as variable. The doubling was proposed to be the result of a repair: there is no plausible VI for an *n* which is immediately dominated by a root node so that the node is filled by copying the PF of its sister.

The present paper also raises a number of empirical and theoretical questions. On the empirical side, more verb classes need to be tested: the experiencer verb *temere* 'fear', e.g., seems to be unable to form a VVn (*\*temi-temi*) to me, in spite of it being bisyllabic and transitive. Also, it seems reasonable to expect speaker variation in the domain of unergatives. Speakers may vary wrt. whether they analyse a given verb root as having a basic meaning containing an internal arguement or not during acquisition. A broader inquiry is required here, ideally employing questionnaires where the VVns are presented against contexts controlling for transitivity. On the theoretical side, the gist of the present proposal hinges on two connected ideas. First, it was proposed that the nominalizing head *n* can be satisfied vacuously, i.e. it can function as an argument without previously combining with a root. Second, and more importantly, it was assumed that the syntax can generate structures which are not interpretable by the VI module without leading to a crash. Basically, the VI module was assumed to be fallible, with the consequence that such failures can be repaired by morpho-phonological operations, one being copying. This has very broad consequences which will need to be evaluated in future research.

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