Syntactic gradients in compounding: Bemba associative nominals vs. Italian prepositional and deverbal compounds

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In this article we compare three classes of nominal constructions: Bemba so-called ‘associative nominals’, a class of nominal constructions found in several Bantu languages (though we will essentially concentrate on Bemba), Italian so-called ‘prepositional compounds’ (or ‘phrasal compounds’), a class of nominal constructions common to other Romance languages (such as French and Spanish), and a specific class of prepositionless deverbal compounds that is peculiar to Italian and is not found in the other Romance languages.

The reason for comparing such geographically and typologically distant languages is that Bantu associative nominals and Romance compounds share some important properties.

As is well known, Romance noun-noun compounds (see also Basciano et al. 2011, this volume) differ from Germanic root compounds in a number of respects. First of all, Romance noun-noun compounds are left headed, whereas Germanic root compounds are typically right headed. Also, in Romance noun-noun compounds, the two nominals are sometimes separated by a phonologically independent preposition-like element which seems to contribute in a non trivial way to the meaning of the whole compound. Germanic noun-noun compounds sometimes feature a so-called ‘linking element’, occurring between the two nouns. However, this element has the form of a nominal inflection marker, it is a bound form, and does not seem to contribute in any substantive way to the meaning of the whole construction.

Moreover, some recent contributions (see Delfitto & Melloni 2009, 2011) have shown that Romance prepositional compounds (that is, those noun-noun compounds featuring a preposition-like element) do not always obey the restrictions dictated by the Lexical Integrity Hypothesis and, therefore, are less morphologically encapsulated than Germanic root compounds.

Interestingly, Bemba associative nominals pattern together with Romance prepositional compounds in that they are left headed, they are composed of two nominals separated by a phonologically independent marker which seems to restrict the set of possible interpretations of the whole construction, and, arguably, they lie outside the scope of the Lexical Integrity Hypothesis.

The goal of this article is therefore to compare in greater detail Bantu associative nominals and two specific varieties of Romance com-
pounds in order to further investigate their differences and similarities from a theoretical perspective.

The paper is organized as follows. In section 1 we discuss the main structural and interpretive properties of Bemba associative nominals and consider a number of tests enlightening their degree of morphological encapsulation. In section 2 we consider Italian prepositional compounds, their structural and interpretive properties, and, by applying the same tests adopted for Bemba associative nominals, their degree of morphological encapsulation. In section 3 we discuss the preliminary results of the analysis. Section 4 offers an overview of the properties of Italian deverbal compounds, shortly considering their relationship with the two classes of nominal constructions discussed in the preceding sections. The general conclusions are found in section 5.

1. Bemba associative nominals

1.1. Internal structure and headedness

Bemba associative nominals (henceforth AN) are constituted of two nouns (N1 and N2), whose internal structure we will discuss shortly, and a connective occurring between the two nouns, known in the Bantu literature as ‘associative marker’ (AM). Their structure is schematically represented in (1). Some examples are given in (2) and (3):

(1) N1 + AM + N2

(2) ubwálwa bwa mataba
   14beer 14AM 6maize
   ‘beer of maize’

(3) ulúkasú lwa mfúmú
   11hoe 11AM 9chief
   ‘the chief’s hoe’

Bemba nouns, following a pattern found in most Bantu languages, can be decomposed into a root, a class marker (CM), and an initial vowel (IV) - often referred to as ‘augment’ - according to the template IV+CM+root.1 To see an example, consider the noun ubwálwa in (2): álwa is the noun root; bu- (realized as bw- for phonological reasons) is the CM for class 14, the class the root belongs to; u is the IV. As the reader may have noticed, in the constructions in (2) and (3), N2 does not have an IV; we will discuss the distribution of the IV in the second noun of AN later in this section.
The AM is a phonologically independent element that can be decomposed into a morpheme -a and a concordial agreement marker, according to the template CONCORD+a. Concordial agreement is made with the noun class of N₁. For example, in (2) the AM is bw-a; it is constructed by attaching -a to the concord agreement marker of class 14, which is the class N₁ belongs to. Similarly, in (3) lw-a contains the class agreement marker of class 11 lu- because N₁ belongs to class 11. The agreement pattern is highlighted in (2) and (3) by the use of bold font.

ANs are left-headed; that is, N₁ is the head of the construction. N₁ is the structural head as it determines the class of the whole construction. In (4) the AN ulúkásu lwa pamushí is the subject of the sentence; crucially, the verb agrees in class with N₁ (class 11) but cannot agree with N₂ (class 16):

(4) ulúkásu lwa pamushí palyá na-lu/*pa-lubá
11hoe 11AM 16village 16DEM TNS-11/*16SM-lost
‘the hoe of that village is lost’

N₁ is also the semantic head of the construction: (2) refers to a type of beer; (3) refers to a hoe.

1.2. Interpretation

ANs can express a number of readings. In particular, they can express possession, kind, part-whole, location, content, purpose, material, source. Interestingly, these readings correspond to those typically expressed by the genitive (see Asher 2011), with the exception of the purpose reading. The relevant examples are provided in (5-10):²

(5) **Possession:**
ulúkásu lwa mfúmu
11hoe 11AM 9chief
‘the chief’s hoe’

(6) **Kind:**
ubwálwa bwa mataba
14beer 14AM 6maize
‘beer of maize’

ulúsapátó lwa mwáana
9shoe 9AM 1child
‘the child’s shoe’

ubwálwa bwa malé
14beer 14AM 6millet
‘beer of millet’

(7) **Part-whole relation:**
ukúúlú kwa nkókó
15leg 15AM 9chicken
‘chicken’s leg’

(8) **Location/place/time**
ulúkásu lwa pamushí
11hoe 11AM 16village
‘hoe of the village’
1.3. \(N^2\) modification

We now consider a battery of tests assessing the possibility of manipulating \(N^2\) by means of various types of modifications. The goal of these tests is to show whether ANs are morphological constructions, therefore obeying the restrictions of the Lexical Integrity Hypothesis, or freely modifiable syntactic constructions.

1.3.1. Adjectives

\(N^2\) can be modified by an adjective. This is shown in (11) and (12). Notice that, in these examples, the adjective agrees in class with \(N^2\). This agreement pattern shows that the adjective is modifying \(N^2\) and not the whole AN:

\[
(11) \text{ ukuulú kwa nkókó iyí-kulu} \\
15\text{leg} 15\text{AM} 9\text{chicken} 9\text{-big} \\
\text{‘leg of a big chicken’}
\]

\[
(12) \text{ isáaka lya malasha ayá-kulu na-li-luba} \\
5\text{sack} 5\text{AM} 6\text{charcoal} 6\text{-big TNS-5SM-lost} \\
\text{‘the sack for the big charcoal is lost’}
\]

1.3.2. Relative clauses

\(N^2\) can also be modified by a relative clause. This is shown in (13-15). Again, the agreement in class between \(N^2\) and the relative clause marker -yo guarantees that the relative clause is modifying \(N^2\):

\[
(13) \text{ ubwálwa bwa matábá áyo bá-shítile máiló na-bu-pwa} \\
14\text{beer} 14\text{AM} 6\text{maize} 6\text{REL. 2SM-buy.PERF yeasterday TNS-14SM-finish} \\
\text{‘the beer of the maize that they bought yesterday is finished’}
\]
(14) isáaka lya matábá áyo tu-léé-fwaya na-li-luba
5sack 5AM 6maize 6REL 2PL.SM-TNS-want TNS-5SM-lost
‘the sack for some maize that you want is lost’

(15) ulukásu lwa mfuúmu íyo bá-á-mwééné na-lu-luba
11axe 11AM 9chief 9REL 2SM-TNS-see.PERF TNS-11SM-lost
‘the axe of the chief that I saw is lost’

1.3.3. Quantifiers
N² can be a quantified noun phrase, as shown by the grammaticality of (16) and (17):

(16) isáaka lya matábá yamó na-li-luba
5sack 5AM 6maize 6some TNS-5SM-lost
‘the sack of some maize is lost’

(17) ulukásu lwa mfuúmu shónse na-lu-luba
11axe 11AM 10chief 10all TNS-11SM-lost
‘the axe of all the chiefs is lost’

Although the structural properties of Bantu quantifiers are still matter of debate (see Riedel 2009), the facts reported in (16) and (17) suggest that N² can have more structure than that of a simple noun.

1.3.4. Demonstratives
Further evidence that N² can be more than a simple noun is provided by the fact that N² can be headed by a demonstrative, as shown in (18-20):

(18) ulupé lwa mbalálá ishi na-lu-luba
11basket 11AM 10nuts 10DEM TNS-11SM-lost
‘the basket for these groundnuts is lost’

(19) ukúulú kwa nkókó iyi na-ku-kontoka
15leg 15AM 9chicken 9DEM TNS-15SM-broken
‘the leg of this chicken is broken’

(20) ubwalwa bwa malé aya na-bu-bola
14beer 14AM 6millet 6DEM TNS-14SM-rotten
‘the beer of this millet is rotten’

1.3.5. Coordination of nouns
N² can be a coordination of nouns, as shown by the examples in (21-23):
The prayers for the morning and evening have started.

The beer of millet and maize is strong.

House of mud and trees is destroyed.

N\textsuperscript{2} can be referred back to by an anaphoric expression, as shown in (24) and (25):

The axe of the chief is lost. He is very upset.

The leg of the chicken is broken. I will cure it.

The tests proposed in this section indicate that Bemba ANs are syntactic constructions whose internal constituents are fully available for modification. They also indicate that N\textsuperscript{2} can be more than just a noun, as it can be headed by a quantifier or a demonstrative. Finally, the pronominalization test indicates that N\textsuperscript{2} introduces a discourse referent, which can be referred back to by an anaphoric expression.

We now look at the recursion properties of ANs. The example in (26) shows that the head of an AN can be itself an AN. That the bracketing proposed in (26) is correct is suggested by the fact that the second AM agrees in class with \textit{ulúpé}, the head of the first AN:

\textit{((grandmother’s) maize basket)’}
The example in (27) shows that N^2 can be an AN. Again the bracketing proposed reflects the fact that the second AM agrees with bamáma.

(27) [ulúpé  lwa  [matábá  ya  bamáma]]
5basket  5AM  6maize  5AM  2grandmother
‘((grandmother’s maize) basket)’

Other cases of complement recursion are provided in the sentences (28-30):

(28) úlupé   lwa  matábá  ya  bamama  na-lu-luba
11basket  11AM  6maize  6AM  2grandmother  TNS-11SM-lost
‘the basket of maize of grandmother is lost’

(29) ísáaka   lya  malasha  ya  pamushi  na-li-luba
5sack  5AM  6charcoal  6AM  16village  TNS-5SM-lost
‘the sack for charcoal of the village is lost’

(30) umuténge  wa  nshindé  sha  kumúmaná  na-u-wa
3roof  3AM  10reed  10AM  17river  TNS-3SM-fall
‘the roof of reeds off/from the river has collapsed’

There is an interesting constraint on head recursion which, as we will see, holds also for Italian prepositional compounds. Notably, a possession reading cannot precede a purpose reading. This is demonstrated by the plausibility of (31) and the unsoundness of (32):

(31) ínôngó  ya  kumushí  ya  bamáma
9calabash  9AM  17village  9AM  2grandmother
‘grandmother’s calabash of the village’

(32) # ínôngó  ya  bamáma  ya  kumushí
9calabash  9AM  2grandmother  9AM  17village
‘grandmother's calabash of the village’

1.5. Initial vowel

As discussed at the beginning of this section, Bemba nouns, following a pattern found in most Bantu languages, can be decomposed into root, CM and IV, often referred to as ‘augment’. The constraints on the distribution of the IV are still a matter of debate (cf. de Blois 1970, Hyman & Katamba 1990, Ferrari-Bridgers 2009). However, in
the case of ANs it is clear that the IV can appear on N\textsuperscript{1} but cannot appear on N\textsuperscript{2} (this property is shared with the class of Bemba nominal compounds that is discussed in Basciano et al. 2011, this volume).

The fact that the IV cannot appear on N\textsuperscript{2} may be relevant for the analysis of the structural properties of N\textsuperscript{2}. Recent contributions on the IV suggest that the IV is associated with the D(eterminer) position. The obligatory absence of the IV on N\textsuperscript{2} may then be taken as evidence that N\textsuperscript{2} is not a full DP but a smaller chunk of nominal structure. This conclusion however contrasts with the observation that N\textsuperscript{2} can be headed by a quantifier or a demonstrative, which are likely to occupy a D-related position (see Riedel 2009 on this issue). It should also be noticed that things may be more complicated than this given that the IV can appear on the second conjunct of a conjoined N\textsuperscript{2}, as shown by the examples in (21-23).

In this respect it is worth noticing that quantifiers and demonstratives interact in a non trivial way with the IV. Bemba quantifiers and demonstratives can occur either in prenominal or postnominal position, the former option being the marked one. Within ANs both options are available: N\textsuperscript{2} can be headed by either a prenominal or a postnominal quantifier or demonstrative. In the case N\textsuperscript{2} is headed by a postnominal quantifier or demonstrative, N\textsuperscript{2} cannot take the IV, as demonstrated by the minimal pairs (33a-b) and (34a-b). However, in the case in which N\textsuperscript{2} is headed by a prenominal demonstrative or quantifier the IV can appear on N\textsuperscript{2}, as demonstrated by the pairs (33c-d) and (34c-d):

(33) a. úlupé lwa mbalálá ishó na-lu-luba
11basket 11AM 9nuts 9DEM TNS-11SM-lost

b. ʰúlupé lwa imbalálá ishó na-lu-luba
11basket 11AM 9nuts 9DEM TNS-11SM-lost

c. úlupé lwa ishó mbalálá na-lu-luba
11basket 11AM 9DEM 9nuts TNS-11SM-lost

d. úlupé lwa ishó imbalálá na-lu-luba
11basket 11AM 9DEM 9nuts TNS-11SM-lost

‘the basket of those nuts is lost’

(34) a. úlupé lwa mbalálá shimó na-lu-luba
11basket 11AM 9nuts 9some TNS-11SM-lost

b. ʰúlupé lwa imbalálá shimó na-lu-luba
11basket 11AM 9nuts 9some TNS-11SM-lost

c. úlupé lwa shimó mbalálá na-lu-luba
11basket 11AM 9some 9nuts TNS-11SM-lost

d. úlupé lwa shimó imbalálá na-lu-luba
11basket 11AM 9some 9nuts TNS-11SM-lost

‘the basket of some nuts is lost’
1.6. Summary

To briefly summarize the results presented so far, Bemba ANs are left-headed, open to a variety of interpretations (largely corresponding, with exception of the purpose relation, to the interpretations encoded by genitival structures) and open to recursion. N\textsuperscript{2} can be modified by an adjective or a relative clause and can be headed by a quantifier or a demonstrative. Moreover, N\textsuperscript{2} can be a conjunction of nominals and can be referred back to by a pronoun.

2. Romance phrasal/prepositional compounds

2.1. Internal structure and headedness

Romance phrasal compounds (PCs) consist of two nouns and a preposition-like particle (P). Their structure is schematically represented in (35). Some examples are reported in (36), from Italian, (37), from French, and (38), from Spanish. In Italian PCs, P is chosen among one of the following prepositions: \textit{di}, \textit{da}, and \textit{a}. The choice of the preposition is relevant for the meaning of the compound. For example, (36a) denotes a glass filled with wine, whereas (36b) denotes a glass whose prototypical use is to contain wine. Crucially, the two PCs differ only in the choice of P. We will investigate the semantic properties of PCs later in this section:

(35) N\textsuperscript{1} + P + N\textsuperscript{2}

(36) a. Bicchiere di vino  
glass DI wine  
‘glass of wine’

b. Bicchiere da vino  
glass DA wine  
‘wine glass’

c. Porta a vetri  
door A glass(pl)  
‘door made of glass’

(37) Fr.verre à vin  
glass A wine  
‘wine glass’
PCs are left-headed. N¹ is the element determining the grammatical features of the whole construction. For example, the N¹ of (36c) is marked for feminine gender; accordingly the whole PC is marked for feminine gender, as demonstrated by the agreement pattern in (39):

(39) La porta a vetri è rotta
The door:SG a glass:M.PL is broken:SG

N¹ is also the semantic head of the PC: (36b) refers to a type of glass; (36c) refers to a type of door.

2.2. Interpretation

The interpretation of PCs is highly constrained. Delfitto, Fábregas & Melloni (2008, forthcoming) propose that the interpretation of PCs is constrained in ways “that correspond to the activation of the default predicative structures made available by the ‘Qualia’ information encoded on the head”. That is, N² introduces a predication about one of the four Qualia of the head N¹. Some examples are reported in (40-43). In (40) stella predicates something about the formal properties of the head, that is, its having the shape of a star. In (41) vetri predicates something about the constitutive properties of the head, that is, its being made of glass. In (42) pallottola predicates something about the agent in the event of coming into being of the head, that is, its having been made by a bullet. In (43) pane predicates something about the prototypical use of the head, that is, its being a knife for cutting bread:

(40) chiave a stella → FORMAL quale (a key which has the shape of a star)
key A star

(41) porta a vetri → CONSTITUTIVE quale (a door made of glass)
door A glass(pl)

(42) foro di pallottola → AGENTIVE quale (a hole made by a bullet)
hole DI bullet

(43) coltello da pane → TELIC quale (a knife whose prototypical use is to cut bread)
knife DA bread
As we saw, the choice of P is relevant for the meaning of the whole PC. However, pairs such as (40)-(41) and (36a)-(42) indicate that there is no one-to-one correlation between the choice of P and the quale being predicated. Only preposition da seems to strictly correlate with telic quale predications.

Moreover, it is important to observe that there is a class of PCs featuring the preposition di that have a locative reading. Some examples are reported in (44-46). However, as we will see later in this section, the tests concerning N² modification show that di-PCs with a locative reading are far more constrained than the PCs that predicate a property of the head's Qualia structure. This suggests that locative PCs should be treated as an independent class:

(44) Casa di campagna
    house DI countryside
    ‘country house’

(45) Frutta di stagione
    fruit DI season

(46) Quartiere di periferia
    district DI suburb

2.3. N² modification

As we did for Bemba’s ANs, in order to assess the degree of lexical integrity of PCs, we consider a battery of tests concerning the possibility of manipulating N².

2.3.1. Adjectives

The examples in (47-50) show that N² can be modified by an adjective:

(47) camicia a quadri rossi
    shirt A square(pl) red
    ‘shirt with red squares’

(48) porta a vetri opachi
    door A glass.pl opaque
    ‘door made of opaque glass’

(49) bicchiere da vino rosso
    glass DA wine red
    ‘glass for drinking red wine’
(50) bicchiere di birra scura/filtrata
   glass  DI beer  dark/filtered
   ‘glass of dark/filtered beer’

Notice, however, that all the adjectives used in (47-50) express individual-level properties (that is, inherent, non-contingent properties; for the distinction between individual-level and stage-level predicates see Carlson 1980). Pairs such as (51-52) suggest that N² cannot be modified by an adjective expressing a stage-level property (that is, a contingent, non-inherent property):

(51) vestito di seta lucida /*sporca
dress  DI silk  bright  /soiled
   ‘dress made of bright/soiled silk’

(52) porta a vetri doppi /*rottì
   door  A glass.pl  double  /broken
   ‘door made of double/broken glasses’

As for locative PCs (that is, PCs featuring the preposition di and a locative interpretation), notice that N² cannot be modified by an adjective, even in the case in which the adjective expresses an individual-level property:

(53) *casa  di  [campagna francese]
    house  DI countryside  French

(54) *appartamento di  città piccola
    flat  DI city  small

(55) *frutto di stagione fredda
    fruit  DI season  cold

2.3.2. Relative clauses

The distinction between stage-level and individual-level predicates holds also for relative clause modification. Examples (56) and (58) show that N² cannot be modified by a relative clause expressing a stage-level property. The examples remain ungrammatical also when a reduced relative clause is used. On the other hand, examples (57) and (58), featuring a relative clause expressing an individual-level property, are significantly more acceptable. Also, according to some speakers, (57) and (58) are perfectly acceptable if a reduced relative clause is used:
(56) *bicchiere da vino (che ho) bevuto ieri
    glass DA wine (that 1s-have) drunk yesterday

(57) ? bicchiere da vino (che è) invecchiato almeno cinque anni
    glass DA wine (that is) aged at least five years

(58) *porta a vetri (che sono stati) imbrattati dai teppisti
    door A glasses (that have been) soiled by-the hoodlum

(59) ? porta a vetri (che sono stati) prodotti a Murano
    door A glasses (that have been) crafted in Murano

As for locative PCs, the examples in (60-63) show that N2 cannot be modified by a relative clause, be it stage or individual-level, full or reduced:

(60) *quartiere di periferia (che è stata) trascurata dal sindaco
    district DI suburb (that has been) neglected by the mayor

(61) *quartiere di [periferia (che si trova) sul mare]
    district DI suburb (that is located) on the sea

(62) *casa di [countryside (che è stata) comprata dalla famiglia Tepper]
    house DI countryside (that has been) bought by the Tepper family

(63) *casa di [countryside che si estende per molti ettari]
    house DI countryside that extends over many hectares

2.3.3. Quantifiers
The examples in (64-67) show that N2 cannot be headed by a quantifier:

(64) *bicchiere da ogni vino
    glass DA every wine

(65) *camicia ad alcuni quadri
    shirt A some squares

(66) *porta a molti vetri
    door A many glasses

(67) *vestito di qualche seta
    dress DI some silk
2.3.4. Demonstratives

N² cannot be headed by a demonstrative, as demonstrated by (69-70). However, the sentences in (71-72) suggest that the N² of locative PCs can be headed by a demonstrative (it remains to be seen whether the constructions in (71-72) are true PCs or more complex genitival structures):

(69) *bicchiere da quel vino
    glass DA that wine

(70) *camicia a quei quadri
    shirt A those squares

(71) Gianni ama gli appartamenti di quella città
    Gianni loves the apartments DI that city

(72) ? Gianni ama la frutta di questa stagione
    Gianni loves the fruit DI this season

2.3.5. Coordination of nouns

N² can be a coordination of nouns, as shown by (73-75). Coordinations within locative PCs trigger contrasting judgments. Yet, examples such as (76) are quite acceptable:

(73) camicia a quadri e righe
    shirt A squares and stripes

(74) bicchiere da vino e birra
    glass DA wine and beer

(75) bicchiere di acqua e vino
    glass DI water and wine

(76) ? Gianni ama le case di campagna e città
    John loves the houses DI countryside and city

2.3.6. Pronominalization

The referent of N² can be resumed by a pronoun. This holds at least for the cases in (77-78). Judgements are less clear in the case of PCs expressing a telic quale predication (cf. Bassac & Bouillon 2001). Yet, (79) is quite acceptable:
(77) Ho comprato una camicia a quadri, che ne ha di diversi colori e dimensioni
‘I bought a shirt with squares that has them in different colors and measures’

(78) Voglio un bicchiere di [vino bianco], perché lo preferisco al rosso
‘I want a glass of white wine because I prefer it to the red’

(79) ? Voglio comperare dei bicchieri da [vino bianco], perché lo preferisco al rosso
‘I want to buy some glasses for white wine because I prefer it to the red’

Also in the case of locative PCs judgments are not clear. Yet, a sentence such as (80) is rather acceptable:

(80) ? Voglio una casa di campagna, perché la preferisco alla città
‘I want a house in the country side because I prefer it to the city’

2.3.7. Interim summary
The tests proposed in this section indicate that Italian PCs are more constrained than Bemba ANs. N2 can be modified by an adjective or a relative clause only as long as the modifier expresses an individual-level property. Moreover, N2 cannot be headed by a quantifier or a demonstrative. However, Italian PCs are not completely opaque: N2 can be a coordination of nouns and its referent can be resumed by a pronoun.

These tests also show that locative PCs constitute a relatively independent class as they do not allow N2 modification, even by adjectives or relative clauses expressing an individual-level property.

2.4. Recursion

Italian PCs can be recursive. Examples (81-82) show that the head of the PC can be itself a PC. Examples (83-84) show that N2 can be a PC:

(81) [Vestito da sera] di seta
dress DA evening DI silk

(82) [Vestito di seta] da sera
dress DI silk DA evening

(83) Fodero da coltello da macellaio
sheath DA knife DA butcher
We observed that in Bemba ANs a possession relation cannot precede a purpose relation. A similar constraint seems to hold also for Italian PCs. The pair (85-86) shows that a *di* measure phrase cannot precede a *da* phrase expressing a telic *quale* property:

(85) bicchiere *da* birra *di* vino  
glass *DA* beer *DI* wine

(86) *bicchiere *di* vino *da* birra  
glass *DI* wine *DA* beer

We speculate that this constraint may be reducible to a more general constraint disallowing stage-level modifications before individual-level modifications (see Langaker 1988, 1991):

*stage-level > individual-level.

This constraint explains, among other things, why the stage-level adjective *aperta* ‘open’ cannot precede the individual-level adjective *rossa* ‘red’, as shown by the pair (87-88), or the constitutive *quale* modification *a vetri* in (89-90):

(87) Porta *rossa* aperta  
door *red* open

(88) *Porta aperta rossa  
door open *red

(89) Porta *a vetri* aperta  
door *A glass.pl* open

(90) *Porta aperta a *vetri  
door open *A glass.pl

2.5. Summary

To briefly summarize the results, Italian PCs are also left-headed and open to recursion. However, their interpretation is restricted to expressing a modification of a *quale* of the head. N^2 can be modified by an adjective or a relative clause as long as these express an
individual-level property but it cannot be headed by a quantifier or a demonstrative. Finally, N² can be a conjunction of nominals and can be referred back to by a pronoun. We also pointed out some important differences between Qualia structure PCs and locative PCs.

3. Intermediate summary

Table 1 summarizes the results reviewed in the previous sections.

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<tr>
<td><strong>Head</strong></td>
<td>LEFT</td>
<td>LEFT</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>Genitive relations + purpose</td>
<td>Modification of a quale of the head</td>
</tr>
<tr>
<td>N²+adjective</td>
<td>✔</td>
<td>✔ with i-level adj.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✗ with s-level adj.</td>
</tr>
<tr>
<td>N²+relative clause</td>
<td>✔</td>
<td>✔ with i-level r.c.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✗ with s-level r.c.</td>
</tr>
<tr>
<td>N²+quantifier</td>
<td>✔</td>
<td>✗</td>
</tr>
<tr>
<td>N²+demonstrative</td>
<td>✔</td>
<td>✗</td>
</tr>
<tr>
<td>[N² N and N]</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>N² pronominalization</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Recursion</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

We began with the observation that Bemba ANs pattern together with PCs in that they are left headed, they are composed of two nominals separated by a phonologically independent marker which seems to restrict the set of possible interpretations of the whole construction, and in that they are syntactically ‘transparent’, in the sense of not obeying the usual constraints posed by the Lexical Integrity Hypothesis.

However, apart from these similarities there are a number of significant differences.

1. In ANs the form of the associative marker linking the two nouns is determined by the head of the compound through class agreement; in PCs the form of the preposition is linked to the mean-
ing of the compound (although, as we saw, there is no one-to-one correlation between form and meaning).

2. The interpretation of both ANs and PCs is rather restricted, especially if we compare these forms with Germanic root compounds. However, Bemba ANs arguably subsume the meanings of the Indo-European Genitive, plus the purpose relation, whereas the interpretation of Italian PCs is restricted to the expression of a *qualia* property of the head.

3. The N₂ of ANs can be freely modified by either adjectives or relative clauses. The N₂ of PCs can be modified by an adjective or a relative clause only in case they express an individual level property.

4. The N₂ of ANs can be headed by a quantifier or a demonstrative, whereas the N₂ of PCs cannot.

This brief summary suggests that ANs and PCs belong to quite different classes of syntactic constructions. Nevertheless, it can be concluded that both ANs and PCs cannot belong to morphology, at least as it is traditionally conceived, that is, as an independent computational module largely opaque to syntactic computations. In fact, both ANs and PCs show a significant degree of transparency.

4. A note on prepositionless genitives in Italian

In Italian, it is not only PCs that challenge the idea of a clear-cut divide between syntax and morphology but also, significantly, the class of prepositionless N+N compounds investigated by Delfitto & Paradisi (2009a-b), which contains the examples in (91):

(91) taglio spese sociali  ufficio riscossione tributi
cut expenses social  office collection taxes
‘social-spending cut’  ‘tax-collecting office’
caduta foglie  inizio mese
fall leaves  beginning month
‘leaf fall’  ‘month beginning’

This class of compounds is characterized by a set of peculiar properties summarized in (92) (see Delfitto & Paradisi 2009a-b for the relevant exemplification):

(92) (a) phonological independence of the compound constituents;
(b) semantic compositionality;
(c) licensing of ellipsis;
(d) licensing of pronominal anaphora
What interests us from the present perspective is that these properties, taken together, suggest a high degree of syntactic ‘transparency’. A possibility that comes to mind is to reduce these cases of alleged compounding to a specific modality of genitive case assignment. Prepositionless genitive is well-documented both in Semitic, where it gives rise to the so-called ‘Construct State’ (CS), and in early phases of Romance, where it gives rise to the so-called ‘Juxtaposition Genitive’ (JG) of Old French (see Delfitto & Paradisi 2009a and the references cited therein). Construct State in Semitic and Juxtaposition Genitive in Romance share a number of properties, among which the ap positional nature of the DP-complement and the strict adjacency requirement between N and the DP-complement. However, they also reveal substantial differences: the head of the construction is obligatorily articleless in Semitic (whilst the noun is normally introduced by a definite determiner in JG), and the DP-complement is obligatorily marked as +Definite and +Human in Romance (whilst there are no comparable constraints in Semitic CS, which is simply characterized by definiteness spreading effects, by means of which the definiteness or indefiniteness of the DP-complement percolates to the nominal head). Moreover, residual case morphology can be detected in Romance where the genitive complement is marked with the cas-régime (a label subsuming syncretic morphological realization of accusative and oblique case), whereas this is clearly not the case in Hebrew and even in Arabic (cf. Shlonsky 2004), where the alleged genitival features that have been postulated in D are systematically silent. In spite of these differences, there have been suggestions that the two constructions might be amenable to theoretical unification (the interested reader is referred to Delfitto 2009), based on the idea that all prepositionless varieties of genitive assignment (or at least those connected to definiteness effects) emerge as a consequence of the activation, on the head-noun, of an unvalued definiteness feature, by means of a natural extension of the theory of genitive case developed in Pesetsky & Torrego (2004).

Quite independently of the success of these attempts, there are serious reasons to believe that the constructions in (91) represent a distinct phenomenon, whose reduction to the less standard varieties of genitive assignment under discussion looks rather problematic.

A first reason is that there is no residual case-morphology in deverbal compounds. This not only holds for the constructions in (91) in Modern Italian, but also for all cases of alleged appositional genitive attested in Old Italian (see below for further qualifications). This is a significant difference between (91) (and the most likely precursors of this construction-type in Old Italian) and JG in Old French.
A second reason is that the aprepositional mode of compound-ing exemplified in (91) is strongly productive with deverbal nouns in Modern Italian (that is, given an arbitrary deverbal noun, it is rather simple to come up with examples in which the DP-complement is realized aprepositionally). This cannot be a matter of style, register (such as the special syntax of newspaper headlines, etc.) or the result of the interaction with other sociolinguistic factors, since all these constructions are necessarily prepositional, to the best of our knowledge, in all other Romance languages in comparable linguistic settings, to the effect that Italian seems totally isolated in this respect. This is even more striking if one considers that JG is not exclusively licensed by deverbal nominal heads in Old French.

Third, there is some evidence that the special status of the class of constructions in (91) is already detectable in early phases of Italian. In fact, constructions that might be amenable to the variety of JG traditionally found in Old French are present both in Old Italian (cf. (93)) and in many (Southern) dialects of Modern Italian (cf. (94)) (see Delfitto & Paradisi 2009a for a full discussion and references to the primary sources, basically consisting in practical texts from Tuscany dating back to the 14th century):

(93) a. lo prode Puccio Sinibaldi
   the interest Puccio Sinibaldi
   ‘Puccio Sinibaldi’s interest’

b. a nome messer Eustagio
   at name sir Eustagio
   ‘in the name of Sir Eustagio’

(94) a. Rosa lu sindich∂
   Rosa   the mayor
   ‘Rosa, the servant of the mayor’ (Southern Latium)

b. la kasa la mammana
   the house the midwife
   ‘the house of the midwife’ (Veroli; also attested in Castro dei Volsci)

Besides these constructions, where the DP-complement is often expressed by a proper name (they are in fact largely attested also in toponyms), a distinct construction is also detected in the same sources, where the aprepositional genitive regularly expresses one of the internal arguments of a deverbal head noun. Some cases in point are provided in (95) (from Delfitto & Paradisi 2009a):
(95) a. facitura e cocitura lo detto pane
   'making and baking of the above-mentioned bread'
b. per scrivitura la sentençia contra Saracione
   'for the writing of the sentence against Saracione’
c. reghatura una chassa da Mungnese
   'the transportation of a box from Mugnese’
d. aburattatura farina
   'selection of flour’
e. Gosstommi portatura letame tra due volte . . .
   'the double transportation of manure cost to me . . .’

In these constructions, as one may infer from the examples in (95), the constraints that usually apply to the DP-complement in JG do not hold: the latter can be definite as well as indefinite, and its reading can be specific as well as kind-referring. This means that not only are these constructions not articleless (the presence of the article is in fact shared by JG, as seen above), but there is also no definiteness spreading: an indefinite DP-complement is perfectly compatible with a definite reading of the head noun, as is evident from (95e) and probably also from (95c). These features arguably extend to the deverbal prepositionless constructions in Modern Italian exemplified in (91). In Modern Italian, one could point to some rocks in the middle of a mountain road while driving further and utter (96):

(96) Questa caduta massi avrebbe potuto danneggiare la nostra auto
   'this rock fall could have damaged our car’

This shows that kind-reference is not as a compelling requirement, for the interpretation of the DP-complement in (91), as it might seem at first sight. Moreover, the CS and JG property according to which the nominal head and its complement need be strictly adjacent does not hold for this class of compounds, as witnessed by the relative acceptability of (97), where the adjective modifying the head noun intervenes between the latter and its nominal complement:

(97) ? Trasporto rapido rifiuti tossici
   'fast transportation of toxic waste’
On these grounds, the deverbal compounds in (91) may be taken to represent a challenging comparative puzzle: clearly, they are not characterized by the syntactic opacity effects traditionally tied to the Lexical Integrity Hypothesis, but it may not be easy to figure out how they could be reduced to a manifestation of the mode of genitive assignment exemplified by CS and JG (and arguably based on a syntactic mechanism of definiteness valuation, as proposed in Delfitto 2009).

From the point of view of the present contribution, it is fair to say that these deverbal compounds illustrate, on a par with ANs in Bemba and PCs in Italian, the case of nominal constructions that we would like to keep apart from more traditional forms of compounding, but that resist, in some way or another, a full-fledged syntactic analysis.

5. Conclusions

The three classes of nominal constructions examined in the present contribution share an interesting property: they are all syntactically ‘too transparent’ to be assimilated to the traditional forms of nominal compounding (on the model of, say, Germanic compounding) while resisting, at the same time, assimilation to the familiar syntactic mode of construction whereby a noun selects a full DP as its genitival complement.

There is actually a sort of gradient. ANs in Bemba look like genitives in many respects, if only we consider that their complement may be headed by a quantifier or a demonstrative, and that the set of interpretations to which they can give rise largely overlaps with those typically connected with the genitive. However, this overlap is imperfect (as witnessed by the presence of the ‘purpose reading’ discussed in section 1.2) and the absence of the augment in the structures where the demonstrative or the quantifier is realized postnominally may be taken to show that there are cases of ANs where the nominal complement is not a full DP.

Italian PCs are in many respects more similar to compounds: the interpretations to which they give rise are quite more constrained than those associated with the genitive. In fact, they seem to trigger the activation of the Qualia Structure of the head noun in the same way standard aprepositional compounds arguably do in Italian (cf. Delfitto & Melloni 2009, 2011): the role of the preposition might thus
simply consist in enhancing *Qualia* activation. However, they readily accept forms of modification of the non-head as well as they readily undergo discourse pronominalization of the non-head. Moreover, they more readily accept recursion than it is the case with the aprepositional forms of nominal compounding.

Italian deverbal compounds are perhaps in-between. On one side, they can be clearly kept apart from the aprepositional forms of genitive assignment proper to early phases of Romance, both on synchronic and diachronic grounds, as we have seen in section 4. On the other side, they remain a syntactic phenomenon, in that they readily admit recursion and modification, as well as ellipsis and pronominalization.

In order to account for the nominal constructions whose properties we have investigated in this contribution new styles of analysis and new theoretical tools are required, whereby the boundaries between morphology and syntax are completely reshaped and the gradient of ‘syntactic’ properties that we have detected here is fully taken into account. We leave this for future research.

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Notes

1 For more discussion about the IV, see Basciano et al. 2011, this volume; for an in depth discussion of class markers and concord in Bantu see Carstens 2008. Interestingly, several attempts have been made to show that Bantu classes and Romance gender can be reduced to unified system of features with similar inflectional and derivational functions; on this see, among others, Corbett 1991 and Ferrari-Bridgers 2008.

2 On this, see also Matambirofa (2000).
Bibliographical References


