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Loose apposition

A construction-based analysis

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Loose appositional constructions consist of coreferring adjacent nominals. The relation between the nominals is different from complementation and modification, and shows some intriguing syntactic, semantic and pragmatic characteristics. To model them we employ the framework of Sign-Based Construction Grammar, enriching its inventory of constructions with a highly abstract one that models supplementation in general, and a more specific one that models the loose appositional construction.

1. Introduction

Some examples of the loose appositional construction (AC) are the italicized phrases in (1–2).[1]

(1) *My brother, Richard*, is developing a low-cost modular ground robot. (COCA, 2009 NEWS)

(2) *General Colin L. Powell, chairman of the Joint Chiefs of Staff*, is opposing the use of military force. (COCA, 1992 NEWS)

Loose ACs consist of two nominals. We call the first one the *anchor* and the second one the *appositive*.[2] The appositive is surrounded by commas, the orthographic

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1. COCA is short for the Corpus of Contemporary American English, created by Mark Davies at Brigham Young University. It contains more than 450 million words of text and is equally divided among spoken language, fiction, popular magazines, newspapers and academic texts.

2. One also finds the terms U_1 and U_2 for the anchor and the appositive respectively, see amongst others Meyer (1987), Acuña-Fariña (1999) and Loock & O'Connor (2013).

equivalent of intonation boundaries in speech. In this respect, the loose AC in (1) differs from the italicized phrase without commas in (3).[3]

(3) *My brother Richard* built the distinctive twin-gabled church. (COCA, 2009 ACAD)

The orthographic/prosodic difference corresponds to a difference in interpretation. In (1) the speaker is understood to have one brother and that brother is claimed to be Richard. In (3), by contrast, the speaker is understood to have more than one brother and the function of the second nominal is to single out which of the brothers is meant (see Keizer 2005, Acuña-Fariña 2009 and Kim 2012). There are also differences in distribution. Burton-Roberts (1975: 401), for instance, points out that an indefinite nominal may be followed by an appositive if and only if it is a separate intonation unit, as demonstrated in (4a).

(4) a. Two years earlier three white men had similarly dragged a black man, James Byrd Jr., to his death. (COCA, 2011 MAG)
     b. *Two years earlier three white men had similarly dragged a black man James Byrd Jr. to his death.

This paper focusses on loose ACs, i.e. NPs with an appositive that forms a separate intonation unit, as in (1–2) and (4a). Section 2 presents the properties which we consider characteristic of loose ACs. Section 3 introduces the leading ideas and the notation of Sign-Based Construction Grammar (SBCG), and Section 4 proposes a formal analysis of loose ACs in terms of that framework. Section 5 contains the conclusions.

2.   Properties of the loose AC

In this section we first argue why the loose AC is a headed construction (Section 2.1). Since this deviates from the widely held assumption that appositive constructions are non-headed, as claimed in Huddleston & Pullum (2002: 1350), we provide ample motivation for our claim. Next, we identify the semantic and pragmatic contribution of the appositive (Section 2.2). Finally, we spell out the main properties of the anchor (Section 2.3) and the appositive (Section 2.4).

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3. The construction in (3) is sometimes called a *close* AC, as in Keizer (2005) and Heringa (2011), but there are also authors who prefer to call it an instance of modification.

2.1 The loose AC is a headed construction

That the two nominals in a loose AC form a constituent is clear from the fact that they must be adjacent, see also Quirk *et al.* (1985). Separating the appositive from the anchor, as in (5b), yields an ill-formed result.

(5)   a.   Sarajevo, the capital of neighboring Bosnia, is where World War I began. (COCA, 1999 SPOK)
      b.   *Sarajevo is where World War I began, the capital of neighboring Bosnia.

Within the AC the relation between the anchor and the appositive is asymmetric. Notice, for instance, that the *omission* of the appositive in (6) does not affect the well-formedness of the sentence, while the omission of the anchor does.

(6)   a.   Chuck Selwyn, headmaster of Walden School, halted in mid-stride as we entered his office unannounced. (COCA, 1994 PUB)
      b.   Chuck Selwyn halted in mid-stride as we entered his office unannounced.
      c.   *Headmaster of Walden School halted in mid-stride as we entered his office unannounced.

Confirming evidence is provided by (7), quoted from Heringa (2012: 558).

(7)   a.   Anna Wilson, not my best friend, voted against me.
      b.   Anna Wilson voted against me.
      c.   *Not my best friend voted against me.

We take this as evidence that the anchor is the head of the loose AC. Since this clashes with the assumption that loose ACs are non-headed, we provide some more evidence for our claim. It relates to agreement, on the one hand, and case assignment, on the other hand.

Starting with *agreement*, let us inspect the data in (8–10).

(8)   I, Pookie, am going to open my house so that a near stranger can sell Avon cosmetics there. (COCA, 2010 FIC)

(9)   I, Jerome David, am going to ask myself what it is like to live in a set-up. (COCA, 1992 FIC)

(10)   I, Claudius, am such a delightful creature, aren't I?[4]

The finite verb in (8), the anaphoric pronoun in (9) and the tag in (10) all show agreement with the first person pronoun in the anchor, rather than with the third

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4. The examples with no explicit source are either self-made by the authors or minimally modified from the cited literature.

person proper noun in the appositive. The same holds for the number value in (11).

(11)   Our brains, our most important asset in the struggle for life, are unique in their complexity.

The finite verb shows agreement with the plural anchor, rather than with the singular appositive. Moreover, in languages which overtly mark grammatical gender, such as Italian, it is the gender of the anchor that matters for agreement with predicative adjectives. In (12), for instance, the predicative adjective shows agreement with the feminine noun *canzone* 'song' in the anchor, rather than with the masculine *capolavoro* 'masterpiece' in the appositive.

(12)   Questa   canzone, il capolavoro   di Adamo, è bellissima.
          this   song.FEM, the masterpiece.MAS of Adamo, is beautiful.AUGM.FEM
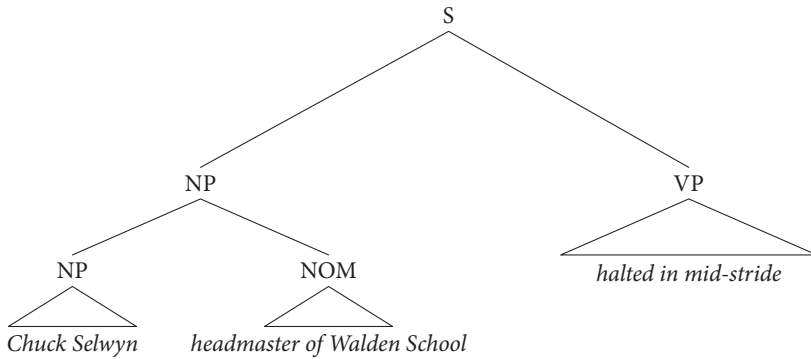   'This song, Adamo's masterpiece, is very beautiful.'

Acuña-Fariña (1999: 67–68) discusses similar examples from Spanish and Galician.

The evidence that relates to *case assignment* is based on data from languages in which the anchor and the appositive may have a different case, such as Romanian. As demonstrated in Heringa (2012: 573–578), it is the anchor, rather than the appositive, that bears the contextually assigned case in such combinations. In (13), for instance, the verb *dat* 'gave' assigns dative case to the indirect object, and this is indeed the case that shows up in the anchor *Arabelei* 'Arabel.DAT', but the appositive has a nominative form.

(13)   Astronauții   au   dat Arabelei,   un   păianjen de
          astronauts.DEF PAST.3.PL gave Arabel.DAT, a.NOM spider   of
          grădină, apă și   carne.
          garden, water and meat.
          'The astronauts gave Arabella, a garden spider, water and meat.'

Taking stock, the omissibility data, the agreement data and the case assignment data all suggest that the anchor is the head of the AC. To capture this we adopt a structure in which the appositive is Chomsky-adjoined to the anchor.[5]

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5. This kind of tree geometry is already proposed in Delorme & Dougherty (1972: 9–10).

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                              S
                    ┌─────────┴──────────────┐
                   NP                        VP
             ┌─────┴──────┐            ┌──────┴──────┐
            NP           NOM          △
         ┌──┴──┐      ┌───┴───┐   halted in mid-stride
        △        △
   Chuck Selwyn  headmaster of Walden School
```

The NP anchor is the head of the higher NP and shares its person, number, gender and case. The appositive may share those values as well, but this is not necessary: It may have another person value, as in (8–10), another number value, as in (11), another gender value, as in (12), or another case value, as in (13).

Summing up, loose ACs are constituents that are headed by the anchor and the appositive is Chomsky-adjoined to the anchor.

2.2 The contribution of the appositive

The semantic contribution of the appositive can be phrased in terms of a separate proposition, as illustrated in (14–15).

(14) a. Brussels, the capital of the country, is officially bilingual. (COCA, 2000 NEWS)
      b. Brussels is the capital of the country.

(15) a. He visited his daughter, back then a student at Southern Methodist University. (COCA, 2006 NEWS)
      b. His daughter was back then a student at Southern Methodist University.

The proposition takes the form of a copular construction, in which the anchor corresponds to the subject and the appositive to the predicate nominal.[6] As pointed out in Heringa (2012: 561), the proposition which expresses the contribution of

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6. If the anchor is indefinite, the proposition sounds more natural if the appositive corresponds to the subject and the anchor to the predicate nominal.

(i) a. A white student, Kim Cunnings, says she went to a private school for a while. (COCA, 1999 NEWS)
     b. Kim Cunnings is a white student.

the appositive has the illocutionary force of an assertion, also if the main clause expresses a question, as in (16).[7]

(16)   a.   What could Linda, a new and unproven robopsychologist, do against the Living Legend? (COHA, 1986 FIC)
       b.   Linda is a new unproven robopsychologist.

Contrary to what (14–16) might suggest, the meaning of a sentence with a loose AC is not simply the conjunction of the meaning of the sentence without the appositive and the proposition which is contributed by the appositive. This is demonstrated in Potts (2005) by means of examples like (17).

(17)   a.   Sheila says that Chuck, a confirmed psychopath, is fit to watch the kids.
       b.   Sheila says that Chuck is fit to watch the kids and that Chuck is a confirmed psychopath.

The appositive in (17a) is part of the subordinate *that*-clause, but the proposition which it contributes cannot be simply conjoined to the proposition which contains its anchor, as in (17b), since Sheila is not committed to the proposition that Chuck is a confirmed psychopath. Instead, it is the speaker who is committed to this claim. This accounts for the contrast in (18).

(18)   a.   Sheila says that Chuck is fit to watch the kids and that Chuck is a confirmed psychopath, but Chuck is not a confirmed psychopath.
       b.   #Sheila says that Chuck, a confirmed psychopath, is fit to watch the kids, but Chuck is not a confirmed psychopath.

In (18a) it is Sheila's claim that Chuck is a confirmed psychopath, and the speaker can go on denying that claim, but in (18b) it is the speaker who is committed to the claim and denying that claim in the same sentence is, hence, incongruous. The assumption that the contribution of the appositive is speaker-oriented has been challenged in more recent work, see Amaral *et al.* (2007) and Harris & Potts (2009). A counterexample is provided in (19), an excerpt from a story about a missing woman, named Leta, and her husband Frank.

(19)   According to Frank, the couple, along with his mother, who had just arrived for a visit, had driven to their vacation home on St. Maarten on January 11 after an evening of drinks with friends. He says that Leta, *a frequent gambler*, wanted to go to the Westin casino a half mile away. (COCA, 2008 MAG)

According to the speakers we consulted, the claim that Leta is a frequent gambler can be attributed to the speaker (the reporter), confirming the judgements about

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7. COHA is short for the Corpus of Historical American English. With 400 million words of text, ranging from 1810 to 2009, it is the largest structured diachronic corpus of English.

(18), but it can also be attributed to the husband, which shows that the claim does not necessarily commit the speaker.

Summing up, the semantic contribution of the appositive is that of a proposition. Its nucleus is a copular construction and its illocutionary force is that of an assertion. That assertion is canonically attributed to the speaker, but attribution to another agent is not impossible.

2.3 Constraints on the anchor

The anchor typically takes the form of a definite NP, such as a personal pronoun, a proper noun or a nominal that is introduced by a definite determiner, as in (20).

(20) a. I, John Rawls, have seen through the veil of ignorance. (COCA, 2002 MAG)
      b. Daniels, director of printing for the U.S. Senate, had been attending a Chicago conference. (COCA, 2001 NEWS)
      c. Mrs. Sharma went to Jitendra's house, a nice-looking building in New Baneswor with a large yard. (COCA, 2006 FIC)

Indefinite NPs can also be used as anchors, as shown in (4) and the example in footnote 6, repeated here as (21b).

(21) a. Two years earlier three white men had similarly dragged a black man, James Byrd Jr., to his death. (COCA, 2011 MAG)
      b. A white student, Kim Cunnings, says she went to a private school for a while. (COCA, 1999 NEWS)

Interrogative NPs, by contrast, are inappropriate, as shown in (22).

(22) a. *Who, the director of our art department, has been with the company for more than ten years?
      b. *I do not remember whose husband, a talkative person, participated in the discussion.

This chimes well with the fact that the contribution of the appositive is an assertion, rather than a question. Also excluded are exclamative and quantified NPs, as in (23–24).

(23) a. *What a beautiful bag, a Delvaux, you have!
      b. *It is amazing what a tough lady, Angela Merkel, she is.

(24) a. *Everybody, the talkative person(s), participated in the discussion.
      b. *No woman, the talk of the town, participated in the discussion.

Comparing these with the well-formed combinations in (20–21), the relevant distinction appears to relate to the specificity of reference. Notice, for instance, that the indefinite NPs in (21) refer to a specific black man and a specific white student, rather than to any individual who is a black man or a white student. Fodor & Sag (1982) call such NPs *referential indefinites* and contrast them with quantificational indefinites. Typical of a referential indefinite is that it is interpreted "as an unscoped element which does not bind variables and is insensitive to island boundaries, but which happens to entail a maximally wide scope quantifier reading" (Fodor & Sag 1982: 379). Such indefinites, Fodor & Sag (1982: 379) claim, pattern "exactly like definite referential phrases such as proper names, demonstratives and (non-attributive) definite descriptions". A distinction along the same lines is made in Kamp & Reyle (1993: 289).

Besides the exclusion of interrogative, exclamative and quantified NPs, which can be attributed to semantic factors, there is also a syntactic constraint on the anchor, namely that it must be fully saturated. The bare nominal in (25), for instance, is inappropriate as an anchor.[8]

(25) *Headmaster of Walden School, Chuck Selwyn, halted in mid-stride as we entered his office unannounced.

Gapped nominals do not qualify either, as shown by the contrast between (26) and (27).

(26) a.   I personally know the author of that book.
      b.   That book I personally know the author of __.

(27) a.   I personally know the author of that book, Ian Mc Ewan.
      b. *That book I personally know the author of __, Ian Mc Ewan.

The well-formedness of (26b) shows that nominals can be gapped, but the ill-formedness of (27b) demonstrates that such nominals cannot be used as the anchor of a loose AC.

Summing up, a nominal can be used as the anchor of a loose AC, if it is referentially specific and syntactically complete.

2.4 Constraints on the appositive

The appositive has roughly the same constraints as the anchor. It may be definite, as in (28), or indefinite, as in (29).

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8. The combination is well-formed if one drops the commas around the appositive, but in that case it is a close AC or an instance of modification, see footnote 3.

(28) a. My guest, David Wood, has written a series of articles about what this means. (COCA, 2001 SPOK)

b. Beijing, the capital of Earth's most populous country, is massive. (COCA, 1998 MAG)

(29) a. Debbie moved into Alexandria's House, a transitional home for young mothers. (COCA, 1994 MAG)

b. Coach Mike Smith, a former defensive coordinator, knows when his team needs more youth in the D-line. (COCA, 2011 NEWS)

Interrogative, exclamative and quantified NPs are inappropriate, and so are gapped NPs.

There are also some differences, though. First, the appositive need not be fully saturated, as shown by the bare singulars in (30).

(30) a. Bush, son of former President Bush, has declined to rule out such a race. (COCA, 1997 NEWS)

b. David, owner of a construction company, built the entire house with some help from son David. (COCA, 1997 MAG)

Second, the appositive may contain an adjunct in predeterminer position, as in (31).

(31) a. Noonan, not a bad guy, chooses his next words carefully. (COCA, 2001 FIC)

b. He visited his daughter, back then a student at Southern Methodist University. (COCA, 2006 NEWS)

We treat such adjuncts in the same way as the italicized left peripheral NP modifiers in (32).[9]

(32) a. Behind him is a stone-edged whirlpool with *possibly* the most breathtaking view I've ever seen. (COCA, 2001 MAG)

b. It's *precisely* the same remarkable machinery that all of us have. (COCA, 2012 SPOK)

c. *Only* the color of her scarf had changed, from silver to cerulean. (COCA, 2012 FIC)

More specifically, given that the sister and the mother of these adjuncts are both saturated NPs, we treat them as Chomsky-adjoined modifiers.

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9. For a survey of peripheral NP modifiers, see Huddleston & Pullum (2002: 436–439).
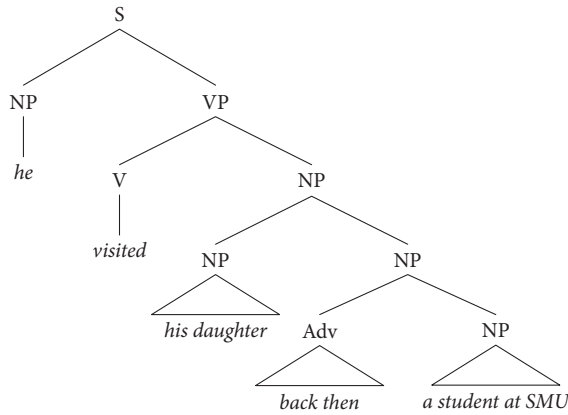
Summing up, the appositive is subject to roughly the same constraints as the anchor. The main difference concerns the fact that the appositive need not be fully saturated and that it may contain left peripheral modifiers that do not combine with anchors, such as *back then*.

3.   Sign-Based Construction Grammar

To pave the way for a formal analysis of the properties of the loose AC in Section 4 we provide a survey of the leading ideas and the notation of Sign-Based Construction Grammar (SBCG). This is a surface-oriented monostratal framework that combines properties of Construction Grammar (CxG), on the one hand, and Head-Driven Phrase Structure Grammar (HPSG), on the other hand.

The basic notion of SBCG is the linguistic *sign*. Its treatment builds on Ferdinand de Saussure's conception of the sign as a unit of form (*signifiant*) and meaning (*signifié*) (Saussure 1916). Employing the Typed Feature Structure notation of HPSG, signs are declared to have the following features, see Sag (2012: 98).[10]
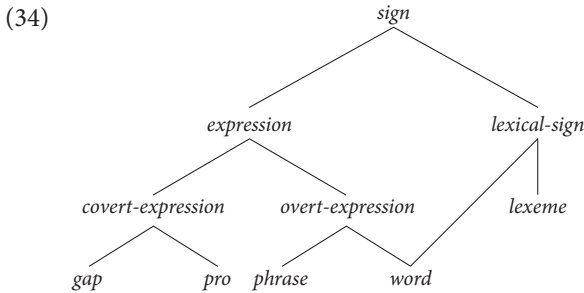
(33)   *sign* : $\begin{bmatrix} \text{PHONOLOGY} & \textit{phonological-object} \\ \text{FORM} & \textit{morphological-object} \\ \text{SYNTAX} & \textit{syntactic-object} \\ \text{SEMANTICS} & \textit{semantic-object} \\ \text{CONTEXT} & \textit{context-object} \end{bmatrix}$

While the values of the PHONOLOGY and FORM features jointly represent the forms of signs, roughly corresponding to Saussure's *signifiant*, the values of the

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10. This is a type declaration. It consists of a type, a colon and a bundle of the features that are relevant for the type.
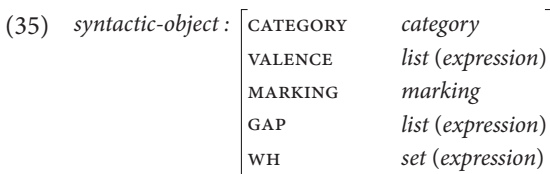
SEMANTICS and CONTEXT features jointly represent the meanings of signs, roughly corresponding to Saussure's *signifié*. The values of the SYNTAX feature mediate between both and play a crucial role in the combinatorics of the grammar. They do not correspond to any part of Saussure's definition, mainly because the latter was intended for lexical signs.

Signs come in a variety of types and these types are organized in terms of the following hierarchy.

(34)

```
                              sign
                      /                \
              expression              lexical-sign
            /          \                  /    \
  covert-expression   overt-expression        lexeme
      /      \            /         \
    gap      pro    phrase          word
```

The overt expressions are the words and phrases that show up in sentences. The covert expressions include unbounded dependency gaps and silent pronouns. Lexemes generalize over word form paradigms. The words *laugh*, *laughs*, *laughed* and *laughing*, for instance, are different realizations of the lexeme *laugh*. In contrast to words, lexemes do not show up in sentences and, hence, do not belong to the overt expressions.

Since subtypes inherit the properties of their supertypes, it follows that the various types of signs have all the features which are mentioned in (33). Their values are types which in turn may be associated with other features. For the syntactic objects, for instance, Sag (2012: 180) employs the following type declaration.

(35)   *syntactic-object :*
$$\begin{bmatrix} \text{CATEGORY} & category \\ \text{VALENCE} & list\,(expression) \\ \text{MARKING} & marking \\ \text{GAP} & list\,(expression) \\ \text{WH} & set\,(expression) \end{bmatrix}$$

The value of the CATEGORY feature is a part-of-speech, such as *noun* or *verb*. The value of the VALENCE feature is a list of those expressions that are selected by a given sign. The transitive verb *buys*, for instance, selects a third person singular NP as its subject and an accusative NP as its complement. The value of the MARKING feature models the contribution of modifiers, specifiers and markers. A common noun without determiner, for instance, has the value *unmarked*, while a fully saturated NP has the value *marked*. The value of the GAP feature is a list of expressions;

it is empty for signs which do not contain any gaps, but for those which do, it provides information about the syntactic and semantic properties of the missing part(s). In (26), for instance, repeated in (36), the GAP list of *the author of that book* is empty, while the one of *the author of __* contains an accusative NP.

(36) a. I personally know the author of that book.
      b. That book I personally know the author of __.

The value of the WH feature is a set of expressions; it marks the presence of a *wh*-word in interrogative and exclamative signs. Signs which do not contain any such *wh*-word have the empty set as value, represented by { }.

For the representation of individual signs, one uses its type, printed in italics, and the features which are declared for that type together with their values. Figure (1), for instance, is a representation of the intransitive verbal lexeme *laugh*. Notice that this is a partial representation, since the GAP, WH, SEMANTICS and CONTEXT features are omitted.

$$
\begin{bmatrix}
\textit{lexeme} \\
\text{PHONOLOGY} & \textit{/læf/} \\
\text{FORM} & \langle \textit{laugh} \rangle \\
\text{SYNTAX} & \begin{bmatrix}
\textit{syntactic-object} \\
\text{CATEGORY} & \textit{verb} \\
\text{VALENCE} & \langle \text{NP} \rangle \\
\text{MARKING} & \textit{unmarked}
\end{bmatrix}
\end{bmatrix}
$$

Figure 1. The lexeme *laugh*

Constructs are configurations of a mother and its daughter(s).[11]

(37) *construct* : $\begin{bmatrix} \text{MOTHER} & \textit{sign} \\ \text{DAUGHTERS} & \textit{nelist (sign)} \end{bmatrix}$

Just like the signs, the constructs are organized in a hierarchy, see Sag (2012: 107).

(38)

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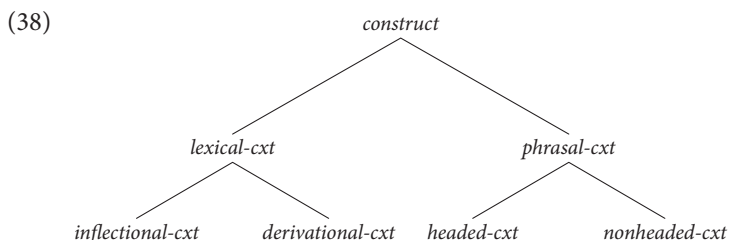
11. *nelist* is short for non-empty list.

Lexical constructs model morphological processes, such as inflection and derivation, and are not of direct relevance for the topic of this paper. The phrasal constructs, by contrast, are relevant. Being constructs, they consist of a mother and a list of daughters, as spelled out in (37). An extra constraint on the *phrasal* constructs is that the mother must be a phrase and that the daughters must be overt expressions, i.e. words or phrases (Sag 2012: 145).

(39) *phrasal-cxt :* $\begin{bmatrix} \text{MOTHER} & phrase \\ \text{DAUGHTERS} & list\ (\text{overt-expression}) \end{bmatrix}$

Headed constructs are a subtype of the phrasal constructs and, hence, have the same features and properties, but on top of that they also have a head daughter.

(40) *headed-cxt :* $\begin{bmatrix} \text{HEAD-DAUGHTER} & \textit{overt-expression} \end{bmatrix}$

This differentiates them from non-headed constructs, such as the coordinate ones. An example of a well-formed construct is the one in Figure 2. The value of the HEAD-DTR feature is an object H whose properties are spelled out by the typed feature structure after the colon. That same object is also the rightmost member of the DAUGHTERS list.[12]

$$\begin{bmatrix} headed\text{-}cxt \\ \text{MOTHER} \begin{bmatrix} phrase \\ \text{FORM} & \langle that,\ dog \rangle \\ \text{SYN} \mid \text{CAT} \quad \text{NP} \end{bmatrix} \\ \text{DAUGHTERS} \quad \left\langle \begin{bmatrix} word \\ \text{FORM} & \langle that \rangle \\ \text{SYN} \mid \text{CAT} & determiner \end{bmatrix},\ H \right\rangle \\ \text{HEAD-DAUGHTER} \quad H : \begin{bmatrix} word \\ \text{FORM} & \langle dog \rangle \\ \text{SYN} \mid \text{CAT} & noun \end{bmatrix} \end{bmatrix}$$

Figure 2. The construct *that dog*

In order to qualify as a proper sign, it is not sufficient to belong to one of the various subtypes of *sign* and to have the features that are declared for it. The representation of the lexeme in Figure 3, for instance, does not qualify as a sign, since its values are not mutually compatible.

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12. Notice that Figure 2 is a partial representation, just like Figure 1. [SYN|CAT …] is an abbreviation of [SYNTAX[CATEGORY …]]

$$\begin{bmatrix} lexeme \\ \text{PHONOLOGY} \quad /læf/ \\ \text{FORM} \quad \langle dog \rangle \\ \text{SYN} \mid \text{CAT} \quad adjective \end{bmatrix}$$
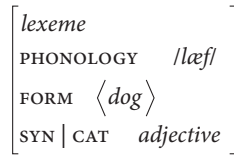
Figure 3. An ill-formed lexeme

To differentiate the ill-formed signs from the well-formed ones, SBCG employs the Sign Principle (see Sag 2012: 105).

(41) Every sign must be listemically or constructionally licensed, where:
  – a sign is listemically licensed only if it satisfies some listeme, and
  – a sign is constructionally licensed only if it is the mother of some well-formed construct.

The term *listeme* is introduced in Di Sciullo & Williams (1987) "as a generalization of the notion 'lexical entry' to include multiword expressions of various kinds", Sag (2012: 71). The listemes collectively form the lexicon. The representation of the lexeme *laugh* in Figure 1 is listemically licensed, since this combination of phonological, morphological and syntactic information satisfies one of the (many) listemes in the lexicon, but the representation of the lexeme in Figure 3 is not, since there is no listeme with the form *dog* whose phonological value is /*laef*/ and whose syntactic category is *adjective*.

In a similar way, the grammar has to differentiate the well-formed constructs from the ill-formed ones. An example of the latter is given in Figure 4: a phrasal construct whose mother is the verb phrase *Kim the* and whose daughters are the noun *Kim* and the determiner *the* is not well-formed.
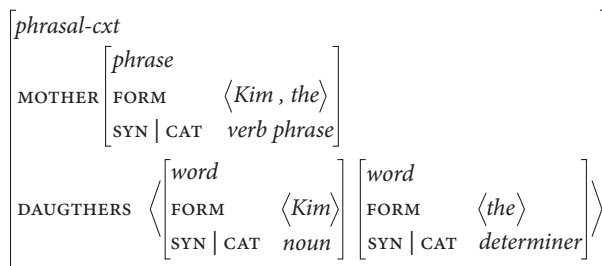
$$\begin{bmatrix} phrasal\text{-}cxt \\ \text{MOTHER} \begin{bmatrix} phrase \\ \text{FORM} \quad \langle Kim\,, the \rangle \\ \text{SYN} \mid \text{CAT} \quad verb\ phrase \end{bmatrix} \\ \text{DAUGTHERS} \left\langle \begin{bmatrix} word \\ \text{FORM} \quad \langle Kim \rangle \\ \text{SYN} \mid \text{CAT} \quad noun \end{bmatrix} \begin{bmatrix} word \\ \text{FORM} \quad \langle the \rangle \\ \text{SYN} \mid \text{CAT} \quad determiner \end{bmatrix} \right\rangle \end{bmatrix}$$

Figure 4. An ill-formed construct

To prevent the overgeneration which is exemplified in Figure 4, the constructs must satisfy certain constraints. It is these constraints that are called *constructions* in SBCG. Technically, they are implicational constraints, consisting of a type, a right arrow and a feature structure. The type is a lexeme in the lexical class constructions and a construct in the combinatoric constructions. An example of the

latter is the constraint that models the combination of a head with its modifiers and/or specifiers. This subsumes amongst others the combination of an attributive adjective and a noun, as in *red box*, and of a determiner with a nominal, as in *every box*. Building on the HPSG treatment of this type of combination in Van Eynde (2006) and Allegranza (2007), Sag (2012: 156) employs a subtype of the headed constructs, more specifically the *head-functor-cxt*, and defines it in terms of the constraint in (42).

(42) **Head-Function Construction:**

$$
\textit{head-functor-cxt} \Rightarrow
\begin{bmatrix}
\text{MOTHER} \mid \text{SYNTAX} \quad X \mathbin{!} \begin{bmatrix} \text{MARKING} \quad M \end{bmatrix} \\[4pt]
\text{DAUGHTERS} \quad \left\langle \begin{bmatrix} \text{SYNTAX} \begin{bmatrix} \text{CAT} \mid \text{SELECT} \quad H \\ \text{MARKING} \quad M \end{bmatrix} \end{bmatrix}, H \right\rangle \\[4pt]
\text{HEAD-DAUGHTER} \quad H : \begin{bmatrix} \text{SYNTAX} \quad X \end{bmatrix}
\end{bmatrix}
$$

What this implication states is that a head-functor construct consists of a mother and two daughters, the second of which is the head daughter *H*. The first daughter (the functor) selects the head daughter. This is modeled by a feature that is added to the objects of type *category*:

(43) *category* : $\begin{bmatrix} \text{SELECT} \quad \textit{sign-or-none} \end{bmatrix}$

The value of the SELECT feature captures the requirements that a sign imposes on its head sister, if any. The SELECT value of the quantifying *every*, for instance, is a singular count nominal and the one of the demonstrative *those* is a plural nominal. The head daughter in (42) shares its SYNTAX value *(X)* with the mother, except for the MARKING value *(M)* which the mother shares with the functor daughter.[13] As applied to an example, the nominal *red box* consists of an adjectival functor and a nominal head. The former selects an unmarked nominal and is itself unmarked, so that the resulting combination is unmarked too. This accounts for the fact that it can be preceded by another adjective, as in *big red box*. A determiner also selects an unmarked nominal, and is, hence, compatible with any of *box*, *red box* and *big red box*, but its own MARKING value is marked, which implies that the result of its addition is also marked. This accounts for the fact that determiners cannot be stacked, as in **every that box*, or preceded by an adjective, as in **red that box*.

There are similar constraints for other types of combinations, such as that of a head with its complement(s) and of a head with its subject. It may be worth stressing that this notion of construction differs from the one that is standardly employed in other branches of Construction Grammar: A construction in SBCG

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13. The exclamation mark after *X* introduces the exception part.

is not a conventionalized pairing of form and meaning, but rather an implicational constraint on either constructs or lexemes. Such constraints need not simultaneously put conditions on form and meaning; instead, they can exclusively address syntactic properties, as in (42), or phonological/orthographic properties, as in the construction that will be presented in Section 4.1.

4.   An SBCG treatment of loose ACs

We have already argued that the loose AC is a headed combination in which the anchor is the head (see Section 2.1). In terms of the SBCG hierarchy of constructs this implies that it is a subtype of *headed-cxt*. Surveying the subtypes that are presented in Sag (2012) and summed up in (44), there is not one that captures the specific properties of the loose AC.

(44)

headed-cxt

subj-head-cxt   *head-comp-cxt*   *head-func-cxt*   *filler-head-cxt*
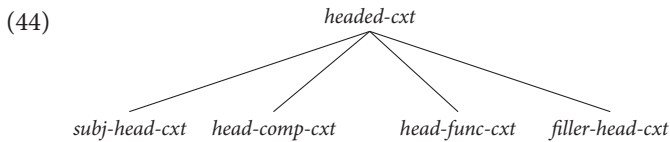
The appositive cannot be a subject or a filler, since it necessarily follows the anchor, whereas subjects and fillers precede their head.[14] Moreover, it cannot be a complement, since the anchor does not need an appositive to be saturated. A functor treatment might seem less implausible, but given the way in which the *head-functor* type is defined, it does not fit the bill either. Take, for instance, the AC in (30b), repeated in (45).

(45)   David, owner of a construction company, built the entire house with some
        help from son David. (COCA, 1997 MAG)

It is counterintuitive to assume that the appositive *owner of a construction company* lexically selects its head sister *David*, and it is wrong to assume that it leaves its mark on the mother, for if it does, the subject of (45) would be an unmarked nominal, whereas it is a fully saturated marked NP.

For this reason, we add a new type of headed constructs, called *head-supplement-cxt*. It subsumes a wide range of constructs, including amongst others loose ACs. In terms of SBCG practice, this means that the type which models loose ACs is a subtype of *head-supplement-cxt*.

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14. Fillers typically appear in clause-initial position and combine with a gapped clausal head. In *what could Linda do __*, for instance, *what* is the filler and combines with the gapped clause *could Linda do __*.

(46)

$$headed\text{-}cxt$$

subj-head-cxt   head-comp-cxt   head-supplement-cxt   …

loose-ac-cxt   …
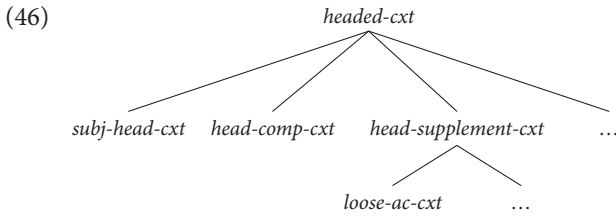
The properties of head-supplement constructs will be spelled out in Section 4.1 and those of loose ACs in Section 4.2.

4.1 The head-supplement construction

Our use of the term *supplement* is inspired by Huddleston & Pullum (2002: 1350):

> Supplements have the character of interpolations or appendages. … In speech, supplements are marked as such by the prosody: they are intonationally separate from the rest of the sentence. In writing, they are normally set off from the rest of the sentence by punctuation marks — commas, or stronger marks such as dashes, parentheses or (in the case of appendages in end position) a colon.

A conversion of this description in SBCG notation is given in (47).

(47) **Head-Supplement Construction:**

$head\text{-}supplement\text{-}cxt \Rightarrow$
$$
\begin{bmatrix}
\text{MOTHER} & \begin{bmatrix} \text{PHONOLOGY} & /\boxed{F}\,\#\#\,\boxed{G}\,\#\#/ \\ \text{FORM} & L_1 \oplus \langle punct \rangle \oplus L_2 \oplus \langle punct \rangle \end{bmatrix} \\
\text{DAUGHTERS} & \left\langle H, \begin{bmatrix} \text{PHONOLOGY} & /\boxed{G}/ \\ \text{FORM} & L_2 \end{bmatrix} \right\rangle \\
\text{HEAD-DAUGHTER} & H: \begin{bmatrix} \text{PHONOLOGY} & /\boxed{F}/ \\ \text{FORM} & L_1 \end{bmatrix}
\end{bmatrix}
$$

What this implication states is that a construct of type head-supplement consists of a mother and two daughters, the first of which *(H)* is the head daughter. The VALUE of the mother is a concatenation of the PHONOLOGY values of the daughters, as usual, but in addition the second daughter is preceded and followed by an intonation boundary (##). Correspondingly, the FORM value of the mother is a concatenation of the FORM values of the daughters, with punctuation marks around the rightmost daughter.

Since the construction does not impose any constraints on the syntactic categories of the daughters it not only subsumes combinations of NPs, but also

of PPs, APs, VPs and clauses, as in the following examples, quoted from Meyer (1987:110).[15]

(48) a. He's on vacation, on a holiday.
      b. He is paralyzed, crippled from the waist down.
      c. If you don't pass — if you get a failing grade — you'll not graduate.

It also subsumes combinations in which the daughters belong to different categories, as in (49), which combines an NP with a non-restrictive relative clause, and (50), which combines a clause with an NP.

(49) Jean-Luc Dehaene, who led the Belgian government from 1991 till 1999, died in 2014.

(50) Jill sold her internet shares in January — a very astute move.

In sum, the constraints on the *head-supplement-cxt* type capture those properties of loose ACs which they share with a wide range of other constructs. The properties which differentiate them from the other head-supplement combinations are spelled out in the constraint on *loose-AC-cxt*.

4.2 The loose appositional construction

To model the properties of the loose AC we need a finer-grained structure for the representation of semantic and contextual objects.

The *semantic objects* contain an index and a list of frames, understood in the Berkeley Construction Grammar sense of frame semantics (see Fillmore & Baker 2010). The frames express semantic constraints on the index, such as the properties which it has, the relations which it entertains with other indices, and so on. While the semantic objects in SBCG are all of the same type, HPSG treatments canonically make a distinction between different types. Ginzburg & Sag (2000:ch4), for instance, have a separate type for the semantic representation of nominals, and make a finer-grained distinction between quantified objects, on the one hand, and parameters, on the other hand. The former subsume the generalized quantifiers, i.e. the denotations of NPs which are introduced by such determiners as *every*, *each* and *no*. Parameters, by contrast, are the denotations of NPs that are not explicitly quantified. We take this distinction on board, since it is useful to model the loose AC.

The *contextual objects* consist of contextual indices, representing among others the speaker, the addressee and the utterance location, and background

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15. Similar examples are provided in Burton-Roberts (1975:410), Acuña-Fariña (1999:69–71), Huddleston & Pullum (2002:1350–1362) and Heringa (2012:573).

assumptions. These assumptions include presuppositions and conventional impli-
catures (see Potts 2007 for a detailed survey).

(51) *context-object* :
$$\begin{bmatrix} \text{C-INDICES} & contextual\text{-}index \\ \text{BACKGROUND} & list\,(proposition) \end{bmatrix}$$

An example of such a background assumption is the fact that the entity which is
denoted by a name, such as *James*, is an entity which actually bears that name.

At this point, we are ready to spell out the defining characteristics of the loose
AC.

(52) *loose-*AC*-cxt* ⇒
$$\begin{bmatrix} \text{MOTHER} \mid \text{CONTEXT} \mid \text{BCKGR} & \left\langle \begin{bmatrix} proposition \\ \text{NUCLEUS} \begin{bmatrix} copula\text{-}frame \\ \text{THEME} & i \\ \text{ATTRIBUTE} & j \end{bmatrix} \end{bmatrix} \right\rangle \\[2em] \text{DAUGHTERS} \quad \left\langle H, \begin{bmatrix} \text{SYNTAX} \begin{bmatrix} \text{CATEGORY} & noun \\ \text{GAP} & \langle\,\rangle \\ \text{WH} & \{\,\} \end{bmatrix} \\ \text{SEMANTICS} \begin{bmatrix} parameter \\ \text{INDEX} & j \end{bmatrix} \end{bmatrix} \right\rangle \\[2em] \text{HEAD-DAUGHTER} \quad H : \begin{bmatrix} \text{SYNTAX} \begin{bmatrix} \text{CATEGORY} & noun \\ \text{VALENCE} & \langle\,\rangle \\ \text{MARKING} & marked \\ \text{GAP} & \langle\,\rangle \\ \text{WH} & \{\,\} \end{bmatrix} \\ \text{SEMANTICS} \begin{bmatrix} parameter \\ \text{INDEX} & i \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

This looks like a lot of information, but it is in fact nothing more than a conversion
into SBCG notation of the properties that were informally discussed in Section 2.
To show this, let us start with the constraints on the head daughter, i.e. the anchor
(H). The CATEGORY value requires it to be nominal, the VALENCE value and the
MARKING value jointly require it to be fully saturated, the GAP value requires it to
be gapless, and the WH-value excludes the presence of interrogative or exclamative
wh-words. In addition, the SEMANTICS value requires the anchor to be referential
rather than quantificational.

Turning to the appositive, we find roughly the same constraints as for the anchor: It must be nominal and gapless, it may not contain a *wh*-word and it must denote a parameter. The only difference concerns the absence of constraints on the VALENCE and the MARKING values. They are left out since appositives do not need to be fully saturated.

The semantic contribution of the appositive is included in the CONTEXT value of the mother. It concerns a proposition that takes the form of a copular construction in which the THEME role is assigned to the index of the anchor *(i)* and the ATTRIBUTE role to the index of the appositive *(j)*.[16] This differentiates the loose AC from other subtypes of the head-supplement combination, such as the self-correction construction in (53).

(53)   He was just a kid, probably a teenager, and he was still alive. (COCA, 2009 FIC)

This sentence does not imply that a kid is probably a teenager. The distinction between apposition and self-correction is already made in Burton-Roberts (1975:410).

What is not included in (52) is the assumption that the conventional implicature in the CONTEXT value is attributed to the speaker. This is deliberately left out to allow for alternative attributions, as in (19).

What is also not included in (52) is the requirement that the head daughter shares its index *i* with the mother. This is not necessary, since it is a constraint that holds for all headed constructs and, hence, also for the loose AC. If the indices are associated with PERSON, NUMBER and GENDER features, as usual in HPSG, it follows that the values of those features are also shared between the anchor and the loose AC as a whole. This accounts for the agreement data in Section 2.1.

The constraint in (52) is intended to model the loose AC in all languages that employ the construction. Individual languages may impose more specific constraints. In Russian, for instance, the anchor and the appositive must have the same CASE value. This is illustrated by the fact that the dative anchor in (54) is compatible with a dative appositive, but not with a nominative or an instrumental one.[17]

(54)   a.   Oni dali edu i   Anite,   drugoj paučixe.
            they gave food also Anita.DAT,   other   spider.DAT
            'They gave the food to Anita, the other spider, as well.'
        b. *Oni dali edu i   Anite,   drugaja pauchixa.
            they gave food also Anita.DAT,   other   spider.NOM

---

16. For a justification of this treatment of copular constructions, see Van Eynde (2015).

17. These examples are quoted from Heringa (2012:563).

    c. *Oni dali edu i   Anite,   drugoj pauchixoj
        they gave food also Anita.DAT,   other   spider.INSTR

The agreement also shows in loose ACs with a nominative or accusative anchor (see Heringa 2012: 576). To model this we add the language specific constraint in (55).[18]

(55)   **Case Agreement in the Loose** AC:

$$\textit{loose-AC-cxt} \Rightarrow \begin{bmatrix} \text{DAUGHTERS} & \left\langle H, \begin{bmatrix} \text{SYNTAX} \mid \text{CATEGORY} \mid \text{CASE} & C \end{bmatrix} \right\rangle \\ \text{HEAD-DTR} & H : \begin{bmatrix} \text{SYNTAX} \mid \text{CATEGORY} \mid \text{CASE} & C \end{bmatrix} \end{bmatrix}$$

It requires the appositive to have the same CASE value as the anchor.

5.   Conclusion

This paper has provided a formal analysis of loose apposition. We first identified the properties that we consider characteristic of this construction and then modeled them in terms of Sign-Based Construction Grammar (SBCG). To do this we have enriched the SBCG inventory of constructions with the highly abstract head-supplement construction, on the one hand, and the more specific loose AC construction, on the other hand. As such, the paper contributes to SBCG, widening its coverage and enriching it with tools to model a construction that had not been treated yet in this framework. At the same time, we expect the SBCG treatment to contribute to a better understanding of the phenomenon of apposition as such. This expectation is not only based on the conviction that formalization leads to more precise empirical prediction and theoretical clarity. It is also based on a property of the SGCG framework itself: By its very nature, it requires one to pay attention to the proper place of some given construct in the hierarchy of constructs as a whole. This paves the way for a treatment of particular constructions that is as general as the facts allow and as specific as those same facts require.

    An obvious topic for future work is to identify the properties of other subtypes of the head-supplement constructs. This might lead to the insight that the loose AC has a number of properties in common with some of the head-supplement constructs, but not with all, which in SBCG term implies that there is evidence for positing intermediate types in between head-supplement constructs and loose ACs.

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18. The CASE feature is declared for those syntactic categories which bear case markings.

Acknowledgements

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