Are there coordinate compounds?*

SUSANNA PADROSA-TRIAS
Centre de Lingüística Teòrica, UAB
susannapt@gmail.com

1. Introduction

A number of studies dedicated to compounding acknowledge the existence of the so-called coordinate compounds, which can be roughly defined as compounds in which there is a relation of coordination between the two constituents (e.g. Bauer 2001, 2008, Bisetto & Scalise 2005, Olsen 2001, 2004). Coordinate compounds are usually divided into two subtypes, which are exemplified in (1) and (2) for English.[1]

(1) actor-director
player-coach
jazz-rock

(2) mother-child (relationship)
doctor-patient (gap)
mind-body (problem)

The basic claim of the paper is the denial of such a type of compounding. It is argued that what are generally called coordinate compounds are cases of asyndetic syntactic coordination. It is shown that coordinate structures can, nonetheless, be interpreted as compounds under special circumstances.

The paper is structured as follows. Section 2 includes a review of two different approaches to coordinate compounding: Bisetto & Scalise's (2005) and Olsen's (2001, 2004). Section 3 contains my proposal - according to which nominal coordinate compounds of the NN type are nonexistent - and section 4 extends the proposal to verbal categories. Finally, section 5 summarizes the main findings of this study.

* This work is based on some parts of Padrosa-Trias (forthcoming). I would like to thank Peter Ackema, Anna Bartra and Jaume Mateu for reading an earlier version of the paper and sparing me from some errors. I also wish to thank Jon MacDonald and Andrew Woodard for their native judgments on English data. As usual, I take responsibility for all errors.

[1] Note that *coordinate compounds* is only one of the labels used in the literature to make reference to the forms in (1) and (2) jointly. Other labels are *copulative compounds* (cf. Olsen 2000, 2001, 2004), *appositional compounds* (Bauer 2001, 2008) and *appositive compounds* (Booij 2005). Sometimes distinct labels are used for the compounds in (1) and those in (2): *appositional and coordinative compounds*, respectively (Plag 2003), *appositional and relational compounds*, respectively (Wälchli 2005). In this paper the label *coordinate compounds* has been chosen to refer to the forms in (1) and (2) jointly, except where Olsen's understanding of such forms is described.

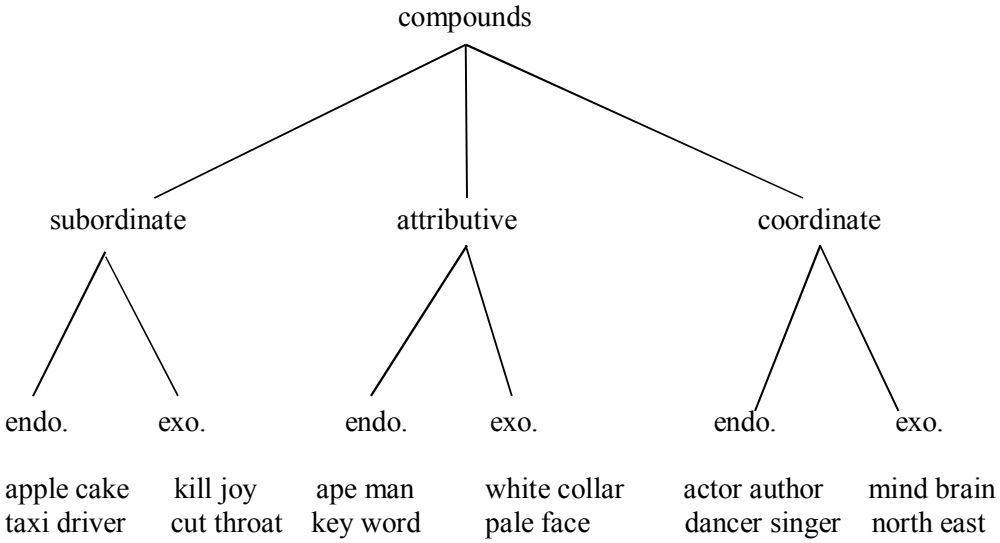
2. Coordinate compounding

This section briefly presents how the so-called coordinate compounds are understood in Bisetto & Scalise (2005) and in Olsen (2001, 2004). This will allow us to gain a general idea of how coordinate compounds are treated in the literature.

2.1. Bisetto and Scalise (2005)

Bisetto & Scalise (2005)[2] provide a classificatory scheme for compounding, which is as follows:

(3)



The first level of analysis takes into account the grammatical relation that holds between the constituents of the compound. By this criterion, three macro-types of compounds are identified, each defined by a different relation. One of them is a relation of subordination, which can be found in compounds like *car-driver*, where *car* is understood as the internal argument of *drive*, *book cover*, interpreted as the 'cover of a book', and *catfood*, understood as 'food for cats'. This type of relation gives rise to subordinate compounds, which are contrasted with the two other macro-types: attributive compounds and coordinate compounds. Attributive compounds are characterized by a relation of attribution: the first element expresses a property which is

[2] Bisetto & Scalise's (2005) classification is revised in Scalise & Bisetto (2009). In a nutshell, Scalise & Bisetto (2009: 50) add a further level of analysis into their previous classification of compounds "in order to account for the different semantic/interpretative relations that come into place between the constituents of the compounds in each class". Subordinate compounds and attributive compounds, but not coordinate compounds, are further subdivided. For example, subordinate compounds are divided into ground and verbal-nexus compounds. Ground compounds correspond to what in the literature on compounding has generally been referred to as primary/root compounds (e.g. *windmill*), whereas verbal-nexus compounds include those compounds in which the head is deverbal and the non-head can be either an argument (often called synthetic compounds, e.g. *bookseller*) or an adjunct (e.g. *street seller*). Since there are no changes regarding coordinate compounds, the discussion to follow is based on Bisetto & Scalise (2005).

attributed to the second element, as in *blue cheese* and *pale face*. Coordinate compounds are characterized by a coordinating relation, and are defined as follows:

(4) "Coordinate compounds are those formations whose constituents are tied by the conjunction «and». (…) From a semantic point of view, such compounds can be considered as having two heads (*poet painter* is both a «poet» and a «painter»)."

Bisetto & Scalise (2005: 327)[3]

The three compounding macro-types[4] are then defined by a second criterion, which is characterized by the presence or absence of a head. This second criterion divides each macro-type into two sub-types: endocentric and exocentric.

Scalise & Guevara (2006) observe that presence vs. absence of a head constituent can be ambiguous between a formal head and a semantic head, which they define as follows (p. 190):

(5) "The formal head of a compound is the constituent which shares with –and percolates to- the whole compound all of its formal features: lexical category and subcategorization frame. The whole compound, thus, is expected to have the same distributional properties of its formal head."

"The semantic head of a compound is the constituent which shares with –and percolates to- the whole compound all of its lexical-conceptual information (LCS in short, following Jackendoff 1990 and Lieber 2004). The whole compound, thus, is expected to be a hyponym of its semantic head."

Scalise & Guevara (2006) claim that endocentricity obtains in those compounds where the formal head and semantic head coincide, as in *capostazione* (lit. master+station, 'station master') in which the semantic head (a *capo*, which is a hyperonym of a *capostazione*) is the same as the formal head (the masculine gender of the compound comes from *capo*: $[[capo]_{masc}[stazione]_{fem}]_{masc}$). When the two heads do not coincide, then the compound is exocentric. In their terms (p. 192):

(6) "An *endocentric compound* has at least one formal head and at least one semantic head. If a compound has only one formal head and only one semantic head, then the two must coincide.

If a compound realises any of the remaining possibilities, it will be considered to be *exocentric*."

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[3] Scalise & Bisetto (2009: 46) give a similar definition, which I quote because it will become relevant in section 3.1.: "*From a semantic point of view, these compounds can be considered to be characterized by two heads (painter-poet is both a 'poet' and a 'painter') even though,* ***as claimed by Bloomfield (1933), only one of the nouns can act as the head. As a general rule, only one of the nouns can be pluralized, and, in those languages where gender is relevant, it is precisely that noun that confers the gender on the compound formation***." [bold: SPT]

[4] The tripartite classification of compounds is allegedly reinforced in Scalise, Bisetto & Guevara (2005), in which it is argued that each macro-type of compounding has a different selection mechanism. That is, the head of the compound is supposed to select the non-head differently in each of the three macro-types. See Padrosa-Trias (forthcoming) for some criticisms of this proposal.

This notion of head has consequences for the understanding of coordinate compounds. Initially, coordinate compounds, despite inflection being placed on both elements of the compound in languages like Italian, were taken to have one head, which was determined by the canonical head position of the language in question. For example, English would have the head on the right, e.g. *actor-director*, and Italian would have the head on the left, e.g. *bar pasticceria* 'bar-pastry shop'. This view is endorsed in Scalise, Bisetto & Guevara (2005), which is later changed to incorporate the revised notion of head and endocentricity/exocentricity in (5) and (6), according to which coordinate compounds have two heads (Scalise & Guevara 2006: 191). In short, the uneasiness about the notion of head and the change in coordinate compounds from having one head to two heads suggests that the structure of such compounds is not crystal clear.

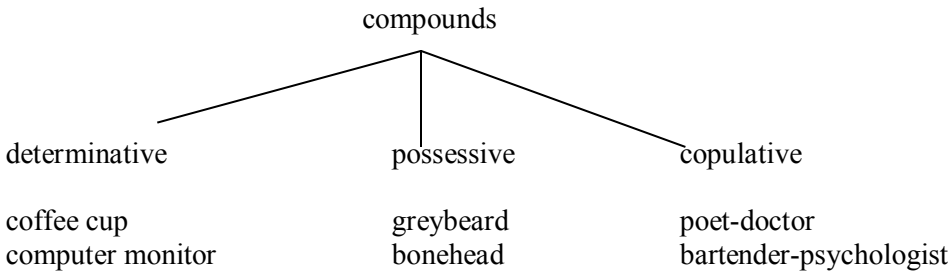
After having presented Bisetto & Scalise's (2005) compounding scheme together with some refinements to their classification, one is in a position to say that Bisetto and Scalise would treat the coordinate compounds in (1) as headed (with two heads: endocentric) while those in (2) would be treated as headless (exocentric).

Let us now turn to Olsen's (2001, 2004) classification of compounds and to her understanding of coordinate compounds.

2.2. Olsen (2000, 2001, 2004)

Olsen (2000, 2001, 2004) follows the classification of compounds used by the early grammarians of Sanskrit, according to which compounds are divided into three major types:

(7)



Although the three major types of compounds in (7) do not exactly correspond to Bisetto & Scalise's (cf. 3) three macro-types, the determinative, possessive and copulative compounds of (7) can be subsumed into the subordinate, attributive and coordinate compounds of (3) respectively. Let us consider each type in turn, placing special emphasis on copulative compounds. Determinative compounds are those in which the first element restricts the denotation of the second element, the head: e.g. a *coffee cup* is a type of cup, one for coffee. Possessive compounds also display a modifier-head relation which, in this case, denotes a property which is attributed to an external entity: a *greybeard* is, for example, a seal which has a grey beard. Copulative compounds are defined as follows:

(8) "Copulative compounds (or *pseudo-dvandvas* (…)) are compounds in which the individual constituents are equally predicated of the entity to which the compound as a whole refers (…). Some recent coinages are *actor-houseguest*, *gangster-businessmen*, *host-mediator*, *explorer-anthropologist*, *tent-office* and *Kosher-Cajun*. An *actor-houseguest* is someone who is both an actor and a houseguest; a *tent-office* is something that is both a tent and an office and *Kosher-Cajun* refers to a type of cuisine possessing the characteristic attributes of both manners of preparing food."

Olsen (2000: 908)

"Copulative compounds encompass a coordinative relationship between the two constituents such that both concepts are attributed simultaneously to one individual: 'poet-doctor' is someone who is both a 'poet' and a 'doctor'."

"(…) the basic copulative pattern carries the meaning 'an x that is simultaneously A and B' (…)."

Olsen (2001: 279, 297)

As can be seen, the subordinate, attributive and coordinate compounds of (3) include the determinative, possessive and copulative compounds of (7) respectively, but also other types of compounds. For example, some attributive compounds refer to an entity which is characterized by the property expressed by the compound (e.g. *pale face*), in the same way as possessive compounds, but there are also other attributive compounds in which the head is modified by the non-head, with no reference to a third entity (e.g. *ape man*), unlike possessive compounds. Further differences between the two classifications will not be pursued, since my main concern is the characterization of the so-called coordinate compounds, or copulative compounds in Olsen's terms.

Olsen (2001, 2004) argues that the three compound patterns displayed in (7) are subsumed into the same compound template in languages like English and German:

(9) $[Y + X]_x$ (Y and X being open lexical categories)

This formal scheme is implemented semantically in Olsen (2004: 89f), in which it is stated that the two predicates that constitute the compound stand in an underspecified relation to one another. The relation is taken as a variable whose content is predicted by the meaning of the compounding elements or inferred from a contextually relevant aspect. Let us consider how the determinative, possessive and copulative readings are derived given a single compound template. Possessives are assimilated to determinatives with the only difference that exocentric possessives involve a process of meaning extension. Copulative compounds are a semantic subset of the template displaying the 'and' relation between the constituents of the compound. The differences between the three compound types then have to do with the interpretational option chosen. To be more precise, the determinative/possessive reading is obtained when the underspecified relation is instantiated as a modifier-head relation, as in *coffee cup*, and the copulative reading is obtained when the relation is instantiated as an identity relation, as in *actor-houseguest*. There are some compounds in which both relations can be instantiated with the result that the same compound can be interpreted both as a determinative/

possessive compound and as a copulative compound. As Olsen (2004: 91) notes, *bartender-psychologist* is a case in point. It can be understood as a 'psychologist for a bartender', a 'psychologist that treats a bartender', a 'psychologist who looks like a bartender', among other determinative readings, and also as a person who is both a psychologist and a bartender, namely the copulative reading.

By proposing the $[Y + X]_x$ template, Olsen predicts that regular compounding in Germanic will be right-headed formally. The prediction seems to be corroborated. Copulative compounds in English have the plural inflection on the second constituent:

(10) a. (…) *the writer-directors* (John Musker and Ron Clements…)
b. (Disney's) *attorney-archivists*

The plural inflection is also placed on the second constituent in German (11a) and the second constituent determines the gender of the whole compound (11b):

(11) a. *die Linguist-Psychologen, die Ingenieur-Studenten*
b. *der Baby-Bastard, der Opfer-Zeuge*

In Olsen's view, copulative compounds are hierarchically structured with binary branching, namely they do not have a flat structure. For instance, *songwriter-producer-arranger-friend* is given the structure below:

(12) [[[[songwriter] producer] arranger] friend][5]

Olsen notes that copulative compounds can occur on their own and in an embedded position. Regarding unembedded copulatives, some semantic patterns are more common than others. Some compounds refer to things, as in *tent-office* and *comedy-drama*, but the most productive semantic pattern denotes people by naming their professions, as in *writer-director*, *singer-guitarist*, and *editor-publisher*. Following Olsen (2001: 305, 2004: 88), the two compounding elements together form a complex concept that is added to one's ontological system of objects. If the two elements in a copulative compound cannot create a concept referring to a coherent entity in one's ontological system of individuals, then the result is ungrammaticality, as in (13).

(13) *The artist-instrument thrived on irony.[6]

Concerning embedded copulatives, they can be inserted in structures in which the head licenses a semantically coordinate complex argument. In some cases, the head allows a complex argument which displays a 'between' relation between its members: *predator-prey battles* are battles between predators and preys. In other cases, the head can be a collective term whose constitution is specified by the elements of the embedded copulative: *a man-wife team* is a team made up by a man and his wife (for other contexts in which embedded copulatives are allowed, see Olsen 2001: 298-301). In short, regarding the examples just mentioned, a copulative compound is embedded into a

[5] The examples in (10), (11), and (12) are taken from Olsen (2001: 293).

[6] This example (borrowed from Olsen 2004: 88) is contrasted with syntactic coordination, in which the same predicates are used but now they are predicated of an individual.

(i) Warhol, the pop artist and (the) instrument of the masses, thrived on irony.
Olsen (2004: 88)

determinative compound: e.g. *[[predator-prey] battles]*, and the embedded copulative (*predator-prey*) is licensed by the semantic requirements of the head (*battles*).

Turning to the question of how to treat the compounds in (1) and (2), Olsen would call them copulative and would distinguish them by their embedded (2) vs. unembedded (1) nature.

After having presented two views on coordinate/copulative compounds (Bisetto & Scalise's and Olsen's), my proposal concerning their status follows.

3. The proposal

This section presents my proposal regarding the nature of the alleged coordinate/copulative compounds illustrated in (1) and (2). The forms in (1) are dealt with in section 3.1. while the forms in (2) are discussed in section 3.2.

3.1. Endocentric coordinate compounds / unembedded copulative compounds

I depart from Bisetto & Scalise's (2005) and Olsen's (2000, 2001, 2004) conception of coordinate/copulative compounds substantially. They all understand that the compounds in (1) refer to an *entity* which is both A and B, A and B being the two members of the compound: e.g. an *actor-director* is *somebody* who is both an actor and a director (see Olsen's definitions in (8)). If all forms in (1) refer to an entity outside the coordinate structure, they cannot be endocentric, as Bisetto & Scalise claim, but exocentric (see Levi 1978 for a similar view).[7] If this reasoning is correct, there are no endocentric coordinate compounds, and the coordinate compounds in (1) should be labelled exocentric like those in (2).

However, I want to argue that there are no exocentric coordinate compounds either. In my view, a true coordinate relation (i.e. an entity having properties of both A and B) can only be established in syntax, not in morphology where compounding takes place (see Haspelmath 2004 for a broad view on coordinating constructions).[8] Support for the proposal that coordination is syntactic (as opposed to morphological) comes from authors like Bresnan & Mchombo (1995) who discuss some tests which show that the internal structure of words behaves differently from that of phrases. One of the tests is conjoinability: syntactic objects can be conjoined by the coordinator *and* while morphological objects cannot.[9] Accordingly, NN forms with a coordinate relation cannot be treated as compounds. My proposal is that they are cases of asyndetic

[7] Levi (1978: 93-94) believes that, despite the compounding nouns being in a coordinate relation, the resulting compound (or the 'complex nominal' in her terms) is exocentric because neither noun is the head semantically. She proposes an underlying relative clause whose head is deleted. For example, *speaker-listener* is derived from 'person who is (both) a speaker and a listener', with *person* being deleted.

[8] I believe that (alongside a generative syntactic component) there is a generative morphological component responsible for word formation processes like compounding.

[9] Some apparent counterexamples seem to involve ellipsis/deletion and cannot then be treated as conjunctions of parts of words (but see Ackerman & LeSourd 1997 and Lieber & Scalise 2006 for a different view).

syntactic coordination, with an implicit conjunction between the two nouns. The forms in (1) cannot then be coordinate compounds of any type. The same conclusion is reached by Adams (2001: 82), who does not consider similar forms compounds on the grounds that expressions with 'coordinated elements are phrases' (in this case the coordinator would be implicit).

The forms in (1) can, nonetheless, be treated as compounds, as endocentric single-headed compounds, determinative compounds in Olsen's terms: the second noun is the head formally (e.g. plural marker is attached to it) and semantically (it is a hyperonym of the compound as a whole); and the first noun restricts/modifies the head. As a result, the compound instantiates a modification/subordination relation: the compound denotes a subset of the set of entities denoted by the head noun, which is given some properties by the first noun. As defined by native speakers, a *player coach* is 'a coach who is also a player on the team', 'a coach that plays with the team' and *jazz rock* is 'rock with some characteristics of jazz'.

The facts observed in (10-12) are easily captured if compounds like those in (1) are determinative, rather than coordinative (contra Olsen). The second constituent bears the plural inflection in the examples in (10) and (11a) and determines the gender of the whole compound in (11b), facts which follow if the second compounding element is the formal head, and which are hard to explain if the compound is coordinate. That is, the formal right-headedness of the compounds is expected if they are determinative but is not expected if they are coordinate (cf. Bloomfield's 1933 remarks in footnote 3). If a coordinate relation were present between the compounding elements, plural inflection would be expected on both elements, contrary to fact. The hierarchical structure depicted in (12) for *songwriter-producer-arranger-friend* and the compound template $[Y + X]_x$ shown in (9), proposed by Olsen, can accommodate determinative compounds better than the alleged coordinative compounds: in the case of determinatives the relationship between the constituents of the compound is subordinative, with a modifier-head relation, and in the case of copulatives it is coordinative, with a symmetrical relation.[10] An asymmetrical relation seems to be instantiated both in (12) and (9), thus favouring the determinative type of compound. In addition, if there were a relation of coordination between the compounding constituents, the two nouns would equally be hyperonyms of the compound. Alleged coordinate compounds like *player coach*, though, are interpreted as determinative compounds by native speakers (see above). In short, the forms in (1) fit the determinative pattern of compounding both formally and semantically, while they prove problematic to conform to an alleged coordinate pattern of compounding.

Notice that my proposal does not deny a sequence of two nouns the possibility of having a coordinate reading. My claim is that when such a reading is present, one is dealing with a syntactic construction with asyndetic coordination (and not with compounding). In other words, an NN sequence can be interpreted as encoding a relation of coordination, in which case it is a syntactic construction, or as encoding a modifier-

[10] For a definition of coordination in terms of (a)symmetry, see Haspelmath (2004: 35f).

head relation, in which case it is a determinative compound. My proposal is summarized in the following scheme:

(14) NN → coordinate reading → not a compound
NN → modifier-modified reading → a compound

Some NN sequences can only be interpreted as determinative compounds. This is the case of the compounds whose first element denotes the gender of the noun in second position: *maid-servant*, and *she-goat*. It seems that a coordinate relation is possible when the two coordinated elements can equally contribute new information to the construction by their being semantically parallel. These requirements are not satisfied by compounds whose first element is a gender marker (*she-goat*), but seem to be satisfied by forms denoting two job titles (e.g. *actor-director*) or two types of devices/machines (*washer-dryer*) although not always (e.g. *fighter-bomber*), according to native speakers' judgments. What these results suggest is that two apparently coordinated nouns can be interpreted as coordinate but also as a modifier-modified structure, the final interpretation probably being subject to the speaker's knowledge of the world.

Before delving into the forms in (2) in the next section, let us consider how the proposal put forth in this section can deal with the ungrammaticality of the sentence in (13). According to my proposal, its ungrammaticality is not due to the fact that the complex concept created by *artist* and *instrument* does not refer to a coherent individual in one's ontological system of individuals, as Olsen claims, but to the inability of *artist-instrument* to conform to a determinative compound in the sentence in (13). That is, in my understanding, *artist-instrument* cannot encode a coordinate relation between its constituents if it is to be understood as a compound (recall that coordination is a sign of syntax and not of morphology, i.e. compounding), but it can be a determinative compound with a modifier-head relation. The interpretation of an instrument that serves as an artist or that is like an artist in some aspect seems plausible (which would be consistent with the interpretation of a determinative compound). The ungrammaticality of (13), though, follows from the fact that, out of context, *instrument* is understood as a tool (an object) and not as a person, an interpretation that clashes with the semantic requirements of the verb *thrive* and the sentence in general. The semantics of the construction in which *artist-instrument* is placed do not agree with the expectations created by the determinative compound regarding its semantics: *thrive on irony* requires an agentive subject, which clashes with the default reading of *artist-instrument* as an object. A kind of garden path effect seems to cause the ungrammaticality of the sentence.

3.2. Exocentric coordinate compounds / embedded copulative compounds

The forms in (2), repeated below for convenience, are treated as exocentric coordinate compounds in Bisetto & Scalise (2005) and as embedded copulative compounds in Olsen (2001, 2004). According to their view, the two members of the compound characterize an entity outside the compound, with which they stand in a particular relationship, as in *the mind-body problem*, understood as the problem between the mind

and the body. Some authors distinguish different subtypes of such compounds. For instance, Bauer (2008) distinguishes translative compounds (*the Wellington-Auckland flight*) from co-participant compounds (*parent-child relationship*). In the former the order of the elements makes a difference in meaning since there is a starting point and a finishing point, and in the latter there is some interaction among the participants. However, the position taken by the aforementioned authors cannot be maintained if coordinate compounds do not exist, as has been claimed in the previous section. Let us now consider how the forms in (2) can be analysed in agreement with the proposal according to which there are no coordinate compounds.

(2) mother-child (relationship)
doctor-patient (gap)
mind-body (problem)

Although an NN sequence with a coordinate relation is a phrase (as already discussed above in relation to the nature of the objects in (1)) and cannot be a compound by itself, it can be incorporated in the non-head position of a compound, if permitted by the head. This is the case of the compounds in (2), which in my view are endocentric compounds with a subordinate relation between the head and the non-head. My proposal is that the forms in (2) are compounds not by virtue of the coordinate relation established between the elements constituting the phrase (as has generally been assumed) but by virtue of the subordination relation established between the phrase in the non-head position (which acts as a simplex word, cf. Ackema & Neeleman 2004) and the noun in head position. To illustrate the point, in *mind-body problem*, *problem* is the head of the compound and *mind-body* is its non-head, which happens to be a syntactic phrase turned into a word and inserted in the non-head position of the compound. The specific relation between the elements of the compound is determined by the semantics of the head (cf. e.g. Pustejovsky 1995). This type of compound is possible when the head licenses a complex coordinate argument. Recall from section 2.2. that Olsen identifies different types of heads that allow a coordinate phrase in the non-head position of the compound. For example, the collective term *team* allows the phrase *man-wife* to specify the content of the *team* in *a man-wife team*. Some examples in which the head permits a complex coordinate argument are given below:

(15) the angel-beast division
father-daughter dance
the Cadbury-Schweppes business
Wellington-Auckland flight
the nature-nurture debate
love-hate relationship

Some support for my proposal comes from the observation that if the compounds in (2) or (15) were exocentric compounds, as Bisetto & Scalise (2005) claim, they would be quite different from other compounds that are classified as exocentric in their system, such as *butterfingers* and *redhead*. These two compounds are said to be exocentric

because their referent (the 'semantic head') is not determined by *fingers* and *head*,[11] but by an entity outside the compound, i.e. a type of person. However, Bisetto & Scalise's explanation for exocentricity cannot be extended to any of the examples in (2) or (15). For example, *mind-body* does not uniquely refer to a problem (only *mind-body problem* does). In my analysis, *mind-body* just means 'mind and/or/… body' and can be combined within an endocentric compound with any noun to its right: for instance, *mind-body question*, *mind-body relationship*, *mind-body discussion* and *mind-body exhibition*.[12] In contrast, it is impossible to combine a compound like *redhead* with a noun to its right that refers to the semantic head of *redhead* (e.g. *person*), since it would be semantically superfluous (i.e. the word 'person' is already implied): **redhead person*.

In short, what Bisetto & Scalise and Olsen understand for coordinate/copulative compounds can only exist in the non-head position of a subordinate/determinative compound. In this position a coordinate relation (understood as syntactic and not as morphological) can be established thanks to the semantics of the head outside the coordinate relation.

4. Extending the analysis

The analysis proposed for the nominal forms in (1) and (2) can also be applied to verbal and adjectival categories in English, and is intended to be applicable to other languages as well. While verbal VV sequences in English will be briefly presented below, the reader is directed to Padrosa-Trias (2010) for some discussion on AA sequences in English (e.g. *devilish-holy, cruel-compassionate expression*) and for the analysis of parallel examples in Catalan (e.g. *bomber escalador* (firefighter climber) 'a firefighter who can also work as a climber', *vol Àustria-Hongria* (flight Austria-Hungary), *tractat hispano-americà* (treaty Hispano+American)). Let us now consider how VV forms with an apparently coordinate relation between the two constituents are treated following my proposal.

Regarding $[VV]_V$ forms in English, the general consensus is that they are not compounds (Selkirk 1982) or are regarded as exceptional compounds (Spencer 2003) because they are argued to be the result of backformations. They may be related to nominal or adjectival forms: *dive-bomber*$_N$ ~ *dive-bomb*$_V$ and *dry-cleanable*$_A$ ~ *dry-clean*$_V$. However, the grammar is unlikely to result in an acceptable object, namely a $[VV]_V$ compound, if the grammatical principles do not allow such a type of object, which explains why I consider it a compound (cf. Booij 2005, Plag 2003). Some examples follow:

[11] They could act as heads in a 'metonymy' analysis, though.

[12] One question that may arise from the previous discussion, though, is why a phrase, without an overt coordinator, is usually odd at best when used syntactically, but fine in the non-head position of a compound (?*mind-body is an interesting problem*). A tentative answer could be that a syntactic phrase must omit some material if it is to appear in the non-head position of a compound, as has been argued for telegraphic speech in newspaper headlines (see Ackema & Neeleman 2004: 123, fn. 10 for similar discussion), whereas such material must be present in syntax.

(16) crash-land, dive-bomb, drink-drive, drop-kick, dry-burn, fly-drive, freeze-dry, shrink-wrap, slam-dunk, sleep-walk, stir-fry, and strip-search.

As already noted in the previous section, I understand complex forms with a coordinate relation not as compounds, but as phrases. If the forms in (16) involve a true coordinate relation, they cannot be included in the study of English compounding. Although the presence of asyndetic coordination is a real possibility for some forms (e.g. *stir-fry*), speakers' interpretations show that this is not the only reading available. The forms in (16) can also be analysed as compounds with the second verb being the head formally (e.g. past tense inflection attaches to it) and semantically (i.e. the compound denotes a subtype of the type of action expressed by the second verb), and the first verb being a kind of manner/temporal modifier. The result is that such compounds are endocentric single-headed compounds (of a subordinate/determinative nature). Accordingly, *to dive-bomb* is expected to mean 'to bomb in a diving fashion/when diving', that is, a type of bombing. This expectation agrees with the interpretation given by speakers.

5. Conclusions

In this paper I have argued for the non-existence of coordinate (either endocentric or exocentric)/copulative compounds (either unembedded or embedded) in Bisetto & Scalise's (2005) and Olsen's (2001, 2004) terms. My proposal is that such alleged compounds are cases of asyndetic syntactic coordination. Coordinate structures can, though, be interpreted as compounds if one element is taken as the head and the other as the non-head. This is the case of the examples in (1): for example, a *player coach* is a type of coach. It is also shown that coordinate structures can be inserted in the non-head position of a compound, which is the case of the examples in (2): for example, *the mind-body problem* is a kind of problem, one which has to do with the mind and the body. In short, I have claimed that the forms which are traditionally called coordinate compounds have the following structure: [[non-head] head], with the non-head being filled with a single word, as in *[[player] coach]*, or with a coordinate phrase that acts as a single word, as in *[[mind-body] problem]*.

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