COORDINATION AND FUNCTIONAL REDUNDANCY: 
THE CASE OF ADJECTIVES OF TEMPORAL ORDERING

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1. Introduction

English has a class of adjectives concerned with temporal ordering of things and events, exemplified by the following (Quirk et al. (1985: 1452–1453)):

(1) earlier, former, preceding, previous, prior
(2) coexisting, coinciding, concurrent, contemporary, contemporaneous, simultaneous
(3) ensuing, following, later, next, subsequent, succeeding, supervening

The adjectives in these groups serve to locate the relevant entity (or the trajector (TR)) in relation to a given time reference (or a landmark (LM)).¹ In (1), (2), and (3) the trajector is located previous to, simultaneous with, and subsequent to the landmark respectively (Quirk et al. (1985: 1452–1453)):

(4) He handed in a good essay. His previous essays were all poor.
   (TR: all of his essays preceding the good one just mentioned; 
   LM: the good essay just mentioned)
(5) The death of the President was reported this afternoon on Cairo

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¹ The term “entity” is used to cover both things and events. The notions of trajector and landmark are to be understood in the senses in which they are explained in Taylor (2003: 113).
radio.

A simultaneous announcement was broadcast from Baghdad.

(TR: the announcement broadcast from Baghdad; LM: the report of the death of the President on Cairo radio)

(6) I left him at 10 p.m. and he was almost asleep. But at some later hour he must have lit a cigarette.

(TR: some hour following 10 p.m.; LM: 10 p.m.)

In the following discussion, we will be exclusively concerned with adjectives in group (3), focusing on following, later, and subsequent as they are used to modify the head noun in the last conjunct of a nominal coordination structure. This usage is illustrated by the following:

(7) marriage, divorce and later remarriage

(8) a power failure and subsequent problems

A notable thing about these adjectives is that they can exhibit a kind of functional redundancy, adding no important information on the temporal relationship between the TR and the LM. Consider the following example:

(9) Many homes were damaged by the heavy rains and subsequent flooding.

(OPED)

(TR: the flooding following the heavy rains; LM: the heavy rains)

There would be no substantial change in the temporal aspect of the TR-LM relationship if the adjective in question were removed from the sentence, as is shown in the following:

(10) the heavy rains and flooding (cf. (9))

This property, however, is not shared by all of the adjectives used in the same syntactic structure. Consider the following:

(11) Since 2005, however, Mr. Bove has gained a certain reputation as one of the few bank analysts to predict the blow-up in the housing market and subsequent problems at many banks.


(TR: problems following the blow-up in the housing market at many banks; LM: the blow-up in the housing market at many banks)

In this case, the adjective is not functionally redundant: the coordination structure involved would not allow the same temporal relationship between the TR and the LM to be expressed by its modifier-free variant. The variant, in addition, would sound somewhat odd:

(12) ?the blow-up in the housing market and problems (cf. (11))

In this note, we will attempt to explore what distinguishes the two types
of nominal coordination structures described above, one with a functionally redundant attributive adjective in the last conjunct and the other with a functionally non-redundant one in that syntactic position. In Section 2 we will examine some of the previous analyses of the adjectives of temporal ordering concerned and point out their failure to fully resolve the issue. In Section 3 we will be concerned with the types of coordination structures in question to find out how they differ from each other in the nature of the relationship between the TR and the LM and how the difference can motivate the observed facts about the functional redundancy of the adjectives involved in the structures.

2. Previous Analyses


Gilman (1989: 878) observes that to describe something as “later” is usually just to establish its relative place in time, but to describe it as “subsequent” may also imply that it not only follows but in some way grows out of or is otherwise closely connected with what precedes it.² He presents the following examples:

(13) … the reviews we saw were favorable and looked forward to the subsequent books in the series. (Gilman (1989: 878))

(14) The report, and its authors’ subsequent prodding, moved the faculty last spring to agree. (Gilman (1989: 878))

(13) may imply that the subsequent books in the series (TR) would grow out of the preceding ones in the same series (LM); (14) may suggest that the subsequent prodding by the authors of the report (TR) occurred after and was closely connected with the report itself (LM). Gilman’s observation also applies to the following examples, presented earlier:

(9) Many homes were damaged by the heavy rains and subsequent flooding.

(11) Since 2005, however, Mr. Bove has gained a certain reputation as one of the few bank analysts to predict the blow-up in the housing market and subsequent problems at many banks.

² Some authors focus on the function of subsequent with regard to temporal ordering, making no mention of other possible implications of the word. For instance, Manser (1990: 64), comparing the adjective with consequent, contends that while the latter means “following as a direct result,” the former simply means “occurring after.”
The flooding (TR) followed and resulted from the heavy rains (LM); the problems referred to (TR) occurred after and developed out of the blow-up in the housing market in question (LM).

Gilman’s analysis is credited for pointing out that subsequent may include in its meaning aspects other than the purely temporal one, but it does not recognize any functional variants of the adjective; it remains to be seen what distinguishes (9) functionally from (11).

2.2. Wilson (1993)

Wilson (1993: 422), also discussing subsequent, notes that the word may suggest a relationship more than just sequence in time, and therefore a subsequent occurrence may perhaps imply “an occurrence of the same sort.” This seems to be true for (11): the problems that occurred afterward (TR) can be regarded as something of the same sort as the preceding occurrence, the blow-up in the housing market (LM), because the latter can plausibly be regarded as a kind of problem—problems followed another problem. It should be noted, however, that this insight also seems to apply to (9), where the flooding (TR) and the rains (LM) can be regarded as the same sort of entities, being subsumed under the category of weather-related phenomena. This leads us to claim that Wilson’s analysis of subsequent, although capturing a non-temporal component of the meaning of the adjective, shares with its predecessor the failure to illuminate the functional variation associated with it.

3. An Analysis

In the preceding section, we examined two analyses concerned with the semantics of some of the adjectives of temporal ordering in question and pointed out their inadequacies for our task. In the present section we will investigate the types of nominal coordination structures involving the adjectives described earlier, one with a functionally redundant attributive adjective in the last conjunct and the other with a functionally non-redundant attributive adjective in that position, by first exploring how they differ in the nature of the TR-LM relationship involved and then considering how the difference can motivate the functional redundancy or non-redundancy of the adjectives in question.
3.1. The TR-LM Relationship in the Types of Nominal Coordination Structures

We will first be concerned with the second type of nominal coordination structure, illustrated by (11) (which is repeated below):

(11) Since 2005, however, Mr. Bove has gained a certain reputation as one of the few bank analysts to predict the blow-up in the housing market and subsequent problems at many banks.

(11) includes a coordination structure with a functionally non-redundant adjective in the latter conjunct. The point to note about the TR-LM relationship involved in this case is that the LM (“the blow-up in the housing market”), by being regarded as a kind of “problem,” instantiates the category represented by the TR (“problem”). That is to say, the category represented by the head noun in the conjunct of the structure that corresponds to the TR is instantiated by the entity denoted by the preceding conjunct, the one corresponding to the LM. This generalization also holds for the following cases, each involving a nominal coordination structure with a functionally non-redundant adjective in the last conjunct:

(8) a power failure and subsequent problems
(TR: problems following a power failure; LM: a power failure)

(15) Critics of colonialism see the independence gained from the withdrawing colonial powers as only partial liberation due to corruption and following problems.
(TR: problems following corruption; LM: corruption)

(16) IATA, an organization representing about 240 airlines from across the world, has announced the earthquake and following disasters will have a noticeable impact on March air travel.
(http://traveltweaks.com/travel-japan-disasters-31757/)
(TR: disasters following the earthquake; LM: the earthquake)

These cases share with (11) the category/member relationship between the TR and the LM involved: in (8) and (15) the LM (“a power failure” and “corruption”) is a member of the category represented by the TR (“problem”); and in (16) the LM (“the earthquake”) instantiates the category represented by the TR (“disaster”).

We will now turn to the other type of nominal coordination structure. This is illustrated by (9), repeated below:

(9) Many homes were damaged by the heavy rains and subsequent
The point to note about this example—which includes a coordination structure with a functionally redundant adjective in the latter conjunct—is that the TR (“the flooding following the heavy rains”) and the LM (“the heavy rains”), although both representing weather-related phenomena, do not find themselves in the kind of category/member relationship that is recognized in (8), (11), (15) and (16): the TR is something that is caused by the LM and the two entities are closely connected with each other, but the LM is not a member of the category represented by the TR—heavy rains themselves are not members of the category “flooding.” That is, the category represented by the head noun in the TR-corresponding conjunct of the structure is not instantiated by the entity denoted by the preceding, LM-corresponding conjunct. This analysis also applies to the following cases, each of them involving a nominal coordination structure with a functionally redundant adjective in the last conjunct:

(7) marriage, divorce and *later* remarriage
    (TR: remarriage following marriage and divorce; LM: marriage and divorce)

(17) The story is about the soldier’s capture and *subsequent* escape.
    (Chambers SD)
    (TR: the soldier’s escape following his capture; LM: the soldier’s capture)

(18) The book discusses his illness and *subsequent* resignation from the government.
    (CALD)
    (TR: his resignation from the government following from his illness; LM: his illness)

(19) After reunification, his Stasi links left him open to accusations of extortion, profiteering and tax evasion that culminated in his arrest and *later* conviction in a state court in Berlin in 1996 on five counts of blackmail.  
    (TR: his conviction in a state court in Berlin following his arrest; LM: his arrest)

(20) Japanese automakers have slashed production since the magnitude-9 earthquake and *subsequent* tsunami March 11 because of a shortage of supply from part makers whose factories were damaged.
    (TR: the tsunami following the magnitude-9 earthquake March 11; LM: the magnitude-9 earthquake March 11)

The last conjuncts of the coordination structures involved in (7) and (17)—
(20) can be changed to adjective-free versions, as shown below:

(21) marriage, divorce and remarriage (cf. (7))
(22) the soldier’s capture and escape (cf. (17))
(23) his illness and resignation from the government (cf. (18))
(24) his arrest and conviction in a state court in Berlin (cf. (19))
(25) the magnitude-9 earthquake and tsunami March 11 (cf. (20))

The cases of (7), (9) and (17)–(20) belong together in that they do not share the kind of category/member relationship that is found in (8), (11), (15) and (16): in (7) the TR (“remarriage following marriage and divorce”) and the LM (“marriage and divorce”) are both entities related to matrimony, but the LM is not a member of the category represented by the TR—“marriage and divorce” do not constitute a member of the category “remarriage”; likewise, in (17)–(20) the LM (“the soldier’s capture,” “his illness,” “his arrest” and “the magnitude-9 earthquake March 11”) does not instantiate the category represented by the TR (“escape,” “resignation,” “conviction” and “tsunami” respectively).

We have explored two types of nominal coordination structures including adjectives of temporal ordering in the last conjunct in order to find out their difference in the nature of the TR-LM relationship involved. The point of our argument may be summarized in the following statements:

(26) The type of nominal coordination structure with a functionally non-redundant attributive adjective in the last conjunct involves a category/member relationship between the TR and the LM.

(27) The type of nominal coordination structure with a functionally redundant attributive adjective in the last conjunct does not involve the kind of category/member relationship between the TR and the LM that is found in the type with a functionally non-redundant attributive adjective in that position.

We may claim that since a category/member relationship is equated with a kind of conceptual hierarchy, the two types of coordination structures are distinguished from each other by the possibility of recognizing a conceptually hierarchical organization in the TR-LM relationship: functional redundancy correlates with the recognition of a conceptually non-hierarchical TR-LM relationship and functional non-redundancy a conceptually hierarchical one.

3.2. A Motivation

In 3.1, we investigated the two types of nominal coordination structures, one with a functionally redundant attributive adjective in the last conjunct and the other with a functionally non-redundant one in the position, and
found out how they differ in the nature of relationship between the TR and the LM. We will now go on to consider how the difference can motivate the functional status of the adjectives involved in the structures.

First, we will look at the type of nominal coordination structure with a functionally non-redundant adjective in the last conjunct. Consider example (16):

(16) IATA, an organization representing about 240 airlines from across the world, has announced the earthquake and following disasters will have a noticeable impact on March air travel.

As noted above, this sentence involves a category/member relationship between the TR and the LM, with the latter (“the earthquake”) instantiating the category represented by the former (“disaster”). In this case, if we removed the adjective from the last conjunct of the coordination structure, we would have the following structure, one that would sound somewhat odd:

(28) ?the earthquake and disasters (cf. (16))

In (28), “the earthquake” is a member of the category “disaster,” meaning that the entity referred to in the first conjunct is included in the entities referred to in the second. Another way of describing the situation is that the odd-sounding (28) involves a hyponymous relationship, with the extension of the first conjunct being a subset of the extension of the second. This incongruity of coordination and hyponymy may be generalized as the following constraint:

(29) The Extension Constraint
In a nominal coordination of the pattern “A and B,” the extension of A must not generally be a subset of the extension of B.

This constraint seems to derive from the principle of equal informativeness: in a nominal coordinate structure, the conjuncts are in principle equally informative, and so they must not generally be related in such a way that one conjunct is extensionally included in another because that would render the one included hardly informative.

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3 We follow the definition of hyponymy given in Cruse (2011: 136).
4 Note that the constraint does not exclude cases like the following:
   (i) Since 2001, all students and young people in Wales have been exempt from NHS charges until they are 25. (The Telegraph, Sep. 6, 2005)
   In this sentence, the coordinated elements, “all students in Wales” and “all young people in Wales,” are related in such a way that the former group is not a subset of the latter, although there is likely to be substantial overlap between them. Also deserving mention in this connection is the following, which may possibly have the initial perception of anomaly:
tions of the Extension Constraint, each being the modifier-free version of a nominal coordination with a functionally non-redundant adjective in the last conjunct:

(30) ?a power failure and problems (cf. (8))
(31) ?the blow-up in the housing market and problems (cf. (11))
(32) ?corruption and problems (cf. (15))

It may now be obvious what kind of function the adjective serves in the type of nominal coordination in question. See the following:

(33) the earthquake and following disasters (cf. (28))

In this case, the adjective, which is back in its original position, serves to keep the structure from violating the Extension Constraint: the extension of the first conjunct (“the earthquake”) is not a subset of the extension of the second conjunct (“following disasters”). This means that in such cases the adjectives in question have an essential function; they are functionally non-redundant.

We will turn to the other type of nominal coordination, one with a functionally redundant adjective in the last conjunct. Consider example (20):

(20) Japanese automakers have slashed production since the magnitude-9 earthquake and subsequent tsunami March 11 because of a shortage of supply from part makers whose factories were damaged.

As noted earlier, the sentence does not involve the same kind of TR-LM
relationship that is found in the type of nominal coordination discussed just above. In this case, if we removed the adjective from the last conjunct of the coordination structure, we would have the following structure:

(34) the magnitude-9 earthquake and tsunami March 11 (cf. (20))

In (34), “the magnitude-9 earthquake March 11” is not a member of the category “tsunami March 11,” meaning that the entity referred to in the first conjunct is distinct from the entity referred to in the second conjunct. This is to say that the coordination structure (34) does not violate the Extension Constraint: the extension of the first conjunct is not a subset of the extension of the second. In this case, it is to be noted, the two entities in question (the earthquake and tsunami) are sequentially ordered and this temporal relationship is iconically expressed in the coordination structure: in (34), the unmarked reading is that the earthquake was followed by the tsunami, rather than the other way around. We may thus claim that in such cases it is this principle of iconicity that makes adjectives of temporal ordering like subsequent functionally redundant; the temporal relationship between the entities in question would remain the same without them.

4. Conclusion

In this note, we have explored two types of nominal coordination structures including adjectives of temporal ordering (following, later, and subsequent) in the last conjunct, with a view to discovering how they differ in the nature of the TR-LM relationship involved and how the difference can motivate the facts about the functional redundancy of the adjectives in question. The type of structure with a functionally non-redundant attributive adjective in the last conjunct involves a category/member relationship between the TR and the LM. The type of structure with a functionally redundant attributive adjective in the same position does not involve the same kind of TR-LM relationship that is found with functionally non-redundant attributive

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6 The principle of temporal iconicity, alternatively called the principle of sequential/linear order, is a sub-principle of grammatical iconicity by which the order of things and events are reflected in the order of linguistic expressions. For more on the principle of iconicity and its sub-principles, see for instance Haiman (1983), Givón (1985), Fischer and Müller (2003), Rohdenburg (2003), Dirven and Verspoor (2004: 8–12), Radden and Dirven (2007: 53–55), and Langacker (2008: 79).
adjectives. This difference can be considered responsible for the functional status of the adjectives involved in the structures, by appealing to the Extension Constraint and the principle of temporal iconicity, both applying to nominal coordination structures.

REFERENCES


Some other syntactic structures involving adjectives of the same type seem resistant to the same line of analysis. Consider, for example, the following:

(i) Those concerns were overshadowed by subsequent events. (Collins COBUILD LD)

In this case, although the adjective in question is functionally non-redundant, it is not clear whether or not the sentence involves a category/member relationship between the TR and the LM as in nominal coordination structures with a functionally non-redundant adjective in the last conjunct: it may or may not be that the LM (“those concerns”) is a member of the category represented by the TR (“event”). How our analysis can be modified to apply to non-coordinate structures like this remains to be explored in future research.
New York.

Dictionaries


Walter, Elizabeth, Kate Woodford, Pat Bulhosen, Penny Hands, Lucy Hollingworth, Ginny Klein and Julie Moore, eds. (2009) *Chambers Student Learners’ Dictionary* (Chambers SD), Chambers, Edinburgh.

Source of Examples


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