THE N AFTER N CONSTRUCTION:
A CONSTRUCTIONAL IDIOM

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This article suggests an analysis of the N after N construction, exemplified by question after question, along the lines of the tripartite parallel theory advanced by Jackendoff (1997, 2002). It will be observed that the construction manifests a syntax-semantics mismatch: a singular noun in syntax but a bare plural noun in semantics. This mismatch is argued to be due to a correspondence rule that associates syntactically subordinate structure with semantically coordinate structure. It will be also shown that the analysis is applicable to the N ni-tugu N construction, the Japanese counterpart to the N after N construction.*

Keywords: syntactocentrism, the tripartite parallel architecture, Plural, Comp, subordination-coordination mismatch

1. Introduction

There have been two leading perspectives on the theory of syntax within generative grammar. One is based upon Chomsky’s distinction between the ‘core’ and ‘periphery.’ Chomsky (1981: 6) idealized away from language-specific or idiosyncratic phenomena and argued that maximally general phenomena reflect something fundamental and universal about the nature of language. On this view, the theory of syntax is a theory of ‘core grammar,’ but the residue of phenomena constitutes ‘the

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Chomsky (1995) has pushed forward this view one step further and advanced the Minimalist Program which takes the scope of syntax to be narrower than ever. In this project, stylistic phenomena (e.g. Heavy NP Shift) are argued to fall outside the scope of syntax itself, since they are difficult to describe by using theoretical constructs that the program alleges to constitute syntax.

On the other hand, Jackendoff (1997, 2002) together with Culicover (1999) has indicated an alternative perspective in which the empirically adequate theory of syntax allows not only for the maximally general phenomena but also for the irregular, exceptional, and idiosyncratic phenomena. In particular, they claim that there is no distinction between the ‘core’ and ‘periphery’; instead language phenomena form a continuum, from the most general to the most idiosyncratic. The underlying motivation for this is seen in Culicover’s (1999: 15) remark that “the mechanism for dealing with the idiosyncratic in language is every bit as unique to the human species as is the mechanism for dealing with the general.” In order to clarify the significance of the periphery in the syntactic theory, they have investigated a number of constructions that manifest mismatches between syntax and semantics, for instance, the ‘time’-away construction (*Bill slept the afternoon away*), left-subordinating and -constructions (e.g., *You drink one more can of beer and I’m leaving.*), and the comparative correlative (e.g., *The more you eat, the fatter you get.*). These phenomena are viewed as instances of ‘constructional idiom’ in a way that the association of syntactic structure with conceptual structure is explicitly specified.

Taking the latter view into consideration, we will explore a particular construction with two identical nouns paralleled by *after*. The expression, exemplified in (1a–c), is termed the N after N construction (Italics are mine).

(1) a. *Sigh after sigh passed along its streets to break against dripping walls.*
   

b. The night he laughed at her she wildly took up paper and pen and wrote *page after page*, analysing his character, ... tracing all the causes and the growth of her misery. (E. M. Forster, *Where Angels Fear to Tread*, 75)

c. The strength of their bodies, the lust of their souls, the fact that they could, with a show of affection or good-nature, receive *man after man*, astonished and later dis-
In each example, the N after N expression acts as an argument,\(^1\) and shows like its adverbial uses (e.g. day after day) that something happens successively for an indefinite period of time. This construction has been briefly taken up in connection with idioms in the lexicon (cf. Quirk et al. (1985) and Williams (1994)), but to the best of our knowledge, few generative researchers have so far brought serious attention to this expression.

The aim of this paper is to unearth the syntactic and semantic properties of the N after N construction, and propose an analysis of the construction along the lines of the tripartite parallel architecture advanced by Jackendoff (1997, 2002). We will show that the N after N expression acts as a singular noun in syntax but as a bare plural one in semantics, and that the mismatch is due to the fact that the expression is another type of Pseudo-subordination, namely subordination in syntax but coordination in semantics (cf. Yuasa and Sadock (2002)). Furthermore, we will argue that the mismatch is difficult to account for under Chomsky's syntactocentric model of grammar, which hypothesizes that only the syntactic component has an autonomous generative capacity from which semantic and phonological properties are interpreted. Our claim is that the mismatch makes sense only within Jackendoff's (1997, 2002) tripartite parallel architecture, which assumes that each of the syntactic, phonological, semantic components has an independent autonomy except in that they are linked in their interfaces.

The organization of this paper is as follows. Section 2 elucidates syntactic properties of the N after N expression and concludes that it is a nominal category whose syntax requires singularity for subject-verb agreement. Section 3 considers semantic properties of the expression and argues that it behaves like a bare plural in semantics. Section 4 shows that the tripartite parallel theory is more adequate to account for the singular-plural mismatch of the N after N construction than the syntactocentric one. Section 5 examines our analysis by seeing whether it can capture a number of characteristics of the construction in question. Section 6 explores the possibility that our analysis will be generalized.

\(^1\) The argumental status of the construction is confirmed by the fact that it functions as the controller of PRO in non-finite complements.

(i) Man after man tried [PRO to escape from the burning house].
to the N *ni-tugu* N construction, which is the Japanese counterpart to the N *after* N construction. Section 7 concludes this paper.

2. Syntactic Properties of the N *after* N Construction

In this section we will describe syntactic properties of the N *after* N construction and clarify its categorial status and internal structure. It will be shown that while the construction has some idiosyncrasies in syntax, it has a number of regularities in terms of the X bar-theory.

2.1. Regularities of the N *after* N Expression

Besides the N *after* N constructions in (1a–c), which behave as arguments, English has a number of expressions in which two identical Ns are paralleled by a preposition as in *arm in arm, day by day, face to face, spoonful by spoonful,* and *one by one.* These are termed 'parallel structures' by Quirk et al. (1985: 25) and are typically used as adverbials.

(2) a. They talked *face to face*.
   b. They stood *toe to toe/eyeball to eyeball*.

They point out that the nouns in (2a, b) resist modification by articles (e.g. *John talked to *the/a* face to *the/a* face*)), thereby arguing that the nouns have largely lost their independent nominal status. This fact leads them to conclude that such expressions are virtually idioms exemplifying ‘frozen’ article use.

The same is carried over to the N *after* N construction. Each noun of the construction cannot take an article (e.g., *{the/a} man after {the/a} man escaped from the burning house.*), suggesting that the expression is an instance of idioms like ‘parallel structures.’ Further-

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2 This point is clear from the following pairs of sentences (taken from Huddleston and Pullum (2002: 633))

(i) a. I drank my milk spoonful by spoonful.
   b. *I used spoonful by spoonful.
(ii) a. They exited one by one.
   b. *One by one exited.

Based upon this observation, Huddleston and Pullum (2002: 633) argue that these parallel structures are PPs headed by prepositions such as *by.* A question arises: what is the category of the N *after* N expression? We will take up this question in section 2.2.
more, the N after N construction cannot be split by syntactic operations such as extraposition.

(3) a. Man after man passed by.
   (cf. one man after another passed by.)

b. *Man passed by after man.
   (cf. one man passed by after another.)

The observations in (3) might tempt us to analyze the expression as a word dominated by an X⁰ node on a par with Chomsky’s (1981: 146, note 94) treatment of kick the bucket as a V⁰, if it is correct to assume following Chomsky (1970) that syntactic operations do not have access to the interior of words. This analysis, however, faces a number of problems. First of all, it cannot predict the ability of the N after N expression to take a prepositional object.

(4) a. She always treated him as a boy, which he was, and as a fool, which he was not, thinking herself so immeasurably superior to him that she neglected opportunity after opportunity of establishing her rule.
   (E. M. Forster, Where Angels Fear to Tread, 51)

b. ... and he kept on asking question after question about the world that lay away down the river, with all its perils and marvels, ...
   (R. L. Stevenson, The Merry Men, 80)

As is obvious from (4a, b), the N after N expression has a complement position like an ordinary syntactic category and then it is a category larger than an X⁰. It is implausible to specify the expression merely as an X⁰ in the lexicon.

Another problem with the treatment of the N after N expression as an X⁰ is that it fails to express the fact that each noun of the expression in question is modified by the same adjective.

(5) Gray summit after gray summit was overtaken by the blaze, and turned to a smoking white intensity.
   (H. G. Wells, The First Men in the Moon, 33)

It is widely accepted that adjectives occupy the specifier position of NP.

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³ It should be noted that the repeated Ns are not modified by different adjectives as in *red car after yellow car. We would like to leave this problem open here for future research.
Hence (5) suggests that each noun of the construction has a specifier like an ordinary category.

Finally, the X⁰ treatment of the N after N expression cannot account for its productivity. Except for the idiosyncrasy of the preposition after, it seems to be productive as is obvious from the examples that we have seen so far. It should be noted that not every noun may occur in the N after N construction: the nouns must be countable (see (6a–c)).

(6)  a. *Water after water fell from high to low.
    b. *John put sand after sand in the mailbox.
    c. *Grass after grass grew in this garden.

To the extent that the repeated Ns are count nouns, we can recognize that the construction has a great degree of productivity. The productivity proves that the construction is generated syntactically rather than lexically.

To summarize, the N after N construction is idiosyncratic in that the repeated Ns neither take determiners nor can be split by syntactic operations, but it involves an internal structure almost consistent with the X-bar theory. More importantly, the construction has much productivity, which suggests that the N after N expression is syntactically generated. In what follows, we will make clear the categorial status and internal structure of this expression and argue that it is a nominal category whose internal structure involves subordination.

2.2. The Categorial Status and Internal Structure of the N after N Construction

Let us consider to which category the N after N expression belongs. There are two conceivable categories for it: a PP headed by after, and an NP headed by either one of the nouns or the other. There are several arguments in favor of the latter. First, the N after N expression works as an antecedent of a restrictive relative pronoun as shown in (7a, b) below.

(7)  a. John asked me question after question that no teacher had answered.
    b. The manager held meeting after meeting that his subordinates hesitated to attend.

The same holds for reduced relative clauses as in (8) below. In this case, tribute after tribute is an antecedent of the reduced relative clause paid by Mr. Crooper to himself.
(8) Again and again were William’s ears afflicted with, “I dunno why it is,” following upon tribute after tribute paid by Mr. Crooper to himself, and received with little cries of admiration and sweet child-words on the part of Miss Pratt.

(B. Tarkington, Seventeen, 101)

In principle, the antecedents of restrictive relative pronouns must be NPs in contrast to those of non-restrictive relative pronouns, as shown by the following paradigm ((9a–c) are taken from Jackendoff (1977: 171)).

(9) a. *[
Relative Clause formation is obligatory in NPs],
{which/*that} accounts for the difference in surface shape.
b. *That Sheila was [AP beautiful], {which/*that} she was, was not realized until later.
c. *Solving this problem will take [PP from now until doomsday], {which/*that} is more time than we’ve got.

Thus, the grammaticality of (7a, b) strongly argues for the nominal nature of the N after N construction.

There is another piece of evidence for the nominal status of the N after N construction. Observe (10a, b), in each of which the N after N expression occupies the subject position of the ‘accusative-infinitive’ complement.

(10) a. We let chance after chance slip, and the end of it is we shall be bundled out bag and baggage into the street.

(E. M. Forster, Howards End, 166)
b. ... and I am glad to see veil after veil lift gradually, revealing new realms of thought and beauty.

(H. Keller, The Story of My Life, 87)

(10a, b) render it more convincing to assume that the N after N expression is a nominal category, for the subject position of an ‘accusative-infinitive’ complement is generally limited to NPs, as illustrated in (11a–c) below.

(11) a. John let many students come into the office.
b. *John let into the office come many students.
c. *John made that Mary is innocent obvious.

Further evidence for the nominal nature of the N after N expression is provided by the fact that it works as an object of prepositions (see (12)).

(12) They clattered down flagged passages, looking into room
The object position of a preposition is typically occupied by NPs as in (13a–c) below, and thus (12) confirms the nominal status of the construction.

(13) a. John talked about the east.
   b. *John talked about from the east.
   c. *John talked about that Mary was innocent.

In summary, the ability of the N after N expression to act as an antecedent of a restrictive relative pronoun, and its ability to appear in the subject position of ‘accusative-infinitive’ complements and the prepositional object position have made it possible to assume that the expression is a nominal category. This conclusion raises an immediate question: what is the internal structure of the N after N expression?

As for the internal structure, we will provide two conceivable analyses: one is to analyze the PP headed by after as being subordinated to the first N (see (14a)) and the other is to hypothesize that the two Ns are conjoined by after (see (14b)).

(14) a. \([NP \text{N-apple} [PP P-after [NP \text{N-apple}]])\]
   b. \([NP [NP \text{N-apple}] P-after [NP \text{N-apple}]])\]

The latter seems to be implausible, since the expression usually counts as singular for subject-verb agreement as shown in (15a, b) below. ((15b) is taken from the British National Corpus.)

(15) a. His head was whirring and picture after picture was forming and blurring and melting before his eyes ...
   (F. S. Fitzgerald, This Side of Paradise, 174)
   b. Study after study reveals the dangers of lightly trafficked streets near home for young children.

The coordinated NPs in subject position generally function as plural for subject-verb agreement (e.g. John and Bill {are/is} going to school.), whereas subordinated NPs contribute to singular for agreement (e.g. A man with green eyes {are/is} going to school.). The fact that the N after N phrase must be singular for agreement has thus provided support for (14a), but not for (14b).4

To sum up, in this section we showed that the N after N construction

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4 It appears that wave after wave in (i) below, taken from the BNC, counts as plural for the agreement.
is a nominal which manifests singularity for subject-verb agreement and therefore hypothesized that its internal structure involves a subordination like in (14a). In what follows we will explore some semantic properties of the construction and show that it acts like a bare plural in semantics.

3. Semantic Properties of the N after N Construction

In this section we will show that the N after N construction shares some semantic features with bare plurals such as apples. Before going into the semantics of the construction, let us start by considering what semantic features bare plural nouns have.

3.1. The N after N Expression as a Bare Plural Noun

Jackendoff (1991) argues that bare plurals (e.g. apples) are characterized by two semantic features: [unboundedness] and [internal structure]. As has been frequently pointed out, bare plurals and mass nouns pattern

(i) Wave after wave of attackers are routed, and Roland alone kills many hundreds.

In this case some original meaning of wave has been bleached, specifically moving parts on the surface of the sea, but it only means a particular pattern of behavior that suddenly happens in an uncontrollable way. Therefore we understand wave after wave as semantically impoverished like partitives such as pile, bottle, and cup (cf. Jackendoff (1977)). Instead we would like to count attackers as a syntactic head which serves as plural for the agreement. In fact, partitives such as handful and dozen are paralleled by after to create the N after N construction.

(ii) a. handful after handful of solid food
    b. dozen after dozen of brandies and liquors

It seems that these partitives have lost a purely semantic meaning and then fail to function as a head of the whole construction.

This conclusion gives rise to the following question: does the adverbial use of N after N expressions like day after day have the same structure as the argumental use of the expression? Otherwise, we would postulate two distinct categories for the N after N expressions. Notice that the nouns of the adverbial use are limited to temporal expressions such as time, day, week, hour, and month. It is impossible to use other expressions as adverbials as in John arrived late *(at) meeting after meeting. Temporal nouns are most likely used as adverbials without prepositions (e.g., John came [that day, this week, this month, this time].) This point makes it likely to assume that the adverbial use of the N after N expression is an NP which bears some kind of an inherent case in the sense of Larson’s (1985) analysis of bare NP adverbials. To motivate this assumption well, however, calls for further consideration.
together in various respects, in particular coercing a bounded event into an unbounded process (cf. Tenny (1994: 25)):

(16) a. John ate an apple {in an hour/*for an hour}. 

b. John ate apples/ice cream {*in an hour/for an hour}. 

In (16a) the event of John’s eating an apple is completed when the fixed quantity of an apple is consumed completely. In contrast, when eat takes a bare plural or mass noun as in (16b), the process of John’s eating an apple continues for an indefinite period of time since there is an indefinite quantity of apples/ice cream. The spatially unbounded quantity of apples/ice cream is reflected in the temporal unboundedness of the event described by eat. In this light Jackendoff thinks of bare plurals and (bare) mass nouns together as unbounded in contrast with a singular count noun which has some bounded quantity or extent. The boundedness and unboundedness are abbreviated [+b] and [−b], respectively. Furthermore, Jackendoff has introduced a semantic feature of [internal structure] to distinguish between bare plurals and mass nouns. The plurals comprise a multiplicity of distinguishable individuals, whereas the mass nouns do not have such entailment. Jackendoff refers to this feature as [±internal structure], namely [±i]. With these features, it is possible to characterize bare plurals and (bare) mass nouns as [−b, +i ] and [−b, −i], respectively.

With these points in mind, let us consider what semantic features the N after N expression bears. First, the Ns paralleled by after, like bare plurals, are construed as distinguishable individuals in the process described by the entire construction. This point is clearly illustrated below.

(17) ROSALIND had been disappointed in man after man as individuals, but she had great faith in man as a sex.

(F. S. Fitzgerald, This Side of Paradise, 148)

In (17) as individuals, which denotes ‘a number of distinguishable persons,’ modifies man after man. It follows that each of the repeated nouns in man after man is a separate entity in the event represented by the whole sentence.

Further evidence that the N after N construction expresses ‘different individuals’ is clearly seen in the following passage (Italics are mine).

(18) But I tried window after window on the terrace without result. The heavy green sun-shutters were down over each, and when I broke the hinges of one there was a long bar within to hold it firm.  

(J. Buchan, Mr. Standfast, 235)
In (18) each refers to a number of distinguishable windows, suggesting that each noun of window after window is a distinct entity.

Another semantic characteristic of the N after N construction lies in the sense of unboundedness. In (16) we noted that bare plurals coerce a bounded event into an unbounded process. Interestingly, the same is found in the N after N construction:

(19) John ate {*an apple/apples/apple after apple} for an hour.

In (19) apple after apple denotes an indefinite number of apples and the event described by ate is construed as unbounded. The parallelism between the N after N expression and bare plurals in the aspectual coercion makes it plausible to conclude that the N after N expression bears the value of unboundedness, namely [−b].

In this section we pointed out that the N after N construction has the two semantic features: (i) a multiplicity of distinguishable individuals and (ii) unboundedness. Employing the notations [±i] and [±b], we characterize the N after N expression as composed of [−b, +i]. Now we have witnessed a syntax-semantics mismatch in the N after N construction: a singular noun in syntax but a bare plural noun in semantics. It is necessary then to localize this mismatch somewhere in the grammar.

4. An Analysis

In this section, we will propose an analysis of the N after N construction in respect of the tripartite parallel architecture developed by Jackendoff (1997, 2002). In particular, we will prove that the tripartite parallel model is more adequate than Chomsky’s syntactocentric theory to capture the syntax-semantics mismatch, pointed out in section 3. Before proceeding, it is appropriate to sketch out some essentials of the tripartite parallel architecture in comparison with Chomsky’s syntactocentric theory.

4.1. Two Approaches to Syntax-Semantics Mismatches

Since the earliest days of generative grammar Chomsky has assumed that the sole source of generativity in the grammar lies in syntactic structure, from which semantic and phonological structure are interpreted. This assumption Jackendoff (1997) dubs syntactocentrism. One recent variant of syntactocentrism, Chomsky’s (1995) minimalist pro-
gram, is laid out as in (20) below.\textsuperscript{6}

\begin{equation}
(20) \quad \text{The Minimalist Program}
\end{equation}

\begin{center}
\begin{tikzpicture}
  \node {Lexicon};
  \node[below left] {Spell-Out \ldots};
  \node[below right] {\ldots Merge/Move};
  \node[below left] {PF};
  \node[below right] {LF \rightarrow CS (Conceptual Structure)};
\end{tikzpicture}
\end{center}

In this conception of grammar lexical items are viewed as a bundle of phonological, syntactic, and semantic features listed in the Lexicon. For example, the lexical entry of the word \textit{cat} is fully represented as in (21) below.\textsuperscript{7}

\begin{equation}
(21)
\begin{cases}
  /kæt/ \\
  +N, -V \\
  \text{singular} \\
  \text{[Thing CAT, TYPE OF ANIMAL, etc]} \\
\end{cases}
\end{equation}

The operation Merge selects lexical items out of the Lexicon and combines them into larger structures such as phrases or clauses. Merge operations are freely interspersed with derivational operations such as Move. However at some point the derivation splits into two ways. One way yields PF (through the Spell-OUT) and the other produces LF, in each of which phonological and semantic features are interpreted. This amounts to saying that the phonological and semantic features are dragged inertly throughout the syntactic derivations.

Contrary to Chomsky’s view that syntax is the one component of generativity, Jackendoff (1997) has advanced the tripartite parallel architecture, which hypothesizes that phonological, syntactic, and conceptual components have an autonomous generative capacity respectively. The layout of the model is illustrated in (22) below.

\textsuperscript{6} (20) is a slightly modified version of (d) in Figure 4.1, taken from Jackendoff (1997: 85).
\textsuperscript{7} We cite (21) from Jackendoff (1997: 84) with the notations “PS, SS, and CS” omitted.
The phonological, syntactic, and conceptual structures are independently generated, but they are linked by PS-SS and SS-CS correspondence rules in the interfaces. The grammatical structure of a sentence is viewed as an outcome of constructing PS, SS, and CS, through the correspondence rules. This conception of grammar is strengthened by a larger hypothesis of mind/brain, *Representational Modularity*, which says that the mind encodes information in distinct representational formats such as syntactic structure and conceptual structure with its own properties. On this view, lexical items are seen as a correspondence rule between well-formed fragments of phonological, syntactic, and conceptual structure. A lexical item, say *cat* is represented as follows ((ibid.: 89)).

In (23) phonological, syntactic, and semantic representations exist independently but they are explicitly associated with one another by subscripted indices. In contrast to the conception of lexical items as 'mixed' representations (as in (21)), Jackendoff argues that lexical items “license the correspondence of certain (near-) terminal symbols of syntactic structure with phonological and conceptual structures (ibid., p. 89).” This way of looking at lexical items is termed a lexical licensing
approach. One consequence of this is that "the lexicon as a whole is to be regarded as part of the PS-SS and SS-CS interface modules (ibid., p. 89)." There is no such lexical component that feeds lexical items into the syntactic derivation.

The two architectures of grammar differ from each other as to how SS-CS mismatches are described in the grammar. Syntactocentrism localizes the mismatches in a mapping of base structure to derived structure, namely Move in the syntactic component, while keeping the interfaces between syntax and semantics as uniform as possible. This model thus simplifies the interface between syntax and semantics at the cost of adding some complexity to the syntactic component (cf. Jackendoff's (1990: 155-157) Syntactic strategy). In contrast, the tripartite architecture localizes the mismatches in the SS-CS correspondence rules, keeping the syntax simple (cf. Jackendoff's (1990: 155-157) Correspondence Rules strategy). To put it simply, the cost is not in the syntax but in the SS-CS interface.

To see differences between the two strategies, consider a sentence with relative clause extraposition (e.g. a man walked in who was from Toronto). Here the extraposed clause who was from Toronto acts as a predicate of its antecedent a man semantically, but as an adjunct syntactically (Williams (1980)). The syntactocentric model attributes the mismatch to Move. The relative clause who was from Toronto is argued to move out of the host noun a man and adjoin to IP in syntax with the SS-CS relation isomorphic. On the other hand, the tripartite theory encodes the mismatch in a correspondence rule between SS and CS, each of which is approximately illustrated below.\(^9\)

(24) a. \([\text{IP} \ [\text{IP} \ [\text{NPa a man}] \text{walked in}] \ [\text{CPb who was from Toronto}]] \) (SS)

\[ a \quad [\text{EVENT} \ [\text{Thing MAN} \ [\text{Proposition WHO WAS FROM TORONTO}]_b]_a \text{MOVE}] \) (CS)

In (24) the extraposed relative clause in SS is linked to the conceptual category \( [\text{Proposition } ] \) in CS by the subscript \( b \). The subscripted indices guarantee a predication relation between the extraposed relative clause and its antecedent. This hypothesis receives support from the following

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\(^9\) One version of such an SS-CS correspondence rule is the Complement Principle proposed by Culicover and Rochemont (1990). This principle roughly says that an extraposed phrase can receive an interpretation only if it is within the maximal projection that contains its antecedent.
fact originally noted by Perlmutter and Ross (1970).

(25) A man walked in and a woman walked out who happened to look sort of alike.

It is impossible to assume that the extraposed relative clause in (25) moves out of the host noun phrases to the sentence-final position. The reason is that the relative clause cannot be hosted in underlying structure by either of the antecedents with which it is associated.


If we assume, following syntactocentrism, that the relative clause moves out of the host noun, there will be no way to account for the ungrammaticality of (26). It is then preferable to analyze the relative clause extraposition as an SS-CS mismatch that allows properties of the construction to be referred to either one of the two structures or the other.

In this section we drew a sketch of the tripartite parallel theory in comparison with the syntactocentric theory. In what follows, we will consider which theory is better to account for the mismatch of the N after N construction.

4.2. The SS-CS Mismatching Hypothesis

In section 2.2 we showed that the syntax of the N after N construction requires singularity for subject-verb agreement, thereby analyzing its syntactic structure as subordination. It is appropriate then to start the discussions by considering how the conceptual structure of the N after N phrase is depicted. This question will be sought in light of \([-b,+i]\) that the N after N construction bears. With these features, for example, apple after apple is assigned the following conceptual structure.

(27) \([\text{Thing} -b,+i [\text{Thing} +b,-i \text{APPLE}]_a \text{AFTER} [\text{Thing} +b,-i \text{APPLE}]_b]_c\]

In (27) the entire conceptual category is composed of two conceptual subcategories: \([\text{Thing} +b,-i \text{APPLE}]_a\) and \([\text{Thing} +b,-i \text{APPLE}]_b\). Each subcategory must be a singular count noun (see (6) above, repeated here for convenience as (28)).

(28) a. *Water after water fell from high to low.

b. *John put sand after sand in the mailbox.

c. *Grass after grass grew in this garden.

As we touched upon in section 3, singular count nouns usually have a fixed and homogenous quantity and therefore they are alleged to bear \([+b,-i]\) (Jackendoff (1991)). An immediate question arises: why does
the whole conceptual category bear [-b, +i] despite the fact that each subcategory has [+b, -i]? To begin approaching a solution for this question, we would like to consider how the two conceptual subcategories are structurally represented.

First of all, suppose along the lines of syntactocentrism that the construction has a conceptual structure which is isomorphic to its syntactic structure: that is, one conceptual subcategory is subordinated to another one.

(29) SS-CS Matching Hypothesis A

\[
\begin{align*}
\text{a. } & [\text{Thing}^{-b,+i} [\text{Thing}^{+b,-i}]_a [\text{Place AFTER Spatial} [\text{Thing}^{+b,-i}]_b]_c]_d \\
\text{b. } & \text{NP}_d \\
& \quad \text{N'} \\
& \quad \text{N}_a \quad \text{PP}_c \\
& \quad \quad \text{P} \quad \text{NP}_b
\end{align*}
\]

In (29) all the syntactic constituents are linked to the conceptual constituents by subscripts: there is no discrepancy between CS and SS. Although this hypothesis has some simplicity in permitting the SS-CS connection to be uniform, there seems to be no direct way to describe the semantic plurality of the construction that we pointed out in section 3. The plurality is also seen in the fact that the N after N expression is co-referential with a plural pronoun.

(30) Words and images came tripping to my finger ends, and as I thought out sentence after sentence, I wrote them on my braille slate. (H. Keller, The Story of My Life, 48)

In (30) the pronoun them is construed as referring to sentence after sentence in the preceding clause. This supports the semantic plurality of the N after N phrase and then shows the independence of CS from SS.11

10 Following Jackendoff’s (1983) idea of semantic fields, we temporarily assume that the conceptual category of AFTER in (29), like prepositions such as in, at, and on, is PLACE, whose semantic field feature is [spatial] or [temporal].

11 In order to take (30) as evidence for the semantic plurality, we must hold that the sort of referential dependency is sensitive to semantics. Such a view is independently argued for by Jackendoff (1997, 2002) and Culicover and Jackendoff (1997).
An additional problem with the Matching Hypothesis A comes from the interpretation of the following sentence, taken from the British National Corpus.

(31) All ranks joined in hearty cheer after cheer for every member of the Royal family ...

In (31) hearty is interpreted as modifying each of the Ns, thereby creating such a construal as hearty cheer after hearty cheer.12 This distributive interpretation usually applies to coordination but not to subordination (see (32)) (cf. Quirk et al. (1986: 960)):

(32) a. old men and women (= [old men] and [old women])

b. an old man with a doll (≠ [an old man with an old doll])

The interpretation in (31) argues against the hypothesis that the two sub-constituents are represented by the notion of subordination both in syntax and semantics. It is then necessary to assume that the construction has coordinate structure at some point of the derivation.

In order to capture the fact in (31), the Matching Hypothesis A might argue that the subordinate structure is restructured into coordinate structure at some level of the syntactic derivation, as illustrated schematically in (33) below.

(33) a. \[ NP_d \]

\[
\begin{array}{c}
N' \\
\downarrow \\
N_a \\
\downarrow \\
PP_c \\
\downarrow \\
\text{after} \\
\downarrow \\
NP_b \\
\end{array}
\]

b. \[ NP_d \]

\[
\begin{array}{c}
N'_a \\
\downarrow \\
N_a \\
\downarrow \\
\text{after} \\
\downarrow \\
N_b \\
\end{array}
\]

The resulting structure derived by restructuring accounts for the fact that the N after N expression behaves like coordination. Plausible though this looks, the process of restructuring seems to be problematic under the restrictive theory of phrase structures. If we adopt the framework

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12 In (31) the adjective hearty precedes the phrase-initial noun and modifies each noun. Interestingly, there is another pattern of modification, 'N after Adjective N,' which Kazuo Kato has pointed out to me.

(i) But that day, climbing up slope after wooded slope of the Chilterns, into the sun, he had been soothed, .... (Susan Hill, The Albatross, 140)

In (i) the adjective wooded modifies the first noun preceding after. A question arises: how is the first noun modified by wooded. We would like to leave this question for future research.
of the Principles and Parameters theory, the restructuring will lead to a violation of the Projection Principle, which requires that lexical properties of a lexical item be maintained throughout the derivations. Even if we recognize the restructuring somewhere in the syntactic derivation, we cannot avoid leaving open the question of why (33b) is the resulting structure, but not the original one, of (33a). There is no a priori reason that (33b) is the resulting structure of (33a).

Another logical possible hypothesis is that the repeated Ns are coordinated by *after* both in SS and CS.

(34) SS-CS Matching Hypothesis B
    a. \[[\text{Thing}^{-b,+i} \ [\text{Thing}^{+b,-i}_a \ \text{AND} \ [\text{Thing}^{+b,-i}_b]_b\ ]_c \]
    b. \[\begin{array}{c}
    \text{NP}_c \\
    \text{N}_a \rightarrow \text{after} \ \text{N}_b \\
    \end{array}\]

This hypothesis may capture the distributive interpretation in (31) through the conjunction of \[[\text{Thing} ]\] and \[[\text{Thing} ]\] in CS. Nonetheless, the syntactic singularity does not fall under this hypothesis. To solve this problem, one might assume, together with the Matching Hypothesis A, that the construction involves a structure-changing operation in the syntactic derivation: namely, the restructuring of coordination structure in (34b) into subordination structure at some level of the derivation. In order to maintain this, it is unavoidable that the restructuring will face the same problem that the Matching Hypothesis A did. If we allow phrase structures to be so freely changeable like a restructuring of coordination into subordination, it will give rise to an unrestrictive theory of phrase structures.

A way out of this dilemma is to hypothesize, following the tripartite parallel model, that the N *after* N expression has a conceptual representation different from the syntactic one. Let us now assume that the repeated nouns involve a subordinate relation in SS but a coordinate relation in CS, as illustrated below.

(35) SS-CS Mismatching Hypothesis
    a. \[[\text{Thing}^{-b,+i} \ [\text{Thing}^{+b,-i}_a \ \text{AND} \ [\text{Thing}^{+b,-i}_b]_b\ ]_c \]
b. \[
\begin{array}{c}
NP_c \\
N' \\
N_a \quad PP \\
P \quad NP_b \\
\text{after}
\end{array}
\]

This hypothesis licenses correspondence of syntactic structure and conceptual structure that do not follow the uniformity of SS-CS mapping. In (35) the NPc, Na, and NPb in SS correspond to [Thing ]c, [Thing ]a, and [Thing ]b in CS, respectively. The open places in the syntactic and conceptual structure render the construction productive unlike ordinary idioms like *kick the bucket*. What makes the expression idiosyncratic is that not all the syntactic constituents correspond to conceptual constituents. The PP headed by *after* has no independent interpretation because it is not associated with any conceptual constituent. This peculiarity is specified for the construction as part of the syntactic side of the correspondence rule. The preposition *after* acts as a constant in the same way that the word *way* does in *one's way* constructions such as *Bill belched his way out of the restaurant*. We cannot replace the word *after* with a semantically similar word such as *following* (e.g., *man {after/*following} man walked in*). Like *one's way* constructions, the N *after* N expression is looked upon as an instance of constructional idiom, a specialized syntactic form with an idiomatic meaning, marked by the word *after*.

The hypothesis in (35) makes explicit the fact, pointed out in section 2, that the N *after* N construction is a singular noun in syntax, but a bare plural in semantics. The singularity of the construction is due to

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13 An anonymous reviewer argues that correspondence rules are so unconstrained on a par with the restructuring in (33) that they might allow for any kind of SS-CS mismatching through the co-indexation between conceptual and syntactic categories. This problem is exactly what Jackendoff (1997: 40) has discussed. His claim is that “correspondence rules are conceptually necessary to mediate between phonology, syntax, and meaning” and “must be constrained so as to be learnable.” As far as correspondence rules are conceptually motivated, it seems more reasonable to use the rules for describing SS-CS mismatches than the restructuring, which lacks a conceptual necessity.
syntactic structure (35b), for subordination typically contributes to singular for the subject-verb agreement. Furthermore, the reason that the N after N expression acts as plural in semantics lies in the composition of two conceptual constituents (i.e. \([\text{Thing}] \text{ AND } [\text{Thing}]\)) in CS. Since the notion of conjunction usually denotes plurality, the conjunction in CS is thought of as being responsible for the plurality of the construction. One advantage of this analysis is that the plurality of the construction is autonomous unlike lexically pluralized words such as people and cattle. The plurality reads from the conjunction of the two conceptual constituents, and thus we need not stipulate the notion of plurality in conceptual structure.

We are now in a position to answer the question raised above: why does the whole conceptual category bear the features \([-b, +i]\) despite the fact that each subcategory has \([+b, -i]\)? To approach a solution for this question, we adopt Jackendoff’s (1991) idea that the notion of plurality is a conceptual function which maps a bounded argument ([+b, -i]) into an unbounded one ([−b, +i]) of the same type. An approximate idea of this hypothesis appears in the conceptual structure as in (36), where the notation PL means the concept of plurality.

\[
(36) \ [\text{Thing} -b, +i (\text{PL } [\text{Thing} +b, -i \text{ APPLE } ])] = \text{apples}
\]

In (36) the function PL, expressing the plural morpheme, maps its argument with [+b, -i] (i.e. an apple) into the argument with [-b, +i] (i.e. apples).

Given this idea, the fact that the N after N expression bears [-b, +i] is viewed as an outcome of the plurality predictable from the conceptual structure of the construction. Applying the PL function to the N after N expression, we will have the conceptual representation in (37), where the variable X denotes either [EVENT] or [THING].

\[
(37) \ [x -b, +i \text{ PL}([x +b, -i a \text{ AND } [x +b, -i b]) c]
\]

Here the coordinated conceptual constituent appears as the argument of the conceptual function PL whose presence follows from the coordination of the two subcategories in the conceptual representation.15

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14 Notice that event nominals such as attack and study qualify as nouns in the N after N phrase (e.g. attack after attack, study after study, and meeting after meeting).

15 An anonymous reviewer argues that the PL is redundant in conceptual structure (37) if the plurality of the construction reads from the coordination of conceptual categories. However, even in the conceptual structure of apples (as in (36)) whose
PL serves to map \([+b, -i]\) into \([-b, +i]\).

To sum up, we have proposed an analysis of the N after N expression on the basis of the tripartite parallel theory, the main idea of which is that it involves subordinate structure in SS but coordinate structure in CS. The analysis has attributed the singular-plural mismatch to the SS-CS correspondence rule which links subordinate structure in SS to coordinate structure in CS.\(^{16}\)

5. Further Considerations

In this section we will show that the conceptual structure (37) of the N after N construction helps to account for some properties of the construction, particularly aspectual coercions.

5.1. A Group Construal of the N after N Expression

In section 3 we revealed that the N after N expression implies a plurality of distinguishable individuals. Interestingly enough, there are a number of instances wherein the N after N phrase is construed as a group composed of the two Ns in the event represented by the clause. Consider the following sentence.

(38) Then system after system of our island would roll together under his feet. (E. M. Forster, Howards End, 176)

In (38) system after system occurs with the adverb together whose meaning is such as to require a group composed of plural things as shown by the incompatibility of together with each in *Each man worked together. It is plausible then to say that system after system refers to a single combined group of systems.

PL is predictable from the plural morpheme, the PL is necessary to coerce \([+b, -i]\) into \([-b, +i]\). For this reason we hold that the PL is required to explicitly encode the notion of plurality even in conceptual structure (37).\(^{16}\)

Yuasa and Sadock (2002) have observed that the subordination-coordination mismatch is exemplified by a comitative construction with NP and PP in Slavic languages.

(i) a. ikh mit-n vayb (Yiddish)
   I. NOM with-the.DAT wife
   ‘my wife and I’

If our treatment of the N after N construction as a subordination-coordination mismatch is correct, it will contribute to strengthen Yuasa and Sadocks’ (2002) claim that subordination-coordination mismatches are general phenomena.
Another argument for the group reading of the N after N expression has to do with verbs such as *collide* and *assemble*. The verbs’ plural subjects must be a group of plural things or individuals, as is obvious from the fact that (39a, b) cannot be paraphrased in light of conjoined clauses (see (40a, b)).

(39) a. John and Mary collided on the highway.
    b. John and Mary assembled in the meeting room.

(40) a. *John collided on the highway and Mary collided on the highway.
    b. *John assembled in the meeting room and Mary assembled in the meeting room.

Interestingly, the N after N phrases function as the subjects of *collide* and *assemble* as in (41a, b) below.

(41) a. Car after car collided on the highway.
    b. Man after man assembled in the meeting room.

This proves that the N after N construction refers to a single combined group of several things. A question arises: how is the group reading of the N after N expression encoded in the conceptual structure?

Our solution for this question will be sought in terms of the COMP function that Jackendoff (1991: 24) introduced. The COMP serves to describe a relation between group-nouns and of Ns in an expression like a *flock of birds*, where a *flock* is a group consisting of many birds. This relation is described as a function of the COMP. With the COMP, a *flock of birds* is assigned the following conceptual structure.

(42) \[ \text{Thing}^{+b,+i} \text{ COMP}(\text{Thing}^{-b,+i} \text{ PL } (\text{Thing}^{+b,-i} \text{ BIRD})) \]

In (42) \[ \text{Thing}^{-b,+i} \text{ PL } (\text{Thing}^{+b,-i} \text{ BIRD}) \] serves as an argument of the COMP, whose introduction is signaled by a lexical item, namely of-Ns.

The COMP provides an analysis of the group reading pointed out in (38) and (41). In each case, the lexical meaning of *together* and *assemble* enforces the interpolation of the COMP function to generate the following conceptual representation.

(43) \[ \text{Thing}^{+b,+i} (\text{COMP}(\text{Thing}^{-b,+i} \text{ PL } (\text{Thing}^{+b,-i} \text{ CAR})_{a} \text{ AND } \text{Thing}^{+b,-i} \text{ CAR}_{b}))_{c}) \]

In (43) the COMP function maps its argument into a bounded and homogenous argument on a par with the group nouns in (42). Hence the N after N phrases in (38) and (41) are understood as a group made up of plural things.

It is worth stating that the conceptual representation (43) of the N after N phrase is not separated from the one assumed above in (37).
In short, the former representation is viewed as derived from the latter representation as a function of the Comp. Therefore it is not necessary to set up a distinct conceptual representation just for the group reading of the N after N construction.

5.2. Verbal Coercion

There is another aspectual coercion for which the conceptual structure (37) can provide an explanation. In section 3 we pointed out that the event described by the verb that takes the N after N argument is coerced into an unbounded process, as shown in (19) above, repeated here as (44).

(44) John ate {*an apple/apples/apple after apple} for an hour. In this case apple after apple like apples changes the event of John's eating an apple into an unbounded process. The sentence conveys a reading that many different apples were eaten by John for an indefinite period of time.

In order to capture this coercion formally, we would like to follow Dowty (1991) in applying the notion of homomorphism to instances of aspectual coercion. To put it simply, the homomorphism is "a function, from its domain to its range, which preserves some structural relation defined on its domain in a similar relation defined on the range (ibid., p. 567)." As an illustration of this, consider the interpretation of a sentence like John and Mary won a prize. Quirk et al. (1986: 954) state that the sentence is ambiguous in the construal of the coordinated noun phrases. When John and Mary is construed as a single group composed of John and Mary, the sentence is interpreted as a single combinatory process: (i) John and Mary jointly won a prize. On the other hand, in the case that John and Mary is regarded as different individuals, the sentence is thought of as multiple events: (ii) John won a prize, and Mary won a prize. It seems reasonable to argue that this ambiguity is an outcome of the homomorphism. In (i), the homomorphism maps the single combined conjuncts (i.e. [NP John and Mary]) into the range of event and the sentence is taken as a single process. In the case of (ii), the structurally distinct conjuncts (i.e. [NP John] and [NP Mary]) are translated into the range of event as a function of homomorphism, resulting in the interpretation of multiple events.

Bearing these points in mind, let us seek an explanation of verbal coercions in (42). If we abbreviate the homomorphism function as H, a sentence like John ate apples will be given the following conceptual
The idea behind (45) is as follows: If a telic verb such as EAT takes an argument such as apples as in (44), the verb interpolates the function H so as to map the relation ‘[-b, +i PL([+b, -i]])’ represented in the conceptual category [THING] into the range of the conceptual category [EVENT]. The generated representation makes apples act as a suitable argument for EAT, since the event of EAT is coerced into an unbounded process as a function of H. The same is carried over to a sentence like John ate apple after apple. Replacing the argument of the function H in (45) with the conceptual structure of apple after apple, we will have a conceptual representation like in (46) below.

\[
(45) \quad \text{[Event}^{\neg b, +i} \text{PL}[\text{Event}^{b, -i} \text{EAT}(H([\text{Thing}^{-b, +i} \text{PL}([\text{Thing}^{b, -i}]))]))]
\]

\[
(46) \quad \text{[Event}^{\neg b, +i} \text{PL}([\text{Event}^{b, -i} \text{EAT} H([\text{Thing}^{-b, +i} \text{PL}([\text{Thing}^{b, -i} \text{APPLE}_{a} \text{AND} [\text{Thing}^{b, -i} \text{APPLE}_{b}])])])])
\]

On a par with the case of (45), the relation ‘[-b, +i PL([+b, -i]])’ defined in the argument apple after apple is preserved in the range of event and thus the sentence is construed as unbounded.

To summarize, we have shown that the conceptual structure of the N after N phrase can account for the two kinds of aspectually coerced interpretations by employing the function of Comp and of homomorphism which are independently well-motivated. The conceptual structure in question has proved to have some degree of usefulness and applicability.

6. A Look at the N ni-tugu N Construction in Japanese

So far we have analyzed the N after N expression as being due to the SS-CS correspondence rule which links syntactic subordination to semantic coordination. If we maintain the analysis we will face a question: Is the SS-CS correspondence rule particular to the N after N expression? If we set up the rule only for the expression, it would be merely an ad-hoc stipulation. In this section we will explore one possibility of the correspondence rule being generalized to the N ni-tugu N construction.\(^\text{17}\)

\(^{17}\) As space is limited, only a sketchy picture will be given of the N ni-tugu N construction. To go into the details of the construction will require another paper.
The construction, exemplified in (47) below, bears a strong resemblance to the N after N construction in English.

(47) a. kuushuu ni-tugu kuushu-gaIraqi-siminn-o Airstrike following Airstrike-Nom Iraqi citizens-Acc kurusime-ta. distressed ‘Airstrike after airstrike distressed Iraqi citizens.’

b. John-wa hagesii koogeki ni-tugu-koogeki-o John-Top intense attack following attack-Acc tekijin-ni kuwae-ta. enemy position made ‘John made intense attack after attack on an enemy position.’

Here we notice that the construction patterns with the N after N phrase in semantics. What is immediately apparent from these examples is that the N ni-tugu N phrase denotes two semantic properties: ‘a multiplicity of distinct things or events’ and ‘unboundedness.’ For instance, we can understand kuushuu ni-tugu kuushu ‘airstrike after airstrike’ as referring to a number of different airstrikes and also we fail to recognize the definite boundaries of kuushuu ni-tugu kuushu ‘airstrike after airstrike’ from the present vintage point. These observations make it plausible to characterize the N ni-tugu N construction as bearing [-b, +i] and involving a similar conceptual representation to that of the N after N phrase.

(48) \([x^{b,-i}] \text{PL}([x^{b,-i}] \text{AND} [x^{b,-i}])\]

In (48) the coordinator ‘AND’ conjoins the two conceptual subcategories. This point is confirmed by the fact that in (47b) the adjective hagesii ‘intense’ preceding the noun koogeki ‘attack’ is regarded as modifying each of the two nouns (koogeki ‘attack’) on a par with hearty cheer after cheer in (31) above.

Let us consider how the N ni-tugu N phrase is syntactically represented. In respect of the view that Japanese is a head-final language, we notice that the phrase-final N of the construction is a syntactic head which the sequence N ni-tugu modifies. What this means is that the construction involves a subordinate structure in syntax in parallel with the N after N construction. The N ni-tugu N construction will be assigned an approximate shape of syntactic structure like that in (49) below (with the category of tugu ‘following’ suppressed).
The question to be asked is as follows: what is the categorial status of the item tugu 'following'? It appears that the word tugu 'follow' is a verb taking a ni-phrase as its argument. However, the item tugu of the construction differs from the pure verb tugu in the s (=semantic)-selectational requirement. It seems that the former s-selects [EVENT] but not [THING] ((50a, b)), but the latter does not exhibit such a restriction ((51a, b)).

(50)  
\[\text{a. } *\text{siatioo ni tugu siatioo} \]
\[\text{president following president} \]
\[\text{‘president after president’} \]
\[\text{b. } *\text{ringo ni tugu ringo} \]
\[\text{apple following apple} \]
\[\text{‘apple after apple’} \]

(51)  
\[\text{a. } \text{siatioo-ni tugu jinbutu} \]
\[\text{president following figure} \]
\[\text{‘a figure next to the president’} \]
\[\text{b. } \text{ringo ni tugu koobutu} \]
\[\text{apple following the favorite food} \]
\[\text{‘the favorite food next to an apple’} \]

A similar constraint is observed in the English preposition following in (52) which is alleged to be grammaticalized from the verb follow.

(52) Following the \{speech/presentation/*film star\}, there are a few minutes for questions.

For that reason, we assume that the word tugu in the construction undergoes a grammaticalization from a pure verb to a postposition. Replacing the variable X with the postposition, we will provide the N ni-tugu N construction with a syntactic structure like (53) below.
To summarize, although the arguments on the N ni-tugu N construction are somewhat rough, it can be concluded that the construction involves a similar SS-CS mismatch observed in the N after N construction. In order to strengthen the conclusion, we require further investigations into the construction.

7. Concluding Remarks

In this paper, we have analyzed the N after N expression as an SS-CS correspondence rule which associates syntactically subordinate structure ((35b)) with semantically coordinate structure ((35a)). Our analysis has adequately captured the singular-plural mismatch, the group readings ((38) and (41)), and the aspectually coerced reading ((44)), of the N after N construction through the application of conceptual functions (PL, COMP, and H) into conceptual structure. This analysis has also proved to be useful for the Japanese counterpart to the N after N construction, the N ni-tugu construction.

Now we would like to consider what implications our analysis of the N after N construction has made for the two grammatical models that we sketched in section 4.1. First, the N after N construction adds a difficulty to the syntactocentric view that the mapping of syntactic structure into conceptual structure is isomorphic. As we argued in sections 2–4, while the syntactic structure of the N after N phrase is almost consistent with the schemas of X'-theory, the association of syntactic structure with conceptual structure follows from no general principles. The syntactic singularity of the construction is irreducible to conceptual structure and is specified as part of the correspondence rule. Recall that this mismatch did not fall out under either of the SS-CS Matching Hypotheses without an unrestrictive operation of restructuring. Instead we followed the Mismatching Hypothesis in analyzing the N after N construction as an SS-CS correspondence rule that attributes properties of the construction to one of the structures or the other. The present
analysis cannot be maintained without assuming that the SS-CS mapping may be more or less arbitrary.

Furthermore, our analysis constitutes a challenge to the syntactocentric conception of lexical items, which argues that lexical items are words ($X^0$ categories) which Merge feeds into the syntactic derivation. This view excludes the possibility of inserting lexical items that are larger than words. Section 2.1 showed the N after N construction is an NP with some endocentric structure and section 4.2 analyzed the construction as having syntactic representation (35b) and conceptual representation (35a) in each component. Hence, if we assumed that the N after N expression encoded both representations in the single lexical entry, we could not insert it into the syntactic derivation by Merge. Our analysis makes sense only on the basis of Jackendoff’s view that lexical items may be larger than $X^0$ and are independently represented in each component.

Let us close by reflecting on implications of the N after N construction for the two perspectives on the theory of syntax that we have mentioned in section 1. Close observations of the construction have revealed that it behaves in several respects unlike ordinary NPs: the expression’s inability to take determiners or to be split by extraposition, and its ability to count as singular for subject-verb agreement in spite of the semantic plurality. In this way the construction is idiosyncratic in syntax, but it behaves more regularly as a bare plural noun in semantics as we saw in section 3. Thus we have seen the interaction of the irregular in syntax with the more regular or general in semantics that this construction manifests. From these results it can be concluded that more attention should be paid to the ‘periphery’ in the study of Universal Grammar, in contrast to what has been assumed in the mainstream of syntactic theory.

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