# X-Bar Syntax and the Unity of Zero *And*-Coordinated Noun Phrases

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Abstract

X-bar theory is utilized to account for the sense of unity that characterizes zero *and*-coordinated noun phrases such as *horse and rider*. It is suggested that the fewer the nodes separating conjoined nouns at D-structure, the more unified the sense. The ambiguity of interpretation that higher level coordinated noun phrases often allow stems from the fact that nouns and noun phrases can be coordinated at different levels of N-bar.

A zero *and*-coordinated noun phrase (or Ø-NP*, to borrow Jackendoff's term NP*) is a type of NP in which two singular nouns, preceded by the zero article (Ø), are conjoined with *and*, as in (1b) below.

(1a) The cowboy and his horse galloped off into the sunset. (1b) Horse and rider were later found dead by a poisoned well.

Jespersen found such noun phrases to occur in all syntactic positions and in both generic and specific contexts (examples from Jespersen 1949:404-8):

Specific ([+specific])
- (a) Brother and sister were at breakfast. (subject)
- (b) Kitty hurriedly gathered up glove and fan. (object)
- (c)...twirling the stem of the wine glass between thumb and first finger. (object of preposition)
- (d) I can't be buyer and seller, too. (predicate of be )

Generic ([-specific])
- (e) For oak and elm have pleasant leaves.

In describing what I will refer to as the unity of such coordinated NPs, Hewson (1972:128) points out that the elements in such an NP must "be known as, or felt to be, a part of each other, or of a larger whole, group, team or range... If they are even remotely unrelated the article [i.e., *a* or *the*] must be used." Hewson's point is a little overstated, however, because when two unrelated nouns are brought together in earlier discourse, they too may be expressed in a Ø-NP* structure as shown in (2).

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(2) The villagers had attached a lantern to the horse's back to act as a beacon for the weary searchers. But after the storm, horse and lantern were nowhere to be found.

On the other hand, a second article can be added intentionally to force a separate interpretation, as in sentence (3) from Maugham (1902:138-39).

(3) Bertha could see only the sky ... now grey, darkening the room; the furniture and the wallpaper forced themselves distastefully on her mind.

Using Jackendoff's (1977) version of X-bar syntax, I hope to account for the sense of "unity" that obtains in (1) and (2) [as opposed to the distinct separateness of interpretation of the NPs in (3)] while elucidating the mechanism for the determination of the article in conjoined noun phrases.

But first we look at an earlier syntactic description that derives coordinated NP structures from conjoined independent sentences (see Crockett 1972). The process of EQUI deletion removes identical constituents, while the process of regrouping assigns the correct plural agreement on the verb. According to this schema, sentence (1b) would therefore derive from sentences (4a) and (4b).

(4a) The horse was later found dead by a poisoned well.
and
(4b) The rider was later found dead by a poisoned well.

Deletion would remove *was later found dead by a poisoned well* from (4b) and regrouping would change *was* in (4a) to *were*. What this schema fails to account for, however, is the deletion of the articles before each of the head nouns *horse* and *rider*. Dougherty (1970 and 1971) rejects this derivation and instead assigns features such as [±totality] to the coordinated node. But since Dougherty fails to account for the assignment of the article, I would like to concentrate on Jackendoff (1977:51), who, in discussing exceptions to his Uniform Three Level Hypothesis, suggests the PS rule shown in (5) for coordinated structures, which "permits coordination of any syntactic category" and does not derive conjoined nouns from conjoined independent sentences. The "i" in the formula represents the fact that the syntactic category remains at the same X-bar level when it is coordinated.

(5) $X_i \rightarrow X_i$ - (conj - $X_i$)*

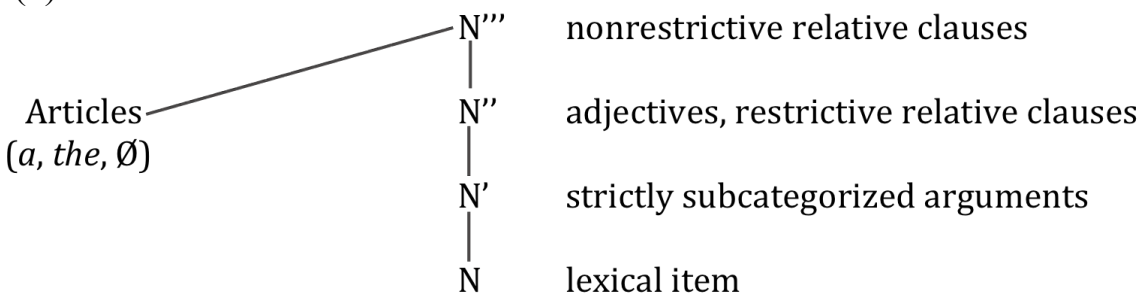
In describing NP specifiers, Jackendoff places the articles among the demonstratives, which include *the*, *this*, *that*, *these*, *those*, *which*, *what*, and possibly *a* and *some*, although

he makes no mention of the Ø article. Demonstratives (Art''') are classed as N''' quantifiers according to the PS rule shown in (6).

(6) $N''' \rightarrow (\left\{ \begin{matrix} N''' \\ Art''' \end{matrix} \right\})$- N''

Jackendoff's schema for the description of noun modification at his proposed three N-bar levels provides a framework for investigating the mechanism for the attachment of the article in Ø-NP* structures. With the application of the PS rule stated in (6), the article is attached at the N''' node, as shown schematically in (7) below. Modifying phrases, on the other hand, are attached according to their degree of "closeness" to the head noun. Thus, strictly subcategorized arguments (e.g., *of*-phrases) are attached at the N' node, attributive adjectives and restrictive relative clauses to the N'' node, and nonrestrictive relative clauses to the N''' node, while the lexical head nouns remain at the N level.

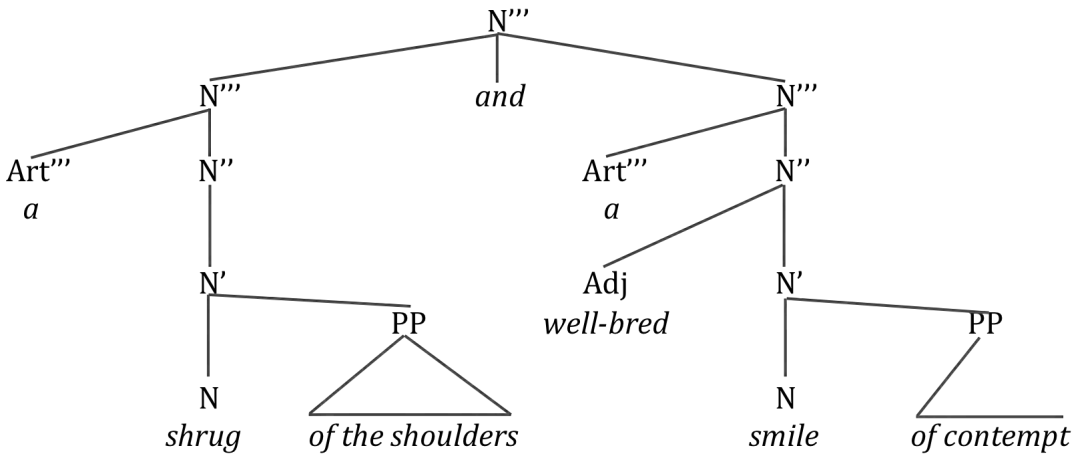
(7)




This tiered schema proves interesting when applied to conjoined nouns for it shows not only how both specifiers and modifiers might interact with each of the head nouns in an NP* structure but also how varying degrees of the unity described by Dougherty, Hewson, and Quirk et al. (1972) might be accounted for. With this in mind, let's look at some examples of NP* structures at the N''', N'', N', and N levels from published works.

Sentences (8-10) are examples of N''' coordination.

(8) "...[her] attitude towards life was a shrug of the shoulders and a well-bred smile of contempt..." (Maugham 19O2:63)

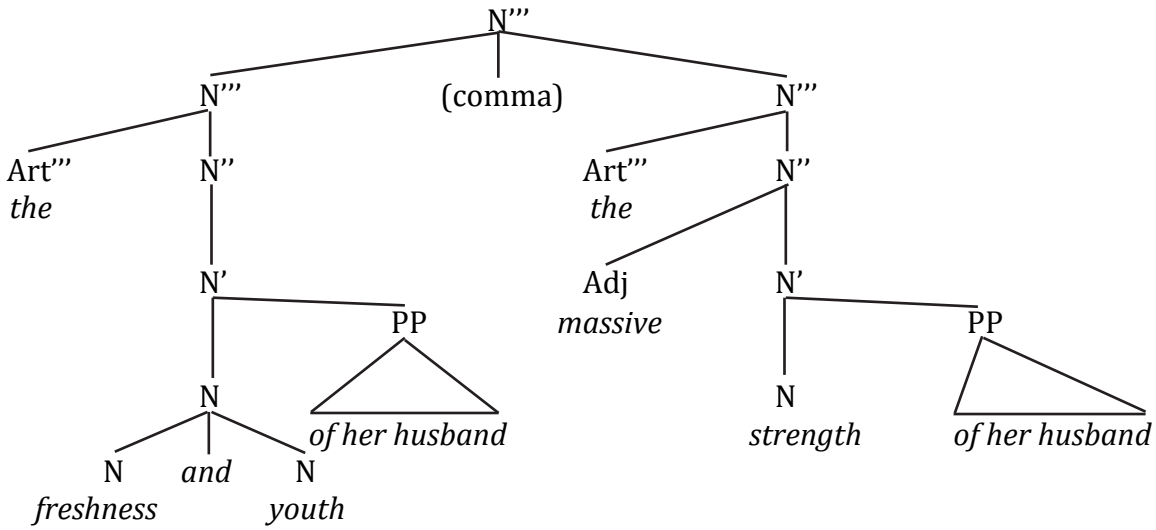



In (8), which is analogous to (3) above, the modifiers are clustered around their respective head nouns, *shrug* and *smile*. The N''' conjunction places the nouns eight nodes apart and allows the attachment of an article to each of the conjoined nodes. Thus, the second branch could have been changed to (9a) or (9b) without affecting grammaticality:

(9a) a shrug of the shoulders and the well-bred smile of contempt (i.e., with which we are all familiar)
(9b) a shrug of the shoulders and (Ø) well-bred smiles of contempt (i.e., which she often uses)

In some cases, N-bar syntax still requires the EQUI deletion rule, e.g., when an *of* -phrase modifies both elements of a coordination, as in the asyndetic (i.e., based on a comma rather than *and*) coordination from (Maugham 1925: 63) shown in (10).

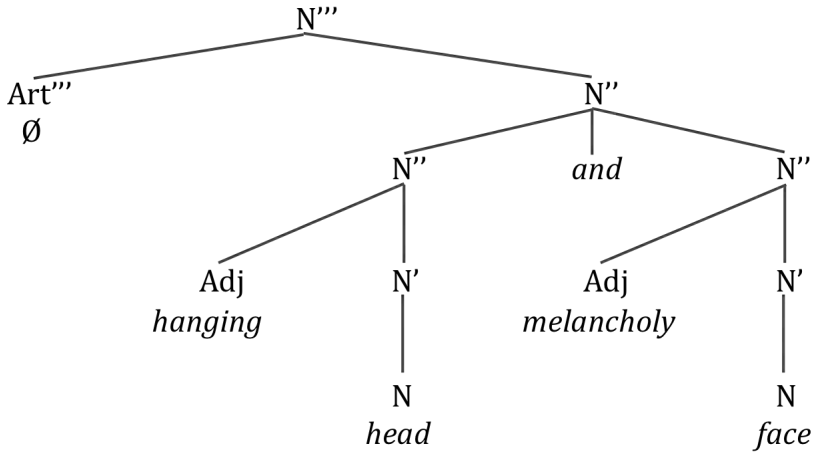
(10) "It needed the freshness and youth, the massive strength of her husband, to bring life to the decayed race."




The postmodifying phrase *of her husband* is deleted from the left branch. Otherwise, to apply to both Ns in the coordination, it would have to be attached to N'", which fits neither Jackendoff's taxonomy nor the intuitive proximity of the nouns to the *of*-phrases.

Sentences (11-12) are examples of N" coordination.

(11a) "He went about with <u>hanging head and melancholy face</u>." (Maugham 1925:188)

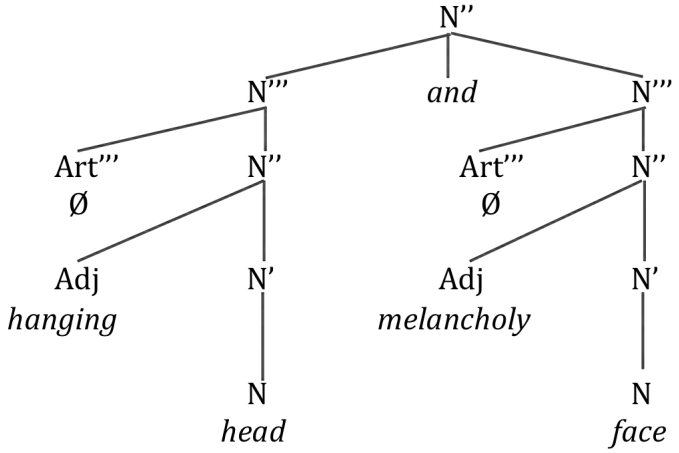



In (11a), the article Ø applies to the conjunction as a whole. The NP could also have been changed by simply replacing the zero article with *a*, as in (11b).

(11b) He went about with <u>a</u> hanging head and melancholy face.

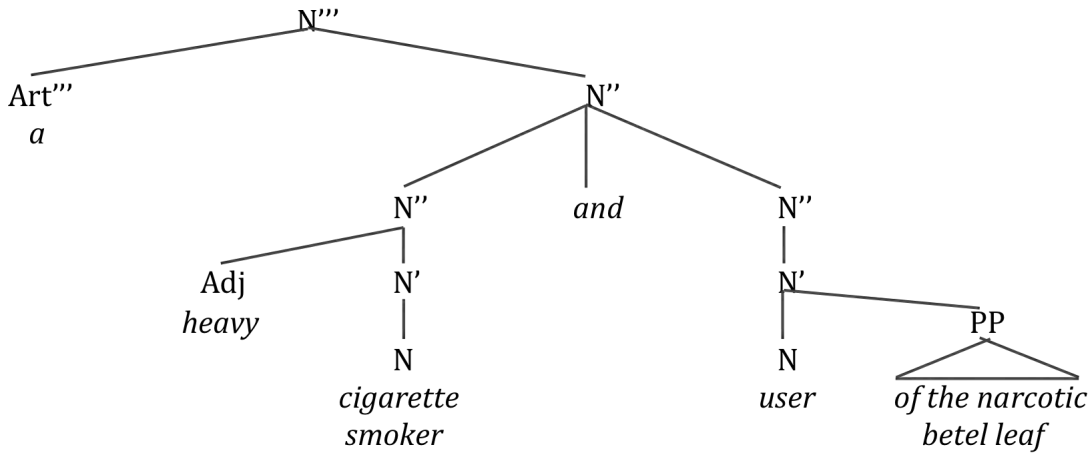
In either case, the nouns are interpreted as being more unified than those in (10), and notice that the nouns are now only six nodes apart. As is always the case with the zero article (because it is indistinguishable from the omission of a specifier), (11a) could also have been diagrammed as the N''' coordination in (11c).

(11c)




However, if the writer had desired an unambiguous separation of the head nouns, he would, no doubt, have written with *hanging head and a melancholy face*, for example, as he did in (10). The N" coordination in sentence (12) shows what happens when an *of*-phrase modifies only one of the nouns in a coordination.

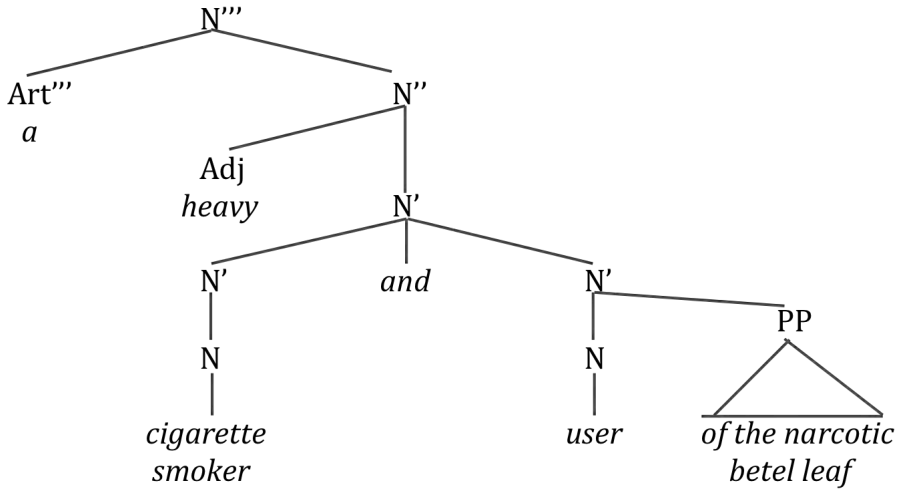
(12) "A heavy cigarette smoker and user of the narcotic betel leaf, she died on Dec. 12, 1891..." (*World Press Review* 34,9:4O)




In (12), the adjective *heavy* applies exclusively to the compound noun *cigarette smoker* and the PP *of the narcotic betel leaf* to the noun *user*. These modifiers keep the coordination at the N" level following Jackendoff's scheme, which we saw in (7).

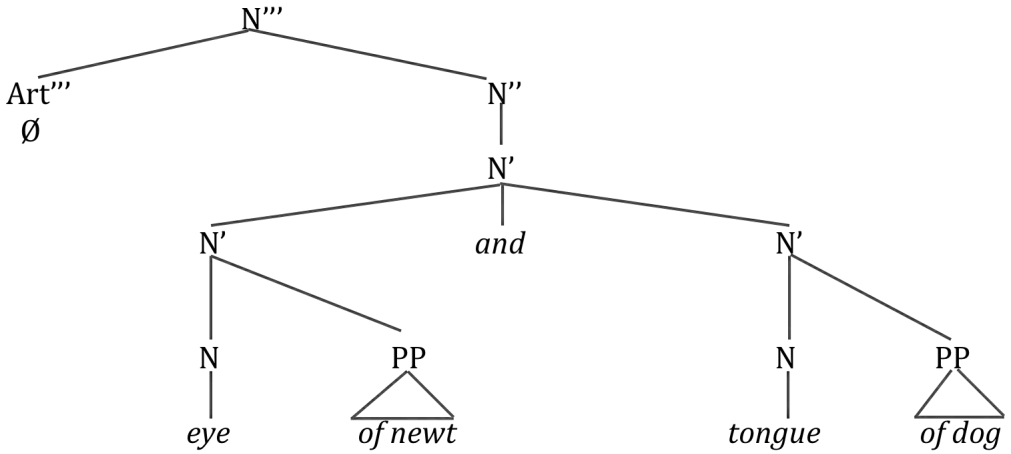
Sentences (13-14) are examples of N' coordination. In (13), we see that it is possible to interpret the adjective *heavy* in (12) as applying to both *cigarette smoker* and *user* (i.e., heavy smoker and user). In this case, the head nouns are coordinated at the N' level, producing an even greater sense of unity. The nouns are now only four nodes apart.

(13)




Another example of N' coordination is shown in (14).

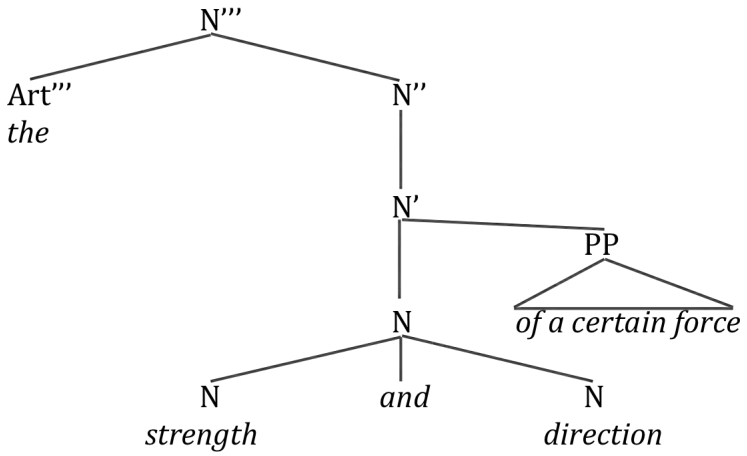
(14) "Eye of newt and tongue of dog, Wool of bat and toe of frog (Shakespeare, *Macbeth*, Act IV, Scene 1)




In (14), the unity of *eye* and *tongue* is apparent. Indeed, we interpret the NP* as a blending of essences, as in a simmering sauce. Had the phrase been written *eye of dog, and tongue of newt*, the sense would hardly have changed. Of course, the Ø article also contributes to the sense of massness.

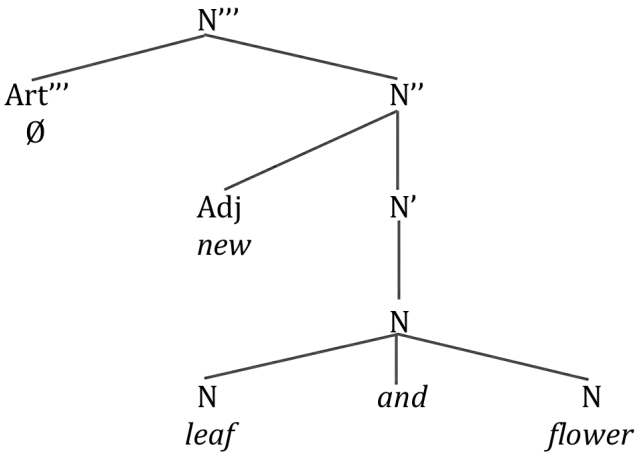
Sentences (15-16) are examples of N coordination.

(15) "If the strength and direction of a certain force vary from place to place..."
(*Science News* 13O,11:169)



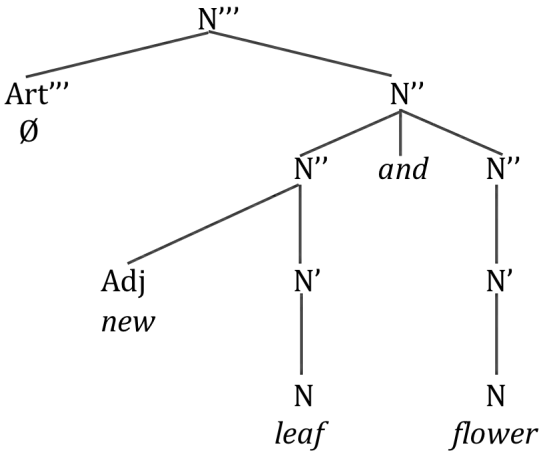

In (15), the head nouns are two nodes apart and share a strong sense of unity. The prepositional phrase applies equally to both head nouns and could have been stated as *the strength of a certain force and direction of a certain force*, but this would then have required an N" conjunction, as in sentence (11). In comparison with (10), sentence (15) shows that it is only the higher levels of modification (i.e., the adjective *massive* ) and specification (i.e., the article *the*) that prevents (10) from having the same overall tree structure as (15). Yet it is precisely the article and the adjective that widens the distance between the coordinated nouns. Another instance of N conjunction is shown in (16a).

(16a) "Horse-chestnut trees, deep in new leaf and flower, made flat shade."
(Lawrence 1975:201)



In this example, the adjective *new* applies equally to the conjoined head nouns. But there is also the possibility of restricting the application of the adjective to the first head noun, thereby separating the two head nouns to a greater degree and allowing a different interpretation. The nouns would then constitute an N" conjunction, as in (16b).

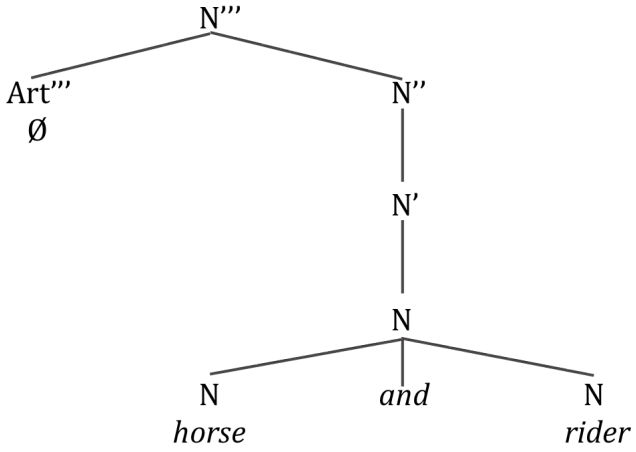
(16b)




The foregoing examples show that Jackendoff's three N-bar levels can be productively applied to conjoined nouns and NPs, creating what could be referred to as an N3P*, an N2P*, an N1P*, and an N* category. This nomenclature is meant to show that the first three structures constitute conjoined NP structures, whereas the fourth constitutes a conjoined noun structure.

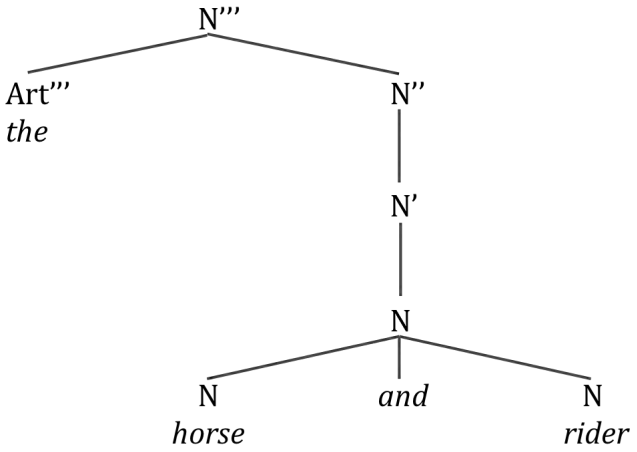
The nouns constituting the Ø-NP* structures that we saw in (1b) are both at the N level. *Horse and rider* would thus have the form at D-structure shown in (17a).

(17a)




*The horse and rider*, on the other hand, would have the form at D-structure shown in (17b).

(17b)




The tree diagram suggests that the Ø-NP* *horse and rider* occurs without determiners at D-structure. The choice of the Ø article is made outside of the NP* (which should in this case be labeled N*), just as it is for any lexical item, and in fact any of the three articles (*a*, *the*, and Ø) are possible specifiers of the NP*.

What is left to explain is why the zero article can be chosen with singular countable nouns. The same structure under the same conditions occurs in several other languages (e.g., Danish, German, Portuguese and Spanish, but curiously not French), and in all cases it has a "poetic ring" as it does in English. However, a similar "poetic" effect (clearly the marked option) can be achieved by specifying a singular count noun with the zero article, as in (18a) and (18b).

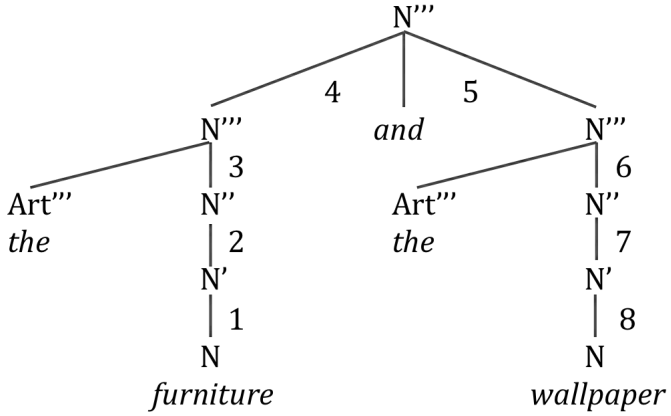
(18a) She gazed at him, <u>head</u> turned to one side.
(18b) Everything was <u>fly</u> that came into his web. (Joseph Conrad 1913:55)

The choice of the zero article with coordinated singular countable nouns, then, may be simply a marked one. The prior mention requirement for specific nouns that we saw in (1b) and (3) might serve merely to set the head nouns as candidates for N conjunction, essentially making the juxtaposition of the members of the pair acceptable because each has been made part of a larger whole for the hearer through prior discourse.

The use of a determiner with the second in a pair of coordinated elements is deletable in any context wherein those two elements are logically able to function as an undifferentiated unit (e.g., *husband and wife*, *brother and sister*, *horse and carriage*, *thumb and forefinger*, *buyer and seller*). A second determiner is required only when the elements are to be considered as being separate, as we saw in sentence (3). Such a

conjunction is actually an N3P* in which each element of the compound (i.e., the *furniture* and *the wallpaper*) is assigned its own specifier, as shown in (19).

(19)




The distinct separateness of interpretation of each coordinated element can be explained by the fact that eight nodes separate the conjoined nouns. The greater the separation in the D-structure, the more separate the interpretation. Moreover, each is an N''' and therefore equivalent in status to a noun postmodified with a nonrestrictive relative clause (see 7). Such nouns in conjunction are too separate to allow a single determiner to specify them, as shown in (20).

{*woman}

(20) The man, who worked in the fields, and the woman, who managed the dairy, were not prepared for city life.

In sum, the basic difference between *the furniture and the wallpaper* and *horse and rider* is that *the furniture* and *the wallpaper* are coordinated NPs whereas *horse* and *rider* (or *a horse* and *rider* or *the horse* and *rider*) are simply coordinated Ns. The latter appear to form a more closely-knit pair whose unity can be ascribed to the fact that the coordinated elements constitute an N and are therefore "equivalent" to a lexical item. The function of lexis is to trigger a concept which must necessarily be cogent and iconic. Conjunction at the N level works to retain this unified effect. Such a unity of concept also applies to noun compounds, which can be coined as NPs at the N'' level in the form of head nouns with relative clauses (*a store that sells books* → *a bookstore*) but have only N status as a noun compound. It is clear that *bookstore* is a unified concept that is interpreted as a kind of store. Likewise, a complex noun compound such as *a cathode ray tube display unit* is perceived as a type of unit and not as a separate cathode and ray and tube and display and unit.

In conclusion, the N-bar schema appears to allow any article (or other specifier) to occur with NP* structures and suggests that the higher the N-bar level of a coordinated

noun or NP structure, the more likely it is to be interpreted as consisting of separate entities. Conversely, the lower the N-bar level, the more likely the coordinated elements are to be interpreted as a unity.

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