

## HOW TO UNDERSTAND THE ADJECTIVE PLUS NOUN COMPOUND AND ITS ADJECTIVAL COMPONENT?

### **Abstract**

This paper aims at the study on the interpretation of adjectival components in the adjective plus noun construction in terms of syntax-lexicon interface. In accordance with the right-handed rule, it is the head, that decides the most semantic and morphologic properties of the compound in a compound structure, so the adjectival components only get the lexical meaning and semantic realization with the heads. The interpretation can be various according to different kinds of adjective plus noun compound (ascriptive and associative). Although the associative adjective looks like noun morph-syntactically, it is an adjective semantically. This makes it possible to interpret associative adjectives as ascriptive ones under the same rule.

## 1 Introduction

With the evolution of generative grammar, the research between lexicon and syntax went on another stage. One trend among them is to continue exploring the lexicon, which deals with the production of lexical category. On the other hand, rest of them put particular emphasis on syntax, which is for phrasal category. Researchers who are exploring compounding myths usually intend to make a sharp dividing line between the two linguistic structures.

Bulk of researches has been done for the distinction of compound structure and phrasal structure. And this distinction is based on the boundary of word categories and the syntax-lexicon overlap as well. In the research progress of compounding, noun plus noun compound has become the main topic, while the adjective plus noun compounding is in a comparatively vulnerable position. Hence, this paper is concerned with the adjective plus noun compound and its adjectival compound in the theory of lexical morphology. In particular, I intend to study on the interpretation of adjectival components in the adjective plus noun construction in terms of syntax-lexicon interface. In order to achieve this, how to distinguish the adjective plus noun compound with the phrasal one is in great importance.

### 1.1 What is the myth?

The compounding process is said to be a result from the interface of lexicon and syntax. This can, to some extent, explain the confusion that why we can get various interpretations on the same word string (also known as the orthographic order), although they get different stress patterns. Let us take GREEN HOUSE as an example:

(1a) The greenhouse effects on global warming hugely.

(1b) The green house looks beautiful in the sunshine.

Regardless to lexical meaning and phonological attributions, the two GREEN HOUSEs have slightly differences on word shapes in that the two elements has no

gap between each other instead of distribute separately. It immediately follows the judgement that the GREENHOUSE in (1a) is a compound, which is composed by two roots. Note that I use root, instead of word or morphemes, to highlight that compound is in the status of word as a whole syntactic structure, although its components can work as a word individually otherwise the compound. This may be the simplest way to pick out compound, in that the roots are composed in one word. For cases like (1b), it will never become a compound, as GREEN is fully functioned as an adjective, which plays the role of internal pre-head modifier with attributive effect. It can be interpreted as 'the house in the colour of green'; when the compound GREENHOUSE denotes a special framework with glass and plastic. However, the distinction between compound and phrase is not in such an easy way. In the English language, when an adjective plus noun construction is defined as a compound, it can only be used as one single syntactic structure individually, other than any languages else.

However, the unpredictation of compound meanings is one of the factors to distinguish compounds with phrases. The reason of this unpredictation falls on the point that something, other than the lexicon, gives the meaning behaviour on the construction. Questions often been asked that whether this distinction is systematically drawn in the absence of the morphosyntactic difference or not. Following the lexical integrative principle, we should keep it in mind that syntax cannot see the inside of words. In other words, what syntax can do is to manipulate words instead of their components. In the tile, I take the expression of adjectival components in an adjective plus noun compound. I try to avoid give an exact definition of the notion, as it involves a complexity systematically.

But how can we measure the word formation of it? And how does the compounding process take place? Through the analysis of morphological process, compounding is in the strata-2, which indicates one of the most productive changes of word-formation and less restrictive. Under this hypothesis, compounding will, not must but probably, share some common properties as the morphological processes in the second stratum. This complicated morphological process includes affixation,

suffixation and the combination of roots and free morphemes as well. However, the components in the compound can only be regarded as roots. Strictly speaking, before dropping into the next strata (which I mean is the process of compounding), all the data involved are words already. These words may be formed through derivation or inflection (e.g. puffy eyes, running nose), so I cannot restrict the object in the domain of morpheme. On the other hand, this derivation or inflection has nothing to do with syntax in stratum-2 and no syntactic properties can be obtained during this process. So it is inappropriate to use the notion 'word' to describe the object. Under this hypothesis, I will go into a dead-end field if I insist to analyze the syntactic structure of the adjectives in the compounds clearly as in phrasal structures. Besides the discovery of the syntactic properties, other factors should be taken into consideration. And the lexical attribution of the adjective is exact the variant. But how the linguistic units get concatenated and then form the higher word-units? I will explain it later in session 3 and session 4.

There are more than syntactic and semantic features in a compound. Phonological property should also be included. Concerning the cases where the adjective plus noun construction enjoys the form meaning doublets, stress pattern become a good test facility to pick out the compound.

In accordance with the right-handed rule, it is the head, that decides the most semantic and morphologic properties of the compound in a compound structure (excluding the limited counter-examples like passers-by). It immediately follows the prediction that when the head of a noun compound is in the right, the compound is probably a noun compound. No matter which category the left member belongs to, it make no efforts on the syntactic structure on the compound. I would like to discuss some general principles of how adjectives work as part of the compounds, not an individual sentence element. So the examples I analyzed are standard and popular ones in English.

I am in the agreement with Ingo Plag's (2002) assumption that compounds are binary structures. This inspired my interest in studying this binary between lexical and syntactic. In order to discover that binary, I will work on the adjective attribution

in an adjective plus noun compound, which is mainly based on the semantic level. So far my research is narrow down to the question that how to understand the adjective in adjective plus noun compound?

Followed the introduction above, the main discussion part of the paper is divided into two main part. In section 3, I will try to prove the failure of obtaining syntactic property for compound components. And an explanation will be given to the overlap between the syntax and lexicon. Section 4 is concerned with the lexical meaning of the components of an adjective plus noun compound and also its argument realization. In order to give a clear explanation, firstly, 4.1 describe the headedness in the adjective-noun compound. 4.2 and 4.3 make an interpretation of ascriptive adjective and associative adjective in turn, as the adjective plus noun compound can only divided into the two kinds. Then 4.4 is an analysis of the doublets between the two kinds. Those adjectives, which enjoy such doublets, do not have to be in compounds or phrases only.

## **1.2 Methodology**

This is a paper involving no experiment or any other quantitative method, so most of the work will be based on a number of theoretical researches. However, it is more a study based on practical data from daily speeches than a summary of former theoretic ideas in certain fields. I will exemplify a number of data from the list of normal English words.

In one word, it is a qualitative study of current morphological issues, which concerning a new aspect of Adjective plus noun construction. The research will follow the normal steps to work out my own conclusion by answering a specific research question, through the application of linguistic theories.

## **1.3 Expectation and problems**

I will approach the research purpose by answering a series of questions: what is in an adjective plus noun compound? What is the difference of adjective plus noun phrase? How to understand the adjective status in a compound? How to understand the

semantic relation between the adjective and the head? What is the gap between syntax and lexicon in the Adjective plus noun constructions? How to understand this overlap and interface?

We cannot prove the syntactic properties of any compound components when they are in a morphological process. What we can do is to prove them in other structures outside the compounds. What's more, the lexicon itself does not change either. When we get different outcomes when understanding different types of the adjective plus noun compound structures, we should explain it with a unification of reasons corresponding to several linguistic aspects. At the mean time, we can explore the compound myth through either the lexicon side or the syntax one. Because there is an overlap between the two linguistic aspects and this overlap makes it possible to explore the semantic interpretation and the argument realization of the adjective plus noun construction.

However, I suffer a limitation of getting access to a large quantity of data to analyze. So I can only conclude a general and simple way for understanding the adjective plus noun compound and its adjectival component. It lacks sufficient evidences to cover all the possible compounding structures. Counter examples still exist. Take 'duty-free' as an example: although its two components are one adjective and one noun respectively, it does not obey our general right-hand head rule. It has a boundary over two word categories. Even if we take the variation to treat DUTY-FREE as a noun compound in this circumstance, we fail to explain it under the right-hand rule, although it obtains the meaning as 'A duty-free article' in Oxford English Dictionary (online website <http://dictionary.oed.com/cgi/entry>). Referring back to the historical quotation, we can confirm that DUTY-FREE used to be an adjective at its first existence. This, therefore, became a problem of conversion, which is not relevant in this paper.

Furthermore, the aim of this paper is to interpret adjective plus noun compound in a lexicon-syntax aspect. To establish a comprehensive theory on adjective plus noun compounds, a detail discussion on phonological rules (e.g. stress pattern) should also get involved. A little of phonology is mentioned as we didn't put any

emphasis on phonology, which I think is an outstanding point on dealing with compounds myth. If possible, I will do future research on compound stress so as to make the issue more completed.

## **2 Literature review**

In this section, I will try to give a clear domain and restriction to some basic concepts and ideas present in this paper. And this can be achieved by summarize a set of related theories on the topic.

In the very beginning, in order to explore the adjectival components in the adjective plus noun compound, it is necessary to make a clear review of the relevant theories about compound, especially the definition of the so-called adjective plus noun compound.

In order to see the components inside the compound construction, I would introduce the method by Connor Ferris (1993), which interpret compounds into a certain formula with linguistic symbols. He uses two capital letters to represent the two parts of a compound: the dependent (P) and the head (E). In most cases, an adjective plus noun construction is configured with property and entity. One point I want to pursue in this paper is how the property and entity relates to each other. According to Ferris (1993), if the symbols are applied together with the bracketing representations, it will illustrate the compound structure visually. Universal grammar provides an innate facility to what we known as a 'word'. This facility includes form and shape, meaning, pronunciation and general functions in use. When reflecting to the linguistic view, it can be equivalent to lexicon, phonology, and syntax. So before the discussion of the adjective plus noun compound and its adjectival components, we should confirm what is in a 'word' instead of its morphosyntactic structure.

In English, what are the criteria to judge whether a language structure is a compound or phrase? This issue has been discussed for such a long time. Although no one works out a systematic theory to measure the linguistic unit, what we can confirm is that compound is a construction which is concatenated by certain number

of components to express one configured meaning. Unlike the traditional aspect, the components don't have to be words, specified in the number of two. Here, I will take the revised definition by Ingo Plag (2003) as follows:

“A compound is a word that consist of two elements, the first of which is either a root, a word of a phrase, the second of which is either a root or a word”

While I will not concern all the three types of data mentioned above, I will focus on the element of word. To be more specified, the data involved in this paper should belong to the category of adjective, which denotes the properties of objects, persons, places, etc., according to Cambridge English Grammar (2005). When combined with another word or root, it may take a few changes both lexically and syntactically. So far, a new problem came across, which concerns the topic of prediction of meaning during the process of word-formation. A sentence can be regarded as a configuration of certain word string, so adjectives always play different syntactic functions in accordance with which position it occupies.

Word position in the sentence should be one of the sources that cause inflectional suffixation, but it fails to cause the occurrence of any inflection or derivation inside a compound. Syntax can only decide which kind of words every position need in a sentence. This helps the selection of word category. Concerning the points so far, both the derivational suffixation and compounding process belong to the same morphological level, which is known as stratum-2. While we can't stop at the syntactic stage, it is undeniable that either derivational affixation or suffixation meets a more complicated lexical change than compounding, when going through more depth. When compared with inflectional morphological process (which is known as stratum-1), the lexical meaning seems to be more unpredictable referring to the fact that inflectional changes have no shift between lexical categories. It indicates that compounding has a less robust prediction facility of lexical meaning.

There are two modes for the noun compound structure altogether. One is the major one, which is in the form of dependant plus head structure; while the other is

the secondary construction, sometimes known as the synthetic compound (e.g. watchmaker, coffee maker etc.). The synthetic compound involves a derivational process, so it will not be concerned in the paper.

Laurie Bauer (2004) quotes a table for the criteria to distinguish compound from phrase. In which, he mentioned several topics including the main stress attribution, inflection belongs to the whole unit, meaning not entirely predictable and the unit as one lexeme as a whole. It is widely accepted that the more predictable a construction is, the more productive it is. This assumption comes from the semantic transparency rule of syntactic structures.

As is mentioned before, noun plus noun compound has the priority in the research of compounding. It is discussed in such a frequency that it becomes the default structure of noun-noun compound, e.g. pencil box, London road and etc. And English is a language which does not contain the derivation morphology that allows us to achieve a category shifting from noun to adjective. The only explanation for it is that, in N plus N compounds, one of them obtains the grammatical function to modify the other one, which takes the syntactic position as an adjective in the structure. This argument was supported by a number of theorists (Bauer 2003; Ferris 1993; Jespersen 1942; Levi 1973; Giegerich 2005, to name just a few). Many examples sound acceptable in modern English, although they may seem marginally. Levi (1973) claims the phenomenon as the conversion from nouns into adjectives if the English lexicon contains those adjectives. Jespersen (1942) also gives the same suggestion that initial nouns can be used as adjective when a modifier is in the relation of co-ordination with an adjective.

So far, I would like to pay my attention on the adjective plus noun compound, which enjoys a more transparent semantic feature in my opinion. My hypothesis draws on the point that the absence of adjective status as a syntactic role isn't conflict to its semantic roles in an adjective plus noun compound. To be more specific, the adjectival dependant and the nominal head referring adjective as the argument in the adjective plus noun compound in a lexical semantic level.

## 2.1 Recognizing adjective plus noun compounds

How can an adjective plus noun construction be represented directly by its syntactic form and structure? This is a problem of how to make a distinction between compounds and phrases. The necessity and possibility to classify the two structures in such an extreme way is still controversial; however, an agreement has been reached by widely that, as a whole, the compound itself is only one word. The simplest way for it to make the distinction is to judge the function of the construction. Words mean things, while phrases describe things. If the construction is a meaning one, it probably is a word (i.e. compound).

Researchers gave morphological definitions in a slightly different way. Many of them avoid confirming whether compound is one word or not in that 'word' is also a controversial notion in morphology:

"A compound is ... a combination of two independent words into a higher word-unit" (Carr 1939)

"When two or more words are combined into a morphological unit we speak of a compound." (Marchand 1955)

It is still vague if the judgement of compound status is only on the morphological level. Other aspects, like semantic definition, should also be taken into consideration. Jespersen first proposed the criterion (1954):

"As formal criteria thus fail us in English, we must fall back on semantics, and we may perhaps say that we have a compound if the meaning of the whole cannot be logically deduced from the meaning of the elements separately."

The definition restricts the compound meaning into an unification, so we cannot get the semantic interpretation of the adjective in a compound simply by deducting

its noun head. The attributiveness of adjective may transform metaphorically when combined with another noun root/word/phrase.

However, the compound structure is complicated internally, both in syntactic structure and meaning, as its elements can be two or more words or roots. According to Plag (2003), hierarchical structure is one of the general ways to make it possible for the analysis of polymorphemic words, as binary may involved. So we can use a decomposition method to figure out its components. We can say that compound may have compositional meaning and although it is still a plausible. Generally, we use the template as the preliminary version for all kinds of compound:

$$[X Y]_Z$$

Although researchers (Bauer 1983 and Plug 2003 etc.) have reclaimed that more than two elements can occur in one compound at the same time (e.g. severe weather forecast), we can still use the two letters (X and Y) to make a representation. Followed by the development of right hand head rule in compound, a compound can be divided into two parts, one as the HEAD and the other one as the DEPENDENT of the head. The head always decide the category property of the compound, while the dependents contribute through the lexical semantic aspect. In most cases, the head of a compound is in the right hand, which is represented by Y in the template; while X stands for the so-called non-head. And Z refers to the grammatical properties of the whole compound, which is often inherited form Y. When applying this representation to adjective plus noun compounds, Z must denote the noun and X has an adjective property or contains the adjectival element (i.e. sometimes X can be noun morph-syntactically, but adjective semantically).

To explain the adjectival components in a compound, it is necessary to make a clear review of compound; especially what is the so-called adjective plus noun compound. To see into a word, I would introduce the method by Connor Ferris (1993), which interpret compounds into a certain formula with linguistic symbols. It can illustrate the structure visually, together with the bracketing representations.

It is easy to get the conclusion that the root can get their category property individually in other structures other than in the compound, just as (2b) shows. The construction between the brackets can only fall into one word class. Afterwards, compound can combine with other word/root to get a new compound. Absolutely, we fail to see the adjective WHITE in (2c). What we concern here is the whole noun-plus-noun construction, in which 'whiteboard' lost its syntactic property again.

(2a) [[white] [board]]<sub>N</sub>

(2b) [white]<sub>A</sub> [board]<sub>N</sub>

(2c) whiteboard paper

whiteboard marker

A boundary of syntax and morphology let us possible to judge the Adjective-plus-noun construction by the different concatenations of syntactic structures. The boundary also set an ambiguity of the dividing line between compound and phrase. For years, researchers have taken great efforts to work out the distinction between compound structures and phrasal ones. Although they try to set a number of criteria on the issue, the ambiguity still exist between the two notions. Neither the diagnosis theory of lexical transparency (Bauer 1998, Jespersen 1942) nor the stress pattern (Marchand 1969) can perfectly measure all the cases. So far no explanation has been comprehensive or convincing enough to make a clear distinction between compounds and phrases.

However, other linguists (Giegerich 2006) held other opinions on this topic that there's no need to make such a sharp distinction between the two notions, as no hypothesis can possibly work without any counter examples. This seems to be a close approach for the conflict of syntactic property and morphological process.

Noted that its head, in accordance with the right-handed rule, decides the most semantic and morphologic properties of the compound. It is overtly that in a noun compound, in most cases, the head, as well as the right part of it, is a noun, excluding the limited counter-examples like passers-by. I would like to discuss some general

principles of how adjectives work as part of the compounds, not an individual sentence element. So the examples I analyzed are standard and popular ones in English.

## **2.2 The syntax-lexicon overlaps in noun compound**

It is hard to define the notion 'adjective' in an adjective plus noun construction as the construction contains not only the adjective - noun phrase but the adjective-noun compound as well. Syntax can see the components inside a phrase, so it can decide their syntactic properties and the positions in the sentence. So it is convenient to measure the syntactic properties of the adjective.

By and large, the lexical integrity principle makes the internal structure of a word impossible to get access to the syntax. Adjective noun compound is on the lexical level, so syntax fails to see inside of the compound. Thus it is plausible to regard the component as ADJECTIVE in the adjective plus noun construction. Giegerich (2005) explained this ambiguity with the bracket erasure convention in morphological stratification theory:

The Bracket Erasure Convention, for example, not only makes the morphological structure of a given word invisible to the syntax; it also makes any stratum-1 complexity of a given form invisible to morphological and phonological processes associated with stratum 2

Before taken morphological changes in stratum-2, the roots are words already. They pursue different syntactic roles in the sentence other than the compound construction, so does the adjective in adjective plus noun compounds. Adjectives may be relative to common nouns they modify, or they may be free, absolute modifiers of individuals as well. Even the words order string look exactly the same, the adjective in it can get a variation. Selkirk (1982) gave the typical example to illustrate the complicated interpretation for adjectives in syntactic structures:

Maya is a beautiful dancer.

Relative: as a dancer, Mary is beautiful. Or we can also get an adverbial interpretation: Generally speaking, Mary dances beautifully; absolute: Mary herself is beautiful in general and at the same time she is a dancer. Ferris (1993) explains this as an external difference of senses. This difference of relative and absolute equivalent to what we say the distinction of the restrictive adjective interpretation and non-restrictive one in adjective plus noun construction. Siegel (1985) gives a similar explanation of how adjectives make effect with their syntactic properties: adjectives may be relative to common nouns they modify, or they may be free, absolute modifiers of individuals of individuals.

It is possible to get two different explanations on the same adjective, due to its features. In other words, it's a problem of whether the adjective is an intersective or not. Furthermore, restrictive and non-restrictive adjectives have different grammatical limitation in usage. Semantic ambiguity directly affects figures in syntactic rules. Semantic type is a function of syntactic combinatory properties. The dual semantic roles of member of adjective category are actually predictable from the dual syntactic roles that define the part of the speech.

The naming function of words allows their meanings and forms to launch a trend of changing when words are retained and 'coined' in the speech community, according to Giegerich (2006). This explained why we can get a variety of interpretation (in the present paper, which denotes the adjective plus noun compound construction as well the phrasal one) based on the same word string.

When dealing with the semantic meaning of adjective plus noun compounds, we find more lexicalized cases than those in noun plus noun compounds. Adjective noun compound then is not that robust as noun plus noun compound. This may suggest a principle that the more transparent the construction is, the more productive it is (Siegel 1985; Giegerich 2005; Plag 2003).

### 2.3 The attributiveness of adjective

An adjective can exist immediately following a noun phrase under several structures to play different syntactic and semantic roles in a sentence. In some cases, even the word is morph-syntactically in another word category, it also has the ability to behave like an adjective modifier with attributiveness. The situation is common in adjective plus noun constructions, because of the overlap between adjective to other category (actually acknowledged as noun and verb). Adjective can be obtained by a variety of ways in morphological process. One major and robust way to get an adjective is the doublet syntactic function of words

No matter the adjective is a morpheme or root or morphologically complicated word, the semantic properties of it will not change. Ferris (1993) summarized a systematic and comprehensive approach for the study of the syntactic structures involving English adjectives. His list of full array of internal patterns of adjectival constructions gave a clear clue to measure the adjectives, which illustrates the modifying relations of the property and entity. He argued that noun is not identical enough to denote the property of an entity, so adjectives are introduced to enrich the construction meaning. And a set of intentional notion is listed to express the surface construction as entity, identification, qualification and assignment, which is often known as a syntax issue in general. I will try to apply them into adjective plus noun compound to see if they also take effect in compound construction.

It is said that an adjective is a word that can modify a noun and appear either next to the noun as part of the phrase or in the predicate. Even those words satisfy this condition, they do not constitute a single, unified linguistic category. Except the above features, adjectives seem to be more complicated, both semantically and syntactically. Both the syntactic role and semantic role will contribute to the definition of the part of the speech.

One way to diagnose the attributiveness of adjective on certain constructions is to use the following sentence (Ferris1993: 21):

Given a situation where a phrase composed of adjective A and noun N can correctly apply to something perceived by the speaker, is it possible in principle to say the following truthfully: This N is A

Ferris set up his observation on the phrasal constructions, and I would like to apply it in the adjective plus noun compound construction to measure the way how PROPERTY and ENTITY are linked. I suppose here that the diagnose question can take effort on part of the adjective plus noun compound. Adjectives, which enjoy the adjectival association with their noun heads, can be observed by this test.

To be more explicable, Giegerich (2005) states an irreconcilably hybrid status of the adjective in the adjective plus noun construction: their structural characteristics identify them as objects of the lexicon, while at the same time they may behave as though they were syntactic constructions. This gives a clear domain for the us to understand the adjectives in a overlap between syntax and lexicon.

### **3. The syntactic status of the adjective in adjective noun compound**

It is universally summarized that there are three distinctive properties of prototypical adjectives from function, grade to modification (Huddleston and Pullum 2005). However, it is hard to define the notion 'adjective' in an adjective plus noun construction as the construction contains not only the adjective plus noun phrase but the adjective plus noun compound as well. Syntax can see the components inside a phrase, so it can decide their syntactic properties and the positions in the sentence. So it is convenient to discover the syntactic properties of the adjective. And we can measure adjectives in Adjective Phrases through the aspects listed above.

After confining the adjective to the Adjective plus noun structure, I have restricted the subject on a morphological level in this chapter. As the notion morpheme is said to be the smallest meaningful unit by a number of researchers (Bauer 1983, Matthews 1991 and Plug 2003). What I want to discover in this section is that how does the adjective composed. An adjective, as one of the components in a

word, worked in the compound with a variety of aspects from lexical, phonological to syntactic. But not all the adjectives in the adjective plus noun compound is a simple lexeme stem, so it is inappropriate to restrict the subject (which is known as the adjectival component in a adjective plus noun construction) as morpheme. There are vast counterexamples showing that the adjective may be come from inflection or word category overlap (e.g. participle form of verb gain the adjective function).

While it is not the whole story for compounds, based on the lexical stratification theory, words don't have syntactic properties until they finished the lexical and phonological interfaces in stratum two. Syntax fails to take effect on this stage. Furthermore, the lexical integrity principle makes the internal structure of a word impossible to get access to the syntax. Adjective noun compound is on the lexical level, so syntax fails to see inside of the compound.

Moreover, before X and Y take the compounding process, they are well-formed words or phrases already. While they come to the stratum-2, they can only be regard as roots, although it is a poor notion for them. As soon as they accomplish the morphological process, they become another well-formed syntactic structure, which is recognized as the adjective plus noun compound.

Thus it is plausible to regard the component as ADJECTIVE of the adjective plus noun construction.

(3a) Which building do you mean, the green house and the blue one?

Can you make it a greener house?

The light green house looks beautiful.

The house over there is green.

(3b) the greenhouse effect

(3c) [black] [[board]s] AdjN phrase

[[blackboard]s] AdjN compound

We can say the GREEN in (1a) is an adjective, because it shows a set of syntactic functions like working as attributive modifier, having the comparative shape and

being modified by another adjective. However, it is hard to put a syntactic role on GREEN in (1b) in that we can only get the word class for the entire compound construction. One possible way to solve the problem is to treat it as a root.

Based on the theoretical analysis before, when the adjective GREEN dropped in to the stratum two to take the complex morphological process of compounding, its syntactic property loses. At the end of the stratum two, a syntactic property of the whole compound construction can finally be obtained. Syntax makes it possible to spot "house" in the word GREENHOUSE. For cases like GREENHOUSE, all that we can confirm is that the compound is a noun and in the sentence, the construction occupies one grammatical position as a whole. Then it can take morphological changes as a word.

It is known that GREEN is an adjective and HOUSE is a noun before the compounding process, while afterwards GREENHOUSE is a noun compound. We fail to approve the adjective status of the component in the compound. Hence, it's meaningless and impossible to discuss the adjective status in adjective noun compound. To make a highlight, I didn't claim that GREENHOUSE is a noun but noun compound. How to define the word class of the compound is another complicated topic to be approved, I just regard it as a word-unit in the present paper.

However, we still refer the notion as ADJECTIVE noun compound although we fail to approve the adjective status of GREEN in GREENHOUSE. It's no need to insist on the syntactic status of GREEN in the compound since we will never consider the word order or position inside the compound. In the phrase structure, the syntactic relation between the head and the modifier is measured because this can help us work out the general rule for the composition of a sentence. Still take (1a) as example, after analyzing the syntactic role of the adjective in the adjective noun phrase, we induct a universal rule that the attributive adjective is probably pre-nominal. Then we can put other adjectives like blue, big, small etc. before the noun HOUSE to form an adjective noun phrase in the same kind.

Nonetheless, it is impossible to generate an adjective plus noun compound by 'compound' derivation, which means that we cannot get a compound (e.g.

\*bluehouse) which is derived from another compound (e.g. greenhouse). Although adjective noun compound involving an adjectival element, it doesn't mean that we are allowed to change its component in order to compose a new compound. The components of the compound structure are not amendable. In word formation, the analysis of exist words is able to predict the possible composition of morphemes, roots and words; while we don't generate new words by morphological rules. So I hold the opinion that it's impossible and pointless to study how the adjective roots get relates with their heads on a syntactic level. Giegerich (2005) indicates that bracket erasure convention can account for this phenomenon as the complexity of morphological process and the integrity of lexicon.

On the other hand, an overlap between syntax and lexicon exists during the morphological process. As the example show below:

(4) Baked potato

Iced latte

Running water

Dancing queen

All the examples in (4) are proper noun, and the adjectives denote the distinguish property about the entity. BAKED POTATO refers to a specific food, which is made on the base of an entire potato by baking, served with a variety of fillings and toppings. The occurrence of BAKED (as a past participial adjective) in the compound comes from its lexical meaning. In other words, it isn't the grammatical rules that need a past participial to express the passive meaning in that position. We can measure it by explore how BAKED behaves in other language structures except the compound construction:

(5) I want a baked cheesecake not an over baked one.

All the items are baked.

- (6a) The [baked potato]AdjN is so hot.  
 (6b) The [baked]A [potato]N is do hot.  
 (6c) The baked boneless chicken breast is so dry.  
 ?(6d) unbaked potato

As an adjective in (5), BAKED can take an attributive function as well as predicate. We can decompose (6c) into three small sentences: a. the chicken is baked; b. the chicken is boneless; c. the chicken is dry. And the three sentences can be linked by 'and' on a syntactic level, regardless to semantic emphasis. And we can make the same change on (6b): the potato is baked and the potato is hot. Following this analysis, BAKED is the modifier of the subject POTATO. Nonetheless, we cannot transfer (6a) in the same way if BAKED POTATO is a compound here. This is because the subject in the sentence is BAKED POTATO, and BAKED plays no grammatical role in the sentence structure. The occurrence of (6d) is intended to demonstrate the fact that after the compound is well-formed; its modifier member could make no morphological change, neither inflectional nor derivational. If we want to denote a special potato dish prepared without being baked. It is inappropriate to generate a compound like (6d) in that we follow a syntax-lexicon continuum in research of the compounding process (Giegerich 2005). On the other hand, UNBAKED POTATO is a grammatical phrasal structure in which the derived adjective denotes the state of the entity.

The only thing we can do is to make transformation outside the "plain" form of the compound. A typical situation of this will be adding inflectional affix -s to get a plural form (e.g. whiteboard and whiteboard-s).

However, just explain the failure to prove syntactic status of adjectives in the adjective plus noun compound is far from satisfactory. The lexicalist hypothesis of the dividing line between the syntax and lexicon explain the possibility of why adjective plus noun compound is different to adjective plus noun phrase. It is not enough for the interpretation of adjective plus noun compound. In next section, I will expand my explanation through the lexicon side of this topic. In a word, different

words can be lexical categorized from either lexicon or from syntax. What we are mainly discussed in the paper is the one produced from lexicon (which also known as compound as well).

#### **4. How to interpret the adjective in an adjective noun compound**

When studying the lexical meaning of a compound, it isn't a simple superposition of lexicons involved in the construction. Other factors, attributiveness inside the construction, for example, should also account for it. Giegerich (2006) suggests that even in the perfect form of dependent plus head nominal structures, the construction isn't necessarily getting the phrasal interpretation semantically. This variation may be taken by different speakers, according to their cognitions and encyclopaedia knowledge. So the BAKED POTATO construction, as analyzed in section three, doesn't necessarily take the characterized meaning as a compound.

Let's discuss a couple of adjective plus adjective constructions first:

French fries

French-English translation

French perfume

We can easily work out that FRENCH in the last two constructions denotes certain property related to the entity, while in French fries, no specific contribution has been designated from the noun. Ferris (1993) use the example to argue that "a divergence of relation at the intensional level "can account for the distinct types of interpretation, which we get from words into phrases and sentences.

In the adjective-plus-noun compound, adjectives can get several realizations when the noun dead. The types shift from the attributive adjective and the associative one. I will discuss each in turn later in this section. Noted that compounding in is in stratum-2 as a morphological process, the argument realization is not enough to understand the construction perfectly. In other words, other

morphological rules should also be taken into consideration. One important of them will be the lexical integrity rule.

I will begin my explanation about the interpretation of adjective-noun compound with the most basic issue of headedness in a compound structure. Secondly, I will discuss the two kinds of adjective-noun compounds (which known as ascriptive and associative) in turn both in 4.2 and 4.3. Then 4.4 will be a list of compounds that share the doublets of ascriptive and associative. Finally in section 4.5, I will exemplify some other adjective plus noun compounds, which is composed by more than two words. It can be regard as an integral noun construction, which is result from a complicated process.

#### **4.1. The Headedness in Adjective-Noun Compound**

Considering the problem of headedness, all possibilities can fall into two questions: Is the compound semantically headed or not? If yes, how do the head and the other part contribute to the compound, equally or in a sub-ordinate way? By answering the two questions, we get four types all together: endocentric, exocentric, possessive and copulative. Noted that not every type exists in the adjective plus noun compound, I will analyse them in turn in the rest of this section.

The notions of endocentric compound and exocentric Compound indicate the position of the head in a compound. Plag (2003) give a detailed definition of both the two of them: endocentric compound refers to those compounds whose head is inside the construction and exactly the semantic one (i.e. whiteboard, blackbird etc.); while exocentric compound, also known as the Sanskrit term bahuvrihi, whose semantic head is outside the compound (pickpocket).

Endocentric compound seems to be the simplest kind among the four. Let's take "dental decay" as example. No matter how differently it lexicalized as a compound, the head DECAY in dental decay is still the one which the compound denotes to semantically. As the result, it is clearly endocentric.

From now on, let's turn to more complicated examples:

- (7a) redneck  
 bigmouth  
 greybeard  
 green hand  
 (7b) cut-throat

At first, we may treat (7a) as an exocentric compound, because we observe that the grammatical head fail to become the semantic head of the compound. So it is in a deviant status semantically. In addition, it isn't composed in the form of noun plus noun. But when we look at its grammatical properties instead, it is obvious that its part of speech followed its head to be a noun, in accordance with the right-handed rule. Under which circumstance, the seemingly exocentric compound is in fact an endocentric one regarding to its grammatical property. Plag (2003) makes a similar analysis to classify such compounds.

A subclass of exocentric compound is shown in (7a), and sometimes called POSSESSIVE COMPOUNDS. I should emphasis that this kind of compounds always restrict the entity as human being or higher animals, in addition, it should denote the entity which have certain character. Take GREYBEARD into detail, it denotes to those people who have the grey beard. Then it gets the lexicalized meaning as the senior citizen. We can't get its semantic interpretation directly from every member, while it is reasonable to expand the meaning to some extent, some times metaphorically. It is striking that compounds in (7a) are only semantic exocentric construction, as there is no change in the part of speech. It is indicated that the left-hand member in a possessive exocentric compounds is an adjective in most cases (Bauer1978, Plag 2003).

(7b) is instantiated to show a prototype of an exocentric compound in terms of grammatical property. In accordance with Plag (2003), its head (in most cases the right member) isn't inherited by the compound to get the category property correspondingly. Although CUT plus THROAT is an adjective plus noun structure in

form, it is an adjective compound other than the noun compound, which inherited the category property from its right-hand member.

For cognitive linguists, the examples will be treated as metonymy or get the representation on a rhetoric ground. Our object is the word itself, what we discover should be based on lexicons and their realizations in the structures.

Furthermore, I didn't mention copulative compounds in this section (also called Dvandva compounds in Sanskrit terms). The compounds of this kind have no predominant member semantically inside, because both attribute to the meaning of the compound. So it seems impossible for those compounds which have adjectival properties semantically in that the adjective being subordinate to the other functions as attributive dependent in adjective plus noun compounds.

## **4.2. Adjectival ascriptions**

According to Ferris (1993), the prototypical adjective 'express a property which is valid for the entity instantiated by the head N'. Except the predicate function, the only function of adjective is the attributive use 'as internal pre-head modifier to following noun', which is suggested by Huddleston and Pullum (2005). Referring to the linguistic forms of adjective plus noun construction, the noun is the head while the adjective as the dependent with an attributive function at the same time (Giegerich 2004). But I am not claiming that only adjective can occupy the position of attribute in one sentence. Noun can be the other variation, e.g. stonewall, man-doctor and olive oil etc.

Together with the right-hand rule, the adjective plus noun compound matches all the conditions above, regardless to the rare counter examples, such as *Prince charming*.

### **4.2.1. Intersective vs. Subjective**

Given that the main stream of adjective researches is ascription. In general, an adjective prototypically occupies the attributive position and then denotes the property of the entity correspondingly.

We get two subclasses of property denoting modifiers, known as the intersective adjective and the subsective one. I deal with these two kinds with further explanation in turn. Let's begin with the most common and regular examples in (7):

- (8) blackbird  
 greenhouse  
 the Big Ben  
 organic rice  
 double decker

The compounds listed in the (8) share the default analysis of an adjective plus noun compound. The adjective, which is functioned as the attributive dependent, denotes its noun head. The interpretation of compound should be the intersection, which comes from both members in the compound. In addition, the semantic meaning structure cannot just be in a simple hierarchy. This finding draws on Giegerich (2004), in which article he gives it a name as lexicalization.

Secondly, one outstanding myth between compound and phrase is that the two structures are morph-syntactically the same. So when shall we choose to go for the compound reading? The first efficient and effective way is to judge the stress pattern. Generally speaking, compound can get their main stress on either fore-stress or end-stress (Bauer 1998; Giegerich 2004). In the compound, whether main stress falls on the dependent or the head can be a short cut to pick out the compound from all adjective plus noun structures. Giegerich(2005) states that synthetic compounds, as well as primary compounds are likely to have fore-stress, while lexicalized attribute-head constructions get more chance to a end-stress. So far gives the adjective a fore-stress when it is in an intersective adjective plus noun compound.

If all the compounds are as typical as the examples I list in (8), we would be in an easier situation to work out the adjective plus noun compound interpretation myth. However, compounding is a morphological process producing complicated

lexemes. It is impossible to get all the examples in such a regular and well-formed status.

(9a) heavy smoker

beautiful dancer

quick driver

(9b) good chef

(9c) the smoker is heavy.

The dancer is beautiful.

\*The driver is quick.

The chef is good.

All the heads shown in (9a) turn up to be deverbal nouns, so we can interpret their dependents with reference to the meaning of their verb forms. Up to now, we can work out that a heavy smoker is a group of smokers who smoke heavily. The higher hierarchy of this notion is the one we called smoker. Hence, adjectives of this kind help to form the subclass of certain notion which the head denotes. Furthermore, lexical semantics sometimes does something to the compound with subsecutive adjectives. Noted that all the heads in (9a) is derived from verb, it logically exists a relation between the originated verb and the adjective semantically. This also affects the representation of the adjective plus noun compound. The BEAUTIFUL DANCER example has been discussed by Ferris (1993) to work out a variety of argument realization and the semantic restriction of the adjective. When in an adjective plus noun compound, the dependent BEAUTIFUL modifies and only modifies her when she is a dancer.

In order to get a subsecutive interpretation, the subsecutive adjective plus noun compound doesn't need to contain a deverbal noun as we can find (9b) get a subsecutive adjective interpretation under the same principle. CHEF doesn't take any doublet in any category other than noun. When we use the expression GOOD CHEF to refer a person, what we actually mean is that the person enjoys excellent cooking

skills. Or we can get an intersective interpretation that the person is a member of GOOD people, and at the same time he also owns the occupation of a cook. To get the interpretation without ambiguity, we have to give reference to what we mean by GOOD.

Furthermore, the modifiers in both (9a) and (9b) are restrictive adjective when it is used to describe the property of the entity. We can test whether the adjective is restrictive or non-restrictive by the sentences in (9c) to see if there is an ambiguity. Obviously, a heavy smoker isn't necessarily to be heavy physically. In the quick driver example, we even fail to make it grammatical when putting the adjective in a predicate position because of the semantic restriction of the adjective.

#### **4.2.2 Restrictive and non-restrictive**

In this section, I would introduce a sub-classification of the adjectival ascription. This is a distinction of restrictive and non-restrictive. This distinction gives us useful evidence to measure the adjective in adjective plus compound contractions in that it sets a domain for the entity to be modified.

While 'restrictive and non-restrictive' are more often discussed in adjective plus noun phrases, it shows a binary of semantic interpretation of modifiers and heads in a sentence. According to Bauer (1993), the distinction between restrictive and non-restrictive makes no effort to any difference of intensional structure.

Giegerich (2005) discussed this statement on a compounding level, to some extent. A typical example is as follow:

The well-prepared students will finish the exam on time.

Vs. The well-prepared students will pass the exam or the others will fail.

The adjective in the former sentence get a non-restrictive reading that refers to anyone who is well-prepared for the exam. So far, it makes a possibility for those who are not well-prepared to finish the exam on time. On the other hand, the latter WELL-PREPARED restricts its head into a specific group of the students who are

capable to pass the exam. With this interpretation, it is indicated that there's only two kinds of students, one can pass the exam and the other one cannot.

I also want to make it clear that restrictive or non-restrictive is the property for all adjectives, not only for ascriptive ones. So associative adjectives can also get this property, but noted that their semantic and grammatical properties only allow them to be restrictive. In other words, there is no distinction between restrictive and non-restrictive for associative adjectives in the adjective plus noun compound construction. I will come back to this point later in section 4.3.

### **4.2.3. Adjectives Belonging to Two Categories**

English is not the language which has a derivational morphology that enables us to get an adjective from other lexical categories. Actually, it is possible for a word to get the access to two categories. It is also called the category overlaps sometimes. Except the simple lexical stems, a high proportion of adjectives will be in derived forms (either inflection or derivation), involving affixation, conversion and compounding. The adjectives I will discuss below share the same morphosyntactic form with verb inflections. When they become the component in an adjective-noun construction, their interpretations associate with their noun heads closely.

(9) running water

baked potato

dancing queen

roasted beans

Those words which belong to the category of adjective are not necessarily be originated only from the lexicon. There is an overlap between the categories of verb and adjective, which allows the gerund-participle or past participle form of verbs get the adjective interpretation. In most cases, adjectives of this kind describe a state. The argument realization also indicates which voice we should refer, the active voice or the passive one. It doesn't mean which voice the sentence should pick; instead, it

suggests a semantic interpretation of the adjective plus noun structure. (9) is the group of adjective plus noun compounds whose dependent is the adjective, which also belongs to the verb category as well. RUNNING denotes an active and moving state of water, what's more, we know that the motion of water is active not passive. While not all kinds of water meet the above condition can be named running water; the construction denotes the substance which is accessible to people through the tap for daily consuming. The specification and the restriction of word meaning is result from lexical integrity rule. Under this analysis, we can obtain the main characteristic features of ROASTED BEANS easily: the subject of the food is beans; it is made by roasting; it is get roasted by some one else.

Besides the boundaries between adjectives with participles, there is another kind of category overlap which is recognized as adjectives versus nouns. A straightforward type of the adjective-noun boundary named adjectivalisation in Huddleston's argument (1984). A typical example of is BOY in the syntactic structure BOY ACTOR, where BOY functioned as a modifier to a noun. In general, that function is always taken by adjectives. When applying this phenomenon into compounds, we get the other important type of adjective plus noun compound. I will explain it in detail in section 4.3.

### **4.3. Adjectival association**

There are two modes for this construction altogether, adjective plus noun and seemingly noun plus noun, e.g. GREENHOUSE in greenhouse effect and STONEWALL. English is a language which does not contain the derivation morphology that allows us to achieve a category shifting from noun to adjective. The only explanation for it is that, in N plus N construction, one of them obtains the grammatical function to modify the other one, which takes the syntactic position of adjective in the structure. So we still regard it as an adjective plus noun compound due to the semantic adjectival status of the first member. It is this kind of syntactic constructions, which is the subject of the present section.

This construction seems to be the other kind of adjective plus noun compound and it is recognized as the associative noun compound. When the ascription conveys a property which is instantiated by the noun, association is valid for something else, compared by Ferris (1993). Similarly, Giegerich (2005) describes it in more details: ‘an identifiable and substantial subset of the members of the category absolutely fails to conform to the category’s defining characteristic’.

As we accept Jespersen’s claim that sometimes noun is more an adjective than a co-ordinate with adjectives. We can get the other kind of adjective realization in an adjective plus noun compound, named adjectival association.

Levi (1972) quotes a list of variation of the argument structures among the adjectival association (including the examples correspondingly) as follows:

Agentive	presidential refusal
Objective	oceanic studies
Locative	marginal notes
Dative	feline agility
Instrumental	electric calculator
	electrical clock
	electrical generator
	manual labor

While Levi just gave the argument realization of the adjectives only, a couple of morphologists develop their own theories on her examples of electric calculator/electrical generator. Not only we are not calculating for electricity but the generator doesn’t work on electricity as well. We have to use the text context and our common sense or encyclopaedic knowledge to catch the correct meaning of the construction. Which indicates that only command the argument structures is not enough, what more influential is how to get the realization. (Bauer1987 pp97; Giegerich2005).

(10) dental decay

mental disorder

tropical fish

boy actor

How do we understand the dependent in cases like (10)? One universally accepted explanation is given by Huddleston & Pullum (2002). They treat adjective dependent in an attributive position denoting something associated with the entity; instead of directly applying the denotation to the head. In order to acquire the whole meaning of a compound, we should begin with the analysis of DENTAL DECAY. When referring to Oxford English Dictionary, we can get the meaning that DENTAL is TOOTH. If it is possible to say that DENTAL and TOOTH are synonymous, the original compound is equivalent to TOOTH DECAY. And we get an interpretation as "the decay of teeth" or "the teeth is in a decay state". Then it becomes a noun plus noun compound. When associative adjective denotes entity, it will be strange because semantically, the modifier is noun. The same thing happens in BOY ACTOR. The whole construction denotes an actor who is also a boy at the same time. As actor refers to the occupation of the person, BOY works as an attributive modifier to restrict the person's gender. Some people may analyse the BOY ACTOR as copulative compound, which takes two heads in the construction. With this interpretation, there is no emphasis and highlight here. BOY and ACTOR are the two properties of the same people. When we put them into an associative adjective plus noun compound, we get an emphasis here on ACTOR, because of the headedness rule. Then the compound is probably gets a end-stress.

An acceptable explanation of this ambiguity is that the dependent is a morphosyntactic adjective, although it is a noun semantically. Thus the adjectives of this kind are not stable and they are nor good adjectives. Levi (1978) gives a set of properties for these adjectives:

Non-predicative - \*the decay is dental

Non-intersective

Non-modifiable - \* a severe dental decay

Non-gradable - \* much more dental decay

Always next to head - \* dental severe decay

Often restricted distribution - \* dental paste

Usually have a correspondingly noun 'partner' - tooth decay

This is useful to recognise the properties of associative adjectives in the adjective plus noun construction. We can easily work out that it will be ungrammatical if we transform DENTAL DECAY into different syntactic structures as we expected to. In an adjective plus noun construction, especially adjective noun compound, a test like this can distinguish the morphosyntactic adjective from the semantic one. As is explained before, the adjectival components inside the compound get no access to take the syntactic properties individually in a sentence. No wonder the associative compounds take such a limitation. And the adjective inside is not in such a regular and robust way. Furthermore, all the properties of attributiveness mentioned in this section are on the semantic level.

The issue of restrictive and non-restrictive interpretation has been mentioned in section 4.2 already. What I want to emphasize here is the fact that associative adjective can only get a restrictive use in adjective plus noun construction. This can be recalled in Ferris (1993) that 'non-restrictive adjectives... , express properties which are perceived by speakers as present in the entity of the noun phrase which they have in mind.' Compound is a more integral and lexicalized construction than phrase. It immediately follows that there appears to have no possibility for associative adjectives to be non-restrictive adjectives.

Once the associative adjective denotes an entity, it will be in a strange status. Under the clearly-identifiable structural condition, we can easily get the point that the adjectives in the adjective plus noun compound are morphosyntactic adjective, but semantically, they belong to noun. A conclusion has been made from the

measurement of the associative adjective as an individual unit in part of the speech. Associative adjective enjoys the function as follows:

- Be predicates
- Can be graded
- Can be modified

Unfortunately, the adjective in the adjective plus noun construction doesn't meet any criterion that is listed above. And there exists an arbitrary collocation restriction in adjective-noun construction. An example is MENTAL HOSPITAL: it will be abnormal if we drift it into an ascriptive use (i.e. the hospital is mental) since the notion refers to the specific place to treat diseases associate with mental. So it is weird to understand the construction in the way like *the hospital is mental*.

- (11) papal murder - papal visit
- musical instrument - musical comedy
- electronic calculator - electronic company

I have mentioned a little early in this section that compounds in (11) express different semantic meaning when the adjective combines with different nouns to denote different notion. Musical instrument refers to the entity which in used to make music; while we never say that the comedy which makes a music is musical comedy (i.e. the notion actually refers to the kind of show mainly performance with music). Furthermore, in the case of PAPAL MURDER, a question raised that who is being the murder? The interpretation can go either way. Giegerich (2005) states a list of sentence to measure the property of these adjectives, here to list just one:

?Do you mean the presidential murder or the papal one?

He argues that the judgement like this may differentiate from speakers, and once they get the associative variation, the corresponding adjective plus noun compound should be a lexical construction. And Bauer (2005) gets the same suggestion that there is a lexicalization during the morphological process.

What's more, when realizing the argument in an adjective plus noun compound, metaphor individual lexicalization inserts the detail for lexicalization, in which syntax doesn't have.

(12) the Germany - Polish invasion

the London-Paris eurostar

Some one may argue that the interpretation variation of adjectives in the compound structure mainly depends on the argument realization ambiguity. When we come to a notion called the Germany-Polish invasion, we will probably fail to realize that it's Germany who invaded Poland in war history, without any encyclopaedia knowledge. It is not linguistic rules or language itself gives you the representation. The same thing happens in the expression of "London-Paris eurostar". We will never know whether it's a round trip or one-way route by the theoretic exploration. Probably in France, the same train service is expressed as "Paris-London eurostar" because of cultural priority.

So far makes the conclusion that adjectives get various interpretations not only based on their morphosyntactic representation, but their semantic realization as well. To understand the adjective plus noun compound, an essential point is to understand both ascriptive adjective and associative adjective. And we can achieve this by the judgment of stress and meaning when we first come to a syntactic construction. One typical example is HAIR NET. When the construction gets an end-stress, we can probably get an associative reading as the net made of hair; if the construction obtains the fore-stress, I would rather interpret it as hair in other ways associate with net. Noted that if the association is highly lexicalized, the modify makes less effect.

#### 4.4 Where the meaning doublet exists

Can you tell whether the following examples are ascriptive or associative?

(13) toy factory

Chocolate house

Plastic bag

We can have both the ascriptive and the associative interpretations of the adjective plus noun constructions above. TOY FACTORY is among the most typical ones. On the one hand, TOY modifies the noun, indicating that the main business of the factory is producing toys; on the other hand, the construction denotes an entity which is a factory and at the same time, itself is a toy. The former interpretation is ascriptive while the latter is an associative one. When TOY gets the ascriptive interpretation, it is more a phrasal construction than a compound. Due to its semantic transparency and morphological productivity, we can easily get constructions likewise: sugar factory, flour factory, paper factory and etc. However, when the construction gets the associative interpretation, its meaning is highly lexicalized and being fore-stress as well.

When facing the form meaning doublet, an effective way to pick compound out is to measure its stress pattern. In the nominal association, if the construction is more compound like, it is more likely to be fore-stress; respectively, we can conclude the principle on the phrasal side. If the construction is more phrasal like, it gets more chance to obtain an end-stress.

Recalling Giegerich (2005):

“associative adjectives constitute within the category Adjective a non-default ... subclass, whose asociativeness is specified ...some members of this subclass should also have default, ascriptive senses.”

A typical given example will be DENTAL DECAY and DENTAL FRICATIVE, as the former one is associative and the latter one is ascriptive. An effective way to measure the difference is to transform the sentences into predicate ones. When it is normal to say the fricative is dental, it seems ill-formed if saying\* the decay is dental. As the two kinds cannot mutual exclusively distinct with each other, Giegerich (2005) gives a new conclusion that ascription is default, and association is in specific cases, when in the adjective manifestation.

#### 4.5. More complicated adjectival constructions

As is mentioned before we cannot judge adjective plus noun compound in a simplification. Compounding is the morphological process for complicated word, while sometimes it is even sophisticated to interpret. I will exemplify two compound structures here, which is combined more than two words, so as to show the vagueness and ambiguity of adjective/noun plus noun compound construction.

(14a) [[Quiet]<sub>A</sub> [[study] [space]]<sub>N</sub>]<sub>N</sub>

(14b) [[Quiet]<sub>A</sub> [study]<sub>N</sub> [space]<sub>N</sub>]<sub>N</sub>

We can find the above words in many places from library to classroom. (14a) is an adjective plus noun compound structure, whose head is a noun plus noun compound already. Ignoring the semantic consideration of the noun-noun contracture here, I would like to treat QUIET as the adjective ascription. Referring to one property of the noun head, the whole construction can be interpreted like *the study space in which discussion and loudness is not allowed*. On the other hand, it is possible for the three words to concatenate the compound. So there isn't a clear semantic relation inside, because the components inside the compound are associated in various ways: a. the space is for quiet study instead of group discussion or creation; b. the study space which should keep quiet; c. a quiet space for study. Any two members of the three components can combines together to have an

adjective plus noun construction to denote the property of certain entity. The argument realization of it is due to the syntax-lexicon continuum.

The last data I want to mention in the paper is the following compound which appears as a proper name.

(15a) [Dutch]<sub>A</sub> [[*apple*] [*turn-over*]]<sub>AdjN</sub>

(15b) [[*Dutch*] [*apple*]] [*turn-over*]<sub>AdjN</sub>

DUTCH shares the boundary between noun and adjective. While TURN-OVER, as a verb-preposition compound, also belongs to two categories, this makes thing even more complicated. Brackets in the two constructions clearly illustrate the different composition representations of the same morphosyntactic structure. In (15a), DUTCH modifies the well-formed noun compound APPLE TURN-OVER. And it takes the attributive function instead of a predicate one. The adjectival attributiveness here is controversial:

- a. If it is an ascriptive non-restrictive adjective, we can interpret the construction into “the apple turn-over imported from Netherlands”. As far as I realized, there is no such apple turn-over that is in Dutch cooking style. Thus the components didn’t compose any unique meaning. That is to say that no lexicalization is in the construction. It is possible for us to quote other APPLE TURN-OVERs like English apple turn-over or Danish apple turn-over. It immediately follows a judgement that construction in (15a) is an adjective plus noun phrase.
- b. The other way to analyse the adjective plus noun construction is to interpret it with the adjective associative relation. DUTCH APPLE can be seen as a configuration, which denotes the property of the apple. When combining with the head, it becomes an associative compound. We can understand this with common sense that it is a food in a turn-over shape; at mean time, the main ingredient of it is Dutch apple.

I list only two examples from the vast compounds around us in daily life. The more complicated the construction is, the less regular it is. We can probably analyze it with either a compounding aspect or a phrasal one. The argument realization seems more confusing, because even adjectives in simple lexeme stem can get various interpretations semantically. One effective way may refer to the stress pattern system. In (15a) where we get a phrasal interpretation, it is end-stressed; in (15b) where we prefer a compound interpretation, a fore-stress is likely to obtain. Considering the slight difference of the adjectival interpretations here, I recall the statement of Giegerich (2004) that it is unnecessary and impossible to set such a clear dividing-line between compounds and phrases. With the same adjective noun construction, whether to get the compound interpretation or the phrasal one also depend on different individuals. It also varies because of the human cognition or encyclopaedia knowledge.

## **5. Conclusion and limitation**

Although we fail to prove the validation of the adjective status in a compound, the argument realization allows the compound to have semantic modification interrelation between the dependent and its head NOUN. Together with the lexicalization and stress variation, we can study the ADJECTIVE and ADJECTIVE plus NOUN COMPOUND in a comprehensive way.

Evidences show the invisibility of syntactic properties inside the morphological process. There does not appear to be a single syntactic property of adjective components that can be manipulate during the morphological process. It seems that the adjectival components in the noun compound might have lost their attributiveness, while examples suggest there is a link between syntax and lexicon. In particular, it is an overlap, accompanied with the so-called lexicalization.

Comparing the normal adjectives, the adjectival components in the compounds behave differently because of a restriction. The restriction is mainly about syntactic properties due to the lexical integrity rule. Up on the discussion on chapter four, it is

not difficult to work out that when a construction is semantically transparent and fully productive, it is probably syntax originated; while the lexical originated one may not fully productive and sometimes non-parent (Giegerich 2005). So in the adjective plus noun compound, the semantic attributiveness is regular, although the construction meaning is in lexical integrity. And another trend for the meaning of compound is that the more the construction is lexicalized, the less transparent it will be. Following the same clue, the compound construction will be less predictable. The same thing happens on the productivity of the compound. This may explain the fact that most researches about nominal compounds, especially the adjective plus noun compound, concentrate on induction of existing constructions instead of the prediction of other possible constructions under the same rules. Showing the special properties as explained above, compounds enjoy a complicated construction status, and this result in a variety of interpretations, so there is an absence of a comprehensive theory to cover all the situations, including the counterexamples (the ambiguous stress pattern in the compounds can also prove it).

Compound itself is an ambiguous and complicated topic, not only because of its morph-syntactical similarity to the phrasal construction, but also its difference between the syntactic adjective. But how can we understand the adjective plus noun compound and its adjectival components outside the morphological process? We can refer to lexical semantics and phonology, although I put most of my attention on the overlap between lexicon and syntax.

To get a comprehensive interpretation of the adjective plus noun compound, one important thing is to understand the adjective well. As adjective associated with nouns/noun phrases in a complicated way, the realization of which is based not only on a syntactic level but also in a lexicalized way. Then in chapter three, I make a classification of the adjective plus noun compounds through different aspects.

In order to explore the relationship between the dependent and the head in the adjective-noun compounds, I introduced three kinds of headedness referring to adjective attributiveness in the compounds. Then a description of ascriptive adjective and associative adjective was made to illustrate the adjectival attribution. When 4.4

exemplify the doublets examples of the two classifications, it indicates a comparison of them. On one hand, when the adjectival components of the compound have both two entries to go for, the interpretation ambiguity reflects a clear distinction of the ascriptive compound and associative compound; on the other hand, the existence of these doublets indicates a lexical complexity for the adjective plus noun compound realization. In the last section of the main discussion, I analyze two compounds which are composed of more than three members, and at the same time, both of them have various interpretations. And the selection of interpretation depends on different speakers.

In the discussion above, I try to explain the lexicon and syntax interface by the illustration of how adjectives behave in the adjective plus noun compound, compared to the other Adjective plus noun compounds. Some points and ideas still have a large space to be developed. Another important issue about lexical stratification and compound construction is the interface between lexicon and phonology. When finishing this paper, I remain some phonological questions unsolved. When in an adjective plus noun structure, is stress predictable of meaning? Or vice versa? The stress-meaning correlation also worth doing as a research topic for adjective plus noun phrase/compound. Because of the words account limitation, I didn't extend this topic in depth, although it's a robust aspect, which contains a set of interesting research questions to explore the adjective plus noun compound myth.

Due to the language limitation, a few expressions in the paper may be difficult to understand or in an inappropriate usage. In addition, the discussion may not go through the very academic depth. Some arguments just show the understanding of the linguistic knowledge itself.

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