

## Introduction

Compound words can be seen to be used in all kinds of contexts, such as newspaper articles, daily communication, and so on. It is one way for English speakers to create new English words—by putting existing words together. Compounding does not occur only in English; it also exists in other languages, such as Chinese, which also has numerous compounds in its lexicon, like *fàn wǎn* “rice bowl”, and so on. In English, some of the compounds are already integrated into the lexical system, but some may be new even to native speakers. Undoubtedly, compound words often cause EFL (English as foreign language) learners' comprehension problems, since even native speakers of English may not understand the meanings of some compounds. There could be many reasons. First of all, although a compound consists of more than one word element, its meaning is not always the sum of the meanings of components. For example, a blackboard is not necessarily black but could be green. Furthermore, the meaning of a compound could lose the connection with the meanings of its components, such as *deadline*, which has nothing to do with death or with a line. As Swales (1974) claims, “The more technical and specialized the subject, the more frequent and more complicated the compound nouns” (p.129).

The compounds that are not semantically compositional are also called idioms. Idioms are created to meet different temporal, spatial or any other needs, and they are definitely new and strange to those people who never saw them before when they appear for the first time in the chronologically stored, cumulative database. Such idioms would especially problematic to EFL learners who do not have enough culture-related knowledge to interpret, or to guess the meanings of the idioms correctly. Therefore, this study aims to analyze possible difficulties that Chinese EFL learner' have in understanding compound nouns and to answer the following research questions:

1. Do Chinese EFL learners with different proficiency levels perform differently in the comprehension of compound nouns?
2. When a single-sentence context is provided along with each of the compounds, will the compounds appear easier to the EFL learners than when no context is provided?

## Literature review

The form of a compound may be different when it is found in different context—they may be written as separate words, as a single word, or as being connected with a hyphen. Charteris-Black (1998) explains such differentiation from the viewpoint that how recently a word has entered the language—novel compounds are usually written as two separate words, established compounds are written as a single word, and there is a period of hyphenation prior to full

compounding. However, there might be inconsistency of orthography used among dictionary writers, for example, Webster's Hypertext's (1997) *best seller*, Cobuild's (1988) *best-seller*, and Chambers' (1998) *bestseller*. Juhasz, Inhoff, and Placke (2003) explain this phenomenon from the popularity of the usage. They point out that whether a compound expression is spelled as two separate words, as two hyphenated words, or as a single word is largely determined by popular usage, and lexicographers pick the spelling that is most frequently found in the written text sources. No matter what is the major reason that causes such differences in the spelling of the compounds, different spelling of the same compound sometimes causes readers' confusion about whether the writer expresses the same meaning with different spelling of a compound or not.

In addition, there are some others that cause the compounds to be difficult even to native speakers. For example, different grammatical relations could be expressed by the same underlying juxtaposition of words (Fromkin, & Rodman, 1998). For instance, while a *boathouse* is a house for boats, a *cathouse* is not a house for cats. Bauer and Renouf (2001) point out such difficulty from another perspective, saying that it results from the fact that although one of the basic principles of compounding in English is that English compounds are right headed, there are many exceptions. The right-headed characteristics of English compounds are illustrated by some researchers, such as Allen's (1978, p.105) ISA condition, stating that "compounds are hyponyms of their right-hand element and that they behave like their right-hand elements", and Lieber's claim (1983) that the feature of the right-hand element gives a compound its category. For example, in *god child*, the right-hand element is *child*, and so we can predict that it denotes a subcategory of child rather than "*god*" and that its plural in the same way as *child* does.

Despite the right-headed characteristics, many exceptions exist in English compounds. Bauer and Renouf (2001) put these exceptions in two main types, each containing four sub-categories.

1. Bahuvrihi compounds like *redskin* (a person, a potato, or an apple) or *egghead* (a person) have denotata which are external to the structure of the compound.
2. Lexicalized compounds, such as *pickpocket* (Marchand, 1969, p.380-81), appear incorporation of the direct object into the verb, although the order may be unexpected. Compound words of this type appear are fundamentally a Romance one.
3. Compounds involving particles can be best seen as being derived from the relevant verb+ particle grouping with inversion in the one case and a stress shift in the other indicating their status as nouns (such as put in→ *input*).
4. The syntactic function of some compounds which are usually used as premodifiers but sometimes used independently may not be easily equated with the word-classes of their individual elements, such as *pass-fail* (test), *nose-bleed*,

and so on.

The other type includes phrasal items, which are “compound like” in that they are listemes (DiSciullo & Williams, 1987) and are perceived as single words by native speakers. They may be simple lexicalizations of syntactic structures and may be overtly left-headed.

1. Compound phrases include lexicalizations of a head noun followed by a prepositional phrase complement, such as *lady-in-waiting* and *mother-in-law*.
2. French loan constructions, which retain French word order, are also left-headed, such as *attorney general*.
3. Some expressions do not have an overt head and appear to be lexicalizations of phrasal structures (Bauer, 1983, p207), such as *has-been*, *forget-me-not*.
4. Verb+ participle constructions such as *pass by* are left-headed in that they make their inflections on the left-hand element (*passer-by*) and are hyponyms of their left-hand element.

Since compounds cause comprehension problems even to native speakers, it goes without saying that they would cause more difficulties for EFL learners. As Charteris-Black (1998) claims, the comprehension of some compound nouns is problematic to ESL (English as second language) learners mainly because of the idiomatic opacity, syntactic opacity and lexical novelty of the compounds. First of all, the formation of idiomatically opaque compound nouns involves a metaphorical process in which secondary meanings of the two elements are transferred to the compound form, which Halliday (1985) refers to as grammatical metaphor. For example, if the compound *shark lawyer* is interpreted as a lawyer who is predatory and aggressive, then the noun *shark* is used metaphorically rather than literally. If the compound is interpreted as a lawyer who represents an environmental group dedicated to protect sharks from overfishing, then *shark* is used literally (Goldvarg & Glucksberg, 1998). The inability to recognize such metaphor may lead to the comprehension problems with complex nominals used in academic and professional writing (Bhatia, 1992) and the inability to identify the correct headword (Gerrig & Murphy, 1992).

As for syntactically opaque compounds, they are difficult because the syntactic indicators of their meanings, which would be present in an equivalent phrasal form, are deleted in a lexicalized form. If learners, especially the ones lack the culture-specific knowledge to provide the semantic basis for an interpretation, cannot identify the deleted element, it would be impossible for him or her to comprehend what the compound means. For example, for a learner who does not recognize the syntactic relation in *car crime*, s/he could interpret it as a crime in which a car is used or a crime which is committed on a car (Charteris-Black, 1998). Finally, lexical novelty could also be a problem. If learners never see a compound or does not know the meaning of the constituent of a compound, it would be

impossible for them to know what the compound possibly means. Therefore, Charteris-Black points out that a major influence on lexical comprehension is exposure: the more often and longer periods that learners are exposed to the compounds, the more possible for learners to understand the meanings and the usage of the compounds. Since compound words might cause difficulties in learners' comprehension, whether the difficulties can be reduced when the compounds are presented in a context would be an interesting issue. According to Gough (1984), context plays a role in the identification of words in text, and studies of context effects support the claim that words are recognized better in context than out of context. Nation and Coady's study (1988) showed that the redundancy or richness of information provided in the context could enable a reader to guess an unknown word successfully without really knowing it. Moreover, Hukstijn (1992) found that learners were more likely to infer an incorrect meaning of an unknown L2 word in a text when no cue to its meaning was given than when a cue was present; thus cues may at least help prevent misguesses. However, there is also counter evidence. For instance, Bensoussan and Laufer (1984) found that their subjects could successfully guess only 25% of the unknown words in a text used in their study, and therefore they concluded that even when the words are presented in a context, what learners usually do was applying "preconceived notions" about the meaning of a word or phrase which often led to incorrect guessing. From the mixed results of the studies mentioned above, it appears to be controversial whether context cues can help learners guess the unknown words correctly or not, no matter the unknown words are single words or compounds.

## **Methodology**

### **Subjects**

Two groups of subjects participated in this study. All of the subjects were students in Leader University, Tainan, Taiwan. One group, classified as the intermediate group, consisted of fifty junior English majors (twelve males and thirty-eight females) who took the elective course, TESOL Methodology. The other group, classified as the higher-beginner group, consisted of thirty sophomores (two males and twenty-eight females) whose major was Health and Medical Management. Subjects of this group were selected from the sixty students who took the required course, Practical English, according to the scores of three exams they took during the past one and half semester. They were the higher achievers in their class and therefore were classified as higher-beginner group. The average age of the beginner subjects was 20.43, and the average year for them to learn English was 8.77. As for the strategy to deal with unknown words in the reading material, fifty percent of the beginner subjects chose guessing from the context while forty percent chose looking up the frequently-occurring words or every unknown word.

The average age of the intermediate subjects was 22.14, and the average year for them to learn English was 9.87. Seventy percent of these intermediate subjects chose guessing from the context as their strategy to deal with unknown words in the reading material, while forty-six percent of them chose looking up the frequently-occurring words or every unknown word.

### **Procedures**

The subjects of the two groups participated in the same experiment at different time. At the first stage, subjects received a test consisting fifteen multiple choice questions which required them to choose the best definitions for the compound nouns (Test 1). Despite the shortcomings of multiple choice questions of being only able to provide indirect assessment (Arnaud and Savignon, 1994), multiple choice questions were selected as the test form in order to limit the wide range of possible answers that might be caused by open-ended questions. The compound nouns were selected from Charteris-Black's study (1998), each consisting potential factors that might influence compound noun comprehension: syntactic opacity, idiomatic opacity, and lexical novelty. According to Charteris-Black, these words were selected from Independent Newspaper from 1994-1996. As for the lexical novelty, it is measured against the Webster's Hypertext and Chambers dictionaries; words that cannot be found in either dictionary are defined as novel (Charteris-Black, 1998). The potential factors that might lead to comprehension difficulties for the compound nouns are shown in Table 1. The distracters of the multiple choice questions were proofread by a native Australian-English speaker who was an instructor at English Department of Leader University.

At the second stage, which was done right after the first stage ends, provided the subjects with the compound nouns in the single-sentence context. As Haynes (1984) suggests, guessing which only depends on local context (intrasentential and sentential information) may be more effective than guessing which depends on global context (intersentential to discourse-level information). Therefore, each compound noun was presented with a single sentence adapted from Taipei Times, China Post, and Sinorama Magazine, one of the official publications that introduce Taiwan. Then, the same distracters were provided to see if the subjects will choose a different definition due to the context (Test 2). Down below each test item, the subjects were asked to check how they selected the answer. They had to choose one from "guessing from the word elements of the compound", "guessing from the context", "having learned it in class", "having seen or heard it somewhere", and "making a wild guess".

Compounds: Combinations of the Components?  
- EFL Learners' Difficulties in Comprehension of Compound Nouns

**Table 1** Potential factors influencing compound nouns comprehension (\* indicates the factor is present)

Compound (n=15)	Syntactic opacity	Idiomatic opacity	Lexical novelty
blackmail		*	
mad cow	*	*	*
playboy	*	*	
serial killer			*
information superhighway	*	*	*
fat cat		*	*
road rage	*		*
spin doctor	*	*	*
war criminal	*		
junk food	*	*	*
car crime	*		*
sweatshop	*	*	
banana republic	*	*	*
curb crawler		*	*
urban planner			*

Note: The items in this table are excerpted from Charteris-Black (1998)

### Results

The results of the four tests (Group 1's Test 1 and Test 2, Group 2's Test 1 and Test 2) are shown in Table 2. Group 2's performance was better than Group 1's in both Test 1 and Test 2. However, on the average, the context did not help the subjects of both groups to infer correct meanings of the compound nouns since both groups' mean facility values of Test 2 (56.3% for Group 1 and 70.5% for Group 2) were lower than those of Test 1 (58.7% for Group 1 and 71.6% for Group 2). Both groups' test results in the two tests were analyzed by T-tests to see if there was a significant difference between both groups' performance in the two tests. When Group 1's performance in Test 1 and Test 2 is analyzed, there was no significant difference between the two tests' results ( $t=0.34$ ,  $\text{Sig.}=0.737$ ,  $P>.05$ ). There were also no significant differences between Group 2's performance in Test 1 and Test 2 ( $t=.14$ ,  $P>.05$ ), Group 1's and Group 2's performance in Test 1 ( $t=-1.759$ ,  $P>.05$ ) and Group 1's and Group 2's performance in Test 2 ( $t=-2.00$ ,  $P>.05$ ).

and word-in-context test (Test 2) (%)				
	Group1(Test1)	Group1(Test2)	Group2(Test1)	Group2(Test2)
blackmail	80	80	94	84
mad cow	43	50	34	38
playboy	76	83	88	86
serial killer	47	53	68	76
information				
superhighway	67	57	94	86
fat cat	67	63	80	72
road rage	63	40	66	56
spin doctor	73	73	84	92
war criminal	43	43	50	58
junk food	87	87	100	100
car crime	33	33	60	56
sweatshop	47	60	62	81
banana republic	80	60	96	84
curb crawler	27	23	62	48
urban planner	47	40	36	38
Mean	58.7	56.3	71.6	70.5

Table 3 Summary of facility values for compound noun tests according to linguistic features

Variable	Facility values	Group1(Test1)	Group1(Test2)	Group2(Test1)	Group2(Test2)
Syntactic opacity (n=10)		61.2	58.6	73.4	74
Idiomatic opacity (n=10)		64.7	63.6	79.4	77.4
Lexical novelty (n=11)		57.6	57.5	70.9	67.8

As shown in Table 3, when the test results were analyzed from linguistic features, syntactic opacity, idiomatic opacity, and lexical novelty, the task difficulty appeared to be similar for both groups. Compound nouns with the feature of lexical novelty appeared to be more difficult than compound nouns of the other two types since both groups' mean facility values of the lexical novelty type were lower than the other two types. However, for the compound nouns with any type of linguistic feature, the context did not seem to provide help for both groups' guessing except for the slight improvement in Group2's performance with syntactically opaque compound nouns. In addition to the both groups' overall performance in the two

tests and in the compounds with three different linguistic features, their performance with compound nouns with different number of variables was also analyzed. As shown in Table 2, despite the complexity that compound nouns with more linguistic features might exhibit, both groups performed best with those with three linguistic features. Except for Group 1's performance in Test 1, the results of Group 1's Test 2 and Group 2's Test 1 and 2 also showed higher facility values for compounds with two linguistic features than those with single linguistic feature.

Table 4 The number of variables and Group 1's and Group 2's mean facility values in Test 1 (%)

Number of variables \ Groups	Group1(Test1)	Group1(Test2)	Group2(Test1)	Group2(Test2)
One (n=4)	54.3	54	62	64
Two (n=6)	52.2	59.3	69.7	67
Three (n=5)	70	65.4	81.6	80

Finally, the subjects' familiarity with the compound nouns in question was also tested. On the average, Group 1 subjects reflected that they had learned in class or had seen about one of the compound nouns in this study somewhere and Group 2 reflected that they had learned or seen 3.3 compound nouns that were included in the test. For Group 1, in spite of low familiarity with other compound words in test, some Group 1 subjects reflected to have learned or seen *junk food* (33%) and *playboy* (30%). For Group 2, the top four compounds that these subjects reflected to have learned or seen are *junk food* (88%), *mad cow* (54%), *playboy* (50%), and *blackmail* (48%). However, even if the subjects reported that they had learned or seen the compound nouns before, it did not guarantee their chosen definitions for these compounds were always correct. Among the compounds that the subjects regarded as familiar ones, 28.1% of Group 1's chosen definitions were wrong while 21% of Group 2's chosen definitions were wrong. Nonetheless, comparatively, there were more wrong guesses of unfamiliar compounds in both Test 1 and Test 2 of the two groups: the percentage of wrong guesses of unfamiliar compounds for Group 1 was 59.33% while the percentage of wrong guesses of unfamiliar compounds for Group 2 was 43.8%.

### Discussion

From the results of the two tests conducted with the two groups, it appears the selected compound nouns are not as difficult to the learners as we might have imagined since the mean facility values of both groups in the two tests are over 50%. Unsurprisingly, the intermediate group performs better than the beginner



group in both tests, but the difference is not significant. Another finding is that the context offered in the second test does not seem to help learners guess the meaning of the compound better; instead, the context seems to cause their confusion in guessing since both groups perform better in the word-list test (Test 1) than in the word-in-context test (Test 2), although the difference is also slight. The findings provide support to Bensoussan and Laufer's claim (1984) that even when the words are presented in a context, learners usually apply their "preconceived notions" about the meaning of a word or phrase which often leads to incorrect guessing. It could also be because the learners are not well trained to inference the word meaning from the context. In addition, the unclear information of the context (such as some other unknown words and the conveyed message that might be ambiguous to the learners) could also be causes of wrong guessing. Finally, in these sentences excerpted from authentic material, contextual cues that can help learners effectively inference the meaning of the compound nouns might not exist at the sentence level.

As for the three linguistic features that cause learners' comprehension problems, the findings are similar to those of Charteris-Black' study (1998). The findings show that for the subjects in this study, although the differences are slight, lexically novel compound nouns are more difficult than the other two types, and idiomatic opaque ones are easier than the other two. If we analyze the data from the compound nouns that receive lower facility values than 50%, we can get similar findings: there are seven for the beginner group and two for the intermediate group. Among Group 1, four involve syntactic opacity feature, three involve idiomatic opaque factor and five involve lexical novel factor. As for Group 2, one difficult compound noun involves three linguistic features while the other only is a lexically novel one. Therefore, it appears that for both groups, indeed the lexically novel compound nouns are more difficult than the other two types. It could be explained from the component factor of idiomatically opaque compound nouns. According to Charteris-Black (1998), the compound meaning relies on a partial and selective transfer of meaning. Comprehension of such compounds requires learners' awareness of the word components' subsenses. When Chinese learners learn new vocabulary, they usually learn deductively—teachers list many meanings, including sub-meanings of the vocabulary for learners. Therefore, when compared with the compound nouns of the other two types, these idiomatically opaque compound nouns appear easier. Furthermore, comprehension difficulties that might be caused by the idiomatic opacity can be reduced by exposure, especially those culturally less restricted concepts (Charteris-Black, 1998) since both groups reflect that they have learned or seen some of the idiomatically opaque compound nouns (Group 1: 8.7 % , Group 2: 29%), and the percentage is higher than the compound nouns of the other two types (as shown in Table 5). Furthermore, if learners can find equivalents in their native language, Chinese, the difficulty of the compound would also reduce.

For example, learners can find equivalents of *playboy* (花花公子), *junk food* (垃圾食物), *blackmail* (黑函) in Chinese. Since learners can transfer their L1 knowledge of the compounds to L2, these compound nouns are less problematic than others. On the other hand, the identification of syntactic relations in the compounds appear easier to the learners than comprehension of lexically novel ones might be because they are created in recent ten years, and the chance that the learners have never seen or learned the words is pretty high. Even if the learners have encountered the compound nouns in some contexts, they do not necessarily know the meaning.

Table 5 The percentage of the compound nouns with three linguistic features that Group 1 and Group 2 have learned or seen before (%)

Groups	Linguistic feature	Syntactic opacity	Idiomatic opacity	Lexical novelty
Group 1		8.7	25.2	5.5
Group 2		8.7	29	18.7

Since the results show that the combination of the linguistic features might not be the main cause that leads to comprehension difficulty (both groups do best in comprehending compounds with three linguistic features), the final issue we will investigate is whether learners' familiarity with the compound nouns indeed reduces the comprehension difficulty. It is interesting that the subjects of both groups reflect that they have learned or seen some of the compounds in the test, but the results show that they still do not really know what these words mean. Apparently, the intermediate group (3.3 words) recognizes more words than the beginner group (1.07 words) on the average, and among these recognizable compounds, the intermediate group makes fewer errors (error rate: 21%) in choosing definitions for the compounds than the beginner group (error rate: 28.1%). Besides, among the unrecognizable compound nouns, the error rate of the intermediate group is still lower (43.8%) than the beginner group (59.33%). The data tell us that exposure indeed influence learners' comprehension of the compound nouns, and such exposure and guessing ability vary across learners of different proficiency levels.

### Pedagogical implications

As mentioned previously, the meaning of compounds is usually not the sum of the meaning of their components. Therefore, Fromkin and Rodman (1998) had suggested that the meanings of many compounds must be learned as if they were individual simple words. From this study, we can see that exposure plays the main role in learners' comprehension of these compounds. Charteris-Black (1998)

suggests that, except for those technical and semi-technical registers that would benefit from formal instruction, one option would be to leave compound nouns out of general English courses since exposure in a target language setting facilitates acquisition. However, in an EFL setting, such as Taiwan, learners' exposure to authentic material is much more limited than in an ESL setting. Teachers should play the role of the facilitator or the guide offering such material in class. It is important for the teachers to point out the concept which can be ambiguous to the learners: the meaning of compounds is usually not the sum of the meaning of their components. In addition, a complete paraphrase and offering equivalents in Chinese would be adequate to provide the meaning of the full form. For higher-level learners, their attention can be brought to particular linguistic processes which underlie compound noun formation since they can practice fostering guessing strategies while they encounter compound nouns.

Although in this study, the subjects of the both groups do not do better in Test 2, which offers context to each compound nouns, it does not mean that contextual cues do not play a role in learners' comprehension in compound nouns. As Singleton (1997) points out, "good grounds for intervening at the metacognitive level" could be more important than incidental exposure. To further investigate Test 2, we can find that some of the contextual cues are not obvious in the context, although in authentic material, it is common that such contextual cues either are not obvious or do not exist in single sentences. Besides, in addition to the potentially difficult words in the provided context, the implication of the test results might be two-folded: one is that learners are not used to inferencing word meaning from the context, and the other is that for these EFL learners, information inherent in single-sentence context is not enough to correctly guess the meaning of the compound nouns. Taking information highway for example, the original context is shown as follows.

"The Three C's-computers, consumer electronics, and communications-are the global industrial stars of the future. In particular, when telecommunications networks link up information with audio-visual entertainment, this will create the information superhighway. Chunghwa Telecom, which has had a monopoly over telecommunications in Taiwan for half a century, has just passed the first anniversary since its reorganization." (Sinorama, 1997, October, p18)

As shown above, when presented in a discourse context, the meaning of the compound noun is even clearer for learners to inference. Therefore, learners' awareness of detecting contextual cues in the discourse-level context should also be raised in order to make better and correct guessing.

### **Conclusion**

In this study, we have analyzed possible factors leading to EFL learners'

difficulty with compound nouns, and the difficulty might be similar to native speakers. However, as shown in the study, exposure and planned learning could reduce the difficulty. It would be teachers' job to offer and increase learners' chance to expose to authentic material containing compound nouns. The training and enhancement of learners' inferencing strategy from the context should also be another important issue for learning the compounds. Finally, further research can be conducted to investigate whether the results will be different when longer context is provided and when the compound nouns included in the test are less frequently used.

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