

English Hyphenated Compounds

JIAN-SHIUNG SHIE

*Department of English Language, Da-Yeh University
112 Shan-Jiau Rd., Da-Tsuen, Changhua, Taiwan*

ABSTRACT

Hyphenated compounds are common in English. But compound hyphenation has seldom been thoroughly addressed in the literature on English compounding. This article provides a detailed examination of a corpus of 1,561 English hyphenated compounds collected by the author. Various patterns of English hyphenated compounds and their morphosyntactic behavior are discussed in terms of several existing claims or assumptions about English compounding. The results are that the vast majority of English hyphenated compounds are adjectival rather than nominal, that nouns are the most active class of component stems of English hyphenated compounds, that most English hyphenated compounds are right-headed, that 3-or-more-stem hyphenated compounds, derived from phrases, follow the sequence of the corresponding phrase structure constituents, that hyphenation is not necessarily transitional in the evolution of an English compound, and that English neologistic and nonce compounds display a very strong tendency toward hyphenation.

Key Words: English compounds, hyphenated compounds, component stems

帶連字號之英文複合詞

謝健雄

大葉大學英美語文學系
彰化縣大村鄉山腳路 112 號

摘要

英文中有許多帶連字號之複合詞（簡稱連合詞），但相關文獻卻很少深入討論此一課題。本文旨在檢視作者收集之 1,561 個英文連合詞，並就文獻中數個與英文複合詞有關之原則，加以討論各種英文連合詞之構詞模式及其構詞語法性質與功能。結果有六點結論。第一，絕大多數之英文連合詞為形容詞或具有形容詞之功能。第二，名詞是最常見的英文連合詞之組合詞幹。第三，大多數之英文連合詞其詞首靠右。第四，多詞幹之英文連合詞，其詞幹之排列順序與相對應之詞組順序相同。第五，連字號不一定是英文複合詞演化過程中之過渡現象。第六，複合新詞與隨機複合詞絕大多數是帶有連字號的。

關鍵詞：英文複合詞，帶連字號之複合詞，組合詞幹



I. INTRODUCTION

Many scholars (e.g. Bolinger and Sears [11]; Francis [16]; Fromkin and Rodman [18]; Hatch and Brown [19]; Katamba [25]) have recognized compounding as an important process for enlarging the vocabulary of a language, especially English. Compounding is the second most prolific source of new word creation in English, trailing only derivation. Bauer [5] classifies English word formation into ten categories, including prefixation, suffixation, and compounding. Bauer's survey [5] has shown that 20.5% of all English new words formed in the 44 years from 1939 through 1982 are compounds. Many recent studies (e.g., Bauer [7]; Stockwell and Minkova [33]; Wardhaugh [34]) have also recognized compounding as a large and important source of English new words. This indicates that compounds are very common in present-day English.

Compounds often occur in advertising, journalistic, and literary English (cf. Adams [1]; Hatch and Brown [19]; Leech [26]; Rush [31]). The reasons why well-established compounds are used can at the same time explain the motivations for coining new compounds. Information can be effectively condensed through compounds where space is at a premium. To illustrate, *a tomb raider* is shorter than *a person who raids a tomb*. And it is more economical to use *the Clinton-Barak telephone call* than to use *the telephone call that Clinton gave Barak*. In addition, a compound or an expression containing a compound (e.g. *their higher-earning male peers*) can serve as an additional expression for referring to what has already been referred to (as in *these women earn less than their male counterparts*), thus adding variety to the discourse.

Many English compounds are hyphenated. Sometimes, we can change an English compound's morphosyntactic behavior by adding a hyphen in between its constituent elements. Other times, the hyphen of a compound cannot be removed at all. For one thing, *a call-in* is a telephone call to the host of a show, while *call in* can only be used as a phrasal verb. For another, *doctor-patient interaction* means the interaction between a doctor and his/her patients. Without the hyphen, the two terms *doctor* and *patient* would not occur next to each other without a conjunction (e.g., *and*) and determiners (e.g., *a* and *his*). And yet writers on English compounds seldom address the subject of compound hyphenation thoroughly. Some of them describe English compound hyphenation as haphazard or capricious (e.g. Hurford [22]; Napoli [29]). Others hold that spelling or hyphenation is not a reliable indicator of compound status (e.g. Adams [1]; Katamba [25]; Wardhaugh [34]). They seem to imply that hyphen plays no role at all in English compounding, which has motivated the

writer of this paper to do the present research.

The primary purpose of this article is to provide a detailed examination of a corpus of 1,561 English hyphenated compounds collected by the author. Section II briefly deals with the general evolution and hyphenation of English compounds. Section III provides a working definition of a compound and presents the data for this study. Section IV examines various patterns of English hyphenated compounds as shown in the corpus and discusses their morphosyntactic behavior in terms of four existing claims or assumptions about English compounding, including the claim that most English compounds are right-headed. The concluding section summarizes the results of this study and presents implications for English teaching.

II. EVOLUTION AND HYPHENATION OF ENGLISH COMPOUNDS

A very common, probably taken-for-granted, account on English compounding is that English compounds tend to be written first as separate words with a space between their component parts, then, as the compounds become more established, to be hyphenated, and finally to occur as single words with neither a space nor a hyphen between the component parts (cf. Borjars and Burridge [12]; Crystal [14]; Frank [17]; Huddleston [20]; Quirk et al. [30]). It is not hard to find standard instances of such compound evolution. For example, according to Jespersen [24], the present-day compound *today* originated as two separate orthographic words *to day*. In the literature published in the 1920s, we can find the hyphenated form *to-day* was used instead, and there was a growing tendency to spell the compound without the hyphen.

Classifying and discussing compound nouns in general, Adams [1] provides 804 instances of compound nouns, of which 138 are hyphenated. The author of this paper has consulted *The American Heritage Dictionary of the English Language* (3rd ed.), published in 1992, to survey the general evolution of the 138 hyphenated compound nouns in the 20 years from 1973 to 1992. The results are presented in Table 1.

Table 1. Evolution of 138 hyphenated compound nouns

<i>Adams (1973)</i>	<i>the dictionary (1992)</i>
138 hyphenated compound nouns cited in the book	76 listed as single solid words without a hyphen/space 10 listed as hyphenated compounds (unchanged) 27 listed as two orthographic words with a space between them 25 not listed in the dictionary



By and large hyphenation is less common in American English than in British English (Quirk et al. [30]). Taking this factor into consideration, we still can say that the information given in Table 1 generally attests to the tendency of English compound evolution from a hyphenated form into a single orthographic word without a hyphen. However, it is necessary to survey more data in order to know more about hyphenation in English compounds.

Quite a few writers mention that some compounds occur in all of the three forms: with a space, hyphen, or neither. It may be true that compound hyphenation is not fully rule-governed. And yet the haphazardness of English compound hyphenation seems to have been exaggerated. The compounds that can be found in all of the three forms are common diachronically, but extremely rare synchronically. Many examples of such compounds cited in the literature on English compounding are not attested by dictionaries synchronically. For one thing, Huddleston [20] cites *starting point*, *starting-point*, and *startingpoint* as an instance of such compounds. But the solid one (*startingpoint*) is not listed in dictionaries. For another, Quirk et al. [30] state that *flower pot*, *flower-pot*, and *flowerpot* are all possible. And yet only the solid one (*flowerpot*) is listed in present-day dictionaries, granted that *flower pot* and/or *flower-pot* might have been common 20 or more years ago.

III. THE DEFINITION OF A COMPOUND AND THE DATA FOR THIS STUDY

Following Bauer [4, 6], Lyons [27], and Quirk et al. [30], we view a compound as a lexeme comprising two or more stems, such as *love child*, *public works*, *timekeeper*, *handkerchief*, *tape-record*, *long-held*, and *18-year-old*. As component parts of a compound, the stems (such as *hand* and *kerchief* in *handkerchief*) are free forms that have an otherwise independent existence. These stems should be “independently attested as words,” as Fabb [15] puts it. Some scholars (e.g., Burling [13]; Jackson and Amvela [23]) refer to the component parts of a compound as ‘root.’ The present study does not deal with words like *helter-skelter* and *cranberry* on the ground that they are not compounds according to the above definition. The forms *helter*, *skelter* and *cran* do not occur independently in English.

We do not take cross-linguistic factors into consideration either. Beyond the scope of this article are neoclassical compounds, such as *pseudo-Catholic* and *hydro-ski* (cf. Bauer [6]). Neoclassical compound elements (e.g. *pseudo* and *hydro*) may be free forms in Latin or Greek, but not in English.

Bolinger and Sears [11] note that compounds “tend to fill

a single grammatical slot in a sentence (for example, that of a verb, a noun, or an adjective) and to be inflected as single words are - on the end.” In fact, they function as a single word or lexeme both grammatically and semantically. Since a compound, as we see it, is a kind of lexeme, it may have inflected forms, but is not necessarily inflected on the end. Thus we have *ladies-in-waiting*, *tape-recorded*, *longest-held*, and so on. In the present study, all the inflected forms of a compound are conceptualized as one single compound. For instance, *long-held*, *longer-held*, and *longest-held* count as one single compound rather than three different ones.

The main purpose of this study is to examine hyphenated English compounds. Dictionaries may be used as a frame of reference, but should not be the only source of data for a study on English compounding. Baayen and Renouf [8] also consider dictionaries to be unreliable data source for morphological studies. There are two reasons for this. First, it is impossible for a dictionary, however comprehensive it is, to provide entries for all established English compounds. Take for instance *husband-to-be* and *sea green*. Both are established compounds, but they are not registered in many English dictionaries. It is not only practically unrealistic but also commercially unappealing to include all compounds as entry words in a dictionary whose meanings can be deduced from their own component stems or roots. Second, dictionaries do not list compound neologisms and nonce compounds (namely compounds coined by a speaker/writer on the spur of the moment to fill an immediate need, as in ‘a *small-is-beautiful* policy’). Therefore, counts based on dictionaries will definitely be unable to represent the realities of English compounding.

The data for this study is a collection of 1,561 hyphenated compounds gathered by the author of the present paper in person from printed reading matter in recent years. The sources of data include an English newspaper (*The International Herald Tribune*), several magazines (*Time*, *Newsweek*, and *U.S. News & World Report*), and other authentic materials (such as advertising matter, leaflets, product instructions, and business letters which the author has access to). The author did not go over all the issues of the above-mentioned newspaper and magazines in recent years. Rather, the author simply extracted hyphenated compounds from sporadic issues. A very small minority of the collected compounds (not more than 50) were drawn from examples of compounds provided in the recent literature on English compounding. The compounds in the collection are all in keeping with the working definition of a compound given in the beginning of this section.



The frequency of the collected compounds was not recorded. In other words, no hyphenated compound was extracted repeatedly. For example, the author encountered *a credit-card offer*, *a credit-card balance*, *credit-card holders*, and *his credit-card bills*, all of which were recorded as one single hyphenated compound *credit-card* (as a premodifier). When it comes to numeral compounds (i.e., compounds that have a number as its component part), those with the same nonnumeral stem or root are not taken as different compounds

in the collection even if the numeral elements are different. For example, *three-page*, *25-page*, and *400-page* count as one compound in the collection.

All the collected hyphenated compounds have been classified according to the arrangement of the component stems and their word classes. They are either two-stem or 3-or-more-stem compounds. The results are set out in Table 2.

Table 2. A corpus of 1,561 English hyphenated compounds

	<i>pattern</i>	<i>example</i>	<i>number of compounds</i>
1.	N-N	air-sea (rescue) night-vision (goggles)	145
2.	N-V	(to) skin-dive (to) air-ship	18
3.	N-A	child-free (night) lightning-fast (calculations)	120
4.	N-Adv	fruit-only (jam)	7
5.	N-P	head-on (collision) cradle-like (passenger seat)	16
6.	N-Ver	ice-breakers animal-lovers	23
7.	N-Ving	(bribery and) influence-peddling signal-processing (capabilities)	71
8.	N-Ven	postage-paid (mailer) abuse-filled (marriage)	151
9.	V-V	must-win (games) pass-fail (test)	12
10.	V-N	(a 3-month) cease-fire open-heart (surgery)	9
11.	V-A	keep-fit (book)	3
12.	V-Adv	take-home (pay)	3
13.	V-P	(penalty) shoot-outs see-through (blouse)	75
14.	Ven-A	born-poor (Irish immigrants)	1
15.	Ven-P	built-in (dictionary) grown-ups	10
16.	Ven-N	closed-circuit (TV cameras)	2
17.	Ving-N	working-class (support)	2
18.	Ving-P	goings-on	1
19.	A-A	(to be) red-hot Dutch-Belgian (border)	16
20.	A-N	high-volume (sellers) real-life (situations)	155
21.	A-V	clear-cut double-space	14
22.	A-Adv	highest-ever	2
23.	A-P	(his) higher-up	2
24.	A-Ven	middle-priced ready-made (clothes)	22
25.	A-Ving	new-looking (tables) clear-thinking (people)	26



Table 2 (continued). A corpus of 1,561 English hyphenated compounds

	<i>pattern</i>	<i>example</i>	<i>number of compounds</i>
26.	A-Ned	low-heeled (shoes) gray-haired (man)	118
27.	Adv-Adv	(a) long-ago (Christmas)	2
28.	Adv-N	now-epic (struggle with her weight)	1
29.	Adv-V	well-knit (body)	2
30.	Adv-A	far-right (conservative party) once-bountiful	5
31.	Adv-Ving	early-warning (radar) long-standing (relation)	36
32.	Adv-Ven	well-worn (pair of pants) newly-crowned (Wimbledon champion)	90
33.	P-P	in-between	1
34.	P-N	(Everything tips) off-balance after-tax (profits)	54
35.	P-V	(to) back-comb (his hair)	1
36.	P-Ving	forward-looking (markets)	2
37.	numeral-N	20-car (pileup) 10,000-ton (ship)	129
38.	3-or-more-stem compounds	over-the-counter (drug) kindergarten-through-eighth-grade (school)	214

Note: P = preposition/particle

IV. DISCUSSION

The corpus is probably not large enough to yield anything that can discredit any existing claims or assumptions about English compounding. But observations on our data might confirm or offer specific supplements to existing generalities about the composite patterns of English compounds and their morphosyntactic behavior.

One of the basic claims or assumptions about English compounding is that, where the parts of speech of component stems are concerned, “there is almost no limit on the kinds of combination that occur in English” (Fromkin and Rodman [18]). The composite forms of compounds show infinite variety (cf. McKnight [28]). Napoli [29] also states that every combination is possible.

As shown in Table 2, English hyphenated compounds do occur in a great variety of composite forms. And yet the 1,561 hyphenated compounds do not manifest all possible composite patterns. In the corpus many patterns have only one or several instances of hyphenated compounds, including some patterns that are quite productive of syntactic phrases, namely Ven-N, Ving-N, V-Adv, and Adv-V. In addition, no hyphenated compounds have been collected which are built on the patterns of, say, Ving-A, Ving-Adv, Adv-P, P-Adv, P-A, and Ven-Ven. Can unhyphenated compounds fill these gaps? Such examples of unhyphenated compounds do not seem to come readily to mind. The solution to this problem has to rely

on other corpora of unhyphenated compounds.

A second basic claim about English compounding can be found in Bauer [4], Burling [13], Huddleston [20], and Huddleston and Pullum [21]) - The largest number of English compounds are to be found in the category of nouns. However, as can be seen from the examples listed in Table 2, the vast majority of English hyphenated compounds are adjectival rather than nominal. Of the 1,561 hyphenated compounds in the corpus, as many as 1,323 (84.8%) occur in an adjectival or premodifying position in the source sentence. Only 170 instances (10.9%) are compound nouns in the source sentence. Therefore, English hyphenated compounds have a very strong tendency to function adjectivally in the sentence. In many cases, the same word string is hyphenated in a premodifying position but not elsewhere, as exemplified in (1) to (5) below:

- (1) The *cost-of-living* index rose by 3 percent.
The *cost of living* rose by 3 percent.
- (2) We have to secure the *working-class* support.
The *working class* plays an important role.
- (3) We need some *easy-to-hold* bottles.
The bottles are *easy to hold*.
- (4) We need some *first-hand* information about the country.
We are going to see the country *first hand*.
- (5) He has reserved a *first-class* ticket.
He flies everywhere *first class*.



In many other cases, the hyphen is used in premodification, while it is optional for the same word string elsewhere, as in (6) and (7):

- (6) a three-quarter ton
 three-quarters of a ton
 three quarters of a ton
- (7) a heart-to-heart talk
 talk with her heart-to-heart
 talk with her heart to heart

The adjectival hyphenated compounds occur predominantly in an attributive position. But they are not restricted to attributive use. Sometimes they are predicative instead and sometimes display prominent syntactic functions of adjectives, as in (8) to (14):

- (8) You're being very *down-to-earth*.
- (9) The teacher is considered *all-knowing*.
- (10) The last sentence is so *matter-of-fact* that I bet you hardly notice it.
- (11) Keep me *up-to-date*.
- (12) The speedster behind him eases off the gas a little, and the guy behind him over-reacts, taps his brake. Pretty soon there's a shock wave of *slowing-down-ness* propagating upstream. (*Newsweek*, Aug. 27, 2001, p. 51)
- (13) This ain't a song for the *broken-hearted*. No silent prayer for the *faith-departed*. (pop song 'It's My Life', performed by Bon Jovi)
- (14) ...disposable incomes and the advent of Western-style leisure time has prompted a more *laid-back* lifestyle. (*Time*, Aug. 20-27, 2001, p. 73)

A third claim on English compounding is that the most common compounds are composed of two noun stems, such as *fire engine* and *toothbrush* (Biber et al. [9]; Hatch and Brown [19]). As Aitchison [2] puts it, "the largest group of existing compounds involves nouns alongside other nouns."

In the corpus of hyphenated compounds, 145 compounds belong to the N-N class, forming a very large, but not the largest group. The rank ordering of the six largest groups of hyphenated compounds is set out in Table 3.

It is worth noting that, each of the six most productive patterns includes at least one noun as its component part. Therefore, we may say safely that nouns are the most active class of component stems of English hyphenated compounds.

Of the 145 N-N compounds in the corpus, 30 are appositional or copulative compounds. In addition, there are 10 such compounds in the A-A composite form, (15)-(20) being examples:

- (15) the *home-school* links
- (16) a *fighter-bomber*
- (17) an *import-export* company
- (18) an *air-sea* rescue
- (19) the *German-Polish* Border
- (20) innovative *public-private* partnership

It is very hard to tell which element in each of these compounds is the grammatical or semantic head. There is a kind of balance between the two conjoined elements, so neither can be said to be more central than the other. We may as well treat such compounds as headless ones.

The fourth claim on English compounding is that most English compounds are right-headed, which has frequently been advanced in literature (e.g. Bauer and Renouf [8]; Hurford [22]; Napoli [29]). The head root of a compound determines the word class of the whole compound, and the meaning of the head root bears a hyponymous relation with that of the compound as a whole. For example, *color code* is kind of code, not a kind of color. Thus the root *code* is considered to be the head of the compound. When a compound has a head and the head is on the right-hand side, as is the case with *color-code*, that compound is regarded as right-headed. Such

Table 3. Rank ordering of the six largest groups of hyphenated compounds

rank ordering	pattern	number of compounds	example
1	A-N	155	high-volume real-life
2	N-Ven	151	postage-paid abuse-filled
3	N-N	145	air-sea night-vision
4	numeral-N	129	20-car 10,000-ton
5	N-A	120	child-free lightening-fast
6	A-Ned	118	low-heeled gray-haired



a test applies readily to N-N compounds. When it comes to other two-stem patterns, to identify the head we have to consider the phrase structure parallel to the syntactic relation between the two roots. The head of a verb phrase (e.g. *have written three papers*) is the main verb, and the head of an adjective phrase (e.g. *too good to be true*) is the main adjective. Thus the premodifying compound in *intelligence-gathering missions* is right-headed because its corresponding phrase structure *gathering intelligence* shows that *gathering* is the head of the premodifying compound *information-gathering*.

Turning to the corpus, the N-A and A-N patterns, both of which are very productive, would seem to be opposite to each other in terms of the headedness of compounding. If one of them is right-headed, then the other should be left-headed. However, their underlying phrase structures indicate that both of them are right-headed. Take for instance the A-N compound in *a low-budget film*, with the head *budget* on the right. It is the premodifying position that causes the hyphenation, as we have discussed earlier. Otherwise the two words *low* and *budget* would be part of an ordinary noun phrase rather than a compound. Therefore, *low-budget* before, say, *film* is a right-headed compound used as a premodifier. As to the N-A pattern, the second stem (A) is frequently *free* (as in *wrinkle-free*), *conscious* (as in *class-conscious*), *specific* (as in *language-specific*), *intensive* (as in *information-intensive*), *rich* (as in *oil-rich*), *resistant* (as in *scratch-resistant*), or *proof* (as in *quake-proof*). A quake-proof building is a building that is proof against quakes. The corresponding phrase structure *proof against quakes* indicates that the adjective stem *proof* is the head of the N-A compound *quake-proof*.

Such is also the case with N-Ven compounds, the second most productive two-stem pattern in the corpus. Such compounds always involve a passive verb phrase. An Austrian-born action hero is an action hero who was born to an Austrian. Thus the element *born* is the right-hand head in the compound *Austrian-born*. Furthermore, two-stem numeral compounds are also right-headed, as in *a four-engine plane* and *another 17-point lead*.

Another very productive right-headed pattern is the A-Ned form, such as *hairy-chested*, *slender-hipped*, *good-natured*, *cold-blooded*, *high-necked* (sweater), and *long-skirted* (suit). Such hyphenated compounds usually have a noun as part of the second element that denotes personality or a part of body. In fact, they represent a special kind of compound with two word stems plus the class-changing suffix *-ed*, transforming the compound from a noun to an adjective, analogous to the process from *slowing-down* to *slowing-down-ness*, as in (12). The reason why a hyphen is

used before *-ness* in *slowing-down-ness*, but not before *-ed* in the A-Ned pattern, is that the former is a nonce compound. A nonce compound has a very strong tendency to be hyphenated. We shall return to this later. Suffice it to say here that nonce formations, although they do not catch on in the speech community, are generated by productive word-formation rules (cf. Stekauer [32]). In (12), *slowing-down-ness* is composed of two roots (*slowing* and *down*). The root *slowing* is a complex one. And the class-changing suffix *-ness* transforms the compound from an adjective to a noun.

The author of this paper has encountered 127 compounds in the N-Ver form, all of which are right-headed, such as *screensaver*, *bill collector*, *animal-lovers*, and *job-seekers*. But only 23 of the 127 N-Ver compounds are hyphenated, presumably because all of the 127 compounds function as the head of a noun phrase rather than as a premodifier. As pointed out earlier, English hyphenation tends to occur in premodification. Usually the first nonhead element (N) in such compounds can be interpreted as a syntactic argument of the deverbal nominal head (Ver), as in *coffee-maker* (make coffee) and *time-waster* (waste time). But sometimes the nonhead element represents an adverbial in the corresponding phrase structure, as in *sun-bather* (bath in the sun) and *baby-sitter* (sits with the baby).

The last right-headed pattern that we would like to address is the Adv-Ven one, as in *ill-fated*, *well-placed*, *much-debated*, *less-developed*, and *little-understood*. The high productivity of this pattern should be attributed to the proliferation of the *well-Ven*, *ill-Ven*, *much-Ven*, and *little-Ven* subpatterns. An interesting observation is that, according to the data, the derivational adverbs with the suffix *-ly* very rarely occur as the first element of the Adv-Ven compound, granted that they are the largest group of English adverbs. In fact, in the corpus of 1,561 hyphenated compounds there are only five instances of compounds that contain an *-ly* adverb as a component part: *fully-grown*, *fully-fledged*, *badly-needed*, *newly-crowned*, and *internationally-known*. It follows that the *-ly* adverb is very inactive in English hyphenated compounding.

It should be clear from the foregoing that most hyphenated compounds are right-headed in English. The left-headed patterns include the following: V-N, V-Adv, V-A, V-P, N-P, A-P, Ven-P, P-N, all of which contain either a verb or a preposition/particle or both. There are only 172 left-headed two-stem hyphenated compounds in the corpus. V-P and P-N are two more productive left-headed patterns.

The V-P pattern comprises a verb and a particle, as in *a health check-up*, *McDonald's drive-through*, *a drop-off in*



attendance, and *play-off games*. Such compounds can be viewed as being derived from phrasal verbs. Produced through the P-N pattern are such compounds as *on-location* (shooting), *near-shore* (water), *off-peak* (hours), and *after-tax* (profits). The preposition in the P-N pattern serves as the left-hand head and the noun as complement of the head (cf. Boertien [10]).

The corpus embraces 214 three-or-more-root hyphenated compounds. The component stems of such compounds invariably follow the sequence of phrase structure constituents. By contrast, two-stem compounds, since most of them are right-headed, frequently have their component stems conjoined in reverse order, as in *cancer-causing*, *baby-kisser*, *cool-looking*, *home-made*, and *chameleon-like*.

Three-or-more-root hyphenated compounds are the products of phrase lexicalization. Their structures parallel phrase structures. They may be derived from preposition phrases, as in *on-the-job training* and *the out-of-court settlement*; from noun phrases, as in *son-in-law* and *a fork-in-the-road moment*; from adjective phrases, as in *the sharper-than-expected economic slowdown* and *a tough-on-crime governor*; from verb phrases, as in *a know-it-all* and *the taken-for-granted world*; from coordinated constructions, as in *cops-and-robbers films* and *stop-and-go traffic*; or even from a whole sentence, as in *small-is-beautiful policy* and *a one-cause-fits-all model*.

There are 34 instances of hyphenated N-P-N compounds in the corpus, such as *case-by-case*, *cheek-to-cheek*, *bumper-to-bumper*, and *item-for-item*. There is a very strong tendency to use a hyphenated N-P-N compound as a premodifier but an unhyphenated one as an adverbial, as illustrated in (7).

English hyphenation is often described as being in a middle position of the transition from a two-stem compound with a space to a single orthographic word without a hyphen. But many hyphenated compounds in the corpus are long-established ones, such as *love-in-a-mist*, *law-abiding*, *deep-seated*, and *sit-in*. It is not known for certain when they will have gone through the whole evolution and become unhyphenated. In addition, many new compounds occur originally as hyphenated ones, such as *voice-mails*, *key-pals*, *dry-clean* (as in *to dry-clean human excrement*) and *off-hook* (as in *to remove the phone's handset to go off-hook to access the phone line*). Moreover, nonce compounds often occur in journalistic and advertising English. They are coined for one single occasion and do not acquire permanent validity, serving only one specific contextually conditioned application (cf. Stekauer [32]). They are usually hyphenated, as in (21) and

(22):

(21) An *if-you-really-want-to-know* sneer flitted over his face.

(22) I was *cat-sitting* my daughter's indoor feline.

(Reader's Digest, August 2001, p. 191)

It is hyphenated compounds that form the vast majority of examples cited to illustrate neologistic and nonce compounds in recent literature (as in Bauer and Renouf [8]; Boertien [10]; Rush [31]). Therefore, a hyphenated compound can also be placed at the starting point of the above-mentioned compound evolution.

V. CONCLUSION AND PEDAGOGICAL IMPLICATION

Based on the corpus of 1,561 English hyphenated compounds, some generalities or tendencies can be stated as follows:

- (A) The vast majority of English hyphenated compounds are adjectival rather than nominal.
- (B) Nouns are the most active class of component stems of English hyphenated compounds.
- (C) Most English hyphenated compounds are right-headed.
- (D) English 3-or-more-stem hyphenated compounds are derived from phrases and follow the sequence of the corresponding phrase structure constituents.
- (E) Hyphenation is not necessarily transitional in the evolution of an English compound.
- (F) English neologistic and nonce compounds display a very strong tendency toward hyphenation.

Admittedly, the collection of 1,561 hyphenated compounds is not a large corpus. The results of this study require modifications or further supplements based on new data, particularly those from modern literary works, which the corpus for this study is lacking.

According to Hatch and Brown [19], many L2 students are unaware that compounding is a very general process in English, which is attested by the relatively low appearance of compounds in international students' compositions. "If the L1 and L2 both use compounding extensively, learners may try to translate...L1 forms directly to the L2" [19], causing errors in the order in which the component stems appear.

Since hyphenated compounds are common in English, it should be incorporated into English learning materials for speakers of other languages. However, English grammar books seldom cover this subject. The results of this study might be of some reference value to English teaching practitioners and material writers. In particular, the more productive hyphenated compounding patterns (e.g. N-Ven and A-Ned) as well as subpatterns (e.g. *well-Ven* and *N-based*) can



be presented to learners to raise their consciousness in this regard.

We have seen that information can be effectively condensed through compounds. In addition, compounds can add variety to the ways things are referred to in discourse. We have also examined the syntactic and semantic relationships between or among the component stems of a hyphenated compound. Most English hyphenated compounds have meanings derived compositionally. Research has shown that “learners do not learn all compounds as single new items but rather put the parts together to create the compounds” [19]. It should be clear from the foregoing that incorporation of hyphenated compounds into EFL or ESL learning materials is not only necessary but feasible as well.

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