DOCUMENT RESUME

ED 363 107 FL 021 549

AUTHOR Lee, Thomas Hun-tak
TITLE Information on Quantifiers and Argument Structure in English Learner's Dictionaries.
PUB DATE Feb 93
NOTE 21p.; For the serial publication as a whole, see FL 021 547.
PUB TYPE Reports - Research/Technical (143) -- Journal Articles (080)
JOURNAL CIT CUHK Papers in Linguistics; n4 p25-44 Feb 1993

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Dictionaries; *English (Second Language); *Grammar; Second Language Learning; *Verbs

ABSTRACT

Lexicographers have been arguing for the inclusion of abstract and complex grammatical information in dictionaries. This paper examines the extent to which information about quantifiers and the argument structure of verbs is encoded in English learner's dictionaries. The Oxford Advanced Learner's Dictionary (1989), the Longman Dictionary of Contemporary English (1987) and the Collins COBUILD Dictionary of the English Language (1987) are surveyed with reference to "each," "every," "all," and "any" as well as a number of dative and manner-of-speaking verbs. It is found that while most of the quantifier properties are described in the dictionaries, some properties are ignored by all of them. The dictionary information does not suffice to help learners avoid certain errors. Considerable variation is observed with respect to the argument structure of the verbs investigated. It is proposed that learnability should be an important criterion for deciding on the linguistic information to include in learner's dictionaries. (Author/JL)

CUHK PAPERS IN LINGUISTICS NO.4 1993 : 25 - 44.

Information on Quantifiers and Argument Structure in English Learner's Dictionaries[1]

Thomas Hun-tak Lee
The Chinese University of Hong Kong

Abstract

Lexicographers have been arguing for the inclusion of abstract and complex grammatical information in dictionaries. The paper examines the extent to which information about quantifiers and the argument structure of verbs is encoded in English learner's dictionaries. The Oxford Advanced Learner's Dictionary (1989), the Longman Dictionary of Contemporary English (1987) and the Collin's COBUILD Dictionary of the English Language (1987) are surveyed with reference to *each, every, all* and *any*, as well as a number of dative and manner-of-speaking verbs. It is found that while most of the quantifier properties are described in the dictionaries, some properties are ignored by all of them. The dictionary information does not suffice to help learners avoid certain errors. Considerable variation is observed with respect to the argument structure of the verbs investigated. It is proposed that learnability should be an important criterion for deciding on the linguistic information to include in learner's dictionaries.

1. Introduction

In the past ten years, lexicographers have been making conscious efforts to incorporate complex and subtle grammatical information into English learner's dictionaries. It is argued, for instance, in Benson, Benson and Ilson (1986:237) that "dictionaries should make a maximum effort to provide as much pertinent grammatical information as possible." The grammatical information should not relate only to verbs, but should also cover adjectives, nouns and adverbs.

At least four kinds of suggestions have been raised with regard to how the range of grammatical information in English learner's dictionaries should be expanded. The first kind of suggestion is that underlying syntactic differences which are not reflected in the surface structure should be explained in dictionaries (cf. Benson et al 1986:232-4). Thus, the well-known difference between a tough-construction such as (1a) and a non-tough construction such as (1b) ought to be made explicit. The distinction between a verb that takes a direct object and a clausal comp ement, illustrated in (2a) and a verb that takes merely a clausal complement, illustrated in (2b), requires elaboration.

(1a) John is easy to please.
(1b) John is eager to please.
(2a) Paul persuaded Jim to be examined by the doctor.
(2b) Paul wanted Jim to be examined by the doctor.

Secondly, it is argued that constraints on sentence patterns should be indicated to learners. For example, both *send* and *describe* are verbs that can take direct and indirect objects, and can be followed by a noun phrase and a

prepositional phrase, as in (3a) and (4a). However, it is only *send* that can occur in a double object construction, as in (3b), but not *describe*, as shown in (4b).

(3a) John sent the book to his brother.
(3b) John sent his brother the book.
(4a) John described the book to his brother.
(4b) *John described his brother the book.

The morphophonological constraint on the dative construction, which by and large restricts dative verbs to native words (cf. Green 1974, Goldsmith 1980), needs to be included in some form in dictionaries.

A third kind of concern that has been expressed is that examples used in dictionaries should reflect, as consistently and accurately as possible, the grammatical properties of lexical items in their various senses. For example, the word *common* has the sense of 'found or happening often and in many places,' as in:

(5a) Rabbits and foxes are *common* in Britain.

and the sense of 'belonging to or shared by two or more,' as in:

(5b) We share a *common* language.

Fillmore (1989) observes that these two senses of *common* are not treated consistently in the Collin's COBUILD dictionary (hereafter COBUILD). The lead clause in COBUILD is "if something is *common*, ..1.1 ... 1.2., suggesting that the word in the second sense can also occur in predicative position, which is inaccurate[2]. The 1987 edition of the Longman Dictionary of Contemporary English (hereafter LDOCE2), however, makes the difference in complement environments between $common_1$ and $common_2$ quite explicit. $common_1$ is attributive and predicative, while $common_2$ is only attributive.

Herbst (1984) has suggested in the same spirit that example sentences in dictionaries should exemplify complement environments rather than adjuncts: the complement of a verb or adjective tells the learner more about the properties of the lexical item than its adjuncts. He points out that the example sentence in the 1978 edition of the Longman Dictionary of Contemporary English for *accessible* in the sense of "easy to reach, enter or obtain" is

(6a) The island is accessible only by boat.

In this sentence, the phrase *by boat* is an adjunct. However, more useful information may be conveyed to the learner if this is replaced with a sentence like:

(6b) The island is accessible to the public.

in which the phrase *to the public* is a complement. Ferris (1990) takes note of a similar point.

Fourthly, some lexicographers (cf. Cowie 1987b; Maingay and Rundell 1987) argue that discourse and pragmatic information should also deserve a

place in learner's dictionaries. Cowie (1987b:185-7) points out that some examples in the Oxford Advanced Learner's Dictionary could be improved by taking into account the discourse factor. For example, in the entry for the verb *strip*, while the example *strip the bark off a tree* is natural, *strip a tree of its bark* sounds a little odd in the sense that it violates the rule that the end-focus position is generally reserved for new information. An improvement one could make is to have instead: *strip the tree of bark*. For the same reason, Cowie considers it important to inform learners of the distinction between question/response pairs such as (7a) and (7b), the first pair being felicitous while the second is not.

(7a) What happened to your new watch?/ It was stolen.
(7b) What happened to your new watch?/ A thief stole the watch.

From the foregoing discussion, it is clear that lexicographers are not content with describing simply the surface aspects of grammar. They are advocating the inclusion of complex and subtle grammatical information in learner's dictionaries, and have been making an effort to bring to learners some of the recent findings in linguistic investigation.

The purpose of this study is to find out the extent to which syntactic and semantic information of a complex and subtle nature is provided in learner's dictionaries. The relevant data are drawn from three of the most popular learner's dictionaries: LDOCE2; the fourth edition of the Oxford Advanced Learner's Dictionary of Current English (1989, hereafter OALD4), and COBUILD. The two areas I have selected for examination are quantifiers and argument structure.

First, I would like to find out what linguistic properties of quantifiers like *all, every, each, any*, are represented in learner's dictionaries. Knowledge of quantifiers is a very abstract form of knowledge that is probably not learned from experience (cf. Hornstein 1984)[3]. Knowledge of specific quantifiers in a particular language, for instance the subtle semantic and syntactic differences between *each, every* and *all*, is hard to acquire because some of these differences could be idiosyncratic and arbitrary. Learners make a lot of errors in relation to quantifiers, as evidenced in the data in (8-12), all produced by university-level students in Hong Kong:

(8) According to the community care policy, in each districts, there should be sufficient facilities offering to the old people.
(9) My major job frustrations include preparing economic analysis for almost every important events which carry significant implications.
(10) Anyone can't help you.
(11) I ate anything for breakfast this morning.
(12) Answer each question.

What kind of information are student learners likely to get from a dictionary which tells them that *each districts* (8); *every important events* (9); *anyone can't help you* (10) are ungrammatical? Can the dictionary be of help in explaining why *answer each question* (12) sounds less natural than *answer all questions*?

Secondly, I am interested to see how information about the argument structure of certain verbs is indicated in dictionaries. I have selected two types

of lexical items for illustration. One is verbs like *send, buy* and *recommend.* This is of interest because this class of verbs is subject to both morphophonological and semantic constraints. Can learners rely on the dictionary to find out which of these verbs can occur in the double object construction? The other type of verb is manner-of-speaking verbs such as *whisper, shout* and *shriek.* As a non-native speaker of English, I have often found it necessary to determine which of these verbs can be followed, for instance, by a *that*-clause complement or a nominal object. However, my experience has been that dictionaries differ considerably in how they encode the argument structure of these verbs. It would be of interest, therefore, to compare the three dictionaries in their treatment of the subcategorization properties of these lexical items.

2. Information on the quantifiers *all, every, each* and *any* in English Learner's dictionaries

2.1 Linguistic properties of *all, every, each*

Quantifiers have been a subject of intensive study in English linguistics as well as in theoretical linguistics. The following are twelve properties relevant to our discussion of the three English quantifiers in question, based on Vendler (1967), McCawley (1977), Hogg (1977) and Aldridge (1982). These are concerned with whether the quantifiers

(a) can precede singular count nouns in a noun phrase;
(b) can precede plural count nouns in a noun phrase;
(c) can precede mass nouns in a noun phrase;
(d) can be followed by a cardinal numeral in a noun phrase;
(e) can be followed by an ordinal numeral in a noun phrase;
(f) can quantify a set of two entities;
(g) can cooccur with symmetric predicates;
(h) have the availability of collective reading;
(i) can fall within the scope of negation;
(j) require the presence of another quantifier in the sentence.
(k) have pronominal status;
(l) can quantifier-float.

The first three properties (a-c) are concerned with number: whether the quantifier can cooccur with count nouns, and if it can, whether it takes singular or plural agreement. The features (d-e), which also relate to distributional properties within the noun phrase, look at the compatibility of the quantifier with ordinal and cardinal numerals.

The characteristics given in (f-j) reflect other semantic properties of the quantifiers: can the quantifier quantify sets of cardinality smaller than three? Is the quantifier consistent with symmetric predicates such as *similar, be alike* or *meet*? Is the quantifier able to give a collective reading referring to the totality of a set rather than its individual members? Can it fall under the scope of negation? Does the quantifier require the presence of another quantifier in the same sentence for the sentence to sound natural?

The last two properties (k-l) are purely syntactic in nature. They examine whether the quantifier can function as a pronoun in addition to being a determiner, and the range of syntactic positions it may float to in quantifying the subject of the sentence.

The above twelve features provide a framework for distinguishing between the three quantifiers *all, every* and *each*. With respect to properties (a-e), *all* can precede a plural count noun or a mass noun in a noun phrase, as in *all buses, all wood*, but not a singular count noun (**all ball*). It can precede cardinal but not ordinal numerals. Thus the phrase *all three days* is well-formed, but not **all third years*.

In relation to the properties (f-j), *all* fails to quantify a set of two or fewer members, as reflected in the oddity of a sentence like

(13) ?Hold a book in all your hands.

However, it is compatible with symmetric predicates, as in:

(14) All the blocks are similar.

It yields a collective reading in sentences such as

(15) All the angles of the triangle equal 180 degrees.

(cf. Aldridge 1982), and it can fall within the scope of negation (e.g. *Not all linguists dance*). The quantifier can be used in a sentence without the presence of another quantifier (e.g. *Put all of these books away*).

As for properties (k-l), *all* may function as a pronoun. It is able to Q-float to auxiliary position, but not to post-object position in quantifying a subject NP. Thus, one may paraphrase (16a) as (16b) but not as (16c):

(16a) All the men bought sandwiches.
(16b) The men all bought sandwiches.
(16c) *The men bought sandwiches all.

The other two quantifiers can be examined in similar manner vis-a-vis the list of properties. In contrast to *all*, *every* must cooccur with singular count nouns (*every book* vs **every books* or **every wood*). It can modify both cardinal and ordinal numerals, as seen from the acceptability of *every three days* and *every third year*.

Like *all*, *every* does not quantify sets with two or fewer members (cf. *?Hold a book in every hand/every one of your hands*). Being distributive, it is not compatible with symmetric predicates. Nor does it give a collective reading. Thus sentences such as:

(17) *Every one of the blocks is similar.

are unacceptable, and a sentence such as:

(18) Every angle of the triangle equals 180 degrees.

fails to give a totality reading. *Every* may be negated: e.g. in sentences like

(19) Not every linguist dances.

Its use does not seem to require the presence of other quantifiers. The sentence

(20a) Put every one of these books away.

sounds as complete as

(20b) Put all of these books away.

Every differs from *all* in not having pronominal status and not being able to float to auxiliary or post-verbal positions in quantifying the subject of a sentence.

In terms of number properties, *each* behaves like *every* in taking singular count nouns exclusively. It modifies neither cardinal nor ordinal numerals (cf. **each three days, *each third year*).

Each may quantify sets of only two members (cf. *Hold a book in each hand*). However, it may not cooccur with symmetric predicates (e.g. **Each of the blocks is similar*), and it cannot fall within the scope of negation, as seen from examples like **Not each linguist dances*. As observed by Vendler (1967) and McCawley (1977), *each* is incomplete without other quantifiers in the sentence. For example, (21a) does not sound as natural as (21b).

(21a) ?Put each of these books away.
(21b) Put each of these books in a drawer.

Similarly,

(22a) ?Susan assisted each executive.

sounds incomplete, but becomes acceptable with the addition of another quantifier, as in

(22b) Susan assisted each executive on a different day of the week.

The use of *each* seems to require some kind of pairing of quantifiers.

Each has pronominal status, and can float to the auxiliary and post-object positions. Thus one could express the meaning of (23a) in the form of (23b) or (23c):

(23a) Each of the men bought sandwiches.
(23b) The men each bought sandwiches.
(23c) The men bought sandwiches each.

2.2 Information about *all, every* and *each* in LDOCE2, OALD4, and COBUILD

All three dictionaries provide copious information about the linguistic properties of *all, every* and *each*. In LDOCE2 and OALD4, detailed usage notes are provided to elaborate on the similarities and differences between these quantifiers. The LDOCE2 gives the following usage note on *each* and *every*:

> USAGE Compare **each** and **every**. 1 **Each** before a noun takes a singular verb. You use **each** when you are thinking of the members of a group separately, or one at a time: **Each** *pupil was given a different book by the teacher.* **Every** always takes a singular verb. You use **every** when you are thinking of a whole group, or making general statements: **Every** *boy ran in the race.* | **Every** *child likes* (=all children like) *to get presents.* 2 **Each** can be used before *of*, or after a subject, in sentences like these: **Each** *of us wants to get a share of the money....We* **each** *have a room of our own.* **Every** cannot be used in these positions. (LDOCE2, at *every*)

The OALD4 offers the following explanation on the same two quantifiers:

> NOTE ON USAGE: **Each** and **every** are generally used as determiners before singular countable nouns. **Each** is used when the items in a group (of two or more) are considered individually: *Each child learns at his or her own pace.* **Every** indicates that all the items in a group (of three or more) are being regarded as members of that group. ....**Each (one) of** and **every one of** come before plural nouns and pronouns, but the verb is still singular: *Each of the houses is slightly different.* ○*I bought a dozen eggs and every one of them was bad.* ○*She gave each (one) of her grandchildren 50p.* **Each** can function as a pronoun on its own: *I asked all the children and each told a different story.* It can also follow a plural subject or an indirect object with a plural verb: *We each have a different point of view.* (OALD4, at *each*)

The relevant information may be given explicitly in the form of a note, or indirectly in the form of examples showing the word in one of the contexts in which it occurs. For example, both the LDOCE2 and the OALD4 make it very clear that *each* and *every* combine generally with singular count nouns, and that *each* can float to an auxiliary position following a plural subject. However, the two dictionaries only indicate implicitly through examples that *each* requires the presence of another quantifier in the sentence. Thus all the examples contain an additional quantifier besides the *each* phrase:

(24) Each of us wants to get a share of the money. (LDOCE2)
(25) We each have a room of our own. (LDOCE2)
(26) Each child learns at his or her own pace. (OALD4)[4]
(27) Each of the houses is slightly different. (OALD4)[5]
(28) I asked all the children and each told a different story. (OALD4)
(29) We each have a different point of view. (OALD4)

Table 1 below surveys the extent to which the twelve properties of *all, each* and *every* (a-l) are indicated in the three dictionaries. Indicated in the table in square brackets are the dictionaries which have included information on the

property corresponding to the quantifier concerned, either explicitly or through example sentences. In cases where the information provided is considered unclear or not explicit enough, a question mark is placed.

As can be seen from the table, the cooccurrence of the quantifiers with count or mass nouns and their number properties are described in all three dictionaries (Properties (a-c)). However, a great deal of variation is found with respect to properties (d-e), i.e. whether the quantifiers can modify cardinal and ordinal numerals.

The dictionaries indicate that *every* can modify cardinal numerals, as can be seen in the extracts below.

> **every**...2 (of things that can be counted, esp. periods of time) once in each: *He comes to see us every day/every three days.* (LDOCE2)
> **every**...3 (used to indicate regular occurrence at specified intervals) each: *The buses go every 10 minutes* **4**..**(b)** alternate: *They visit us every other week.* (OALD4)
> **4 Every** is used when you talk about frequency **4.1** in order to say that something happens at regular periods of time. E.G...*I visit her about once every six months.* ..**5**...If you say that something happens **every third** day, **every fourth** year, etc, you mean that it happens on one day in each period of three days, in one year in each period of four years, etc. (COBUILD)

However, only COBUILD further explains that *every* can modify ordinal numerals as well. LDOCE2 does not mention this usage, and OALD4 includes this only in the context of *every other*. None of the three dictionaries contain information on these two properties for *all* and *each*. How should learners intepret the absence of information on a lexical item? Shall they assume such cooccurence is impossible? This would obscure the difference between *all* and *each*: the former can modify cardinal numerals but not ordinal numerals, while the latter can modify neither.

Information about the size of the set quantified (Property f in Table 1) is included for *every, each*, but not for *all* in the latter's use with count nouns. As shown in the following extracts, while the LDOCE2 and the OALD4 describe this property for *every* and *each*, the COBUILD only touches on it in the entry for *every*.

> **every**..1 each (of more than two)....(LDOCE2)
> **each**..every single one of two or more things or people considered separately. (LDOCE2)
> **every**..(used with sing [C] *ns* to refer to groups of three or more which are seen as wholes) each individual...(OALD4)
> **each**..(used with *sing* [C] *ns* and *sing vs*)(of two or more) every (person, thing, group, etc) considered individually..(OALD4)
> **Every** is used to refer to each member of a particular group of more than two things or people...(COBUILD)

Table 1: Linguistic properties of *all*, *every* and *each* and learner's dictionaries which indicate these properties*

	All	*Every*	*Each*
a) $\_\_N_{c,sg}$	no [L,O,C?]	yes [L,O,C]	yes [L,O,C]
b) $\_\_N_{c,pl}$	yes [L,O,C?]	no [L,O,C]	no [L,O,C]
c) $\_\_N_{mass}$	yes [L,O,C?]	no [L?,O,C]	no [L?,O,C]
d) __cardinal numeral	yes	yes [L,O,C]	no
e) __ordinal numeral	no	yes [O?,C]	no
f) can quantify set of two	no	no [L,O,C]	yes [L,O]
g) compatible with symmetric predicates	yes	no	no
h) collective reading	yes [L?,O?,C?]	no [L?,O?,C?]	no [L?,O?,C?]
i) can be in scope of Neg	yes [L,O]	yes [O]	no
j) requires quantifier pairing	no	no	yes [L,O,C]
k) can function as pronoun	yes [L,O,C]	no	yes [L,O,C]
l) Q-float	yes [L,O,C]	no [L,O]	yes [L,O,C]

* The properties (a-l) correspond to the properties (a-l) discussed earlier. They are based on discussions in Vendler (1967), McCawley (1977), Hogg (1977), Aldridge (1982); N=noun, sg=singular, pl=plural, Q=quantifier, L=LDOCE2, O=OALD, C=COBUILD. *?* means the information on the relevant property is not clear in the dictionary preceding ?. Absence of a dictionary label under a *yes* or *no* means that the dictionary does not contain information on that property.

With regard to the more subtle semantic properties (g-j), as observed earlier both the LDOCE2 and the OALD4 contain examples showing that *each* is generally used with another quantifier in the sentence (Property j). COBUILD likewise lists examples illustrating this property:

(30) She kept a card index for each child.
(31) If you have more than one employer, you will need a certificate for each one.

None of the dictionaries indicate, either explicitly or through examples, the possibility for *all* to cooccur with symmetric predicates. Nor do they tell the reader that this is not an option for *every, each* (cf. Property g).

Some degree of variation can be observed with respect to scope interaction with negation (Property i). The OALD4 indicates through examples that the quantifiers *all* and *every* can be negated (33-34). The LDOCE2 also includes this information for *all* but not for *every*, as can be seen in (32). On the other hand, COBUILD contains no such information, apparently restricted by its corpus base.

(32) Not all water is suitable for drinking. (LDOCE2)
(33) All horses are animals, but not all animals are horses.
/Some of the food has been eaten, but not all (of it). (OALD4)
(34) I couldn't hear every word of his speech. (OALD4)

While all three dictionaries contain some statements about the collectivity of *all* vs the distributivity of *each* and *every*, the information given is quite obscure, and not adequate to inform the learner about a choice in a particular context. For example, below are the definitions of the three quantifiers in COBUILD. One might think that sense 1.1 of *all* gives the totality reading of the word. However, sense 3 of *every* also says one may use the word to refer to all the members of a set, suggesting a collective reading. The example sentence for sense 3, which contains both *all* and *every*, is of no help in differentiating the two quantifiers:

(35) The crowd was of all ages and every colour.

Which quantifier should one then select in the context

___(one of) the angles of a triangle equal 180 degrees.

or in the context illustrated by (12), i.e. *Answer each question/all questions*?

> All: is used 1.1 when you are referring to the whole of a particular group or thing...1.2 when you are referring to everyone or everything of a particular kind.
>
> Every..1 is used to refer to each member of a particular group of more than two things or people, when you are emphasizing that you are considering them all; ...3 Every is used to refer to all the members of a group of people or set of things that there may possibly be.

> **Each**...1 If you refer to each thing or each person in a group, you are referring to every member of the group and considering them as individuals... 2 **each** is used to emphasize that you are referring to every individual thing or person in a group.

Further, a certain degree of circularity can be observed in the definitions. COBUILD defines *all* in terms of *every*, *every* in terms of *each*, *all*, and *each* in terms of *every*, as can be seen from the above.

The syntactic properties (k-l) are generally encoded clearly in the dictionaries. The LDOCE2 and the OALD4 say in their usage notes that *all* and *each* can come after a subject noun or pronoun, and that *every* cannot be so used. The COBUILD does this by exemplification, as in:

(36) We each have our private views about it.
(37) He offered me the tin of biscuits and my sister and I had one each.

The pronominal status of the quantifiers is also described either through examples or in usage notes.

The above survey has shown that while most of the properties of *all*, *every* and *each* are touched on in some form in the three dictionaries, the range of relevant information may vary from one dictionary to another. Further, some properties (e.g. the cooccurrence possibilities with symmetric predicates) do not receive any mention at all, and the treatment of some other features (e.g. the availability of the collective reading) may be too obscure to be of use to the learner. Despite the detailed usage notes, learners may still face difficulty in coping with the idiosyncratic properties of individual quantifiers in English.

2.3 Semantic properties of *any*

The last quantifier to be examined is *any*, which is also a difficult word for Chinese language learners of English. Linguists generally agree that there are two types of *any*. One is called free-choice *any*, as in (38a-b) (cf. Vendler 1967, Carlson 1981). Vendler argues that semantically a free choice must be available in a sentence before free-choice *any* can be licenced. For example, (38c) is not acceptable, because one cannot choose to have an attribute of an object. Similarly, (38d) sounds odd because one cannot have a choice of actions in an event that has been accomplished. However, (38a) is acceptable, because the latter sentence is irrealis. This also explains why free-choice *any* is also sanctioned by modality contexts, as in (38b).

(38a) Open any of the parcels.
(38b) Any doctor will tell you smoking is not good for your health.
(38c) *Any of these blocks is yellow.
(38d) *I opened any of the parcels

The other type of *any* is polarity-sensitive *any*. I will follow Ladusaw (1980)'s analysis that this is an existential quantifier that has to take inherent narrow scope with respect to negation[6]. In this analysis, the contrast between the two sentences in (38a) is represented by the difference between the scope

representations 'There does not exist x=a novel such that I read x in the summer' and 'It is not the case that for all x=novel, I read x in the summer'. This requirement that polarity-sensitive *any* must have narrow scope with respect to negation explains why **Anyone didn't arrive* is not grammatical: *anyone* must fall within the scope of negation, but as subject of the sentence, it is located in a position that makes this impossible.

(39a) I didn't read any of the novels in the summer/
I didn't read all of the novels in the summer.
(39b) Did you read any novel?
(39c) Only John ever eats any meat for breakfast.
I hardly ever eat any meat.
(39d) If anyone ever catches on to us, we will be in trouble.
(39e) I was surprised/*sure that he would accept any favor from her.
(39f) He was ashamed/*glad to take any money.
(39g) Patrick is afraid/*eager to make anyone mad.
(39h) It is difficult/*easy to find any squid in the market.

It is well known that polarity-*any* is not only sanctioned by triggering elements such as negation, the question operator, certain adverbs, and conditional clauses (as in (39a-d)), but also by certain types of verbs and adjectives (cf. Klima 1964, Jackendoff 1972). These predicates do not need to have negative meaning at all (cf. 39e-h). The correct formulation of the condition is given by Ladusaw in terms of the semantic notion of 'downward entailment'.[7]

2.4 Information on *any* in LDOCE2, OALD4, COBUILD

It is interesting to observe that the two types of *any* are clearly demarcated in the three dictionaries. LDOCE2 lists free-choice *any* before polarity-*any*, while OALD4 and COBUILD list the polarity-sensitive *any* first.

> any 1 every; (of more than two), no matter which: *They are all free- take any (of them) you like/ Any child would know that...They haven't arrived yet but we're expecting them at any moment.* (LDOCE2)
> 2 [usu. in questions or negatives] a some; even the smallest number or amount: *Have you got any money?....I admire her for her determination, but not for any other reason... I never seem to get any.....Come and see me if you have any time.* (LDOCE2)
> any..1 (used in negative sentences and in questions; after *if/whether*; after *hardly, never, without*, etc; and after such vs as *prevent, ban, avoid, forbid*)...(OALD4)
> 2(a) ...one out of a number, (the particular choice being unimportant): *Take any book you like* ○ *Give me a pen- any pen will do,* ○ *Phone me any day next week.* (OALD4)
> any ..1 You use any in negative statements, questions, and conditional clauses...*She had hardly any money...It won't do any good...Were you in any danger?..It is unnecessary for me to add any comment..Discuss it with your female colleagues, if you are lucky enough to have any..* (COBUILD)

2 You use **any** in positive statements when you are referring to something or someone without saying exactly what, who, or which kind you mean, often because being exact is not possible or does not matter. EG *Any big tin container will do..Cars can be rented at almost any U.S. airport.* (COBUILD)

Generally the dictionaries list the relevant environments for polarity-sensitive *any*: questions, negation, conditionals, and negative adverbs. No verbs or adjectives are given as a licencing environment in LDOCE2. However, there is one example of an adjectival environment in COBUILD (ie *unnecessary*), and there is explicit mention of verbs such as *prevent, ban, avoid, forbid* (all negative in meaning) in OALD4, whose treatment of polarity-*any* is the most elaborate.

With respect to free-choice *any*, the examples include imperatives, modal contexts, and irrealis contexts. However, none of the dictionaries discuss the scope properties of *any* explicitly: the fact that polarity *any* must have inherent narrow scope with respect to negation. So learners may still be unclear about errors such as

(40) *Anyone didn't arrive.

3. Information on the argument structure of verbs

The argument structure of predicates is an important aspect of their lexical semantics. Learning the semantic property of predicates entails learning the kinds of arguments it takes, and how they map onto syntactic positions.

Do learner's dictionaries systematically encode information about argument structure? I will examine this question by looking at the entries of dative verbs and manner-of-speaking verbs.

3.1 Dative verbs

It is well known that dative verbs are subject to two types of constraints. The first constraint is a morphophonological constraint which by and large prohibits Latinate verbs from the double object environment. Thus, while *send* and *buy* can occur in the double object construction, *deliver, explain* and *recommend* cannot, being Latinate in origin.

The other constraint is primarily a semantic constraint responsible for the difference between (41a) and (41b), or the difference between (41c) and (41d).

(41a) John sent Mary a book.
(41b) ?John sent Mars a rocket.
(41c) John bought Mary a tennis racket.
(41d) *John watched Mary a television programme.
(41e) John phoned Mary a doctor.
(41f) John cooked Mary a meal.
(41g) John washed Mary some socks.

The generalization, according to Goldsmith (1980), is that the first postverbal NP in a double object construction (the indirect object) must denote the prospective possessor of the referent of the second postverbal NP (i.e. the direct object). (41b) sounds odd because Mars is a location and not a goal of the action of sending. (41c) is acceptable since Mary is the prospective possessor of a tennis racket. In (41d), John is watching the television programme on behalf of Mary, but Mary is not the prospective possessor of the television programme, hence the unacceptability of the sentence.

It should be pointed out that the constraint is not an absolute prohibition, in the sense that it can be satisfied as long as the referent of the direct object can be construed as being possessed by the referent of the indirect object in some way. For example, (41e) is acceptable even though Mary does not literally possess the doctor. But the relationship is close enough to satisfy the constraint. For the same reason, native speakers find sentences such as (41f-g) highly acceptable (cf. Allerton 1978).

The findings in Table 2 reveal how the three dictionaries treat the verbs *buy, send, recommend, explain, deliver, cook, wash* and *phone*. It is interesting to note that the three dictionaries concur in giving the double object frame for *buy, send* and *cook*. In the case of *recommend*, LDOCE2 and OALD4 specify that the verb can appear in a double object construction, but COBUILD does not provide this information.

However, none of the dictionaries say whether *explain, deliver* or *wash/phone* can occur in a double object construction. The absence of positive information is hard to interpret for the learner. While *explain/deliver* is barred from the double object environment, *wash* and *phone* are permitted, as seen from the data reported in Allerton (1978).

Table 2: Specification of the double-object complement environment in English Learner's Dictionaries*

	LDOCE2	OALD4	COBUILD
buy	yes	yes	yes
send	yes	yes	yes
recommend	yes	yes	no
explain	no	no	no
deliver	no	no	no
cook	yes	yes	yes
wash	no	no	no
phone	no	no	no

* In this table, a *yes* means that the dictionary lists the double-object frame or gives relevant examples.

3.2 Manner-of-speaking verbs

Manner-of-speaking verbs are verbs such as *shout, shriek* or *murmur,*" which refer to "intended acts of communication by speech and describing

physical characteristics of the speech act" (Zwicky 1971:223). One property of the argument structure of these verbs, according to Zwicky, is that it may have a direct object, which is either a nominal referring to the product of a speech act, or a sentential complement (*that* clause, indirect question, or infinitival construction). The question that confronts the learner is which verbs may be subcategorized for which complement environments.

To illustrate the learner's problem, let's consider the verbs *shout, whisper, shriek* and *moan*. Which of these can take a nominal object? Which can take a that-clause, an infinitival clause? These are practical issues a learner is faced with when learning how to use these verbs properly.

Table 3 below shows a great deal of variation in the three dictionaries with respect to the information they provide about the argument structure of manner-of-speaking verbs.

Table 3: Complements of manner-of-speaking verbs specified in English Learner's dictionaries*

	LDOCE2	OALD4	COBUILD
shout	__NP __inf.clause	__*that* clause __inf. clause	__NP
whisper	__NP	__NP __*that* clause	__NP __*that* clause
shriek		__NP	__NP
moan	__*that* clause		__*that* clause

*In this table, quotation complements are excluded: for example, examples like *'Help!', he shouted.*

For *shout*, COBUILD says it can take a nominal object:

(42) He shouted an order and they halted...

LDOCE2 says it can take a nominal object or an infinitival clause as complement, as in:

(43) The crowd shouted slogans and threw stones at the police...I shouted to him to stop.

OALD4 says it can also take a *that*-clause as complement, as in:

(44) He shouted to me that the ship was sinking.

In the case of *whisper*, both OALD4 and COBUILD indicate that it can be followed by a *that*-clause or a nominal object, as in

(45a) She whispered a word in my ear.

(45b) She whispered in my ear that she wanted to go to the toilet.

However, LDOCE2 only specifies the nominal environment.

Shriek is listed only as an intransitive verb in LDOCE2. Its transitive use is, however, given in both OALD4 and COBUILD, which show examples of the verb taking a nominal object:

(46) shrieked (out) a warning (OALD4)
(47) Outside the courtroom girls shrieked abuse at the lawyers. (COBUILD)

As for *moan*, LDOCE2 and COBUILD say that it can have a *that*-clause complement, illustrated by examples such as:

(48) She's always moaning that she has too much work to do. (LDOCE2)

(49) She..moaned that her husband had abandoned her. (COBUILD)

However, OALD4 does not give any relevant information at all. The dictionary also does not remark on the semantic difference between the complement environments. It has been observed that the choice of a *that*-clause vs an infinitival clause may reflect different meanings (cf. Riddle 1975). In

(50) X shouted to him that the ship was sinking.

the event denoted by the complement occurs before the act of shouting; but in

(51) X shouted to him to shut the gate.

the act of shouting occurs before the event of shutting the gate.

Information about the inability of manner-of-speaking verbs to function as performative verbs is also missing from the dictionaries. By this property, one cannot say (52a) (as opposed to (52b)).

(52a) ?I shout that someone has committed theft.
(52b) I claim that someone has committed theft.

4. What grammatical information should be included in dictionaries?

The above survey of the treatment of quantifiers and manner-of-speaking verbs has demonstrated clearly that contemporary lexicographers have been making a conscious effort to incorporate subtle and complex semantic information into learner's dictionaries. It should also be observed that alongside this, linguists have also turned their attention to potential applications of linguistic research to lexicographic work (cf. McCawley 1986, Fillmore 1989, Levin 1991). This exchange between lexicographers and linguists should lead to a further improvement of learner's dictionaries. Some of the inadequacies and inconsistencies observed in the preceding discussion may disappear when new editions are compiled.

The question still remains, however, as to what types of grammatical information one should include in dictionaries. Some grammatical features may be relatively easy to state (e.g. Property (a-c) of *all, every* and *each*). Others are difficult to describe in simple terms (e.g. the downward entailment condition that characterizes the licencing environment for polarity-sensitive *any*). Some grammatical properties may reflect a general constraint, whereas others reflect lexical idiosyncracies.

The abstractness of the grammatical property in question should not be a hindrance, as long as it can be shown through examples. This is essentially what has been practised in the dictionaries' treatment of the 'quantifier pairing' property (j) of *each*. There is no reason why one could not extend this practice to the treatment of polarity-sensitive *any*, for instance, in giving examples of verbs and adjectives that are downward-entailing. Admittedly, it would still be difficult for learners to grasp the generalization of downward entailment, but at least learners will be led through these examples to realize that polarity-sensitive *any* is not simply triggered by certain syntactic contexts and verbs that carry negative meanings.

Learnability considerations may also be relevant. For example, should information such as the morphophonological constraint or the 'prospective possessor' constraint on dative verbs be included in dictionaries? In this connection, a distinction can be drawn between the two constraints. The morphophonological constraint is a superficial one going back to the etymological origin of the verb. The latter, however, seems to be tied to deeper semantic relations between the complement frames __NP PP and __ NP NP (cf. Gropen et al 1989). A recent study of the acquisition of the English dative by Chinese learners (Hua 1991) shows that even final-year university English majors are not entirely sensitive to the morphophonological constraint. On the other hand, intermediate learners are already aware of the semantic constraint. In view of this, one may argue that it is the morphophonological constraint that needs to be included in dictionaries. The semantic constraint seems to be something general about the grammar and need not be included at all. If this principle is adopted, then lexicographers need not worry about the inclusion of explanations on the difference between (53a) and (53b).

(53a) John bought Mary a tennis racket.
(53b) John watched Mary a television programme.

However, it would benefit the learner to include discussion of the unacceptability of

(54) *John explained me the problem.

Notes

(1) This paper is based on a presentation given at the Seminar on Lexis, held at the University of Science and Technology, July 6-7, 1992. I wish to thank participants of the workshop, as well as Elza Lam, Richard Pemberton and Gladys Tang for comments on an earlier draft of the paper. This article will also appear in R. Pemberton and E. Tsang (eds) *Studies in Lexis*. Hong Kong: University of Science and Technology.

(2) Roger Berry has pointed out to me that Fillmore's criticism is not entirely valid, since one could use *common*$_2$ in a predicative position if it is followed by a complement, as in "This stylistic feature is common to all contracts."

(3) The representation of scope requires theoretical constructs such as operators (e.g., there is a x, for all y) and variables (e.g. x, y) as well as well-formedness conditions governing the binding of variables. It seems plausible to assume that abstract constructs such as operators and variables are not learned inductively, but are part of the initial state of the child.

(4) This is an example of a pronoun functioning as a quantifier. The sentence may be paraphrased as: 'For each child x, x learns at x's own pace'. So the observation that the sentence contains an additional quantifier to the *each* phrase remains valid here.

(5) This may also seem a counter-example, but as analyzed in Keenan (1987), the semantics of *different* requires a pairing of arguments.

(6) Intuitively, an element is said to be within the scope of negation if it is part of what is negated. A sentence like "Nobody came" can be represented as 'Not (there is a x) such that x came', in which the existential quantifier falls within the scope of the negator.

(7) The reader is referred to Ladusaw (1980) for the technical formulation of the condition of downward entailment. Here, I would like to illustrate informally how the notion works with adjectives. In the following two sentences, in which the complement clauses contain noun phrases which bear subset relations to each other (cf. *a favor* vs *a small favor*), (a) entails (b). In all contexts in which (a) is true, one would expect (b) to be also true.

(a) I was surprised that he would accept a favor from her.
(b) I was surprised that he would accept a small favor from her.

This shows that *surprised* is downward-entailing and will licence *any* in the complement clause (cf. 39e). The entailment is 'downward' since the set of entities represented by *favor* in (a) is a superset of the set of entities represented by *small favor* in (b). Note that this entailment relationship does not hold for *sure*.

(c) I was sure that he would accept a favor from her.
(d) I was sure that he would accept a small favor from her.

If (c) is true, (d) may still not be true, since the speaker may be sure that he would accept some favor from her, but not sure about whether it would be a small favor or a big favor. Thus, *sure* is not downward-entailing and does not allow *any* to occur in the complement clause (cf. 39e).

References

Dictionaries:

Cowie, A. 1989 (ed.) *Oxford Advanced Learner's Dictionary of Current English*. 4th ed. OUP. (OALD4)

Sinclair, J. 1987 (ed.) *Collins COBUILD English Language Dictionary*. London: Collins. (COBUILD)

Summers, D., 1987 (ed.) *Longman Dictionary of Contemporary English*. New ed. Longman. (LDOCE2)

Other references:

Aldridge, M. 1982. *English Quantifiers*. Avebury.

Allerton, D. 1978. "Generating indirect objects in English" *Journal of Linguistics* 14: 21-33.

Benson, M., E. Benson, and R. Ilson, 1986. "Grammar in the dictionary" *Lexicographic Description of English*. Amsterdam: John Benjamins. pp. 228-250.

Carlson, G. 1981. "Distribution of Free-Choice *Any*", in R. Hendrick, C. Masek, and M. Miller (eds). *Papers from the 17th Chicago Linguistic Society Meeting*: 8-23.

Cowie, A. 1987a. (ed.) *The Dictionary and the Language Learner*. Tübingen: Niemeyer.

Cowie, A. 1987b. "Syntax, the dictionary and the learner's communicative needs", in A. Cowie (ed.) pp. 183-192.

Ferris, D. 1990. "An example of interaction between syntax and semantics" in J. Tomaszczyk and Lewandowska-Tomaszczyk (eds.) pp. 113-122.

Fillmore, C. 1989. "Two dictionaries". *International Journal of Lexicography*, vol. 2, no. 1, pp. 57-83.

Goldsmith, J. 1980. "Meaning and mechanism in grammar", in S. Kuno (ed.) *Harvard Studies in Syntax and Semantics* vol. 3: 423-449.

Green, G. (1974) *Semantics and Syntactic Regularity*. Bloomington: Indiana University Press.

Gropen, J., S. Pinker, M. Hollander. 1989. "the learnability and acquisition of the dative alternation in English. *Language* 65. 2: 203-257.

Hartmann, R. 1983 (ed.) *Lexicography: Principles and Practice*. Academic Press.

Herbst, T. 1984. "Adjective Complementation: a valency approach to making EFL dictionaries", *Applied Linguistics* 5.1: 1-11.

Hogg, R. 1977. English Quantifier Systems. North Holland.

Hornstein, N. 1984. *Logic as Grammar*. Cambridge, Massachusetts: MIT Press.

Hua, Dongfan. 1991. "Constraints on dative acquisition by Chinese ESL learners", *CUHK Papers in Linguistics* No. 3: 1-27.

Jackendoff, R. 1972. *Semantics in Generative Grammar*. Cambridge, Massachusetts: MIT Press.

Keenan, E. (1987) "Unreducible n-ary quantifiers in natural language", in P. Gärdenfors (ed.), *Generalized Quantifiers*. Dordrecht: Reidel. pp. 109-150.

Klima, E. (1964) "Negation in English" in J. Fodor and J. Katz (eds) *The Structure of Language*. Englewood Cliffs, NJ: Prentice Hall. pp. 246-323.

Ladusaw, W. 1980. Polarity Sensitivity as Inherent Scope Relations. Bloomington: Indiana University Linguistics Club.
Levin, B. 1991. "Building a lexicon: the contribution of linguistics" *International Journal of Lexicography* 4.3: 205-226.
Maingay, S. and M. Rundell, 1987. "Anticipating leaners' errors- implications for dictionary writers", in Cowie (ed), pp. 128-135.
McCawley, J. 1977. "Lexicographic notes on English quantifiers", in W. Beach, S. Fox, and S. Philosoph (eds) *Papers from the 13th Chicago Linguistic Society Meeting*. pp. 372-383.
McCawley, J. 1986. "What linguists might contribute to dictionary making if they could get their act together" in P. Bjarkman and V. Raskin (eds). *The Real World Linguist*. Norwood, NJ: Ablex. pp. 3-18.
Riddle, E. 1975. "Some pragmatic conditions on complementizer choice" in R. Grossman, L. San, and T. Vance (eds). *Papers from the Papers from the 11th Chicago Linguistic Society Meeting*. pp. 467-474.
Tomaszczyk, J. and B. Lewandowska-Tomaszczyk, 1990 (eds.) *Meaning and Lexicography*. John Benjamins.
Vendler, Z. 1967. "Each and every, any and all" in *Linguistics in Philosophy*. Cornell University Press. pp. 70-96.
Zwicky, A. 1971. "In a manner of speaking" *Linguistic Inquiry* 2.2:223-233.