LEXICAL ANALYSIS OF THE VERB COOK AND LEARNING VOCABULARY: A CORPUS STUDY

Priyono

(brospri@gmail.com)

Universitas Mataram Jl. Majapahit 62, Mataram 8312, Indonesia

Abstract: English verbs have built-in properties that determine how they behave syntactically and generate appropriate meaning associated. With these inherent properties some verbs can fill in only in certain syntactic structures and some in others. The observation of the verb COOK using English corpus has revealed its lexical properties covering the area of syntax, semantics, and collocation suggesting uniqueness of its behaviours that are distinguishable from other verbs. Having found the lexical properties of COOK, this article concludes that the acquisition of lexical properties that reflect their level of competence. It also argues that the acquisition of lexical properties should be implicit, not through meta-linguistic knowledge. This would render early grammar teaching unnecessary. The acquisition of lexical properties should take place through subconscious process, not explicit grammar instruction. Many of these are grammatical aspects such as word order, sentence construction, grammatical and lexical collocations.

Key words: lexical properties, acquisition of lexicon, competence.

Findings on lexical studies demonstrate that a lexical item (in this case a verb) turns out to have complex properties (Levin, 1993; Priyono, 1998). Semantically, verbs often carry more than one meaning and fall into various semantic categories. A syntactic perspective, however, shows lexical constraints in the syntactic structures in which verb is the central element. A lexical constraint is a rule that restricts verbs to behave in a peculiar way. Some verbs strictly require objects to express meaning in a sentence, some can only appear without ob-

jects, and others can appear with or without objects. The syntactic variants of a verb are also lexically constrained. For example, a verb like *give* can dativize, as in *he gave me some money*, but a verb like *eat* cannot, *he ate me some sandwich. Likewise, the verb break can alternate to an unaccusative variant as in the window broke, but not write in *a novel wrote.

The verb is evidently central for grammatically acceptable syntactic structure. The nature of the verb meaning selects other syntactic elements to cooccur in a sentence. These elements are typical subjects and objects, and other collocations. The following sections will demonstrate that animacy of subject and object is an important factor contributing to the lexical properties of a verb, and collocational knowledge of this kind is an integral part of the acquired lexicon. With this theoretical construct, the verb *cook* will be observed, analyzed, and discussed in relation to vocabulary learning.

For learners of English as a foreign language, lexical competence is an important issue. One of the major problems for learners is to acquire English verbs' lexical properties. This lexical competence includes the knowledge of the following aspects:

- 1. Whether the verb is strictly transitive or intransitive.
- 2. Whether the intransitive verb is ergative or unergative.
- 3. The syntactic structures that the verb can enter.
- 4. The verb argument structures which include the typical subjects/objects of the transitive, or the typical subjects of the intransitive.
- 5. The lexical and grammatical collocation of the verb.
- 6. The meaning of the verb.

This list is not intended to be comprehensive, but to constitute a conceptual structure of the lexical item suggesting that verb has built-in properties encoding syntactic, semantic and collocational aspects. The complexity of the verb conceptual structure could be the account for the fact that verbs are difficult to learn (Ard & Gass, 1987; Yip, 1994). The difficulty could be attributed to the inherent nature of the English verb lexicon and quite possibly interlanguage. Ard and Gass (1987) and Yip (1994) discovered that the English ergative verbs are troublesome even for advanced ESL learners.

The results of this study present detailed behaviors of the verb *cook* derived from the citations of the corpus data. In the few following sections, the verb is examined to identify the relevant aspects of its built-in structure and the

way in which inter-language may interfere with this structure. The presentation of the data will display the syntactic property of the verb, aspects of meaning, and collocational information. Discussion will follow the description of the properties of the verb *cook*.

THE VERB COOK IN CORPUS

The corpus used as a source of data in the investigation is one compiled for The Macquarie Dictionary known as Ozcorp. This corpus was set up in 1990 by The Macquarie Library Pty Ltd, the publisher of *The Macquarie Dictionary*. The Ozcorp has been constantly extended – it covers texts gathered from novels, newspapers, short-stories, popular non-fiction books, poetry, magazines, autobiography, and manuals/guides/handbooks. This diversity provides sufficient generality and meets the requirement for this study in that it is a relatively general, open-ended collection of texts. It consists mostly of full texts (overall about 250) rather than samples. The total number of words is about 20 million (supposedly, it is currently much more than that).

Three basic programs used to draw citations are Concordance, Sentence, and Collocation. Concordance displays the lexical item under investigation roughly in the middle of each citation, but it does not show a complete use of the lexical item. It is, however, quite effective to have a glance of how the item looks in use. Sentence program, on the other hand, does not place the lexical item in the middle but it mostly shows complete sentences in which the item is being observed. In this way, Sentence program provides more information on syntactic and semantic lexical properties. Collocation program displays co-occurrence of word with others. It also provides statistical information about word frequency in addition to collocational properties.

There are 1628 matches of the word *cook* in the corpus. Quite interestingly, approximately 71% occur as noun, including proper names. The number of occurrences of the verb *cook* is surprisingly lower than the noun. The sentence concordance shows only 478 (about 29%) occurrences as verb compared to 1150 occurrences as nouns. The statistical information from the corpus is summarized in Table 1. This verb has both transitive and intransitive uses, but as can be seen from Table 1, the transitive use is more common than the intransitive. The remaining seven occurrences of *cook* cannot be used because of the deficiency in the data such as truncation or incomplete sentences. Within these syntactic categories, more detailed information is found in the corpus.

Table 1. Frequency of Occurrences

Transitive	270
Intransitive	201
Others/Unidentified	7
Total Occurrences	478

This is also presented in Table 2. This table indicates that the transitive verb can be elaborated into syntactic sub-categorization. The transitive *cook* falls into four syntactic types, at least, which can be labeled as Dative, Benefactive, Simple Transitive, and Transitive with Object permuted. But within each sub-categorization, more specific variants have been found. The following examples will elaborate the details.

Table 2. Syntactic Types of the Transitive cook

1. Dative	13
2. Benefactive Construction	22
Benefactive Reflexive	4
3. Simple Transitive (with direct object only)	219
4. Transitive with Object permuted	12
Total	270

CHARACTERISTICS OF SYNTACTIC PROPERTIES OF THE VERB COOK

The Transitive Cook

Dative

Dative refers to sentence structure that involves two objects. One is directly affected by the action denoted by the verb. The other is an object that has no immediate relation to the verb, but it is usually placed right after the verb.

- (1) I'll light the fire and cook you some bacon and eggs
- (2). ... and we will cook you some Italian food ...

Both Sentences 1 and 2 are the normal dative construction characterized by the presence of two objects and the permutation of the indirect object to position and the deletion of the benefactive preposition *for*.

Benefactive

Benefactive is like Dative in that two objects involve in action denoted by the verb. One of the two objects is known as Recipient or beneficiary and is marked by the prepositions *for* or *to*.

(3)she answered the advert and went to Lilly's home to cook a meal for him as part of her job assessment.

This benefactive construction is identifiable from the existence of an additional participant, a Benefactive or Recipient is introduced by a preposition *for* (or *to*) as shown in Sentence 3. Table 2 shows that another variant of the Benefactive construction has been found in the corpus, that is, Benefactive Reflexive. This variant is illustrated in Sentence 4 below.

(4) Once I tried to cook them for myself in an old frying-pan I'd cadged from her.

There is also another type of Benefactive Reflexive (Sentence 5), but this sentence has been categorized as Pseudo Intransitive, that is, the object is not expressed but understood.

Simple Transitive

The simple transitive can be identified from the existence of a single object in the sentence, no other object either expressed or unexpressed. The simple transitive as illustrated in Sentence 5 below is the most frequent syntactic variant of the transitive *cook*. Out of the 270 occurrences, 219 (81%) is simple transitive.

(5) She would cook his meals and mend his....

Transitive with Object Permuted

This transitive variant is characterized by the permutation of its object. In the normal sentence construction the object occurs after the verb. In this variant, the object precedes the verb. Consider the following sentence.

(6) What several chefs or housewives might do given identical pieces of meat to cook.

In this sentence, the object of the verb *cook* is *pieces of meat*. The object permutation is in fact quite common in the transitive use. There are 13 occurrences of instances like Sentence 6 in the corpus.

The Intransitive Cook

The intransitive *cook* can be classified into three syntactic categories. As shown in Table 3, the three categories are Pseudo Intransitive, Characteristic Property of Agent, and Pure Intransitive (Kilby, 1981; Atkins et al, 1986). Table 3 shows that pseudo is the most common intransitive occurrence, but the three will also be described in the following sections.

Table 3. Syntactic Categories of Intransitive cook

Pseudo Intransitive	177
Characteristic Property of Agent	20
Pure Intransitive	4
Total	201

Pseudo Intransitive

Pseudo intransitive refers to expressions that do not show any objects on the surface but semantically imply that an object is involved.

(7) Remark and Dad could afford to pay someone to cook.

Sentence 7 is one of 177 similar sentences in the citations. This is what Kilby (1981) refers to as Pseudo Intransitive. This type of intransitive is characterized by the absence of surface object, but implies one, that is, the entity being affected (cooked) by the verb. In this example, to cook means to cook something,

some kind of food. Semantically, it is not possible that the verb *cook* does not involve an object, although it does not appear on the surface. Therefore, the intransitive status is not genuine.

Characteristic Property of Agent

The verb *cook* in this category is similar to pseudo intransitive but is different in that it describes the characteristics of the agent.

(8) all the things a woman must do: feed the animals, cook, clean, make tortillas and

The verb *cook* in Sentence 8 is also pseudo intransitive in the same sense described for Sentence 7. However, *cook* in sentence 8 is part of the predicate describing the general characteristics of the subject *a woman*. Therefore, the verb *cook* in this example bears the characteristic property of the agent (see Atkins et al, 1986).

Pure Intransitive

The verb *cook* in this category (pure intransitive) does not involve any objects on the surface as well as in semantic structure. Usually the subject is inanimate

(9) because the fire wouldn't go and the breakfast wouldn't cook – the fat in the frying pan wasn't ...

It is evident from this citation that inanimacy of subject or object is an important determinant for verb behavior. The verb *cook* has a pure intransitive use when the subject is inanimate. The corpus data have indicated that the intransitive *cook* with animate subject cannot completely eliminate the notion of object, as evident in the pseudo intransitive. However, as shown in Sentence 9, the inanimate subject *the breakfast* does not take or even imply an object. It is in fact quite impossible for an inanimate subject like *the breakfast* to be the instigator of the action cooking. In these instances, the verb *cook* has a genuinely intransitive use.

Semantic Information

The corpus data has revealed that the verb *cook* can be classified into two different semantic categories: Change-of-state and Creation. The change-of-state verbs are distinguished from the creation verbs by examining the relation-ship between the verb and its object. The object of a change-of-state verb exists prior to the eventuality denoted by the verb, but the state of the entity undergoes some changes. In contrast, the object of a creation verb does not exist before the event takes place.

- (10) Some stayed ashore to light the fire and cook the potatoes and sausages.
- (11) She would cook his meals and mend his clothes, and they......

The object of the verb *cook* in Sentence 10, *the potatoes and sausages*, is already in existence even before the event of cooking. But in Sentence 11, the object *his meals* exists only after the cooking. Before the cooking takes place, the entity might be some kind of raw materials not ready for consumption. The sense of creation is therefore derived from this point.

Obviously the relationship between the verb and its object is an important aspect of meaning. In this case, the type of object affects the meaning of the verb. Sentences 10 and 11 show that the semantic category of *cook* changes as the verb takes different kind of objects.

Collocational Information

One of the collocational problems is the distance between a word and its collocates. Proximity turned out to be misleading measure for collocation, since a word which occurs adjacent to another does not necessarily have a close semantic or syntactic relation with it. For example, in Sentence 12, *cook* is more related to *dinner* than to *the* or *Christmas*, although it stands two words away from the collocate.

(12) I'll cook the Christmas dinner.

The proximity of the verb *cook* to *dinner* can be attributed to the object noun phrase (the Christmas dinner) whose structure is headed by the noun *dinner* (cf. Jackendoff, 1977).

The relation of *cook* and *dinner* is formed by the meaning of the verb and the syntactic roles of the verb and its object.

The Subject/Object of the Verb Cook

Out of 478 occurrences, 211 subjects of the verb *cook* have been identified. The remaining 267 have no subjects due to the following reasons:

- a. 30 occurrences are truncated or appear as incomplete sentences.
- b. 61 occurrences appear as imperative statements which consequently bring no subject.
- c. 176 occurrences are non-finite, the clause or phrase where the verb *cook* stands is subordinated to the main clause. As subordinate clause, the verb *cook* is often a part of the complement or object of the other verb in the main clause.

The collocational information drawn from the corpus data will therefore be examined by considering the semantic and syntactic relation between the verb and its subject/object for lexical collocation; and between the verb and grammatical items for grammatical collocation.

The subject profile of the verb *cook* shown in Table 4 indicatesno peculiarity. Almost all are animate subjects, as expected.

Table 4. The Subject Profile of cook

Animate	
Personal pronouns	170
Proper names	15
Women	3
Wife	2
Mummy/mother	2
Chef	2
Italians, Scout, Servants, Father, People, Cook, Soldiers, Kids,	11
Waiter, Fishermen Breakfast (Once respectively)	
Inanimate	
Fires	1
Total	211

The subjects women, wife, mother, chef, servants, waiter, granny, scout are all within the range of typical subjects of cook. The unusual example is when the subject is inanimate.

(13) while the fires were burning to cook their meat in the earth ovens, just as

The subject of Sentence 13 is the inanimate *fires*. Interestingly, it takes an object, which creates a perception as if the fires were the agent of the action cooking. For ESL learners, it is probably not difficult to understand, but they are unlikely to produce it. In Indonesian, the transitive *cook* normally goes with animate subject.

The results in Table 5 show that this particular construction should be approached differently. The typical objects of the transitive *cook* are superordinate *food* and its hyponyms such as *stew*, *pasta*, *fried rice*, *eggs*, *cake*, etc. The next most common object is the superordinate *meal* and its hyponyms *break-fast*, *lunch*, *dinner*, *and supper*. This can be seen in Table 5. These objects are quite common and expected to occur with *cook*, but there are some "unusual" objects appearing with the verb: *tea*, *horses*, *ballot* & *books*, *tobacco*, etc.

Table 5. The Object Profile of the Transitive cook

Pronouns (it, them, you, that, those, etc)	60
Dinner, breakfast, lunch, supper	34
meal(s)	27
Food	12
Kinds of food: (cake, pasta, eggs, grub, pudding, soup, toast, dish,	
onion & bacon, stew, potatoes & sausages, mutton & rice pudding,	
bacon & eggs, spaghetti, rice, spuds, etc).	51
Meat(s)	12
Kinds of meat: (steak, beef, chicken, roast, veal, chop,etc)	19
Indefinite pronouns (something, anything, some, things)	14
Fish	9
One time occurrence: stuffing, kuka, what I caught, menu, mullet, a	
couple, sugar, Tandoori style.	8
Unexpected Objects:	

Tea	6
Bardies	4
Rubbish	2
horses, ballot & books, tobacco, wicked, dampers, carcass, angles,	10
girl, bush tucker, proposition (occurred once respectively)	
Total	268 ¹

Animacy turns out to be an important aspect of verb syntax when the subjects of the intransitive *cook* are examined. Table 6 displays the subject profile of the intransitive *cook*.

Out of 201 occurrences as intransitive, 114 subjects have been identified. The remaining 87 have no subjects due to the same reasons explained above. As shown in Table 6, the animate subjects of the intransitive *cook* are more common than the inanimate. However, despite the low frequency of occurrence, the inanimate subjects signal the pure sense of intransitive. Therefore, they are not less important than the more frequent animate subjects.

Table 6. The Subject Profile of Intransitive *cook*

Animate:	
	8.4
Pronouns	84
Proper names	10
Woman	6
Girls	4
Daughters	2
Mammas	1
Dad	1
People	1
My job	1
Brides	1
Kids	1
Inanimate:	
Breakfast	1
Eggs	1

Out of 270 occurrences of transitive, two subjects which seem to be direct objects are missing making up the total of 268.

Total	114

Grammatical Collocation

Having looked at lexical collocations evident in the subject and object selection, the discussion will continue further to the co-occurrence of function words such as prepositions, which form grammatical constituents with the verb. However, the co-occurrence of these function words is not measured from their proximity to the verb. The important thing is whether they bear some semantic or syntactic relation.

There are 13 prepositions that have been identified to occur in various frequencies with the verb *cook* shown in Table 7.

Table 7. The Co-occurrence of Prepositions

То	167
For	59
In	29
On	28
Up	8
At	6
Over	6
Until	4
Without	1
Through	1
Against	1
Before	1
Like	1
Total	312

The reading of the occurrences of the prepositions can be misleading unless notes are given. *To, for, in,* and *on* are the most frequent prepositions that go with *cook* in the corpus, but they do not necessarily represent the common collocates. The preposition *to,* for example, is part of the non-finite *cook* as in *I hate to cook Chinese food.* Likewise, *for* is not the specific collocational property of the verb *cook*. In fact, it is widely shared by a great number of other

verbs that can take benefactive variants, among others, are *bake, make, pour, dance, sing,* etc (see Levin, 1993:48-9 for more details). The prepositions *on* and *in* which are among the most frequent in the corpus show no particular preference for *cook*. The prepositional phrases that *on* and *in* form generally function as adverbs, and they also occur with many other verbs.

(14) ... but I love watching the old Italian mammas who can really cook on a big hot plate.

The prepositional phrases *in the earth ovens* in Sentence 13 and *on a big hot plate* in Sentence 14 are adverbs indicating place where the event occurs. These prepositions are quite productive with other common verbs such as *read* and *sit* in Sentences 15 and 16.

- (15) She read in the library.
- (16) Bill sat on the sofa.

Evidently all of the prepositions in Table 7 are not the grammatical items that make the phrasal verb *cook* except *up*, *through*. In the citations, the two prepositions are part of the verb phrase. This is apparent from the sentences below.

- (17) Peter will cook up at storm at Elderton's....
- (18) Remedy: Carve the meat into thicker-than-usual slices then cook through quickly under the ...

The instances of 17and 18 represent the real grammatical collocation where the verb *cook* is the node and the prepositions are its collocates. In the two sentences *up* and *through* are all grammatical constituents of *cook*.

The Argument Structure of the Verb cook

As summarized in Table 2, the syntactic structures of the verb *cook* indicate that the verb may take a subject, an object, and/or a second object. These three arguments are realized in dative or double-object construction and Benefactive variant (see sentences 1-3, for illustration). But two-argument structures [Subj, Obj] is the most common use of the transitive *cook* (see sentence 5). In Table 3, the verb *cook* encodes different argument structures in three different kinds of intransitive uses. In pseudo intransitive, the subject argument exists at the surface structure, but the object argument is implied (see Sentence 7). In the so-called Characteristic Property of Agent variant, the verb has a surface sub-

ject and an implied object as in the pseudo intransitive, but it describes the general characteristics of the subject (see Sentence 8). The pure intransitive is totally different from the first two in that the verb's object argument is completely non-existent (see Sentence 9).

DISCUSSION

Based on the sentences taken from the corpus, the verb *cook* has both transitive and intransitive uses, but that was not the final result of the investigation. Within the transitive use, there are sub-categorizations of syntactic structures. As shown in Table 2, there are dative, simple transitive, benefactive construction and its sub-variants. Under the intransitive use, there are three subcategories: pseudo intransitive, characteristic property of agent, and pure intransitive (see Table 3).

Regarding the meaning, the verb *cook* can be semantically categorized as verb of creation and change-of-state. This categorization is obviously determined by the types of objects that the verb takes. For example, the objects *potatoes*, and *meal* in Sentences 10 and 11 distinguish the semantic category of *cook*.

The collocational information derived from the citation has revealed both lexical and grammatical collocations. The lexical collocation is formed by the co-occurrence of *cook* and its objects. The typicality of objects has been presented in Table 5. Hence, the conclusion that can be drawn is that the transitive *cook* assigns lexical items to be the object lexicon. This means there is lexical restriction that allows only certain lexical items can be the objects of *cook* (cf. Jacobs & Rosenbaum, 1968:59; Palmer, 1981:133; Westney, 1994:82). The restricted objects have been described as superordinates *food* and *meals*, and their hyponyms. It was realized that the objects beyond this restriction were unusual or unexpected. Some of these unusual objects are *ballot* & *books*, *horses*, *rub-bish*, *proposition*. The peculiarity of the objects might be due to idiomaticity or cultural background which is not covered in this study.

Unlike lexical collocation, the grammatical collocation formed by the verb cook and preposition does not display any typicality of the collocates. The prepositions in and on as Sentences 13 and 14 are bound in the adverbial phrase in the earth ovens and on a big hot plate rather than the verb phrase cook in or cook on. The real grammatical collocation is the ones with the prepositions up and through as in Sentences 17 and 18. The preposition up goes with cook to

form a verb phrase which takes the noun phrase object *something very special*. Even when the phrase is split up by the objective pronoun *you* as in Sentence 19, the collocational link between *cook* and *up* remains. This is the point where *cook up* differs from *cook* and other prepositions.

(19) They'd jolly soon have you in a pot to cook you up with potatoes.

What is significant about the verb *cook* for Indonesian ESL learners? Priyono (2005) asserts that the major problem of learning English as foreign language is lexically related. Analysis of semantic structure would reveal that differences between that of English and Indonesian language could be responsible for difficulties faced by Indonesian learners of English. The analysis of the verb *cook* has showed such lexical complexities. In this study, there are at least two points need to be highlighted. First, the nature of the verb meaning suggests that *cook* is virtually a transitive verb. The findings have demonstrated that what appears to be intransitive is falsely superficial. The absence of surface object simply means that the object is unspecified (cf. pseudo intransitive).

As Hundt (2004) points out that subject animacy is highly related to syntactic patterning, e.g. progressive mode is common with animate subjects, the results of this corpus investigation has demonstrated that the genuine intransitive occurs only when the subject of the verb is inanimate as in Sentence 11. This kind of intransitive should be paid more attention. The inanimate subject of the intransitive is likely to be troublesome for Indonesian learners of English. Referred to as L1 Semantic Transfer, Jiang (2004) claims that uniqueness of semantic structure, tends to interfere the acquisition process of L2 lexical item. He suggests in dealing with this, that interlingual approach be an alternative solution. In Indonesian language, the intransitive *cook* in Sentence 11 would be adjectival *masak*, in which case monolingual dictionary would not help much.

(23) ... the breakfast wouldn't cook makanan (untuk makan pagi) belum masak

Therefore, the expected version of this sentence would be ... the breakfast wouldn't be cooked (cf. Ard & Gass, 1987; Yip, 1994). The second point is that the typicality of the objects should be part of the learner's lexical knowledge. The fact that cook takes superordinate food and meal looks bizarre lexical

property. The Indonesian counterpart of *cook* would normally take the hyponyms of *food*. The ideal acquisition of the English lexicon, e.g., verbs should include implicit knowledge of the lexical properties. Most Indonesian learners of English might have been familiar with simple transitive of *cook* but moving up gradually to benefactive, pseudo intransitive, dative, characteristic property of agent, and pure intransitive would reflect their level of lexical competence.

CONCLUSION

The analysis of the anatomical *cook* suggests that the verb has properties of all linguistic aspects, namely semantic, syntactic, collocational, phonological elements. Further investigation would also be able to discover other aspects such as pragmatic. Lexical competence would therefore include all these properties. Partial acquisition or knowledge of the lexical properties would reflect the learner's incomprehensive competence of the verb. If learners of English only associate the verb cook with simple transitive, they will not be able to identify their intransitive versions. On the contrary, if they have acquired a comprehensive knowledge of the lexical properties, they would be able to recognize and use the verb in all possible ways that are acceptable for native speakers. This would also imply that grammatical aspects are included in the learner's lexical competence - the aspects that should not be seen as metalinguistic knowledge but be acquired through subconscious process - this, would render grammar teaching unnecessary for beginners. Therefore, the most important thing of learning vocabulary is how learners can expose themselves to the extensive language input by any means and let the internalization of language rules take place.

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