SECOND LANGUAGE VOCABULARY ACQUISITION FROM A LINGUISTIC POINT OF VIEW

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Abstract. *Lexical acquisition is a complex process that fits into a larger system of different integrated levels including orthography, phonology, morphology, syntax, semantics and pragmatics. At the core of lexical acquisition is the notion of 'word' and 'word knowledge'. In order to understand the process of L2 vocabulary learning, it is necessary to define what a 'word' is and which aspects are involved in 'word knowledge'. That is, what does it mean to know a 'word'? When is a 'word' supposed to be 'mastered' or 'acquired'? In this respect, it is well worth considering the various factors contributing to word knowledge as well as variables influencing the difficulty with which words are learned. Based on the exploration of word knowledge and L2 vocabulary learning difficulties, lexical acquisition can be seen as a gradual, ongoing process of various developmental stages and ultimate achievement levels.*

Key words: *Lexical acquisition, Receptive and productive word knowledge, Language transfer Word knowledge*

1. INTRODUCTION

The aim of this paper is to introduce some basic terms and concepts in the analysis of lexical acquisition. The emphasis is on an exploration of what constitutes a word, what contributes to word knowledge and which difficulties are involved in lexical acquisition. Besides, an attempt will be made to describe the processes underlying L2 vocabulary learning.

2. LANGUAGE SEEN AS WORDS

The word is clearly central to both the non-specialist and the specialist understanding of language. Most commonly, when people think of a language, they think almost invariably of words (cf. Stubbs, in Singleton 1999: 8). That is, for most people language is largely a matter of words; they are vital to communication, as Wilkins puts it: Without grammar very little can be conveyed, without vocabulary nothing can be conveyed. (Wilkins, in Singleton 1999: 9).

2.1. Categorization of word knowledge: Receptive and productive word knowledge

A learner's vocabulary consists of many degrees of knowledge. The usual distinction concerning word knowledge is between *active* knowledge, that means knowing how to

use a language, and *passive* knowledge, that means understanding a language. Similarly, other terms have been used with reference to this rather straightforward distinction, such as *receptive* (corresponding to passive) word knowledge and *productive* (corresponding to *active*) word knowledge, and *implicit* knowledge (i.e. the L2 knowledge of which a learner is unaware and therefore cannot verbalize) versus *explicit* knowledge (i.e. the L2 knowledge of which a learner is aware and can verbalize on request).

Receptive vocabulary use basically involves "perceiving the form of a word while listening or reading and retrieving its meaning" (Nation 2001: 24f). In contrast, productive vocabulary use involves "wanting to express a meaning through speaking or writing and retrieving and producing the appropriate spoken or written word form" (Nation 2001: 24f).

Yet, the distinction between 'receptive' and 'productive' knowledge of a word seems arbitrary and should rather be considered as the opposite ends of a scale of knowledge. Researchers do not agree on the terminology and some prefer other terms such as 'comprehension' versus 'production', 'understanding' versus 'speaking', or 'recognitional vocabulary' versus 'actual or possible use'. Corson, for example, uses the terms 'active' and 'passive' and divides passive vocabulary to include three kinds of words - "words that are only partly known, low frequency words not readily available for use and words that are avoided in active use" (Nation 2001: 25). This distinction between three kinds of vocabulary that overlap to some degree is based on the idea of vocabulary use and not solely on degrees of knowledge. Some passive vocabulary may be very well known (e.g. swear words) but never used and therefore never active (cf. Nation 2001: 25).

It is generally assumed that receptive learning and use precedes productive learning and use, but yet it is not clear why receptive use should be less difficult than productive use. There are several possible explanations which, however, should not be considered competing but rather complementary.

One explanation is the 'amount of knowledge' explanation which says that productive learning is considered more difficult because it requires extra learning of new spoken or written output patterns, while receptive learning only requires a few distinctive features of the form of an item. This is particularly the case for languages which have different writing systems from the first language and which use some different sounds or sound combinations. The form of items is more likely to cause difficulty than meaning because there is much more shared knowledge of meaning between two distinct languages than there is shared form. Since more precise knowledge of the word form is required for productive use, productive learning is considered more difficult than receptive learning (cf. Nation 2001: 28f).

According to the 'practice' explanation, the amount of practice dedicated to receptive and productive use respectively also influences the differences in receptive and productive vocabulary size. In normal language learning conditions, receptive use generally gets more practice than productive use (cf. Nation 2001: 29).

Last but not least, the 'access' explanation says that a new foreign language word in the early stages of learning has only one simple link to its first language translation (the receptive direction), whereas the LI word has many competing associations (the productive direction).

Thus, productive recall is more difficult than receptive because there are many competing words, phrases or ideas to choose from, and the ones within the LI lexical system are likely to be stronger (Ellis and Beaton; in Nation 2001: 29).

2.2. Other taxonomies of levels of word knowledge

In response to the active/ passive or productive/ receptive dichotomy, different authors have drawn different distinctions concerning word knowledge. Bialystok and Sharwood Smith (1985), for example, put forward a distinction between *knowledge* and *control*. Knowledge is defined as "the way in which the language system is represented in the mind of the learner (the categories and relationships in long-term memory)", whereas control is used to refer to "the processing system for controlling that system during actual performance" (Bialystok & Sharwood Smith 1985: 104). The authors thereby made an analogy to a library, meaning that the knowledge is in the books and in the way they are organized. Gass (1988: 95) summarized their view of control as follows:

With regard to control, or access, the language user or library user needs to know how to get information which includes where to find the books and how to get at that information in the most efficient way possible. Their distinction between knowledge and control is useful with regard to vocabulary, particularly since it crosses the boundaries of the more traditional notions of productive and receptive knowledge. Both production and reception including formation regarding knowledge and control.

However, the library analogy as it is applied to the second language learner's lexicon fails to take into account the dynamic changing nature of the L2 lexicon because books in a library, described as static and unchanging, cannot account for all of lexical knowledge since L2 knowledge is not always unchanging or static. The library metaphor may not be sufficient to account for pragmatic inferencing which, however, is required along with real-world knowledge. Gass and Selinker (1994: 274) noted that "learners have to know more than just the representation to be able to use a word and understand it in a way approximating native speakers."

Another dichotomy which may be useful for instructional purposes is that proposed by Stahl (1983, in Stahl & Fairbanks 1986: 74) who suggests that a "person who 'knows' a word can be thought of as having two types of knowledge about words - definitional information and conceptual information." Definitional information comprises knowledge of the logical relationship between a word and other known words, as in a dictionary definition, which, for example, can involve knowing a definition or synonym. Conceptual information, on the other hand, can be defined as knowledge of the core concept of the word and how that concept changes in different contexts (cf. Grabe & Stoller 1993: 37).

More sophisticated distinctions among different stages of word knowledge were made by several authors such as Paribakht and Wesche (1997), Coady (1993), Gass and Selinker (1994), Graves (1987), and Grabe and Stoller (1997), to name just a few. The categorizations differ from each other in terms of the number of stages, with some authors such as Coady (1993) emphasizing only three major developmental categories, and others such as Grabe and Stoller (1997) suggesting six stages, and in terms of taxonomies referring to understanding only and those including production (e.g. Paribakht and Wesche 1997).

Based on Coady's (1993) and Grabe and Stoller's (1997) categorization of word knowledge, the following taxonomy including reception on one end of the scale and production on the other can be presented:

1. words whose form and meaning are totally unfamiliar and must therefore be inferred from context, looked up in the dictionary or left uncomprehended;
2. words whose form is recognized but whose meaning cannot be recalled without context;

3. words where a degree of familiarity (in terms of form and/ or meaning) can be sensed, without context;
4. words whose form is recognized and whose common meanings are recalled automatically, irrespective of context or sight vocabulary;
5. words whose meanings can be productively applied, but knowledge of form may not be complete; and
6. words which can be used orally and in written form.

Since words are not isolated units of language but fit into many interlocking systems and levels, word knowledge involves many aspects and degrees of knowledge. This implies that any definition of word knowledge on a dichotomy distinction between 'active' and 'passive', 'receptive' and 'productive', or 'explicit' and 'implicit' knowledge fails to acknowledge the nature of words as covering multiple facets.

3. LEXICAL ACQUISITION

When somebody has got a poor knowledge of phonology, this is obvious. The same holds true for a lack of knowledge of grammar. The deficiencies in lexical development, however, are less obvious. If a learner, for instance, wanted to say "oak" but did not know the word, they can still use "tree" and nobody would notice any deficiencies in lexical development. Similarly, if a learner was not familiar with the word "mansion" and used the expression of "a splendid, large house" instead, nobody would notice any deficiencies but they may still seem to be a very good language learner. However, the learners are more aware of the lexical deficiencies, whereas it seems to be more difficult for them to notice any deficiencies in terms of phonology and grammar.

The task of learning words is usually underestimated. Questioning whether learners have "learned" new words basically includes two aspects: first of all, learners have not learned a word when they have not registered it. Secondly, vocabulary learning is an on-going process; the meaning of words can be acquired only gradually since all the shades of meanings of a word can only be acquired in various contexts, and acquiring a word also means acquiring its grammatical properties, again in various contexts.

One way to approach the area of lexical acquisition is to analyze all the different aspects that make up word knowledge. Another way is to take a closer look at the difficulties that are involved in L2 vocabulary learning. In this respect, L2 vocabulary difficulties may be seen as the other side of the coin of vocabulary knowledge. To put it differently, each aspect of word knowledge may present differing degrees of difficulty for second or foreign language learners.

3.1. Difficulties involved in lexical acquisition

The difficulties involved in vocabulary learning have more to do with the individual word itself than the sheer magnitude of the task (i.e. a native speaker 'knows' about 250.000 words). Various researchers have identified different sources of difficulties involved in lexical acquisition. The most straightforward distinction that has been made for this purpose is that between form-based difficulties and meaning-based difficulties, with the former referring to aspects such as orthography, phonology, morphology, word class or syntactic features, and the latter referring to sense and meaning relationships like

synonymy, antonymy, hyponymy and metonymy, or collocations, metaphors and idiomaticity as well as to connotational nuances based on differences in style, register and socio-cultural associations.

3.2. The 'learning burden' of a word

The 'learning burden' of a word is the amount of effort required to learn it. Different words have different learning burdens for learners with different language backgrounds and each of the aspects of what it means to know a word can contribute to its learning burden. The general principle of learning burden is that the more a word represents patterns and knowledge that learners are already familiar with, the lighter its learning burden (Nation 1990). Sources for this knowledge can either be the learner's first language or any other language, or the previous knowledge of the second language. A word's learning burden is generally supposed to be light (i.e. the word will not be difficult to learn) if it uses sounds that are in the LI, follows regular spelling patterns, is a loan word in the LI with roughly the same meaning, fits into roughly similar grammatical patterns as in the LI and has similar collocations and constraints. In short, for learners whose first language is closely related to the second language, the learning burden of most words is likely to be light. In contrast, the learning burden is supposed to increase for learners whose first and second languages are not closely related to each other (cf. Nation 2001: 23-24).

3.3. Form-meaning similarity between LI *and* L2

The learning of new words in the L2 is also strongly influenced by the *similarity between form and meaning of LI and L2 words*. In general, "the more similar a foreign word is in its form and meaning to the LI, the easier it is to learn" (Laufer 1991b: 14). Yet, form similarity to LI does not guarantee easy learning of new words but can even lead to wrong interpretations of lexical items, especially because learners tend to associate similarity in form with similarity in meaning in LI and L2. As Laufer (1991b: 15) states, "easy learning only results from identity or close similarity in both form and meaning, as is the case with cognates".

3.4. Language transfer - the role of LI *in* L2 lexical acquisition

Learning a second or foreign language always involves, consciously and subconsciously, as well as to varying degrees and levels of influence, a comparison between the LI and the L2. The influence of the learner's mother tongue on second language learning cannot be ignored and, although especially strong at the early stages of development, it may continue to play a decisive role in second language vocabulary learning even at a later stage of development.

4. LEXICAL ACQUISITION A GRADUAL PROCESS

Lexical acquisition cannot be viewed as a single process of encountering, learning and knowing words, but must be considered a gradual process of acquiring word meanings that involves adding, changing and restructuring as well as reorganizing one's vocabulary in response to new input and new knowledge. Besides, L2 vocabulary learning should not be

seen as a process that ends once (near)-native speaker proficiency is reached (as may be the case of advanced learners) but may well continue and thus be seen as an open, on-going process of refining, enlarging and deepening one's vocabulary knowledge. In this respect, L2 vocabulary learning does not differ from lexical acquisition in one's native language.

4.1. Expansional and approximative development

The gradual process of lexical acquisition involves two types of development: *expansional* and *approximative* development. Learners do not wait for the input but they anticipate it. Due to the urge to move towards the expansion of language, learners of English often import words from their first language. This often happens automatically in that certain words in their LI are earmarked as potential English words. In addition to the learner's first language, the interlanguage is a source of new words. A common form of the use of the native language is loan translation, that is combining English words and morphemes in accordance with German grammatical patterns. During the first phase of vocabulary acquisition learners assimilate the L2 to their own language. They try to find equivalents for L2 words in their LI; they assume that L2 words differ from LI words in their form only, but they still assimilate the form to LI norms. In another type of *assimilative* strategy the learner employs words which he has already acquired from the target language, i.e. part of his current interlanguage lexicon, as a source for the creation of new target language words. He may, for example, take the familiar word "omission" and by backformation, on the analogy of "confession - to confess", create the non existent verb "omiss". However, such forms of expansion often lead the learner away from the target language. On the other hand, and usually at later stages of development, the learner views target language input not in terms of prior knowledge (LI or his current interlanguage) but in its own terms utilizing the general cognitive faculties to arrive at closer and closer approximations of L2 words in the input. Here he is using *approximative* strategies.

4.2. Lexical acquisition in terms of a cognitive model of language learning

Acquisition in terms of a cognitive model of language learning involves 'intake', 'retention', 'retrieval' and 'utilization'. The main question in cognitive accounts of language learning is how input becomes intake that is stored into long-term memory and can be retrieved later. The input must be processed to become intake. That means it must be analysed and understood before it can be added (i.e. the process of accretion) to existing knowledge. However, new information is never just added on. It is restructured and integrated with previous knowledge and needs to be fine-tuned and corrected in subsequent steps. In order to talk about learning, the processed intake must be stored in long-term memory and must be accessible for retrieval and use. Retrieval and utilization are necessary in the tuning process as well. In short, according to this model, when a word is heard (or seen), it is first taken in, then analyzed, retained in long-term memory and finally used again. These steps do not necessarily happen simultaneously, nor in a temporal sequence but rather take the form of a constant cycle.

5. THE GOALS OF VOCABULARY LEARNING

Vocabulary knowledge is often considered the most crucial factor to academic achievement for second language learners. A lack of vocabulary may be the most detrimental factor in comprehending written and oral input (i.e. reading and listening) as well as in spoken and written communication (i.e. writing and speaking). Vocabulary knowledge enables language use and language use enables the increase of vocabulary knowledge. Yet, there is no simple answer to the question of how much vocabulary a second language learner needs. Basically, there are three ways of dealing with this question. One way is to ask how many words there are in the target language. Another way is to ask how many words native speakers know and a third way is to ask how many words are needed to do the things a language user needs to do (cf. Schmitt & McCarthy 1997: 6).

5.1. How many words are there in English?

The most straightforward way to answer this question is to look at the number of words in the largest dictionary. In general, the vocabulary of the language is a continually changing entity with new words and new uses of old words being added and old items falling into disuse. Counting the number of words in a dictionary is not an easy task since this means dealing with various problems including the decision if *walk* as a noun is the same word as *walk* as a verb, or if compound items such as *goose grass* are counted as separate words, or if names like *Agnes* and *Nottingham* are to be counted as words (cf. Schmitt & McCarthy 1997: 6f).

Two separate studies (Dupuy 1974; Goulden, Nation and Read 1990) have looked at the vocabulary of *Webster's Third International Dictionary (1963),* the largest non-historical dictionary of English, when it was published. Excluding compound words, archaic words, abbreviations, proper names, alternative spellings and dialect forms, and classifying words into word families consisting of a base word, inflected forms and transparent derivations, Webster's Third has a vocabulary of around 54,000 word families. This is a learning goal far beyond the reaches of a second language learner and even beyond most native speakers (cf. Schmitt & McCarthy 1997: 7).

Reports of the size of the English lexicon in the popular press have a very wide range: from 400,000 to 600,000 words (Clairbome 1983: 5), from half a million to over 2 millions (Crystal 1988: 32), about 1 million (Nürnberg & Rosenblum 1977: 11) and 200,000 words in common use, and even up to several million words adding technical and scientific terms (Bryson 1990, in Schmitt 2000: 2f). This discrepancy is largely due to the problem of defining a word.

5.2. How many words do native speakers know?

The question of how many words native speakers know has concerned researchers for more than 100 years. The motivation for such studies is the idea that vocabulary size is a reflection of how educated, intelligent or well read a person is. Unfortunately, the measurement of vocabulary size is affected by serious methodological problems centering around the questions of 'What should be counted as a word?' or 'How do we test to see if a word is known or not?'. Failure to deal adequately with these questions has resulted in several studies of vocabulary size which have produced very diverse results. Generally, it is assumed that an average educated native speaker has a vocabulary of

about 20,000 words, with children acquiring about 1,000 words per year (Goulden et al. 1990; Nation and Waring 1990).

However, such estimates mainly rely on conservative criteria primarily based on derived words (i.e. affixes and compound words), which make up a significant proportion of the word stock of the language (for a discussion of these issues see Nation 1993b).

Teachers of English as a second language may be interested in measures of native speakers' vocabulary size since these can provide some indication of the size of the learning task facing second language learners. The frequently cited figure of 20.000 is a very rough estimate and there is likely to be very large variation between individuals. The figure excludes proper names, compound words, abbreviations and foreign words (cf. Schmitt & McCarthy 1997:7f). Mastery of the complete lexicon of English is beyond not only second language learners but also beyond native speakers. Besides, vocabulary continues to be learned throughout one's lifetime (cf. Nation 2001: 8f; Schmitt 2000: 3f).

5.3. How many words do second language learners need to know?

Although a language makes use of a large number of words, not all of these words are equally useful. There are different ways of measuring usefulness. One measurement is word frequency, that is, how often a word occurs in normal use of language (cf. Schmitt & McCarthy 1997: 8).

In general, it can be assumed that only a small number of the words of English occur very frequently. Thus, if a learner knows these words, they will know a large proportion of the running words in a written or spoken text, which allows a good degree of comprehension of a text. According to the Collins COBUILD English Language Dictionary (1987), for example, 15,000 words cover about 95 per cent of the running words of a corpus. With a vocabulary size of 2,000 words, a learner knows about 80 per cent of the words in a text which means that one word in every five is unknown. However, this ratio of unknown to known items is not sufficient to allow reasonably successful guessing of the meaning of the unknown words. According to Laufer (1988), at least 95% coverage is needed to allow reasonable comprehension of a text, and a larger vocabulary is clearly better (cf. Schmitt & McCarthy 1997: 9f). Given that the vocabulary size of an average native-speaking adult is beyond the reach of the average L2 learner - be it a learner in a language course, an educational setting or an immigrant - the question that arises is: what is a reasonable goal? There is no simple or general answer to this question since this partly depends on how the learner wants to use the language. If the aim is the ability to carry on everyday conversation, then a vocabulary of the most frequent 2,000 words would seem a realistic initial goal, as it would provide about 96 per cent coverage of spoken discourse. In contrast, if the aim is to read authentic L2 texts, then a larger vocabulary would be necessary. With reference to the amount of vocabulary required for this purpose, there are no fixed figures but figures vary between 3,000 and 5,000 words that are considered as the minimum to enable successful entry to authentic texts. However, some researchers argue that the figures may even be higher for true native-like reading (cf. Schmitt & McCarthy 1997: 103).

These figures all refer to the most frequent words in a language but, of course, words are not learned in a strict frequency order. Learners with a 5,000-word vocabulary partially gained from reading extensively on a certain topic, may indeed be able to read with reasonable proficiency on that topic since they will already know many of the

technical terms and jargon relating to that field. However, they may well be at a loss when trying to comprehend texts from other fields. Thus, if a learner aims at developing the ability to read any text fluently which they may happen upon, they will have to master at least the 5,000 most frequent words, in addition to any other topic-specific vocabulary they may know (cf. Schmitt & McCarthy 1997: 103).

Yet, the number of words known is not enough to describe a person's vocabulary adequately. In addition to vocabulary breadth, two other dimensions are necessary: the depth of knowledge or the amount of knowledge present for each word on the one hand, and automaticity, that is how quickly this knowledge can be utilized, on the other. The depth of knowledge involves the knowledge of the primary and secondary meanings, idioms in which a word is used, grammatical features, connotations, collocations, possible contexts, sense relations and register. However, language use requires not only knowledge of words, but also mastery at a level of automaticity that allows their use in real-time (cf. Schmitt & McCarthy 1997: 104).

6. CONCLUDING REMARKS

Generally, the field of vocabulary studies is severely hindered by a lack of baseline standards. Since words are not isolated units of language, but fit into an integrated system of different levels, vocabulary knowledge must be viewed as including knowledge of form and meaning(s) of words as well as pragmatic and socio-linguistic features. Interpretation, analysis, storage and retrieval of words is influenced by similarities and differences between the learner's first and second language in terms of form, meaning and socio-cultural and socio-linguistic aspects.

Lexical acquisition is a gradual process that involves expansional as well as approximative developmental patterns, continuous restructuring of one's current vocabulary by adding new knowledge, adjusting it to old knowledge and thereby changing and refining the various facets of present word knowledge and consequently developing a core vocabulary that is continuously enriched and enlarged. However, it must be noted that the cognitive, inner processes that are involved when learners take in new input and turn it into knowledge and store it into long-term memory for later usage are fairly complex and cannot be explained solely on a linguistic basis; cognitive as well as psychological accounts of language learning will probably be more adequate considering the complexity of the processes involved in lexical acquisition.

In conclusion, irrespective of whether lexical acquisition is viewed from a cognitive perspective or from the point of view of an information theory model, any account of L2 vocabulary learning must consider three main assumptions: (1) lexical acquisition is a gradual process involving different developmental stages, with every stage refining, changing and adding new information or knowledge to the preceding one; (2) L2 vocabulary knowledge involves more than just knowledge of the form and meaning of words and second language learners may ultimately present varying degrees or levels of word knowledge, depending on a number of factors that affect vocabulary learning, retention and use; and (3) lexical acquisition is an ongoing process, involving highly complex cognitive or mental processes, which may well continue even after having reached advanced proficiency level.

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