

# Expositions

## Word Parts and Language Learning

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Research with Japanese learners of English (Brown et al., 2020) has shown that Japanese learners of English typically have inadequate knowledge of the word parts of English. Research with other groups of learners also tend to show a wide range of degrees of knowledge of word parts (Laufer & Cobb, 2020; Sasao & Webb, 2017). This lack of knowledge has important implications for vocabulary size and reading in English because a very large proportion of Level 6 word families (Bauer & Nation, 1993) include many family members that contain prefixes and suffixes. Related to this, a large proportion of the tokens in any text are complex words (Nation, 2022), that is, words containing affixes. The study of word parts is called morphology, and occasionally I will use this term and its adjective, morphological, when referring to word parts, largely because first language research on word parts uses the terms morphological awareness and morphological knowledge. Word part knowledge is closely related to vocabulary size, and vocabulary size is closely related to proficiency level. This article looks at this relationship and tries to relate these three factors using the CEFR (Common European Framework of Reference for Languages) levels.

Brown et al. (2020)によると、日本人英語学習者は接辞や語根などの単語構成要素 (word parts) に関する知識が不十分であるとされている。他の同分野における研究 (Laufer & Cobb, 2020; Sasao & Webb, 2017) でも、単語構成要素に関する知識は学習者によって大きく異なることが示されている。こうした知識が欠けていることは、英語における語彙サイズや読む能力に大きな影響を与えることになる。なぜなら、Bauer and Nation (1993) の分類によるレベル6の単語の多くが、接頭辞や接尾辞を含んでいるからである。同様に、どのような文書でもかなりの部分が、接辞を含む複合語であるからだ (Nation, 2020)。こうした単語構成要素に関する学問を「形態論」という。単語構成要素について言及する場合、私はしばしばこの「形態論」やその形容詞形である「形態論的」という言葉を使う。母語における単語構成要素の研究では、「形態論的認識」

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や「形態素の知識」という言葉を使うからである。単語構成要素に関する知識は語彙サイズと密接な関係があり、語彙サイズは熟達度と密接な関係がある。この論文ではこうした関係を吟味し、CEFR (Common European Framework of Reference for Language) レベルを用いて、この3つの要素を結び付けることを試みる。

**Keywords:** affixes; morphology; stems; word parts

## The Importance of Knowing Word Parts

Research with native-speakers of English has shown that morphological knowledge has a strong relationship with vocabulary knowledge and, through vocabulary knowledge, a relationship with reading comprehension (Levesque et al., 2019). This causal chain exists because knowledge of word parts helps learners understand and remember complex words, and knowing words is an obvious and well-proven prerequisite for understanding a text.

Knowing word parts also affects the opportunities for learning through repeated meetings with words. Each time a word is met through reading or listening, the greater the chance that it will be remembered. If learners are able to see that word forms that share the same word stem are related to each other, then the occurrence of any one of those word forms becomes a repetition of the whole family. For example, the word family *adequate* contains the family members *adequate*, *adequately*, *inadequate*, *inadequately*. Knowledge of the very frequent affixes *in-* meaning ‘not’, and *-ly* making an adverb allows the occurrence of any one of these four family members to be effectively a meeting with the same word family.

Word parts can also be used for *morphological problem-solving* (Anglin, 1993) where learners work out the meaning of a new word. While this will work quite often, especially where the stem is also a free-standing word, it is a somewhat dangerous procedure in that this inferencing may lead to incorrect solutions. It is much safer to see word part knowledge as primarily a way of helping words stick in memory. If morphological problem-solving is done, then checking on the solution is a useful step in the procedure.

## What Does Word Part Knowledge Involve?

There has been a large amount of research on morphological knowledge, including morphological awareness, with native speakers, and particularly native speakers of English. Morphological knowledge is seen as being made up of four related but distinct skills (Goodwin et al., 2021). These are morphological awareness (the ability to reflect upon and manipulate morphemes),

morphological-syntactic knowledge (knowing how morphemes switch part of speech), morphological-semantic knowledge (using the meanings of morphemes to work out the meanings of words), and morphological-orthographic/phonological knowledge (having the ability to spell complex words, and the ability to pronounce complex words). These skills each draw on particular kinds of morphological knowledge, as explained below:

1. Morphological awareness includes the general understanding that many English words have parts and that the meanings of these parts typically contribute to the meaning of the whole word. As a technical term, morphological awareness is not always clearly defined and in research is often measured by seeing if learners can see word parts in words. It may be best used as a blanket term for all the morphological skills, or used much more narrowly somewhat in parallel with phonological awareness to refer to the general understanding that words may have parts and that these parts can contribute to the meaning of the word. At present, its use in first language studies and how it is operationalised do not clearly distinguish it from other aspects of morphological knowledge.
2. Morphological-syntactic knowledge involves knowing how suffixes can affect part-of-speech. In research, it has been measured by getting the learners to choose from different given grammatical forms of the same word or adapt a given word to the right grammatical form to fit a given context. For a large proportion of the most useful suffixes, the part-of-speech marking is the main function of the suffixes, and only a few of the suffixes at Bauer and Nation Levels 3 and 4 have a strong lexical meaning, for example *-able*, *-less*, *-like*, *-ess*, *-ful*, *-ism*, and *-ist*.
3. Morphological-semantic knowledge involves being able to use the meanings and functions of word parts to work out the meanings of words. In research, it has been measured by choosing the meaning for a complex word in context. The first six levels of the Bauer and Nation scale involve stems that are free forms, that is, the stem can be a word in its own right. At Level 7 of the Bauer and Nation scale, stems may be bound forms which cannot stand as words in their own right. So, at Level 6 of Bauer and Nation, *appropriacy* is not a member of the *appropriate* word family because it does not obviously contain the free stem *appropriate*.
4. Morphological-orthographic/phonological knowledge involves having the ability to spell complex words, and the ability to pronounce complex words. In research, it has been measured by getting learners to write

complex words that they hear and to pronounce given complex words.

While these distinctions may be useful when looking at what makes up morphological knowledge, learning word parts and learning how to use them in reading and listening requires a different kind of focus.

### How Are Word Parts Learned?

Word part learning, like vocabulary learning and most other learning, requires three basic closely related conditions, namely (1) a focus on what is to be learned, (2) quantity of attention including repetition, and (3) quality of attention. If we just focus on deliberately learning the meaning of word parts, for example that *un-* means 'not', then the technique of word card (also known as flash card) learning is a very suitable way of quickly learning a relatively small number of very useful affixes. In this technique, an affix is written on one side of the card, and its meaning and grammatical function (either in English or the L1) is written on the other side. A flash card app may also be used. Having a known word containing the affix on the same side of the card as the affix may help learning in that it provides a quality element to the learning in relating new knowledge to old knowledge. This is worth investigating.

Word part learning occurs not only through deliberate learning, but also incidental learning while reading and listening. Such incidental learning probably accounts for how the high frequency, regular, productive affixes are learned by native speakers. Such incidental learning is likely to be rather slow and gradual because affixes are much less obvious than words. Nonetheless, it is an important source of learning and would be supported and boosted by the deliberate study of affixes.

Surveys of the attention given to word parts in EFL textbooks and by EFL teachers (Dang & Li, 2022) show that the small amount of attention given is neither systematic nor well principled. That is, the selection of word parts tends to be opportunistic rather than based on criteria such as frequency, regularity, and productivity. What attention is given tends to be occasional rather than repeated and systematic. Research with teachers of native-speakers shows a similar lack of attention to word parts in teacher training (Gellert et al, 2020; Mulder et al, 2022), and teachers of native speakers tend to have poor knowledge of word parts (Washburn & Mulcahy, 2019).

Word part learning should not involve a large investment of time and effort, because at any level of proficiency only a small number of affixes are

involved (typically around 12 affixes at any one time), and if the words in the word cutting practice activities to apply them are well chosen, then some very useful learning can occur in a short time (see the Word Parts section of Paul Nation's web resources site or Nation & Bauer, 2023 for ready-made material with answers). It would be well worthwhile conducting a simple feasibility study with learners using Level 3 or Level 4 affixes in the Bauer and Nation (1993) scale to see how much time is involved in reaching a reasonable degree of success in learning the affixes and being able to recognise them in words. It is likely that less than an hour in total spread over four or five lessons may be enough, but this remains to be seen.

### **Word Parts, Vocabulary Size, and Proficiency Level**

There has been considerable debate over the appropriate size of word family to use when making words lists to guide teaching, to make vocabulary size tests, and to use in text coverage studies (McLean, 2018, 2021). Much of one issue of the journal *SSLA* (Volume 43, Issue 5, 2021) consisted of papers debating the issue. This debate centres on the relationship between learners' knowledge of word parts and vocabulary size. As this paper shows, the amount of learning of word parts required to get learners to operate with reasonably sized word families is not great and would not require much classroom time. In Appendix 1, I have indicated what I consider to be useful word part and vocabulary size goals at a range of language proficiency levels. The CEFR levels were chosen because they are widely used in Europe and by European publishers and have influence outside Europe. My suggestions of levels of vocabulary size and word part knowledge are based purely on my own informed judgement, using text coverage figures, the boundary between high and mid-frequency words, and the vocabulary sizes of native-speaking adults. Other researchers who have tried to relate vocabulary size to proficiency levels (Milton & Alexiou, 2009, 2020) have suggested different sizes, although there are some points of agreement.

While there is debate about appropriate word family sizes, I think there is largely agreement about some aspects of word part knowledge. These points of agreement are as follows:

1. As proficiency develops, vocabulary size and word part knowledge (which are part of proficiency) also grow.
2. Vocabulary size and word part knowledge grow in roughly predictable sequences, with frequency of occurrence being the major influencing factor.

3. Receptive knowledge develops before productive knowledge.
4. A small amount of deliberate study of word parts can have a marked effect on knowledge of word families.

The vocabulary size levels and the word part knowledge levels in Appendix 1 represent goals. They are not necessarily a description of learners' current achievement.

### **What Word Parts Should be Learned at What Level of Proficiency?**

Learners need to work on the inflectional affixes at the beginner level of proficiency. Inflections do not change the part of speech of a word, but they indicate time, person, plurality, possession, comparative, and superlative. English has eight inflections (each followed by an example): -s [plural] (books), -s [third person -s] (laughs), -ed [past tense] (watched), -ed [past participle] (discussed, spoken), -ing [present participle] (walking), -er [comparative] (bigger), -est [superlative] (smallest), and -'s [possessive] (Fred's). For more detailed information on the affixes of English, see the book by Bauer and Nation (2020).

Word part learning and analysis involving derivational affixes need not begin until learners know the most frequent 1000 words of English and their inflections. The first group of derivational affixes to learn are the most frequent (that is, they occur in the greatest number of different words), the most regular in form and meaning, and the most productive (they are still used to create new words; Bauer & Nation, 1993, Level 3). These are: -able, -er (as in *singer*), -ish, -less, -like, -ly, -ness, -th (as in the ordinal numbers *fourth*, *fifth*, *sixth*, etc.), -y, non-, and un-, which is a total of eleven affixes. Learners should work on learning these while they are learning the second 1000 words of English. Some of these could be learned earlier, but mostly the study of derivational word parts is most usefully begun when learners are at the low intermediate level (Ur, 2022). As well as deliberately learning the meaning and grammatical function of word parts, learners should practice recognizing them in words. Here is a group of words taken from Paul Nation's resources site that learners could use to gain practice in cutting words into parts. In this group, only Level 3 affixes from Bauer and Nation (1993) are used. There are many other such lists on the web site at various levels that can be used for practice.

un/reason/able, disposable, doubtless, driver, easily, eighth, eleventh, employer, emptiness, endless, enjoyable, especially, essentially, exactly, expressionless, fairness, farmer, fearless, feverish, finally, fitness, freezer, frequently, friendliness, funny, generally, girlish, nonstandard, goodness, grassy, wealthy, greatness, greenish, nonprofit, greyish, hairy, happiness, unfortunately, headless, healthy, heartless, heater, hellish, helpless, homeless, nonsense, nonspecific, honorable, hopeless, humorless, hundredth, hungry, nonsmoking

Learners should work on learning the eleven Level 4 affixes (-al, -ation, -ess, -ful, -ism, -ist, -ity, -ize, -ment, -ous, in-) when they know around 2000 to 3000 words. Level 5 affixes and beyond should be learned when learners are at the high intermediate and advanced levels of proficiency. That is, they are well into learning the mid-frequency words (Nation, 2022, Chapter 1), with at least a knowledge of the 4000 to 5000 most frequent word families. Teachers can measure their learners' vocabulary sizes by using one of the recent Vocabulary Levels Tests on Paul Nation's resources site.

### Learning to Deal with Word Parts

Morphological knowledge can be receptive (as used in listening and reading) and productive (as used in speaking and writing). Receptive morphological knowledge involves being able to (1) recognize the forms of word parts and recall their meaning and/or grammatical function, (2) recognize word parts in words (at an advanced level this involves dealing with irregularities of spoken and written form and function), and (3) work out how the meanings of the parts of a word contribute to the meaning of the whole word. It is worth learners deliberately learning the meanings and functions of the small number of high frequency word parts (Levels 3 and 4) at the appropriate stage in their vocabulary development. It is also worthwhile doing several small amounts of spaced practice of cutting of words into parts, both as a focused word cutting activity and as a part of intensive reading. Similarly, there should be several spaced sessions of applying the word part strategy which involves cutting a word with familiar parts into parts and explaining the meaning of the word using the meanings of the parts. Learners should look up the meaning or be given the meaning before cutting the word into parts. They also have to adapt the meaning to include the meanings of the parts. So, the strategy is not a guessing strategy but is

instead a mnemonic strategy. Readers may consult Nation (2022) for more details on the word part strategy. The below words are taken from the lists of words for practice in Nation and Bauer (2023).

*Immeasurable: Something which is immeasurable cannot be measured because it is too large.*

*Expectation: Expectation is a noun made from expect.*

*Nonexistent: Something which is nonexistent (adjective) does not exist.*

Notice that each explanation of the word contains a deliberate mention of the meaning and/or the grammatical function of the affixes, as well as the stem.

For many learners of English as a foreign language, receptive knowledge of most derivational word parts is sufficient. Productive knowledge involves being able to (1) recall the forms of word parts to express a meaning or grammatical function and (2) use word parts to make words.

The learning activities that are most suitable for receptive knowledge include learning the form, meaning, and function of isolated word parts through the teacher giving them some deliberate teaching and through using flash cards, recognizing known parts in words by using the word cutting activity, and learning and using the word part strategy by practising explaining the meaning of a word using the meanings of its parts.

Productive knowledge of word parts is a skill suited to advanced learners and is probably best left to incidental learning although this kind of knowledge can be tested through activities where a blank in a context sentence needs to be completed with a given stem that requires an affix to fit -- *He had a feeling of great \_\_\_\_\_ (happy).*

### Using Useful Word Stems

So far, we have looked at derivational affixes. If we move from morphology to etymology, it is also worthwhile for advanced learners to learn a few useful word stems as a way of helping words stick in memory. This memory trick of relating a part of the word form and its meaning to the whole word is similar to the keyword technique, which has been very thoroughly researched and shown to have very positive effects for vocabulary learning (see Nation 2022 pp. 423-429 for a review of keyword research). Wei & Nation (2013) provide a list of 25 stems that each occur with roughly the same meaning in at least nine other different word families, and another list of words that



occur in at least five other families. The most frequent stems include *spec*, *pos*, *vers*, *vent*, *ceive* as in *inspect*, *composition*, *reverse*, *prevent*, and *deceive*. The study of word stems is interesting and helpful, but it is clearly an activity for advanced learners with vocabulary sizes of well over 4000 words.

### Investigating the Learning of Word Parts

There has been no case study research on the effectiveness of the deliberate learning of word parts on the analysis of transparent complex words. There has also been no case study research or experimental research on the effectiveness of the word cutting activity for learning to recognize affixes in words.

For native-speakers of English, the most easily analysed complex words are those where the word stem is much more frequent than the derived form. Highly frequent derived forms, like *computer*, *government*, *dirty*, and *probably*, which occur more frequently than their stem, are often not seen as derived forms but as independent words (Hay, 2001). In some notable cases, such as *business*, these frequent derived forms take on a life of their own with their meaning becoming less accessible through their parts. This suggests that when EFL learners work on analyzing words, it may be more effective to work with lower frequency family members of high frequency word families, rather than with very frequent derived forms.

**Paul Nation** is Emeritus Professor of Applied Linguistics in the School of Linguistics and Applied Language Studies at Victoria University of Wellington, New Zealand. His latest books include *Teaching Extensive Reading in Another Language* (2020) (with Rob Waring) and *Measuring Native-speaker Vocabulary Size* (with Averil Coxhead), and second editions of *Language Curriculum Design* (2020), *Teaching ESL/EFL Listening and Speaking* (2020), *Teaching ESL/EFL Reading and Writing* (2020), and the 3<sup>rd</sup> edition of *Learning Vocabulary in Another Language*. His web resources site contains many free resources for teachers and researchers, including books, word lists, vocabulary tests, articles and resources for speed reading and extensive reading.

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## Appendix

The following appendix is related to the Expositions article by Paul Nation (November 2023 issue, pp.235–245). The *JALT Journal* editorial team sincerely apologizes for this omission.

### Appendix 1: The CEFR levels, vocabulary size, and word family size

The following table attempts to relate the CEFR descriptors, proficiency levels, vocabulary size and the Bauer & Nation (1993) levels

Level	CEFR descriptors	Suggested vocabulary size	Suggested word family size (Bauer & Nation, 1993)
C2	Has a good command of a very broad lexical repertoire including idiomatic expressions and colloquialisms; shows awareness of connotative levels of meaning.	7000-9000 words	Level 6 and beyond
C1	Has a good command of a broad lexical repertoire allowing gaps to be readily overcome with circumlocutions; little obvious searching for expressions or avoidance strategies. Good command of idiomatic expressions and colloquialisms.	5000-6000 words Oxford 5000 (B2-C1) See introduction to OALD 10 <sup>th</sup> edition p.x.	Level 5
B2	Has a good range of vocabulary for matters connected to his/her field and most general topics. Can vary formulation to avoid frequent repetition, but lexical gaps can still cause hesitation and circumlocution.	4000 words (2000-3000 high frequency words plus 1000-2000 relevant technical vocabulary) Oxford 3000 (B2)	Level 4
B1	Has a sufficient vocabulary to express him/herself with some circumlocutions on most topics pertinent to his/her everyday life such as family, hobbies and interests, work, travel, and current events. Has sufficient vocabulary to conduct routine, everyday transactions involving familiar situations and topics.	2000-3000 most frequent high frequency words	Level 3
A2	Has a sufficient vocabulary for the expression of basic communicative needs. Has a sufficient vocabulary for coping with simple survival needs.	The 1000 most frequent word families	Level 3 partial
A1	Has a basic vocabulary repertoire	120 words and phrases from the Crabbe & Nation (1991) survival vocabulary.	Level 2 Flemmaly

You could classify A as Elementary, B as Intermediate, and C as Advanced.