Chapter 2

Factors in the Incidental Acquisition of Second Language Vocabulary from Oral Input

Rod Ellis

Introduction

In Chapter One we considered a number of general theories that explain the role of the linguistic environment, in particular interactionally created environments, in second language (L2) acquisition. In this Chapter we will focus specifically on how learners acquire L2 vocabulary from input. We will be primarily concerned with oral input but also draw extensively on literature that has examined vocabulary acquisition through reading. This Chapter, then, provides a foundation for the empirical studies reported in Chapter Three.

Second language acquisition (SLA) research makes a traditional distinction between incidental and intentional acquisition. This distinction is reflected in (although not equivalent to) a variety of terms, e.g., ‘acquisition’ vs. ‘learning’ (Krashen 1981) and ‘implicit’ vs ‘explicit’ learning (Bialystok 1978; Ellis 1990). On the one hand learners are credited with the ability to ‘pick up’ L2 items and rules while their attention is focussed primarily on trying to understand and convey messages and without any conscious intention of so doing. On the other hand many learners also have the ability to focus their primary attention on the language code itself in order to deliberately learn new L2 items and rules. The two types of learning cannot be distinguished solely in terms of ‘attention’, though, for, as Schmidt (1990) has convincingly argued, incidental learning necessarily involves a degree of consciousness when learners ‘notice’ new items and rules in the input. The distinction rests, somewhat uncomfortably, on a secondary distinction between ‘focal’ and ‘peripheral’ attention; whereas intentional learning requires focal attention to be placed deliberately on the linguistic code (i.e. on form or form-meaning connections), incidental learning
requires focal attention to be placed on meaning (i.e. message content) but allows peripheral attention to be directed at form.¹

The distinction between incidental and intentional learning is of particular significance to the acquisition of vocabulary and there is a considerable literature on the relative effectiveness of the two types of learning. In general, it appears that intentional learning that utilizes contextual inferencing strategies and mnemonic strategies such as the keyword method results in better recall of word meanings than incidental learning (see Pressley, Levin and McDaniel 1987; Hulstijn 1992; N. Ellis 1997).² However, it is also generally recognized — although not universally (see, for example, Goulden, Nation and Read 1990) — that learners, even the most conscientious, can never acquire a native-like vocabulary through intentional learning. The argument is that no matter how much effort they put into deliberately attending to new words they encounter and no matter how effective their memorization or practice strategies are, they simply do not have the time to learn the amount of vocabulary at stake intentionally (see Nagy 1997). Therefore, they must learn a large portion of it incidentally. As Sternberg (1987: 89) uncompromisingly states: ‘Most vocabulary is learned from context’.

A number of studies have shown that incidental vocabulary acquisition can take place through extensive reading. For example, Pitts, White and Krashen (1989) report that intermediate level students were able to acquire a measurable amount of invented ‘nasdat’ words after reading Burgess’ A Clockwork Orange for 60 minutes. Other studies by Day, Omura and Hiramatsu (1991), Dupuy and Krashen (1993) and Paribakht and Wesche (1997) also report successful vocabulary learning from reading when no instruction was provided. However, some studies have failed to find evidence of learning (e.g. Tudor and Hafiz 1989). Also, as Hulstijn (1992) points out, ‘the retention of word meanings in a true incidental learning task is very low’ (p. 122). Horst, Cobb and Meara (1998) have pointed out that these studies are methodologically limited in that the amount of text the learners were exposed to was small (e.g. only 907 words in the case of Hulstijn’s study) with the result that the frequency of exposure to the target items was very low. Their own study, which involved exposure to a complete graded reader over six days, resulted in a much higher level of incidental acquisition (i.e. about 22% of the targeted words). This study is of particular relevance here as it involved oral as well as written input (i.e. the subjects followed in their books as the story was read aloud to them).

How does this incidental learning take place? The general assumption (see Nagy and Herman 1987; Sternberg 1987; Nation 1990; Stoller and Grabe 1993; N. Ellis 1997) is that the learning of word meanings involves the utilization of
various cues that enable learners to infer the meanings of new items from context. But there is a problem here, for, as Coady (1993) points out, no study has yet been designed that shows how contextual learning really occurs. Furthermore, there is a logical problem, again succinctly described by Coady:

... it is striking that the very redundancy or richness of information in a given context which, on the one hand, enables a reader to successfully guess an unknown word also predicts, on the other hand, that the same reader is less likely to learn the word-form because he or she was able to comprehend the text without needing to know it. (p. 18)

As we saw in Chapter One, if learners can successfully decode meaning without attending to the form/meaning of a new item, they may not notice the item and, if they do not notice it, they will not learn it. Inferencing from context, therefore, can obviously aid understanding, but may do nothing for learning. Nevertheless, it is likely that inferencing will lead to noticing and, therefore, potentially to acquisition at least on some occasions. Obviously, though, learners need to have built up a sufficient L2 vocabulary to enable them to make use of the contextual clues available in the linguistic input. For this reason, Coady (1997) suggests that learners probably require a working vocabulary of some 5,000 words in order to learn new vocabulary through inferencing from written texts.

In fact, inferencing may be a more effective mechanism of acquisition when the input is oral than when it is written. In the case of written text the only cues available to learners for inferencing the meanings of new words are those contained in the text itself (although there may also be extralinguistic cues in the form of pictures and diagrams). Often enough these cues are inadequate (see Stein 1993). As Hulstijn (1992) has shown, many of the inferences that learners make from written context are incorrect. Oral text, particularly that which derives from face-to-face interaction is different, however. In addition to the cues provided by the verbal text itself, there are other cues available from the intonation and gestures used by the speaker and from the situational context. Furthermore, as we saw in Chapter One, interaction affords opportunities for learners to indicate their non-comprehension and through the negotiation of meaning to receive input that is more finely tuned to their abilities to comprehend. What this often means where difficult words are concerned is that learners are provided with synonyms or definitions. Nagy and Herman (1987) are surely right when they claim;

Written context will, therefore, generally not be as rich or helpful as oral context in providing information about the meanings of new words. (p. 24)
It seems reasonable to suppose that oral input can constitute an effective source of data for incidental vocabulary learning even in the beginning stages of language acquisition. Indeed, the success which children have in developing a substantial vocabulary in their first language before they come to school testifies to this.

Given the primacy of oral input in many learning contexts together with its potential to facilitate vocabulary acquisition, it is surprising that so little attention has been paid to it in L2 vocabulary acquisition research. Whereas there are whole books given over to the relationship between reading and vocabulary (e.g. McKeown and Curtis 1987; Huckin, Haynes and Coady 1993), and other books that address a variety of issues relating to L2 vocabulary (e.g. Nation 1990; Arnaud and Bejoint 1992; Coady and Huckin 1997; Schmitt and McCarthy 1997), it is difficult to locate a single article on the relationship between oral input and L2 vocabulary development. A number of studies have addressed the effects of listening to stories on vocabulary acquisition (e.g. Wells 1986; Eller, Pappas and Brown 1988; Elley 1989; Feitelson, Goldstein, Iraqi and Share 1993) but most of this research has concerned L1 vocabulary acquisition. Also, it has focussed on on what might be called ‘spoken written input’ rather than naturally occurring oral input.

The purpose of this Chapter, therefore, is to make a start in examining how incidental L2 vocabulary acquisition can take place from oral input. To this end it addresses this question: what factors govern the learnability of L2 lexical items from oral input? The aim is to provide an initial framework that can serve as a basis for empirical research. Before embarking on this framework, however, it is necessary to give some consideration to the dependent variable — vocabulary acquisition.

The nature of the learning task — vocabulary acquisition

There is a quantitative and qualitative dimension to vocabulary acquisition. On the one hand we can ask ‘How many words do learners know?’ while on the other we can enquire ‘What do the learners know about the words they know?’ Curtis (1987) refers to this important distinction as the ‘breadth’ and ‘depth’ of a person’s lexicon. The focus of much vocabulary research has been on ‘breadth’, possibly because this is easier to measure. Arguably, however, it is more important to investigate how learners’ knowledge of words they already partly know gradually deepens.

As Nation (1990) points out there is considerable variation in the estimates of the breadth of native speakers’ vocabulary. This reflects variation in the definition of a word (e.g. whether ‘govern’, ‘governing’, ‘governed’, ‘governer’
and ‘government’ are considered five different words or the same word) and differences in the way in which vocabulary is measured (e.g. whether recognition or recall of a word is required). Goulden, Nation and Read (1990) suggest that the average educated native speaker has a vocabulary of about 17,000 ‘base words’, a figure that suggests a rate of acquisition of between two and three a day. A frequently cited figure, however, is Nagy and Herman’s (1987) 40,000 for a senior high school student, which suggests students must add around 3,000 new words each year to their lexicon. Nagy et al. (1985) estimate that the rate of vocabulary acquisition necessary to achieve this is around .25 words per minute. Of course, there is considerable variation from one person to another.

Variation in the breadth of L2 learners’ lexicons can be expected to be even greater, a reflection not just of the number of years they have been learning the L2, but also the extent and nature of their exposure to it and, also, their purposes for learning it. Learners who need to develop cognitive academic language proficiency (Cummins 1983) in order to study through the medium of the L2 at university level are likely to manifest greater breadth than learners who need only to develop the basic interpersonal skills to participate in day-to-day interactions.

A number of studies have investigated the size of L2 learners’ lexicons (e.g. Barnard 1961; Quinn 1968; Jamieson 1976 (all cited in Nation 1990); Yoshida 1978; Palmberg 1987; Wode et al. 1992). More interesting, perhaps, than the absolute size of learners’ vocabularies, is the rate at which they increase under specific learning conditions. Yoshida’s study found that a three-year old beginner learner exposed to English for two to three hours a day at nursery school had acquired productive use of 260–300 words over seven months. Wode et al. (1992) analyzed the productive vocabulary of German children acquiring English naturally in the US and noted that the rate of acquisition tended to peak quite early and then gradually decrease. This contrasts with L1 acquisition, where growth is slow up to 50 words and then accelerates. Barnard (1961; cited in Nation 1990) found that school children in India learnt between 1000 and 2000 words over a five year period. Palmberg (1987) found evidence of a steady increase in Swedish children’s vocabulary as a result of their English studies at school (two 45 minute lessons per week), with the number of words recalled almost doubling after a four and a half month period.

As we have already noted, the depth or quality of L2 learners’ vocabulary knowledge is arguably of greater importance than breadth. A learner may ‘know’ 2000 words but this knowledge may be restricted to the recognition of these words in specific contexts. For example, a learner may understand the reference of ‘ruler’ in one context:
I drew a line with my ruler.

but be incapable of recognizing the same word in a different context:

My ruler gives centimetres as well as inches.

and substitute another, incorrect word in production:

*Do you have a scale I can borrow?

Another learner may ‘know’ only 1000 words but may be able to recognize each word in a range of contexts and also use them accurately in production. As Twadell (1973: 73) notes ‘we may “know” a very large number of words with various degrees of vagueness — words which are in a twilight zone between the darkness of entire unfamiliarity and the brightness of complete familiarity’. But how can we characterize the ‘depth’ of a learner’s vocabulary knowledge more precisely?

It is useful to distinguish ‘potential’ and ‘real’ vocabulary (Palmberg 1987). Potential vocabulary refers to L2 words that are not yet part of the learner’s lexicon but can nevertheless be recognized when they are encountered because, for example, they are cognate with L1 words. Thus, a Japanese learner of L2 English may not know the word ‘icecream’ but is able to recognize it because it is close to Japanese ‘aisukurimu’. Real vocabulary consists of those words that have actually been ‘learnt’ to some extent.

It is traditional to distinguish ‘receptive’ and ‘productive’ (or ‘expressive’) knowledge. Receptive vocabulary consists of those words that a learner can recognize but may or may not be able to use; productive vocabulary consists of those words the learner can actually use in speech or writing. It is claimed that this distinction reflects a continuum rather than a dichotomy (Crow and Quigley 1985; Palmberg 1987; Coady 1993). Meara (1997), however, has criticized this account of vocabulary learning as ‘metaphorical’. Certainly the general assumption that word knowledge is initially receptive and then, over time, through frequent encounters and practice, becomes productive need not be the case. It is perfectly possible to envisage a learner having productive knowledge of a word without receptive knowledge. For example, when speaking Spanish I can say ‘cosmopolita’ (thus making my potential knowledge real by ‘foreignizing’ a cognate English word), and yet be unable to recognize this item in oral input because I have not yet formed a phonological representation of the Spanish word.

A more useful way of representing ‘depth’ of word knowledge involves the distinction between ‘knowledge’ and ‘control’ (Bialystok and Sharwood Smith 1985). The application of this distinction to lexis is shown in Figure 1. ‘Knowledge’ of a word requires the learner to (1) form a phonological/graphological representation of a word, (2) discover what words it collocates with, (3) know
what grammatical patterns it can be used in, (4) understand its denotive reference, (5) understand its connotative meaning(s), and (6) know with what other words it is typically associated (see Richards 1976 for a full account of these aspects of word knowledge). N. Ellis (1996, 1997) argues that the processes involved in these aspects of vocabulary acquisition are in part implicit and unconscious (as in (1), (2) and (3) above) and in part explicit and conscious (as in (4), (5) and (6)). ‘Control’ concerns the ability of the learner to access a word in reception and production.

Clearly, there can be degrees of ‘knowledge’ and degrees of ‘control’. For example, Dale (1965) identified the following degrees of understanding, all of which would seem to apply to knowledge of a word’s denotive meaning:

Stage 1: ‘I never saw it.’
Stage 2: ‘I’ve heard of it, but I don’t know what it means’.
Stage 3: ‘I recognize it in context — it has something to do with ...’
Stage 4: ‘I know it’.

Drum (1983) also distinguishes degrees of word-understanding on the basis of a person’s ability to produce different kinds of definition. For example, a person may only be able to define a word by using it in a word or phrase, reflecting only a shallow knowledge of its reference (e.g. ‘The icons in the church ...’). Alternatively, the person might be able to define the word by giving an accurate paraphrase of its meaning (e.g. ‘An icon is a sacred representation of a holy person’). We can also envisage that the other aspects of word knowledge will vary in ‘depth’. For example, Meara’s (1982) work suggests that the types of associations

<table>
<thead>
<tr>
<th>Implicit Acquisition</th>
<th>Knowledge</th>
<th>Explicit Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>(3) Gram. patterns</td>
<td>(4) Denotive meaning</td>
</tr>
<tr>
<td>Collocations</td>
<td>(2)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Control

Reception

Production

Figure 1. A model of ‘depth’ of vocabulary knowledge
found in L2 learners’ lexicons differ from the types found in native speakers; clang associations such as ‘clog/dog’ are much more prominent in the former.

Irrespective of what learners know about a word, they are likely to vary in their ability to access their knowledge in accordance with the conditions of use. As we have already noted, they may be able to use a word receptively but not productively, or vice-versa. They may be able to access a word (for reception or production) when given time to do so, but be unable to do so instantly. We are all familiar with the tip-of-the-tongue phenomenon.

Clearly, ‘depth’ of word knowledge is a complex issue and the above discussion has done no more than skim the surface. It will not be possible to further our understanding until we heed Meara’s (1984, 1992, 1997) call and develop adequate models of how a learner’s mental lexicon is constructed by considering it as a whole — as ‘a large-scale structure’ — rather than focussing on a small number of individual words. We will not proceed very far in our study of how incidental vocabulary learning from oral (or written) context takes place, unless we have a clear understanding of what we mean by ‘vocabulary acquisition’ and, arguably, we are still a long way from this.

Factors affecting incidental vocabulary learning

We can hypothesize that a number of factors will influence incidental vocabulary learning. Inevitably given the paucity of research into acquisition from oral input, this account will have to draw on research involving written texts. It should, therefore, be seen as a programmatically statement rather than a survey. The factors are grouped under four headings; (1) intrinsic word properties, (2) input factors, (3) interactional factors and (4) learner factors.

Intrinsic word properties

It seems very likely that some words will be more difficult to learn from oral input than others, irrespective of the richness of contextual clues available to the learners. We will consider four intrinsic word properties which appear to influence acquisition.

(1) Pronounceability

The extent to which learners are able to pronounce an L2 word will fairly obviously affect their ability to actually produce it. It is less obvious that it
affects their ability to perceive the word and, thereby, to acquire it. Laufer (1997), however, cites a number of sources that suggest that pronounceable words are more likely to be perceived accurately (e.g. Ellis and Beaton 1993a). Laufer suggests that learners may avoid attending to phonologically problematic words. The degree of phonological similarity between the learners’ first language (L1) and the target language functions as a major determinant of difficulty.

(2) Part of speech

There is some evidence to suggest that learners learn nouns more readily than other parts of speech, at least in the early stages. Yoshida (1978) found that his subject, a three and a half year old Japanese boy, learnt mainly nouns initially — 60% of his total words after four and a half months were nouns. In contrast, he learnt few verbs. Felix (1978) also found that his subjects (child learners of L2 German) were slow to learn verbs. Nation (1990) cites a study by Rodgers (1969) that found nouns were the easiest to learn with adjectives next. Verbs and adverbs were the most difficult. Elley (1989) in a study investigating the effects of listening to stories read aloud on the acquisition of new words by seven and eight year old native speakers of English found a tendency for the children to show higher gains on nouns than on adjectives and verbs.

There are a number of explanations for these findings. One is, as Nation suggests, the meaning of nouns can be guessed from context more easily than the meaning of verbs. Another very likely explanation is that learners initially concentrate on nouns because they are more useful for decoding and encoding messages. As Ellis (1984) has pointed out, early L2 utterances are frequently propositionally reduced because learners have limited processing capacity. Verbs are omitted more frequently than nouns because they are not so important for getting a message across. They may be attended to less in the input for the same reason. Finally, N. Ellis and Beaton (1993a) suggest that nouns may be easier to learn than other parts of speech because they are more imageable (see below).

(3) Distinctiveness of word form

A word that has a distinct form is easier to learn than a word that is similar in form to some other word. Nation (1990) describes the problems he had distinguishing two Indonesian words, ‘bintang’ (star) and ‘binatang’ (animal). Huckin and Bloch (1993) in a qualitative study of contextual inferencing found that ‘mistaken identity’ accounted for most of the cases of unsuccessful guessing. The learners allowed word shape to override contextual factors. For example, one learner misread ‘optimal’ as ‘optional’. In both of these examples, it is interesting to note that the words causing the problem begin and end with the same letters,
being differentiated by letters in medial position. Where oral input is concerned, mistaken identity, where unfamiliar words are heard as familiar words, are likely to be even more common. According to Ellman and McClelland’s (1982) trace model of lexical access, lexical expectations can override an auditory analysis of the input. As an example of this, Laufer (1997) gives examples of ‘deceptive transparency’, where words are processed wrongly because learners assume the meaning of a word is equivalent to the meanings of its parts (e.g. they process ‘outline’ as ‘out of line’).

Laufer (1997) also notes that ‘there is a wealth of evidence that L2 learners confuse words that sound and/or look alike’ (p.146). He reports his own study of ‘synforms’. This found that the most problematic were those that differed according to suffixes (e.g. industrial/industrious) and which shared the same consonants but differed in vowels (e.g. conceal/cancel). Laufer’s study involved written tests only but it is highly likely that oral synforms can also be distinguished with regard to the degree of difficulty they pose learners.

(4) Length of word form

It seems reasonable to suppose that learners find it easier to decode and remember monosyllabic than polysyllabic words. Meara (1984) reports that Chinese learners of L2 English were found to have ‘an unexpected difficulty with long words’ (p.234). However, Meara suggests that the reason for the Chinese learners’ difficulty might lie in the lack of familiarity with the Roman alphabet (i.e. be a reading problem). Another possible explanation is that more effort and time is needed to process and remember polysyllabic words than monosyllabic words.

However, it may be difficult to disentangle the effects of word length from other associated factors. Long words may be less pronounceable than short words. Also, as Laufer (1997) points out, in a language such as English, shorter words tend to be more frequent in the input. Laufer also notes that length may only become significant beyond a certain point but that it is difficult to say what this point is.

(5) The degree of correlation between form and meaning

There is considerable evidence to suggest that learners initially store words according to their sound rather than their meaning. Henning (1973; cited in Nation 1990) found that low proficiency learners tended to connect similar sounding words such as ‘horse’ and ‘house’ whereas high proficiency learners made connections according to meaning (e.g. ‘horse’ and ‘cow’). Similarly, Meara’s (1982) word association experiments showed that low-level learners were predisposed to make clang associations, whereas high-level learners and
native speakers made more paradigmatic associations. If learners are initially strongly influenced by the sound of words, then it would seem likely that they will find it easier to learn words where there is a degree of correlation between sound and meaning (e.g. onomatopoeic words like ‘bark’ or ‘sigh’) and also, perhaps, words where the form clearly signals the grammatical meaning of a word (e.g. ‘nation’; ‘lovable’).

(6) Imageability

Ellis and Beaton (1993a) review research which indicates that imageable words are more easily learnt than non-imageable words. An imageable word is one that ‘arouses a mental image’ (p. 5). Concrete words like ‘dog’ and ‘cup’ may be more easily learnt than abstract words like ‘love’ and ‘cruelty’, because they are more imageable. Although the studies they report (including their own) concern intentional learning, it would seem highly likely that imageability is an important factor in incidental learning too, probably because, as Ellis and Beaton note, it results in a ‘richer representation’. Elley (1989), in the study referred to above, found that ‘vividness’ was one of six factors that was significantly correlated with his eight year old subjects’ mean vocabulary gains, although less strongly than some of the other factors he investigated. However, Laufer (1997) points out that it does not follow that because a word is concrete it will be easier to learn than a word that is abstract. He notes that English speakers of Hebrew have more difficulty learning the two Hebrew words for ‘blue’ (kachol/tchelet) than they do many abstract nouns. The extent to which concrete and abstract words are easy or difficult will depend partly on the lexical and conceptual equivalences of the learners’ L1 and the target language.

(7) Polysemy

There is substantial evidence in SLA that learners construct their interlanguages on the principle that one form corresponds to a single meaning (see, for example, Andersen’s (1984) One-to-One Principle). It seems, likely, therefore that learners will find it easier to acquire those words that have single, transparent meanings than polysemous words. This claim is supported by a study by Bensoussan and Laufer (1984) which found that learners were much more likely to experience problems in lexical guessing with polysemous words. Learners proved reluctant to abandon the meaning of a polysemous item they were familiar with even if it did not fit the particular context in which they had encountered the word.
Input factors

Input factors are formal in nature; they reflect the ways in which the speech addressed to L2 learners is simplified. They can be distinguished from interactional factors (see Chapter One). In this section we will consider only input factors.

(1) Frequency

An input factor of obvious importance is word frequency, especially where the acquisition of word form and collocations is concerned (see N. Ellis 1997). Most of the research, however, has addressed frequency in written texts. Oral input tends to have a lower lexical density than written input and to contain more lexical repetition (McCarthy and Carter 1997). Thus, it is likely that oral input exposes learners to fewer lexical items more frequently. This may constitute an advantage at least for lower proficiency learners.

There is plenty of evidence to suggest that the number of encounters learners have with a word is a major factor in whether they learn it or not. Kachru (1962—cited in Nation 1990) found that words that occurred seven or more times in the course books of Indian learners were known by most learners, but that most of the words occurring only once or twice were not known by most learners. Palmberg (1987) found that the vocabulary remembered by beginner learners of English in a classroom context in Sweden reflected the frequency of the items in the text book. Beck, McKeown and Omanson (1987) report a vocabulary training study, part of which investigated the effects of word frequency on vocabulary learning by native speaking children. They found that four encounters with new words were sufficient to produce some results, although the learning that took place was ‘limited’. Elley (1989) found that frequency produced the highest correlation with vocabulary gains made by seven and eight year old children from stories read to them. Eller, Pappas and Brown (1988), in another study investigating the effects of listening to stories, also found frequency a factor. Brown (1993) found a clear, although not very strong, relationship between general word frequency (determined by reference to the Brown University corpus — Francis and Kučera 1982) and the words learnt by learners enrolled on a university intensive English language program during one semester. However, she did not find any relationship between the specific vocabulary used in a video-instructional program (‘Raiders of the Lost Ark’) and vocabulary learning.

A question of considerable importance is whether the relationship between frequency and word learning is a monotonic one (i.e. whether the more frequent a word is, the more learners learn it and the greater the ‘depth’ of their learning)
or whether there is a threshold effect operating (i.e. a word has to be encountered a specific number of times for it to be learnt). N. Ellis (1997) refers to Andersen’s ‘power law of practice’ according to which the amount of improvement decreases as a function of increasing frequency. Thus, more exposures do not necessarily result in more learning. There is also research to show that little is learnt from just one or two exposures. As we have already noted, Hulstijn (1992) found that retention of word meanings in an incidental learning task that afforded just one exposure was ‘very low indeed’. Brown’s failure to find any significant effect for specific vocabulary frequency may reflect the fact that the words did not occur with sufficient frequency for any measurable learning to take place. In contrast, her finding that general vocabulary frequency was related to learning can be explained by the fact that the learners in her study may have received sufficient exposures for learning to take place. All this points to a threshold effect. However, Nagy, Herman and Anderson (1985) argue that a small increment in word knowledge is possible from a single exposure to written text.

In fact, much depends on the ‘depth’ of knowledge being measured. It is possible that a single exposure is sufficient for some learning to take place, even in the case of oral input. Learners, for example, may be able to recognize it as a ‘real’ word where previously they could not. But a single encounter is unlikely to be sufficient to enable learners to give the meaning of a word let alone recall its phonological form.

If by ‘knowing a word’ we mean ‘being able to give its meaning’, then the available research suggests around 6 or 7 exposures seem to be the minimum necessary, although this is obviously likely to vary depending on various other factors, such as the intrinsic difficulty of the word. Palmberg (1987) refers to research by Carpay (1975) which indicates that new words should be used in at least four different contexts when they are first introduced followed by subsequent exposure on three other occasions. The assumption underlying the ‘threshold’ view is that each exposure adds something to a learners’ knowledge of a word, moving it ‘a little bit higher on the scale of knowledge’ (Nagy and Hermann 1987: 27), but that not until there have been sufficient exposures will learners ‘know the meaning’ of a word.

(2) Saliency through ‘focus’

A word may be salient (i.e. ‘noticeable’) because of its intrinsic properties, or it may be made salient by the way it is used in the input. One way that words can be made salient in oral input is through repetition (i.e. its frequency), but there are other ways. A word can receive emphatic stress. A word may be a ‘key’ word for understanding a particular message. A word can be topocalized through
left dislocation (e.g. ‘The dishwashing liquid — give it me’). These devices serve to focus the learner’s attention on the word and thus make learning more likely.

One way in which words can be made salient is through instructional focus. This may or may not involve making them the subject of intentional learning. For example, Hulstijn (1992), in the study referred to earlier, asked learners to read a passage containing unknown words, clues to the meaning of which were provided in the margins. Hulstijn argues that this still constituted an incidental learning task because the learners were concerned only with understanding the text, not learning the words. Hulstijn found that such focussed exposure had some, limited impact on learning. Watanabe (1997) also found that focussed exposure in the form of marginal glosses resulted in more new words being learned from a written text than when either no cues were provided or paraphrases were incorporated into the text. Brown (1993) also examined saliency through instructionally focussed exposure by investigating whether glossing words and using them in exercises based on the ‘Raiders’ video affected learning. It did not. However, she found that ‘salience from gap’ affected learning. This referred to the idea of the concept labelled by a word being introduced before the word itself (e.g. the learners might see a shovel being used in the ‘Raiders’ film but not hear or see the word ‘shovel’ until later). Brown concluded that ‘words that are important in a specific context are more likely to be acquired regardless of frequency’ (p. 281). Elley (1989) found that words that were helpful to the plot and characterization were more likely to be learned from listening to stories than words that were less important in these respects.

(3) Availability of contextual cues

There is general agreement that contextual cues aid vocabulary acquisition. Elley (1989), for example, found that strength of meaning cues was strongly correlated with vocabulary gains in the learners he investigated.

Sternberg (1987) provides a useful classification of the different types of contextual cues found in reading texts. As these are also applicable to oral input they are summarized in Table 1. He points out, sensibly enough, that ‘it is unrealistic to expect a given kind of cue to be equally helpful in figuring out the meanings of all kinds of words’ (p. 93). Some cues will work better for some words and other cues for other words (e.g. a temporal cue for ‘diurnal’; a spatial cue for ‘pasture’ (as in ‘low lying pasture’)). He also notes that the helpfulness of a cue can be determined by whether it precedes or follows the word. Studies of cue utilization in reading suggest that it is easier to make use of preceding than following cues (e.g. Huckin and Bloch 1993), although this might not be the case in oral input, as learners might benefit from first hearing the unknown word.
and then receiving clues as to its meaning. Finally, the proximity of the cue to the unknown word is also likely to be important. Huckin and Bloch found that in most cases of successful guessing their subjects used some word or words in ‘the immediate context’.

It might be argued that input that provides learners with rich clues as to the meaning of an unknown word is more likely to facilitate acquisition of its meaning than input that provides only poor clues. This is highly likely where intentional learning is concerned. Li (1988) compared the effect of ‘cue-adequate’ and ‘cue-inadequate contexts’ on the inferencing and retention of unknown words from both written and oral input by 48 advanced Chinese learners of English. In this study, the learners were presented with ‘sixty discrete, semantically disconnected sentences’ (p. 405), so it seems highly likely that they approached it as a task calling for intentional learning of the items. The results showed that both inferencing and retention were facilitated by cue-adequate contexts. However, as we noted earlier, it is not at all clear that this will also be the case in incidental vocabulary learning. A rich context may make understanding possible without any learning taking place.

There is clearly a need for much more research on the effects of contextual cues on vocabulary learning from oral input, particularly incidental learning. We

<table>
<thead>
<tr>
<th>Type of cue</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporal</td>
<td>Cues regarding the duration or frequency of X (the unknown word) or when X can occur.</td>
</tr>
<tr>
<td>Spatial</td>
<td>Cues regarding the location of X, or possible location in which X can sometimes be found.</td>
</tr>
<tr>
<td>Value</td>
<td>Cues regarding the worth or desirability of X, or the kinds of affects X arouses.</td>
</tr>
<tr>
<td>Static descriptive</td>
<td>Cues regarding properties of X (such as size, shape, color, odor, feel etc).</td>
</tr>
<tr>
<td>Functional</td>
<td>Cues regarding possible purposes of X, descriptive actions X can perform, or potential uses of X.</td>
</tr>
<tr>
<td>Causal/Enablement</td>
<td>Cues regarding possible causes of or enabling conditions of X.</td>
</tr>
<tr>
<td>Class membership</td>
<td>Cues regarding one or more classes to which X belongs, or other members of one or more classes of which X is a member.</td>
</tr>
<tr>
<td>Equivalence</td>
<td>Cues regarding the meaning of X, or contrasts (such an antonymy) to the meaning of X.</td>
</tr>
</tbody>
</table>
know little about the effect of different types of cues, the proximity of the cue to the unknown word and of cue-adequate as opposed to cue-inadequate contexts. It ought to be possible to tease out these effects through careful experimentation. We also need to go beyond the micro level by examining how macrostructural properties of the context influence acquisition. For example, we might examine how learners make use of their knowledge of ‘story grammar’ to learn new words.

(4) Input complexity

The overall complexity of the input in which new words are embedded can also be expected to affect their learnability. There is a considerable literature on the relationship between input complexity and comprehension (see Ellis 1994). Parker and Chaudron (1987), for example, review 12 experimental studies of the effects of input modifications on comprehension. Their conclusion is that although linguistic modifications (e.g. simpler syntax and vocabulary) helped comprehension they did not do so consistently. In contrast, what they call ‘elaborative modifications’ (e.g. repetition, paraphrase, use of synonyms, extraposition and cleft constructions) were considered more likely to promote comprehension. However, Parker and Chaudron’s own study failed to show any advantage for elaborative modifications, a result they explain by suggesting that the overall lexical and syntactic difficulty of the reading texts they used was so great as to negate the effects of the modifications. This research is premised on the assumption that if input aids comprehension it also aids learning, but, as we have already noted, this assumption may not be justified.

Two measures of input complexity that can be expected to have an impact on both the comprehension and acquisition of new words are lexical density and density of unknown words. Lexical density is determined by establishing the ratio of content words to total word tokens. Faerch, Haastrup and Phillips (1984: 84) comment:

The underlying assumption is that as it is the content words which primarily convey information, a text is dense if it contains many content words relative to the number of function words.

The density of unknown words is measured by establishing the ratio of new words to total words in a text. Writers of simplified reading texts set considerable store in controlling the number of new words learners will encounter. Nation (1990) refers to a study by Holley (1973) which tried to determine the optimal level of new-word density for written texts. It indicated that ‘vocabulary learning continues to increase even up to a new vocabulary density of one new word per fifteen known words’ (p. 343). This is considerably denser than the 1:50 density
recommended by West (1955) for supplementary readers. Nation considers that Holley’s learners may have been able to handle a fairly high density because the overall length of the text they were asked to read was fairly short (750 words). Of course, the optimal lexical density and new-word density is likely to be lower for oral texts than for written texts. There appears to be little research addressing this.7

**Interactional factors**

As we have already noted, what distinguishes oral input from written input is that the latter typically involves interaction. This allows for the input to be modified at just those points where learners experience comprehension problems. When learners hear a word that prevents them from understanding the message they can request clarification and thereby obtain further clues about its meaning. Interaction, therefore, potentially enriches input in a number of ways that can be hypothesized to facilitate word acquisition.

The literature on meaning negotiation in interactions involving L2 learners is extensive (see Chapter One) but has focussed on the nature of the modifications that take place, the structure of the modified discourse and on comprehension. There has been no attempt to examine the nature of what Gass and Varonis (1985) refer to as the ‘trigger’ (i.e. the source of the communication problem). However, a quick look at the protocols given as examples of meaning negotiation in the published research makes it clear that, in many instances, the trigger is lexical in nature, as in this example from Pica and Doughty (1985):

A: She’s on welfare.
B: What do you mean by welfare?

Often the negotiation of meaning focuses quite explicitly on lexis.

How then does interaction help learners to acquire vocabulary? Two possible ways are (1) by increasing the overall quantity of the input and (2) through elaboration that results in greater transparency of meaning.

Interaction where meaning negotiation takes place is likely to result in more input (see Chapter Three). It seems reasonable to suppose that the more input learners get, the faster they will learn.8 Where vocabulary is concerned, sheer quantity of input may help by giving learners more time to process new words. Perhaps they tune out the redundant input, thus creating time to focus on the items they find problematic.

Gass and Varonis (1985) define ‘elaboration’ as information not included in the original, problem-causing utterance but subsequently added. One of the main
ways in which speakers elaborate on their initial input when the problem is lexical is by adding a definition of some kind. Through negotiation learners can obtain definitions that meet all the requirements for the 'ideal' definition set by Aristotle, as summarized by Edwards (1967: 322):

1. a definition should give the essence or nature of the thing defined, rather than its accidental properties
2. a definition should give the genus and differentia of the thing defined
3. one should not define by synonyms
4. a definition should be concise
5. one should not define by metaphors
6. one should not define by negative terms or by correlative terms.

It seems very likely that learners will obtain a very good idea of the meaning of words so defined. Meaning negotiation, therefore, may be ideally suited to the incidental learning of word meanings. Such learning, it should be noted, involves a high level of explicitness.

Elaboration through definitions is also found in non-interactive discourse (e.g. lectures). However, such elaboration does not always result in a high level of transparency. Chaudron (1982) describes some of the devices used to elaborate in 'teacher-talk'. He argues that some of them (e.g. apposition, conjunction and parallel structures) can result in ambiguity; learners cannot tell whether new meanings are being added or whether a particular word is being elaborated' (p. 16). Here is one of Chaudron's examples taken from a high school Grade 10 history lesson. It shows how apposition might confound rather than facilitate word acquisition:

... the beaver is known as a very industrious and busy, uh, hard-working animal.

The learners will find it impossible to know whether 'busy' and 'hard-working' are synonyms of 'industrious' or new ideas. One of the advantages of negotiated interaction, perhaps, is that ambiguous definitions of this kind are less likely to occur. 9

So far, the research has focussed on just one aspect of interaction — the negotiation of meaning triggered by lexical problems. The role of interaction in vocabulary acquisition, however, goes way beyond meaning negotiation. We need to broaden the scope of enquiry by examining how interaction helps learners' to focus attention on specific items and to clarify their meanings, even when there are no problems. We should also recognize that 'interaction' is not a necessary condition of acquisition — learners can acquire vocabulary from non-interactional input, as studies like Elley (1989), referred to earlier, have shown.
Learner factors

An explanation of how incidental vocabulary acquisition takes place must take account of the learner as well as the input. Any model of vocabulary acquisition that leaves out learner factors is incomplete. From the existing literature, we can identify a number of learner factors that appear to be important.

(1) Existing knowledge of L2 vocabulary

It can be hypothesized that learners with a well-developed L2 vocabulary will find it easier to infer the meanings of unknown words from context and thus will acquire them more easily and rapidly than those with a more restricted L2 vocabulary. Horst, Cobb and Meara (1998) report that their subjects’ prior vocabulary knowledge facilitated their incidental acquisition of new vocabulary from a graded reader but that the relationship was not strong. They suggest that this is because the relationship is not a linear one. Learners with low general vocabularies will lack the lexical knowledge needed to infer the meanings of new words but learners with high general vocabularies may find themselves able to understand the text without the need to notice new words. This line of argument points to some threshold level of prior vocabulary for incidental acquisition to work effectively.

(2) Background knowledge

A crucial factor is the learner’s background knowledge. It is widely acknowledged that there is a close relationship between vocabulary breadth and world knowledge. As Drum and Konopak (1987) put it, ‘... the more knowledge of the world that an individual has, the more words that person will know’. Given that world knowledge is an important component of general intelligence, vocabulary can be expected to provide a good indicator of a person’s overall intelligence, a hypothesis supported by psychometric IQ tests (Sternberg 1987). What, then, is the nature of the relationship between what a person knows and word acquisition? The answer is almost certainly that it is an interactive one. Learners with wide background knowledge will find it easier to infer the meanings of new words from context and thus increase their vocabulary. Conversely, learners with a wide vocabulary will find it easier to utilize contexts in the acquisition of new concepts.

Imagine an L2 learner hearing (or reading) the following:

The earthquake was devastating. It destroyed half the buildings in the city.
Furthermore, the resulting tsunami flooded the whole area.

There are clues within the context as to the meaning of ‘tsunami’ but these are likely to be insufficient without some background knowledge (e.g. that earthquakes
disrupt the seabed, causing tidal waves). The learner who already has some knowledge of how an earthquake can cause a tidal wave is in a much better position to understand, and perhaps to learn, ‘tsunami’.

So too is the learner with a wide existing L2 vocabulary. This is true on two accounts. First, without a knowledge of the meaning of ‘earthquake’, ‘resulting’ and ‘flooded’ the learner will not have access to the contextual cues that signal the meaning of ‘tsunami’. Coady (1993) claims that words that are easily recognized serve as ‘access portals to schemata’ (p.11). He suggests that for successful inferencing from written input to take place learners need an established vocabulary of about 5,000 lexical items, although, as we noted earlier this may be less true where inferencing from oral input is involved. Second, if the new word is to be learnt, the learner has to slot it into an existing lexical network. Aitcheson (1987) has suggested that a mental lexicon consists of overlapping modules (one for semantic-syntactic information, one for phonological information and one for creating new words). Each module is characterized as a complex network and within each network ‘there should be clusters of dense, multiplex mini-networks’ (p.198). Aitcheson suggests that one kind of mini-network is composed of words related to the same semantic domain. The richer the network representing a domain, the easier it is to make a new entry. Thus a learner with a tightly organized network that already includes such items as ‘earthquake’, ‘devastating’, and ‘flood’ is better equipped to learn ‘tsunami’.

Learners also possess ‘word schemas’. Nagy, Anderson and Herman (1987), Nagy and Scott (1990), and Nagy and Gentner (1990) identify various types of word knowledge that can help a learner learn new vocabulary. **Morphological knowledge** consists of knowledge of the prefixes, roots and suffixes that make up words. **Knowledge of the typical patterns of word meaning** constrain the range of hypotheses that learners have to entertain when they encounter a new word. Learners have knowledge of basic semantic relationships such as synonymy, antonymy and hyponymy. They also have knowledge of the properties of semantic domains (e.g. they know that English verbs like ‘slide’ and ‘wobble’ say something about how an object moves but not about the shape of the object that is moving). Nagy and his co-workers suggest that learners use these different kinds of knowledge to construct and evaluate hypotheses about the meanings of new words. In Nagy and Scott (1990), for example, they show that 7th graders’ ability to distinguish between plausible and implausible English word meanings was related to the size of their lexicons.

From this discussion of the role of background knowledge we can suggest the following general scale of learning difficulty:
Difficult The learner does not have an existing concept to which the L2 item can be attached; the lexical domain to which the item belongs is underdeveloped; the learner’s ‘word schemas’ are poorly developed.

Easy The learner has an existing concept to which the L2 item can be attached; the lexical domain to which the item belongs is well developed; the learner’s ‘word schemas’ are well-developed.

Again though, we need to acknowledge that just because a word is easy to learn with the help of background knowledge does not guarantee that it will be learnt.

(3) Procedural knowledge

Learners also have metacognitive and metalinguistic knowledge about how new words can be learnt. This kind of procedural knowledge is defined by Faerch and Kasper (1985) as ‘knowing how’. It consists of the strategies and procedures employed by learners to process L2 data for acquisition and use. In the case of vocabulary acquisition we can distinguish two types of procedural knowledge; that associated with contextual inferencing and that associated with negotiating meaning in interaction.

A number of researchers have examined the procedural knowledge involved in contextual inferencing, but probably the most substantial work is that of Haasstrup (1991, 1992). Haasstrup’s model is based on her analysis of the strategies evidenced by Danish learners of English in think-aloud tasks which required them to work in pairs to guess the meanings of unknown words from written texts. Haasstrup describes a continuum of word-processing strategies, reflecting the different types of cues that learners utilize. At one end of the continuum is ‘pure bottom-level processing’ where learners rely exclusively on word-internal cues, while at the other end is ‘top-level processing with full integration’ where learners use a variety of cues taken from different levels, including ‘context’ and ‘semantics’, and integrate them. Haasstrup (1991) suggests that there is a ‘developmental continuum’ of processing ability. Learners at the first stage of development can only process zero items (i.e. words with no available linguistic cues such as ‘bouts’). At the second stage they can process ‘ling’ items (i.e. items like ‘curative’ which invite interactive processing with integration of just one linguistic element). At the third stage they can handle ‘ling+’ words (i.e. words that invite interactive processing with integration of several linguistic cues (e.g. ‘indiscriminately’). Although Haasstrup’s claims about a developmental continuum are somewhat speculative, her research provides strong evidence of variation in individual learners’ ability to process meaning from context and also points to the way in which this ability might develop over
time. It should be noted, however, that Hastrup’s work (and that of just about all other studies that have investigated inferencing strategies) examined learner behaviour in the context of activities that required them to deliberately try to understand the meanings of unknown words. As N. Ellis (1997) has pointed out, we do not know whether the same strategies are at work when learners are reading for general understanding and inferencing incidentally.

Whereas Hastrup is concerned with the processing knowledge involved in inferring meanings from written contexts, Robinson (1993) considers the procedural knowledge involved in negotiating meaning, in particular lexical meaning. He notes that negotiation involves the twin processes of ‘assertion’ (i.e. one participant trying to fix or explain a word meaning) and ‘assimilation’ (i.e. the other participant trying to break down what is said into more manageable units in order to assimilate them). He argues that ‘procedural vocabulary is essential to this process’ (p. 241). High frequency vocabulary — Robinson calls it ‘indexical vocabulary’ — serves as the means by which learners negotiate understanding of new words. Obviously, learners vary in their procedural knowledge. We can expect learners with well-developed abilities to carry out inferencing involving the integration of varied cues, linguistic and contextual/semantic, and learners who are adept at negotiating the meanings of new words to develop their lexicons — both in terms of breadth and depth — more rapidly than learners whose skills are less developed in these respects.\(^{10}\)

(4) Immediate phonological memory

In order to learn new words it is necessary to form a stable representation of their phonological form. The extent to which individual learners are able to form phonological representations rapidly and accurately, therefore, is likely to influence their ability to acquire L2 vocabulary. In the case of L1 vocabulary acquisition, Gathercole and Baddeley (1990) review research which suggests there is a close link between children’s phonological memory skills and vocabulary development. They also report a study which provides results suggesting that five-year old children with poor ability to repeat non-words were slower at learning unfamiliar names for toys than children with good repetition skills. It would seem highly likely that immediate phonological memory is a significant factor in L2 vocabulary acquisition. It is also possible that phonological memory improves as a result of acquiring new words.

(5) The learner’s L1

There is ample evidence to suggest that the learners’ L1 plays a major role in L2 vocabulary acquisition. One important factor is the distance between the L1 and
L2. Where the two languages are close (e.g. English and Dutch), learners will have access to a large number of cognate words. In such cases, learners are likely to find the acquisition of both the phonological and semantic representation of a ‘new’ word easy. Nagy et al. (1993) report a study of Spanish-English bilinguals and biliterates, which shows that they were effectively able to transfer Spanish lexical knowledge to reading in English. Even languages that are not close may contain borrowings that facilitate acquisition. Japanese, for example, contains a large number of words borrowed from English. However, because the pronunciation of these words has been adapted to the L1 phonological system (a process known as ‘foreignizing’) learners may have difficulty in recognizing the L2 words when they hear them.

Also, care needs to be taken not to over-emphasize the value of cognates to learners. Because an L1 word has an L2 equivalent where its basic, denotive meaning is concerned does not permit the learner to conclude that the two words are identical with respect to other aspects of use and meaning — the grammatical patterns in which they can be used, their connotation, collocation and association. Holmes and Ramos (1993) note that cognates can often prove ‘false friends’. They point to the need for learners to check their initial guesses based on the recognition of cognates against other contextual cues. Nagy et al. (1993) suggest that the ability to distinguish true from false or partial cognates may require ‘a high level of cognitive flexibility and metacognitive awareness’ (p.254).

The degree of similarity in the phonological features of the L1 and L2 are also likely to affect the ease of learning L2 vocabulary. Ellis and Beaton (1993b) review research which indicates ‘the less overlap between the feature set of the native and the foreign word, the harder it will be for the FL learner to learn that word’ (p.3). Thus a Chinese learner of English finds words like ‘pen’ and ‘see’ easy to learn but words like ‘rice’ and ‘eighth’ difficult.

**Conclusion**

The purpose of this chapter has been to examine the factors that are likely to influence learners’ success in learning L2 vocabulary incidentally from oral input. Unfortunately, this important aspect of second language acquisition has been largely neglected by researchers. While there is a substantial body of research relating to vocabulary acquisition from written context, hardly any attention has been paid to oral context. As a result, this Chapter is programmatic and, in places, speculative. It nevertheless seems important to ask how vocabulary acquisition from oral input takes place — if only because learners attach
considerable importance to vocabulary and because many L2 learners are
dependent on oral input, particularly in the initial stages of acquisition.

The following is a summary of the main conclusions:

(1) Most L2 vocabulary is learnt incidentally, much of it from oral input.
(2) Oral input may be particularly important for the incidental acquisition of
vocabulary by beginners because it affords more contextual support than
written input.
(3) L2 vocabulary acquisition needs to be characterized as having a quantitative
and a qualitative dimension. Learning a word involves a gradual process of
adding ‘depth’ to an initial, shallow representation.
(4) A variety of factors are likely to affect the ‘learnability’ of a word. These
have been grouped under four general headings; the intrinsic properties
of the L2 word, input factors, interactional factors and the learner factors
(including knowledge of the L1). The different factors relating to these four
categories are summarized for convenience in Table 2.

Table 2. A summary of factors potentially influencing the acquisition of L2 words

<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic word properties:</td>
<td></td>
</tr>
<tr>
<td>Pronounceability</td>
<td>Learners find it easier to perceive words that they also find easy to pronounce.</td>
</tr>
<tr>
<td>Part of speech</td>
<td>Learners learn nouns more easily than other parts of speech.</td>
</tr>
<tr>
<td>Distinctiveness of word</td>
<td>A word with a distinct word form is learned more easily than a word which is similar in form to a word the learner already knows. Words that are 'deceptively transparent' cause problems to learners.</td>
</tr>
<tr>
<td>form</td>
<td></td>
</tr>
<tr>
<td>Length of word</td>
<td>Monosyllabic words are easier to learn than polysyllabic words. One reason, however, might be because they are also more frequent in the input.</td>
</tr>
<tr>
<td>Correlation between form and</td>
<td>Words where there is a degree of correlation between sound and meaning are easier to learn.</td>
</tr>
<tr>
<td>meaning</td>
<td></td>
</tr>
<tr>
<td>Imageability</td>
<td>A word that arouses a mental image (e.g. a concrete noun) is easier to learn than a word for which there is no obvious mental image (e.g. an abstract noun). However, the lexical and conceptual equivalence of the L1 and the target language is also a factor.</td>
</tr>
<tr>
<td>Polysemy</td>
<td>It is difficult for learners to infer the correct meaning of polysemous items from context.</td>
</tr>
</tbody>
</table>
### Input factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>Words encountered frequently are learned more readily than words encountered rarely; also frequent encounters promote depth of learning. The relationship between frequency and vocabulary learning may not be monotonic, however.</td>
</tr>
<tr>
<td><strong>Saliency through ‘focus’</strong></td>
<td>Words that are made salient through some kind of focus (e.g. glossing) are more likely to be remembered.</td>
</tr>
<tr>
<td><strong>Availability of contextual cues</strong></td>
<td>Words for which there are cues in the immediate context are likely to be learned more easily than words for which there are no contextual cues, or only distant cues. But currently little is known about which cues or combinations of cues work best.</td>
</tr>
<tr>
<td><strong>Input complexity</strong></td>
<td>New words that occur in simplified input (i.e. input with low lexical density and low new-word density) are likely to be more readily learned than words that occur in more complex input.</td>
</tr>
</tbody>
</table>

### Interactional factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>More input</strong></td>
<td>Interaction can increase the total input available to learners, which may give increase redundancy and give more time to process problematic items.</td>
</tr>
<tr>
<td><strong>Elaborated input</strong></td>
<td>Interaction enables learners to request clarification and thereby obtain definitions of unknown words. However, not all elaborated input is beneficial for acquisition.</td>
</tr>
</tbody>
</table>

### Learner factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing L2 knowledge</strong></td>
<td>L2 learners may require some threshold level of existing L2 lexical knowledge to be able to acquire new vocabulary from context.</td>
</tr>
<tr>
<td><strong>Background knowledge</strong></td>
<td>Background knowledge helps learners infer the meaning of new words. Possession of a richly specified lexical domain makes it easier to ‘place’ a new word in the domain.</td>
</tr>
<tr>
<td><strong>Procedural knowledge</strong></td>
<td>Learners vary in their ability to integrate bottom-up and top-down processing and, therefore, in their ability to infer the meanings of new words. Learners also vary in their knowledge of the procedural vocabulary needed to negotiate understanding of new words.</td>
</tr>
<tr>
<td><strong>Immediate phonological memory</strong></td>
<td>Learners vary in their ability to form accurate phonological representations of new words they hear.</td>
</tr>
<tr>
<td><strong>The learner’s L1</strong></td>
<td>L2 words cognate with L1 words are easy to learn, although they may sometimes prove ‘false friends’. L2 words with a similar phonological shape to L2 words may also be easier to learn.</td>
</tr>
</tbody>
</table>
Finally, it is necessary to reiterate one of the main points covered in Chapter One, namely that comprehending and learning an L2 word are not the same thing. Much of the above discussion has centred on what makes comprehension of new L2 items possible on the assumption that comprehension is a necessary condition for learning to take place. It is not a sufficient condition, however. This raises the question as to what else is needed for incidental vocabulary acquisition to take place. One answer is ‘interest’. Elley (1989) found that the children in his study picked up almost twice as many words from listening to one story than to the other and suggests that the principal reason for this was ‘lack of involvement’ in the second story. Stoller and Grabe (1993: 38) argue that because L2 students often find themselves at a “loss for words”, they are usually quite motivated to improve their vocabulary. However, not all learners are so motivated and, more particularly, as Elley’s study indicates, they are not necessarily motivated to learn every new word they come across. Ultimately, an account of incidental L2 vocabulary acquisition will have to address personal and affective factors as well as psycholinguistic issues.

Notes

I would like to thank Stephen Krashen, Leo Van Lier and Lidia Woytak for their helpful comments on an earlier version of this Chapter.

1. Van Lier, in his comments on a draft version of this chapter, rightly points out that the distinction between ‘incidental’ and ‘intentional’ learning is more problematic than my discussion of it acknowledges. He notes, for example, that ‘intentionality’ may be considered as something external to the learner (e.g. imposed by an instructional focus) or internal (i.e. the learner’s own, preferred orientation). Here, and elsewhere in this book, I am assuming that ‘intentional learning’ refers to intentionality on the part of the learner. He also notes that language users alternate between focal or peripheral attention in response to processing needs.

2. Krashen (1989) provides evidence to suggest that incidental learning may be more effective than intentional learning. He surveys a number of studies that have investigated the impact of silent reading on vocabulary growth and the relative effects of self-selected reading and ‘regular’ reading programs. He concludes that ‘free readers do at least as well, and often better, than students in the regular programs on vocabulary tests, suggesting that free reading is at least as effective as traditional instruction’ (p. 448). The contradiction between Krashen and Pressley et al. may be more apparent than real, however. Krashen does not consider short-term experimental studies, which do tend to find in favor of intentional learning. In long-term studies, where incidental learning has a chance to occur, the difference is less marked and, as Krashen demonstrates, such studies often find in favor of incidental learning.

3. While it is true that there is no widely accepted model that explains how learners come to understand the meaning of words they do not know from context, a number of preliminary attempts to construct a model have been made (e.g. Huckin and Bloch 1993).
4. Krashen, in comments on an earlier version of this Chapter, argues that the problem Coady identifies may not be a problem at all. He argues that a clear context can lead to acquisition even when there is no ‘need’ for the learners to attend to the item. He gives this example:

   If an acquiror of English has not yet acquired the word ‘door’, but knows the word ‘close’, and someone asks him to close the door in a very clear context, the acquiror’s LAD will assign the correct meaning to ‘door’ and at least some acquisition will take place.

   However, Krashen goes on to admit that when there is ‘extremely rich contextual support’ the learner may not notice a new item in the input. Krashen’s argument suggests that we need to examine the kind of contextual support that promotes (and inhibits) acquisition. The later section on ‘Availability of contextual clues’ addresses this.

5. Whereas classroom learners are likely to be exposed to large quantities of written input, untutored learners such as those investigated in the European Science Foundation project on adult second language acquisition will be dependent on oral input for developing their lexicons.

6. Nation (1990) refers to a study by Saragi et al. (1978) which shows that in an incidental learning task 16 or more repetitions in a written text were necessary.

7. Rost’s (1990) book, Listening in Language Learning, for example, has nothing on lexical density or new-word density as factors influencing input comprehension.

8. Wells’ (1985) study of children learning their first language suggests that quantity of input is a major factor in accounting for differences in rate of acquisition. Those children who learned the fastest were the ones that had the most language addressed to them. However, there were also qualitative input differences that were important.

9. It is interesting to note that Drum and Konopak (1987) in a review of research that has investigated the usefulness of different types of cues to word meaning in written text report that definitions and synonyms have been found to be the most useful.

10. It may also be possible to give training to learners who lack procedural knowledge to help them overcome their limitations. A number of researchers consider the role of ‘strategy training’ in this respect (see, for example, Sternberg 1987; Graves 1987; O’Malley 1987).