Chapter 8
Strategies for Inferring Word-Meanings in Context: A Cognitive Model

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This chapter describes an exploratory study that used think-aloud protocols to track the problem-solving strategies of three intermediate-proficiency NNS graduate students encountering unfamiliar words in their course readings. In general, these students relied mainly on context clues for guessing (especially local clues) and were usually successful when they did so. The most common cause of unsuccessful guessing was when students thought they knew a word but didn’t—and therefore didn’t really make a “guess.” The chapter concludes by proposing a dynamic model of hypothesis generation and testing that incorporates both parallel and serial processing.

INTRODUCTION

Of the four general skills that need to be mastered to become proficient in a second language—speaking, listening, reading, and writing—reading is certainly
the most crucial to a student entering into a second-language academic environment. Reading is the primary means by which academic knowledge is transmitted, and it is also a useful secondary source for information that might be missed in a class discussion or lecture. For many foreign students whose command of spoken English is quite tenuous, reading is the skill they most often depend on to help get them through a program of study.

Research has shown that second-language readers rely heavily on vocabulary knowledge, and that a lack of vocabulary knowledge is the largest obstacle for second-language readers to overcome (Ulijn, 1981; Alderson, 1984). Probably the most common way for adult second-language learners to acquire new words in an academic setting, as a glance at the margins of a typical L2 reader’s book will show, is to look them up in a bilingual dictionary. Many second-language learners depend heavily on such dictionaries. But dictionaries, especially the small pocket-size ones favored by L2 readers, often do not contain sufficient accurate information to serve the L2 reader’s needs. Consequently, second-language learners who wish to maximize their reading comprehension and vocabulary building must also learn strategies for guessing word-meanings in context.

Though there has been some scattered research on the strategies that second-language learners use when trying to guess word-meanings in context (e.g., Hosenfeld, 1977; Van Parrenen & Schouten-van Parrenen, 1981; Bensoussan & Laufer, 1984; Huckin & Jin, 1987), none of this research has attempted to model the process in a comprehensive way. The purpose of the present investigation was to trace the behaviors exhibited by one group of L2 students trying to guess unfamiliar words in their course readings and, on the basis of this data, to construct a tentative working model of these behaviors. We cannot claim generality for our model, but we do feel that it can serve as a starting point for further studies, the result of which could be a more generalized theory of second-language word-guessing strategies.

Evolving Perspectives

In the 1960s, the development of psycholinguistic models of reading, such as Goodman (1976) and Smith (1971), shifted the emphasis in teaching vocabulary from learning words in isolation to learning words in context. Smith argued that, instead of looking words up in a dictionary, the best way to identify an unfamiliar word in a text is to draw inferences from the rest of the text. Interest in the use of context as a means of aiding vocabulary learning was given a strong boost by the development of the psychological concepts of priming and spreading activation, which showed that the recognition and understanding of a given word can be affected by the words which have preceded it (Collins & Loftus, 1975). This emphasis on guessing from context has had a salutary effect on second-language teaching insofar as it has sensitized both teachers and learners to the
fact of context-dependence in the interpretation and use of words. But it has also seriously underplayed the problems learners might have in using this context, as well as more fundamental problems they might have in simple bottom-up processing (e.g., graphemic identification). In the past 10 years, the development of interactive models of reading has renewed interest in researching lower order reading skills. Interactive models propose that language processing is organized into levels ranging from graphic recognition to high-level schemata representing world knowledge (Rumelhart, 1977). Activation flows in both directions between these levels (see Rumelhart, McClelland, & the PDP Research Group, 1986), so that bottom-up processing is influenced by top-level schemata, and vice versa. This model of activation was used by Stanovich (1980) to develop what he called an interactive-compensatory model of reading, in which processing at one level can compensate for deficiencies at another level. According to this theory, a reader who lacks fast automatic word recognition skills would try to compensate by using more controlled activation of processes at higher levels, for example, contextual information and top-level schemata. Stanovich notes that increased dependency on higher-level processing does not necessarily mean more effective use of it; deficiencies in automatic word recognition may seriously hamper the reader's use of higher-level processing. Indeed, Eskey argues that, for second language readers, lower level decoding skills are essential to rapid comprehension (Eskey 1988; Eskey & Grabe 1988).

Research Questions

Whether or not interactive models are consistent with successful word-guessing is an empirical question. By observing the performance of second-language readers confronting unknown vocabulary, we hoped to provide a tentative answer to this question and also see whether some word-guessing strategies work better than others. Specifically, we were interested in these questions:

1. What strategies do second-language learners use when they encounter unknown vocabulary in context?
2. How does context function to aid second-language learners in dealing with unknown words?
3. In what ways do second-language learners fail to take full advantage of context clues; that is, how might teachers help these learners to make better guesses when vocabulary knowledge is not sufficient?

RESEARCH DESIGN

Given the complexity of an interactive conception of reading and the difficulty of controlling all the variables involved, we decided to explore the questions listed above via case studies rather than controlled experiments. A further consideration in our choice of approach was that previous research has shown that
gains in vocabulary learning from context tend to be gradual (Nagy, Herman, & Anderson, 1985) and are therefore often difficult to measure empirically in a controlled experiment. To this end, a qualitative study using think-aloud protocols was designed to examine the research questions. We felt that a translation task would be a useful means of achieving this goal, since it allowed the participants to work in both their native and target languages while focusing on the problem of understanding unknown words.

Subjects

Three students currently enrolled in the second semester of the Masters Degree program in International Business at Point Park College in Pittsburgh were asked to participate in the study for a small payment. All three were natives of China and had come to the United States within the last 3 years. Though no test of prior knowledge was given to the subjects, interviews showed that none had extensive knowledge of business or international economics before entering the program. Their instructor evaluated them as having sufficient knowledge in the course to understand the texts described below. The Michigan Test of Language Ability was administered to each of the students to obtain a measure of their proficiency in English. Their scores, ranging from 69 to 82, indicated that they were at an intermediate level of English proficiency. None reported having had systematic training in how to use context clues to infer the meaning of unknown words.

Texts

Since this study was designed to examine how students use vocabulary-learning strategies in an academic situation, materials for the experiment were chosen from the students' current assigned readings. A 450-word passage from a textbook (see Table 8.1) and a 260-word passage from a journal article were selected. Although readability formulas are not entirely accurate or reliable in depicting the actual difficulty of a text for any particular reader (Seltzer, 1983; Duffy, 1985), we decided to run these texts through the computer program Writer's Workbench to get a rough approximation of the linguistic differences between them. According to three standard readability formulas included in this program (Kincaid, Flesch, Coleman-Liau), the longer passage was written at the 11th grade level and the shorter one at the 17th.

Identification and Testing of Target Vocabulary

Target words were selected by the two investigators (who are experienced ESL instructors) as the words that these students would be least likely to know. This resulted in a list of 17 words for the first text and 10 words for the second. While a few of the words on the list, such as tariffs, could be considered technical terms with specialized meanings, the majority of the words were nontechnical. One study (Cohen et al., 1988) found that their informants had greater difficulty with
Table 8.1. The "Tariff" Text with Sentences Numbered and Target Words Underlined (from Lindert, 1986)

**The Basic Analysis of a Tariff**

A majority of economists has consistently favored letting nations trade freely with few tariffs or other barriers to trade [1]. Indeed, economists have tended to be even more critical of trade barriers than have other groups in society, even though economists have taken great care to list the exceptional cases in which they feel trade barriers can be justified [2]. Such consistent agreement is rare within the economics profession [3].

The presumption in favor of free trade is based primarily on a body of economic analysis demonstrating that there are usually net gains from freer trade both for nations and for the world [4]. We caught an initial glimpse of this analysis in Chapter 3 above, which showed that free trade brings greater well-being than no trade [5]. The main task of this chapter and the following chapters of Part Two is to compare free-trade policies with a much wider range of trade barriers, barriers that do not necessarily shut out all international trade [6]. It is mainly on this more detailed analysis of trade policies that economists have based their view that free trade is generally preferable to partial restrictions on trade, with a list of exceptions [7]. Once this analysis is understood, it is easier to understand what divides the majority of economists from groups calling for restrictions on trade [8].

**A PREVIEW OF CONCLUSIONS**

The economic analysis of what is lost or gained by putting up barriers to international trade starts with a close look at the effects of the classic kind of trade barrier, a tariff on an imported good [9]. This chapter and the next spell out who is likely to gain and who is likely to lose from a tariff, and the conditions under which nation or the world could end up better off from a tariff [10]. Later chapters take up other kinds of barriers to trade [11].

Our exploration of the pros and cons of a tariff will be detailed enough to warrant listing its main conclusions here at the outset [12]. This chapter and the next will find that:

1. A tariff almost always lowers world well-being [13].
2. A tariff usually lowers the well-being of each nation, including the nation imposing the tariff [14].
3. As a general rule, whatever a tariff can do for the nation, something else can do better [15].
4. There are exceptions to the case for free trade [16]:
   a. The “national optimal” tariff: When a nation can affect the prices at which it trades with foreigners, it can gain from its own tariff [17].
   b. “Second-best” arguments for a tariff: When other incurable distortions exist in the economy, imposing a tariff may be better than doing nothing [18].
   c. In a narrow range of cases with distortions specific to international trade itself, a tariff can be better than any other policy, and not just better than doing nothing [19].
5. A tariff absolutely helps groups tied to the production of import substitutes, even when the tariff is bad for the nation as a whole [20].

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greater difficulty with nontechnical words than technical words. In this study, it was expected that, from the class lectures and previous reading, the participants would have enough content knowledge to understand most of the technical vocabulary.

The subjects were then tested on these target words, both before the actual reading of each text and after. In addition to target words, other words were added as distractors to minimize any priming effect, that is, to avoid having the full set of test words itself suggest definitions for individual test words. The vocabulary words were randomized twice to be used in two lists, one for the pretest and one for the posttest. The pre- and posttests were designed to show differences in vocabulary knowledge before and after the words were seen in context. They also allowed the researchers to identify words unknown to a specific reader and then focus on the strategies the participants used for those words during contextual guessing.

For the pre- and posttests, the researchers used an interview and probe strategy modified from one developed by Nagy et al. (1985). The participants were asked the meaning of each word. If they did not know the word, they were asked to make a guess; if their guess was partly or possibly correct, the participants were asked to think of another possible meaning. After this probe was completed, the participants were asked to translate that word into Chinese. This translation task was added to safeguard against the possibility that a subject might not know the English definition even though he or she actually knew the meaning. This process gave the researchers a record of what the subjects thought a word actually meant in both Chinese and English. This information could then be compared to what they said in their protocols and written translations to see if there was any change in what they thought the word meant.

To try to determine the amount of contextual support there is for each target word, a cloze test was developed by blanking out all the target words in the two texts. The passages were then given to 12 native speakers who were asked to fill in the blanks.

Protocol Analysis

We elected to use protocol analysis (Ericsson & Simon, 1984) as the investigative tool most likely to yield the rich body of data one needs in an exploratory study. Previous research has shown that the "think-aloud" procedure could be effectively used with second-language learners (Hosenfeld, 1977; Van Patten & Schouten-van Parreren, 1981; Raimes, 1985; Huckin, 1986). The subjects were asked to translate the texts into Chinese while "thinking aloud" either in Chinese or English. All of their verbalizations were recorded on audio tape and later transcribed by a bilingual Chinese-American and analyzed by the two authors.

The subjects were tested individually as follows:
1. Each subject was given the pretest with probes from the researcher.
2. Each subject wrote a translation of the passage while "thinking aloud."
3. Each subject was given the posttest with probes from the researcher.

The participants were given a short training session before the first translation task to gain familiarity with the thinking-aloud procedure. During the actual task, each subject was asked to think aloud while translating, but not to reflect on what he or she was doing (we wanted to tap the subjects' stream-of-consciousness, not have the subjects tell us what they thought we wanted to hear). An experimenter was present to urge the participant to continue talking if he or she lapsed into silence; however, he did not answer questions the participant might have about the text. The protocols were transcribed, checked for accuracy against the tapes, and then divided into units corresponding to what were perceived as the individual subgoals of each participant. As Ericsson and Simon (1984) have argued, verbal protocols capture only a fraction of a subject's thoughts, but they usually provide enough information to trace the thinking process and build a rough model of it.

The participants were asked to make their translations as meaningful as possible but not concern themselves with grammatical correctness. All of the Chinese spoken in the protocols was translated by a native Chinese speaker into English. The translator was instructed to make the translation adhere as closely as possible to the meaning of the Chinese lexical items.

**FINDINGS**

With 27 target words on the two pretests and three subjects participating, there were 81 cases (3 × 27) where subjects could indicate prior knowledge of a word. Of this number, the subjects gave reasonable definitions (as judged by the two authors) of 37. This meant that, during the actual reading of the two passages, there were 44 cases where subjects had to guess at the meaning of a target word.

We used both the tape-recorded protocol and its written transcription to analyze each of these 44 cases. It should be emphasized that, although think-aloud protocols provide more information about cognitive processes than any other single technique, they are able to capture only traces of the cognition that actually takes place. Instead of making definitive claims about the subject's cognitive behavior, the investigator can only make educated guesses and must use his or her interpretive skills to create a coherent picture. That is what we have done here. The overall results are given in Table 8.2, and the discussion that follows should be understood in this light. Although our interpretations are all based on data from the protocol record, they represent only our "best guess" of how our subjects proceeded through the task. Each sentence in the step-by-step descriptions given below should be read as if it contained the word apparently. We have omitted this qualifier simply to avoid heavy repetition.
As Table 8.2 shows, subjects made 25 successful guesses out of 44 opportunities. In so doing, they relied mainly on context clues (23 of the 25). Subjects were unsuccessful in 19 of the 44 guessing opportunities, and these failures can be attributed largely to the subjects’ failure to use context clues. In nine of these cases, they apparently mistook the word for another that resembles it (e.g., *pillars* for *appliers*). We call these cases instances of mistaken ID (Holmes & Ramos, Chapter 5, this volume, call them *mismatches*; Laufer, 1988, calls them *synforms*). In seven other cases (the “pothole” cases), the subjects detoured around the word without even making a guess. In one case, the subject relied on incomplete knowledge of the word. In another, the subject tried unsuccessfully to use morphological analysis. In only one case did the subject rely mainly on context and fail to guess the word.

In general, all three subjects seemed to follow the same pattern for each word they encountered. First, they would simply access their store of vocabulary knowledge. If they thought they recognized the word and knew its meaning, they would stick to that meaning and try to incorporate it in a coherent way into their mental representation of the text, without checking any context clues. This worked well for the many words they really knew—approximately 95% of the 710 words in the two texts. It failed badly, however, for those relatively few words they only thought they knew (i.e., the “mistaken ID” cases). If they did not recognize the word as a whole, they would often try morphological analysis to make guesses, concentrating on the word stem. In most cases, however, they would check these guesses against various context clues, which then became the primary determinants of the subject’s guess. This was usually successful in generating correct or near-correct guesses.

Finally, if they did not recognize either the word or its stem, they would look for a variety of context clues. This tactic was usually successful. The clues involved were of three general types:

### Table 8.2. Totals for All Target Words, with Main Guessing Strategies Used. (3 Subjects, 2 Texts, 81 Target Words)

<table>
<thead>
<tr>
<th>Guesses (44)</th>
<th>Successful (25)</th>
<th>Unsuccessful (19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>Used context*</td>
<td>Mistaken ID</td>
</tr>
<tr>
<td></td>
<td>Latent word knowledge</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Morphological analysis</td>
<td>1</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td></td>
<td>Potholes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incomplete knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Morphological analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used context</td>
</tr>
</tbody>
</table>

*Includes “late bloomer” case
• local linguistic constituents (e.g., syntactic or semantic collocations),
• global text representations (including text schemas and "permanent memory," that is, the translation up to that point), and
• world knowledge.

Although they would often appear to use two or more of these different clues in combination, the overwhelmingly most popular and most effective type of clue appeared to be some local linguistic constituent—especially a collocating clue-word that tipped off the meaning of the target word. Of the 23 cases of successful contextual guesswork, 16 were governed by some clue-word. These clue-words were distinctly local: all but one of the 16 occur in the same sentence as the target word.

On seven occasions, after not finding sufficient contextual evidence to support a hypothesis or not being able to generate a hypothesis in the first place, the subjects apparently decided that they could get by, or "make do," without it. These are the "pothole" cases. We suspect, on the basis of two other cases (discussed below), that the subject put these words into some sort of interim memory store before going on to the next word.

Successful Guessing

In generating successful guesses, our subjects relied mainly on clue-words. However, they used other context clues as well, and showed a variety of strategies in their guesswork, even within subjects. Using Text 1, the following sections describe and illustrate these strategies.

The Clue-Word Strategy. In 16 of the 25 cases where they successfully guessed a word’s meaning, our three subjects used some other word or words in the immediate context to provide clues to the meaning of the target word. In all but one case, this clue-word was located in the same sentence; usually it was the nearest content word. Table 8.3 summarizes these findings:

For example, one subject (Xia) did not know the word distortions. On the pretest, he offered no definition for it at all, either in English or in Chinese. Then he encountered it in the reading (sentence 18). Here is the transcript of his protocol (italics indicate words that the subject spoke in Chinese but that we have

<table>
<thead>
<tr>
<th>Distance from Target Word</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 content word away</td>
<td>12</td>
</tr>
<tr>
<td>2 content words away</td>
<td>1</td>
</tr>
<tr>
<td>3 content words away</td>
<td>1</td>
</tr>
<tr>
<td>5 content words away</td>
<td>1</td>
</tr>
<tr>
<td>27 content words away</td>
<td>1</td>
</tr>
</tbody>
</table>
translated here for the reader’s convenience; Roman type and parentheses indicate words the subject spoke in English):

... When other incurable (distortion) whatever, when other, when other incurable problems, it's incurable then it must be problem exist in the economics, setting up tariffs is better than doing nothing, something is better than nothing.

His written Chinese translation (actually, our back-translation) reads as follows:

When other incurable problems exist in the economy, setting up tariffs may be better than doing nothing.

As reconstructed from the protocol record, Xia begins by fixating on the target word (distortions), with the goal being to translate it. He then tries to generate a hypothesis about its meaning. It is not part of his vocabulary knowledge, so he considers other forms of knowledge he has (syntactic, morphological, text schematic, collocational, etc.). He knows the word incurable (he defined it correctly on the pretest and also in his protocol) and he apparently knows English syntax well enough to see it as a modifier of distortions. He then accesses his world knowledge and infers, in effect, that if it is incurable, it “must be a problem.”

A “late bloomer” case. A more unusual example of the clue-word strategy can be found in another subject’s (Ran) attempts to guess the meaning of barriers (sentences 1 and 2). On the pretest, he correctly translated it as obstacles. Yet, when he encountered it in the text a few minutes later, he did not seem to recognize it. Here is the transcript of his thinking aloud as he dealt with the text phrase, “with few tariffs or other barriers to trade”:

with very free, free, . . . free . . ., free, low, low, few, few, with very few (tariffs) very few tariffs, tariffs, tariffs . . ., tariffs, or other. tariffs, or other . . ., other, other, what, few tariffs or other, other . . ., tariffs . . ., (Indeed) really, indeed, indeed . . .

He fixates on barriers but does not seem to be able to generate a guess as to what the word means. In his written translation (done almost concurrently with his thinking aloud), he translates it as ““types of duties”:

with little tariffs or other types of duties between countries.

Apparently, the modifier other serves as a clue-word here, telling him that barriers is a superordinate of tariffs. If so, this might help to explain why he does not translate barriers as ‘obstacles,’ as he had on the pretest. Perhaps he does not think of tariffs as obstacles, and therefore assumes that barriers must have some other meaning in this context. But since we do not have any protocol
data to support this interpretation, it is merely speculative. This is the only case in our entire study where the subject correctly translated a word on the pretest and then failed to even articulate this meaning during the translation process.

He then goes on to sentence 2, where he encounters the word two more times. Here he avoids the word entirely, going around it the way one drives around a pothole in a street (hence, our use of the term pothole as a descriptor). The text sentence reads:

Indeed, economists have tended to be even more critical of trade barriers than have other groups in society, even though economists have taken great care to list the exceptional cases in which they feel trade barriers can be justified.

Ran translates it in writing as follows:

Indeed, economists want to have a more critical point of view than in other social sectors.

In general, one might imagine either of two reasons for potholing on a word, that is, for not even trying to guess it. First, the subject might feel that the word is not essential to the meaning of the sentence and therefore not worth expending a lot of time and energy on. Or, second, the subject might simply have no idea what it means. In the case at hand, the first reason seems unlikely. Barriers plays a major role in the text sentence, and by detouring around it the subject has produced a translation that differs greatly from the text sentence. Given his behavior on other parts of the task, it is implausible that he would not have been aware of this difference. On the other hand, the second explanation does not hold up well either, for it seems very unlikely that the subject had no idea what the word meant. After all, he had translated it correctly on the pretest and had come up with a near-synonym for it in the first sentence. So we are quite puzzled why he failed to even attempt a guess in this particular case.

In any event, the subject continued reading and translating. In view of his potholing behavior in sentence 2, one would suppose that he had given up on barriers, discharging it, in effect, from working memory. And yet there is clear evidence that he had merely put it into some kind of interim memory buffer. When he got to sentence 6, he encountered the word barriers again:

The main task of this chapter and the following chapters of Part Two is to compare free-trade policies with a much wider range of trade barriers, barriers that do not necessarily shut out all international trade.

Here is how he dealt with it:

to compare free-trade policies with (much wider range of trade barriers) free-trade policies with wider, wider . . ., wider . . ., (much wider) much wider . . . (trade barriers and barriers) much wider range of tariffs . . . range, (barriers that do not
necessarily shut out all international trade) wider tariffs . . . or . . . or (barriers that do not necessarily shut out, barriers that do not necessarily shut out all international trade) and, and the, and those . . . , those . . . , cannot, cannot prevent, preve-, prevent, (god!) preve-, preve- . . . , cannot prevent . . . , cannot prevent . . . (international trade) cannot prevent . . . international trade, international trade . . . the tariffs that cannot prevent, prevent international trade, tariffs that cannot prevent . . . international trade, what does this mean? tariffs cannot prevent international trade.

Suddenly he seems to equate barriers with tariffs. The only previous mention of tariffs in the text occurs in sentence 1, where it is closely linked, both physically and semantically, with barriers. Thus it appears that Ran must have created an association between these two words and put them together into a memory buffer. His written translation of sentence 6 shows that he indeed now sees barriers as meaning ‘tariffs’:

The main task of this chapter and the chapters in part two is to compare the free trade policies with tariffs in more extensive areas or the tariffs that cannot prevent international trade.

Thereafter, for the rest of the text, he consistently translates barriers as ‘tariffs’ (it appears three more times). And on the posttest, he translates it the same way.

This is a case, therefore, where the subject’s sensitivity to context actually overrode independent word knowledge. In a sense, understanding barriers to mean ‘tariffs’ worked quite well in this context. But if he retains this meaning in lieu of the more general meaning of ‘obstacles,’ then his performance in other contexts, where barriers does not mean ‘obstacles,’ may suffer. In that case, it could be said that contextual guessing helped his reading but did not help his vocabulary building.

A variety of strategies. Another word that Ran did not know was presumption. On the pretest he defined it as ‘guess.’ When he encountered it in the text (sentence 4), he continued reading the rest of the sentence. Then, he went back to it, fixated on it, and tried a variety of hypotheses. Here is the relevant protocol segment:

(Such consistent agreement is rare within the economics profession.) such, (such consistent) such . . . , such consistent, consistent (agreement) consistent . . . , (agreement) consistent . . . , (agreement) consistent, consistent (agreement . . . , aiyia, I see, agreement) . . . agree, not “agree” . . . agree, consistent agree, consistent (agree) agree, (agreement) agree about a event (agreement) approve, agree . . . , agree, consistent agree . . . , economics, in economics . . . , in economics circle, in economics circle . . . , in economics circle . . . , it’s rare in economics circle . . . , (The presumption in favor of trade . . . , presumption in favor of trade is
based primarily on a body of economic analysis . . ., presumption) such approval, (presumption, presumption . . ., presumption) is (predict, prediction, in favor) such predi-, predict, such prediction . . ., such . . ., such . . ., about free trade . . ., free trade . . ., such . . . free trade . . . expectation, (favor of) free trade. . . ., (favor) appreciation . . ., appre-, appre- . . . appre, admire . . ., appreciation, -tion . . ., appreciation (presumption, oh, my god, presumption) is it (prediction?) . . . the appreciation of free trade, point of view, point of view . . ., the point of view (is based primarily) on . . .

His written Chinese translation reads as follows:

This view of free trade is based on the analysis of the nature of . . .

Based on Ran’s protocol, our interpretation of his attempts to guess the meaning of presumption is as follows: First, he tries to see it as an anaphoric reference to the preceding sentence. That sentence is still active in his working memory (note the recurring phrase such approval), and he probably knows that, in formal written English, a common way of creating intersentential cohesion is by beginning a sentence with a definite noun phrase that refers anaphorically to all or part of the preceding sentence.

Thus his first guess is that presumption means ‘approval.’ He quickly rejects this guess, for reasons that are not made clear in the protocol. Perhaps he recognizes that ‘approval in favor of’ would be redundant.

He then tries ‘prediction.’ The fact that he makes this guess in English rather than Chinese is a tipoff, we feel, to the underlying source of the guess: prediction and presumption are somewhat similar in word-shape, differing only in their internal syllable. Thus it is plausible to suspect that he uses word-level morphology to generate this particular guess. Notice that this is strictly a local guess: there is no suggestion of any ‘predicting’ in the text up to this point, and no reason that we can see for him to have it in his mental text representation. Perhaps this is why he rather quickly abandons this guess. When he tries it out in context, it doesn’t work.

Next he tries ‘expectation,’ which is a near-synonym of ‘prediction’ but which has more of a positive connotation. This guess, we believe, reflects the subject’s attempt to capture the meaning of the phrase presumption in favor of; note his protocol comment ‘prediction, in favor.’ But he quickly rejects ‘expectation,’ preferring the even more positive ‘appreciation’; note how he continues to key on the text word favor in his protocol comments. At one point, he even tries the very positive term ‘admire.’

Finally, though, he seems to recognize that a positive term like ‘appreciation’ or ‘admire’ does not go well with in favor of. Perhaps he realizes that a phrase like ‘appreciation in favor of’ would be redundant. He briefly returns to ‘prediction,’ then tries ‘point of view,’” without giving any clues as to why.
Perhaps it is the connotative neutrality that appeals to him: "point of view" has neither a positive nor negative nuance and thus might be a safer guess for someone who does not know what *presumption* means. At the same time, it fills the role of a reiterative superordinate (Halliday & Hasan, 1977), providing a lexical transition from the first paragraph to the second. 'View' is the word he settles on for his translation.

This is a good example of a subject trying multiple, varied guesses, all of them using context. His guesswork also benefits from morphological analysis (presumption = prediction) and from the exploring of a semantic field: prediction > expectation > appreciation > admir(ation) > point of view > view. Although 'view' is not a fully successful translation for *presumption*, it is close enough in this context, we feel, to count as an instance of successful guesswork.

**Unsuccessful Guessing**

As Table 8.2 shows, our subjects failed to make correct guesses on 20 of the 44 guessing opportunities they had. In 17 of these 20 cases they did not use context clues, relying instead on vocabulary knowledge, which turned out to be deficient. The most common cause of unsuccessful guessing was simple misidentification of the word. Sometimes our subjects would try to use this "mistaken ID" in their translation; sometimes they would sense that something was seriously wrong with their interpretation and would detour around the word (the "pot-hole" cases). This section discusses both of these types of errors and a third category, that of incomplete knowledge.

**Mistaken ID.** There were nine cases where the subject misidentified a word and forced this misinterpretation into his translation. In most of these cases, there were context clues available which were inconsistent with the mistaken interpretation and which could have alerted the subject to the error, but the subject apparently either failed to notice these clues or failed to take them seriously. This may be due partly to the nature of the clues themselves: in eight of these nine cases, our cloze tests with native speakers indicated that the context clues were not at all obvious. But it is also related, we feel, to a phenomenon reported in Haynes (1984) and Bensoussan and Laufer (1984), namely, that word-shape familiarity will tend to override contextual factors.

A good example of mistaken ID can be found in Xia's attempts to guess the meaning of *optimal* in sentence 17. On the pretest he showed no familiarity with the word, not even venturing a guess. When he encountered it in the text, he apparently mistook it for *optional*. Here is the relevant protocol segment:

*Four . . . , there are exceptions in free trade. (A, tariffs, the national optimal) nation . . . A, a nation can choose tariffs, a nation can choose tariffs, what does that mean? When a nation can influence the prices that it trade with other nations, it may gain from the tariffs (right, that's right)*
He reads the entire text phrase, "The 'national optimal' tariff'', and quickly generates 'can choose' for 'optional'. He apparently senses that this interpretation does not quite fit the context ('what does that mean?'), but he uses it anyway. His written translation reads, "National selective tariffs," with 'selective' clearly being a rendition of 'can choose.'

There are few context clues to draw on in this case, either positive clues supporting an "optimal" interpretation or negative clues denying an "optional" one. And those few clues are hardly clear and unambiguous. One could point to the fact that, in talking about how tariffs affect the well-being of a nation, the entire paragraph focuses on their degree of effectiveness. The word better is particularly prominent, appearing four times, all as part of the main clause predicate. But these clues appear in adjoining sentences, not in the sentence in which the target word itself appears. When we had 12 native speakers (graduate students and undergraduates) complete a cloze test with optimal blanked out, they made wild guesses like 'trade' (2), 'income,' 'brand,' 'price,' 'profit,' 'variable,' 'good,' and 'debt'; three of them left it blank. Thus we have independent evidence that the context clues in this case are not obvious.

**Potholes.** The other major category of unsuccessful guesses consisted of "pothole" cases, that is, cases where the subject simply avoided the word in his written translation. We have already illustrated this kind of avoidance in Ran's response to barriers. After first encountering the word and then seeming to hang on to it in some temporary memory store for several sentences, he eventually succeeded in figuring out its meaning; and so what started out as a pothole case became instead a "late bloomer" case of successful guessing from context. But in the other seven pothole cases in our corpus, involving four words, this was not so; the subject avoided the word indefinitely. And in these cases, it is not because of any lack of context clues. Our cloze tests with native speakers indicated that all four of these words had strong contextual support. Thus, in these cases, it seems that the subject misidentified the word, recognized from context clues that it did not fit the context, but then could not think of a good alternative. In other words, there was probably a clash between the subject's supposed knowledge of a word and his text representation as derived from context clues. Not knowing how to resolve this contradiction, he or she apparently opted to evade it.

A good example of potholding can be found in Xia's response to the text word warrant (sentence 12). On the pretest, Xia translated warrant as 'guarantee.' Like our other two subjects, he apparently confused it with warranty, a word probably known to many Chinese students in the United States through their exposure to consumer product documentation. The text sentence reads as follows:

> Our exploration of the pros and cons of a tariff will be detailed enough to warrant listing its main conclusions here at the outset.
and Xia’s protocol reads like this:

*Our exploration about the good and bad points of tariffs (exploration) exploration is better . . . exploration will . . . be in great details detail (detail enough) will be detailed enough to . . . sure (sure, sure) sure to list out . . . the main conclusion, be sure to list here the main, what? confused, will be detailed enough to sure, list out at the beginning the main conclusion—This sentence doesn’t feel right—then why, why at the beginning list out the main conclusions, will be detailed enough, . . . Actually it’s like this, our exploration about the good and bad points of the tariffs will be in great detail, . . . then will guarantee, list out at the beginning . . . not right, we, didn’t get the right style, will be described here in great detail at the beginning, use ‘‘explore,’’ not ‘‘explain.’’ Our exploration of the pros and cons of tariffs will be detailed enough . . . (to warrant, to warrant, to warrant) enough to do what? Indeed, this chapter and the next . . .

He apparently begins his guesswork on *warrant* by accessing his vocabulary knowledge. Immediately upon encountering the word, he translates it as ‘sure.’ This is not the word he used on the pretest, but it is fairly closely related: A warranty or a guarantee is an ‘assurance’ of something. However, when he checks it against the rest of the sentence, he notices that it doesn’t fit: ‘‘This sentence doesn’t feel right.’’ At this point, one would think he might abandon the warranty/guarantee/sure hypothesis and try another, but he doesn’t. Instead, he tries ‘‘guarantee.’’ When that doesn’t work, he simply evades the problem by rephrasing the sentence. His written translation comes out like this:

*Our exploration of the advantage and disadvantage of tariffs will be introduced in great detail, so that the major conclusions are listed at the beginning.*

Most of our native speakers who took the cloze test produced good guesses on this item: ‘merit, start, justify (5), encourage, warrant.’ (Two others left it blank.) Thus there appears to be substantial contextual support for this word. Anyone familiar with the text-schema for academic textbook discussions (as our three subjects were) should be able to recognize that pro-and-con explorations typically lead to, or warrant, certain conclusions. Thus it should have been relatively easy for our subjects to guess the word’s meaning, even if (as in the case of one subject), a key word like *exploration* is not fully known. Yet there is no evidence from Xia’s thinking aloud or from his translation that he used any of this contextual support in his guesswork. Rather, he clings to two types of commitments: (a) the warrant–warranty misidentification, and (b) the definition of warranty as ‘guarantee, assurance.’’ In the case at hand, it is the first type of commitment that apparently causes the problem: Were it not for that word-form misidentification, the second commitment would presumably not come into play. But this does not reduce the overall force of the point we wish to make here, namely, that context clues seem to have little effect when the learner has word-
level commitments in his mind. For we have evidence from other cases (see also Huckin & Jin, 1987) that, where polysemy is involved, learners who know only one meaning of a word will try to stick to that meaning even in the face of negative context clues.

**Incomplete Knowledge.** On two occasions, our subjects relied on partial knowledge of a word and were unable, despite serious attempts to use context clues, to guess the full meaning of the word in that context. Here is an example: On the pretest Xia defined the word *liquidity* as “not solid” (Chinese: *ye ti*). When he encountered it in the reading text (‘‘Balance of payments deficits and problems of national liquidity depend to some degree on enterprises’’), he first tried using the “not solid” definition (‘‘fluidity’’). But then he quickly recognized that “fluidity” did not fit the context. Going back two sentences, he noticed the word *instability* and decided to key on that. His protocol for this section reads as follows:

*The balance of payments and . . . and (liquidating, national liquidating . . .) fluidity, national fluidity, (national liquidating) problem, not, national, national, fluidity, fluidity, nation, national impossibility, national fluidity, the instability . . . yes, instability . . . [PAUSE] . . . it’s impossible to translate this second part . . . (problems of . . . liquidating) depend on enterprise. That means the instability problem of the nation depends on enterprise, to a certain extent . . . the instability problem of a nation . . . depend . . . on enterprises. Enterprises are facing . . .*

And he translates the text using *instability* for *liquidity*:

*To a certain extent, the balance of payments and the instability problem of a country depend on enterprises.*

Apparently he is not confident of this translation: on the posttest, he reverts to his original definition of *liquidity* as ‘‘not solid.’’ This and another case like it represent two of the three cases where a subject used context clues but failed to guess the meaning of the word. (See Haynes & Baker, Chapter 7, this volume, for other illustrations of the problems caused by polysemy.)

**A Cognitive Model**

Figure 8.1 is a tentative working model of the behavior just described. This cognitive model incorporates both *serial* and *parallel processing*. The meta-linguistic control steps (e.g., ‘‘Try to generate hypothesis,’’ ‘‘Test hypothesis?,” “Make do?” ‘‘Need more context?’’ and ‘‘Generate more context’’) are done in serial order and appear to be governed by conscious decision making. There is clearly a natural ordering to at least some of these steps (e.g., a hypothesis must
be generated before it can be tested), and one can fairly easily follow, in the protocol, a subject's path through these steps. But this path, though made up of a sequence of steps, is not always straightforward. Our subjects displayed false starts, tried multiple hypotheses, ran into dead ends, and generally showed behaviors that one might expect of readers with limited vocabularies. For example, sometimes they would generate several quick hypotheses in a row, without testing them. This would usually result in a negative answer to the question "Make do?" and cause them to read ahead beyond the target word ("Generate more context"). On the other hand, sometimes they would generate an unsuccessful hypothesis (negative evaluation, or "NE") but use it anyway—an example of making do. On two occasions a subject failed to generate a hypothesis, went on past it, and then much later suddenly came up with an appropriate guess. We take this as evidence of some kind of temporary memory store intermediate between the two traditional types of memory (working and long-term) often discussed in the cognitive psychology literature.
The modules in the Generator/Evaluator—which represent only some of those that may have to be included in a more refined model—are linked together in a network. The module labeled “Vocabulary Knowledge” refers to the subject’s knowledge of words, including such aspects as register, frequency, syntactic behavior, pronunciation, orthographic form, derivational relatives, different meanings, and collocations (Richards, 1976). It is, of course, the single most important module for word-guessing in context. The “Text Schemata” module contains the subject’s mental representations of prototypical discourse patterns. The “Syntax and Morphology” module contains the subject’s general knowledge of sentence-formation and word-formation rules, apart from specific syntactic and morphological knowledge associated with any particular word (which we are treating as part of Vocabulary Knowledge). “World Knowledge” refers to all the facts, beliefs, and other concepts that comprise the subject’s nonlinguistic knowledge of the world. The “Text Representation” is the subject’s evolving conception of the meaning of the text-at-hand. “Permanent Memory” refers to the subject’s written translation of the text up to that point.

In contrast to the linear nature of the metalinguistic control steps, the cognitive processing that takes place within and among the various modules in the Generator/Evaluator is much more rapid and complex, and much less readily analyzable. Indeed, our depiction of this part of the model is based largely on inferences that we have made using relatively fragmentary data. The different modules in the Generator/Evaluator, as we hypothesize them to be, are interconnected in such a way as to operate in parallel. For example, vocabulary knowledge is related to world knowledge inasmuch as words have ranges of possible referents in the world; conversely, world knowledge is partially codified, so to speak, in vocabulary. Vocabulary knowledge also includes knowing a word’s part of speech (syntax), its morphological composition, and its colloquiality in various text schemata. It also involves knowing how to adjust the word’s conventional sense to actual text representations. Conversely, one’s knowledge of syntax, morphology, text schemas, etc. can alter one’s vocabulary knowledge, especially in the context of particular texts. Seeing a word used in a certain way in a certain text can cause a reader to revise his or her mental representation of that word, not just to make it fit the reader’s global sense of the text up to that point (the “text representation”) and the written translation (“permanent memory”), but also perhaps more generally and more permanently. For this reason, we see the contents of these different modules as being not fixed but dynamic: Whenever a hypothesis receives a positive evaluation (PE), it is used to update the subject’s mental text representation, vocabulary knowledge, world knowledge, and other components of the Generator/Evaluator (hence our inclusion of an “Updater” in the model). The way in which subjects access these different components also varies, even for a single subject working on a single word: When our subjects tried to test hypotheses, they did not appear to use the same modules in quite the same way they had used to generate those hypotheses. For
example, they might key on morphology to generate a hypothesis but then rely more on world knowledge to test it, or vice-versa.

We wish to emphasize that the model just described is merely a tentative one. It is based on the cognitive processing behavior of only three students doing translation tasks on only two texts. Further studies with a variety of students, texts, and tasks are needed to see if the model has more general validity.

Summary

Vocabulary knowledge seems to be the learner's primary resource in a translation task, at least in the case of our three students. When they know the word, it works to the students' advantage. When they clearly don't know the word, it also works, because they can then direct their attention to context clues. Where this reliance on vocabulary knowledge can cause serious problems is in cases where learners think they know a word but really don't. Instead of using context to help them correct their error, they simply persist in the error. And our data suggest that learners do not learn from these errors: Of the 16 cases of misidentification in our study, subjects did not show any pretest-posttest improvement on 15 of them. The one exception, interestingly, occurred in the case just discussed. Instead of translating warrant as 'guarantee,' as he had on the pretest, Xia left it blank on the posttest. This may not seem like much of an improvement, but if it indicates awareness of a possible misidentification, it could be the kind of incremental change that Nagy et al., and others, have claimed to be typical of vocabulary growth.

CONCLUSION

This study was motivated by three research questions pertaining to the word-guessing strategies that second-language learners use, the role of context in these strategies, and the limits of context. Since only three subjects were studied, our findings cannot be taken as "answers" to these questions, even tentative ones. But the findings are consistent and coherent enough to raise interesting hypotheses for further research. Let us conclude by summarizing these findings.

What strategies do second-language learners use when they encounter unknown vocabulary in context? In general, our learners first studied the word-form itself to see if they recognized any of its parts. If they did, they would generate a hypothesis as to what the word might mean; then they would generally use one or more context-based strategies to evaluate this hypothesis. If they did not recognize any part of the word at all, they would typically use context-based strategies to generate a guess. The most popular of these strategies was the use of some collocating clue-word in the immediate context. Clue-words seemed to serve as a link between the target word, on the one hand, and various levels of
representation, including syntax, text schemata, text representation, permanent memory, and world knowledge, on the other. If they could not find any clue-words or other contextual aids, and if they could get by (i.e., generate a coherent text representation) without using the target word, they would “detour” around it.

_How does context function to aid second-language learners in dealing with unknown words?_ As described in the preceding paragraph, context helps the learner both to generate and to evaluate guesses. Sometimes learners can guess at the meaning of a word through morphological or other word-level clues, and use context only to evaluate their guesses. In other cases, learners may need to use context clues to generate a guess in the first place. In either event, the subjects in our study relied mainly on local context clues to help them guess unknown words. In 16 of the 23 cases where they successfully exploited the context, the principal type of clue they used was some clue-word located in the same sentence. But they sometimes used other kinds of context clues as well, either in support of a clue-word or independently. For example, the general language of the text sometimes seemed to evoke world knowledge that the learner could apply to the evolving text representation, which in turn could be applied to the target word. In the seven successful cases where our subjects did not seem to be using clue-words as such, they were apparently relying exclusively on these broader forms of contextual support.

_In what ways do second-language learners fail to take full advantage of context clues; that is, how might teachers help these learners to make better guesses?_ By far the major condition associated with our subjects’ failure to use context clues to guess word-meanings was when they thought they knew the word in question but didn’t. As in Bensoussan and Lafer (1984) and Haynes (1984), word familiarity—either apparent or real—caused our subjects to ignore contextual factors. In most cases the word was correctly identified, and failure to use context to verify a guess was unproblematic. Indeed, one could argue that it is actually the most efficient way to proceed, since it puts less strain on working memory. But in many other cases, the word was mistakenly identified and failure to examine the context in these cases led to serious problems of comprehension. This pattern has also been noted by Van Purreren and Schouten-van Purreren (1982) and others. Teachers should alert their students to the problem and encourage them to use context clues to double-check word interpretations, _even when they think they know the word._ And they should show them how to use larger discourse-level clues to do this (as discussed in Huckin, 1986, and Huckin & Jin, 1987), not just local clues. Since these metacognitive skills are an important part of reading itself, helping students to develop such skills would benefit them not only in vocabulary building but in reading as well.

At the same time, teachers should encourage students to improve their graphemic identification of words. In our study, most of the unsuccessful cases of word guessing resulted from misidentification of word-forms. Our subjects were
apparently lulled into thinking that they knew such words and did not have to
check them against the context. But the fact is that they did not know these
words. The problem can be attributed partly to the fact that our subjects were all
native speakers of a language whose orthography and lexis are radically different
from those of English. But students from a cognate language can have analogous
problems, as is discussed by Holmes (1986). Sensitizing second-language
learners to the existence of homographs, near-homographs, and other potential
sources of graphemic confusion would serve the valuable purpose of encourag-
ing such learners to use context clues to confirm their guesses.

Our study echoes Stanovich’s research with first-language readers in which
he found that slow readers compensate for word-recognition deficiencies by
making more use of context. Our second-language learners relied heavily—and
often successfully—on context clues for words they did not recognize. But we
also found that this process of using the context often took considerable time. As
Segalowitz (1986) notes:

If the reduced automaticity of word recognition does result in increased dependen-
cy on contextual information, then obviously the quality of that information be-
comes very important. Bilinguals who have a poor grasp of paragraph structure or
the sense of certain syntactic structures will have poor quality contextual informa-
tion to assist word recognition. Their increased reliance on context may thus result
in yet slower reading rates and in reading marked by difficulties. (p. 9)

This study is merely an exploratory one, with obvious limitations. For one, it
does not tell us anything about beginning second-language learners or about
advanced second-language learners. Research reported elsewhere (e.g., Huckin,
1986) suggests that beginners are unable to use many of the context clues
discussed here, and it is possible that advanced learners may find less of a need
to use them. Also, this study looked at learners from only one language group.
Learners from other language groups, especially from cognate languages, may
behave differently. Furthermore, it used subjects who had been residing in an
English-speaking country for at least a year. Thus it may not be reflective of
subjects learning English in their native country. And, of course, it used only
three subjects. Other limitations could be cited as well. We hope that, rather than
being seen simply as flaws in the research, these limitations will be seen as
raising important questions for further study.

REFERENCES

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Bensoussan, M., & Laufer, B. (1984). Lexical guessing in context in EFL reading compre-


ENDNOTES

1. For example, when he encountered the unfamiliar word lexicon (in another text), Xia apparently decided that it was not important enough to worry about. The text sentence reads like this: “Political risk has long been a familiar term in the lexicon of international business,” and Xia’s protocol reads as follows:

   In what? (lexicon) but the political risk recently still not . . . the political risk . . . in administrative system, politcial risk for a long time, for long time, turn it over, political risk has become a familiar word, term, another? in, in the world, has become the international business, what IS this! Pass it, useless, insignificant.

   He then potholed on it.

2. We observed a second instance of this “late bloomer” phenomenon in another part of the study that is not included in this chapter. Reading a third text, Xia encountered the word cataclysmic. He avoided it at first, but then—four sentences later—suddenly came up with a successful guess (“explosive”).

3. Our native speaker subjects had to work from this sentence: “Our___________ of the __________ and __________ of a tariff will be detailed enough to __________ listing its main conclusions here at the ____________.” Thus they actually had less context available to them than did our nonnative subjects.

4. For other discussion of this phenomenon, see Bensoussan and Laufer (1984), Laufer (1988).

Editorial Comments

These researchers combine a powerful technique for looking at cognitive processes during L2 reading (L1 translation with think-aloud) with a range of other information sources: a careful look at texts, reader error patterns, and vocabulary knowledge shown in pretests and posttests.
Using these multiple information sources, Huckin and Bloch focus closely on the relations between reading process and learning product. From this they develop a useful cognitive model of word guessing from context. In addition, they offer us an important distinction between *comprehension* while reading and *vocabulary building*, which may or may not result from this comprehension. In harmony with cognitive theories of attention and learning, they suggest that adequate comprehension does not always lead to long-term retention of word meanings (see also Mondria & Wit-de-Boer, 1989, who found for Dutch students learning French that guessability was inversely related to retention—the richer the context and the easier the guess, the less likely were readers to remember a word’s meaning).

We applaud several aspects of Huckin andBloch’s methodology: (a) The vocabulary pretest is more than the simple checklist used by Nagy, Herman, and Anderson (1985), since it includes probes for definitions and translations; (b) the pretest–posttest design allows for a more precise estimate of vocabulary learned during the reading than does a posttest, which assumes everything to be new; (c) the use of written translation from L2 to L1 with concurrent L1 think-aloud is a powerful alternative to the more typical think-aloud procedure, for it allows more precise insight into the online comprehension, since think-aloud and written protocols can be compared (although, as with any data, the sources of a given difficulty and of its resolution are still not always apparent and thus still depend on researcher interpretation); (d) using texts actually assigned for coursework in the ESL setting, as Parry (this volume) does, enhances the ecological validity of the study; and (e) careful delineation of context through the authors’ analysis of texts and their provision of the whole texts within the research report allows us to closely scrutinize their work.

We also learn a great deal from Huckin and Bloch’s categorization of strategies leading to successful and unsuccessful guesses (Table 8.1). This confirms a difficulty mentioned by Haynes (1984 and this volume; Chapter 3, and Holmes & Ramos, Chapter 5, this volume), which has been given a name by Laufer (1989): that mistaken identities or “syn-form” confusions may be a major unrecognized source of miscomprehension. In contrast with L1 children, this confusion among similar word-forms in memory may represent a special difficulty for L2 learners, whose unstable knowledge of L2 phonology probably creates less efficient patterns of storage and retrieval in memory. Huckin and Bloch find that about 20% of guesses for unknown words involve some type of word-form misrecognition. It also appears that word-form misidentifications easily short-circuit the guessing from context process. But the pedagogical implications of these findings remain cloudy: How can we increase the accuracy of word-form representation in learners’ memory or their attention to form during word identification in reading? Without going beyond
the evidence we have presented here, we can only stress that teachers need in some way to work on word-form accuracy, probably approaching word-form both phonologically, graphemically, and morphemically.

Huckin and Bloch find, as have other researchers (Haynes, 1984, Chapter 3; Chern, Chapter 4, and Dubin & Olshtain, Chapter 10) that most acceptable guesses grow out of clues in the local context (immediate sentence context). The pedagogical implications of this finding remain to be worked out through training studies and classroom research. However, teachers should be aware that they can expect students to experience more success with lexical inference when there are clues in the immediate sentence. Likewise, they should know that students will need more direction from teachers in order to benefit from global contextual clues.

Finally, the authors' inclusion of parallel processing and attentional considerations in their discussion of context raises the question of whether it may be as important to directly teach some vocabulary to a satisfactory level of automatic recognition (see Coady et al., Chapter 11) as to stress strategic but attention-demanding processes of contextual inference. For developing readers, the more automatic lower level cognitive processes can become (processes such as word identification and meaning selection among alternative senses of words), the more attention or cognitive capacity the reader will have left to deal with higher level processing (Perfetti, 1985; Rayner & Pollatsek, 1989) such as inferring the meanings of new word-forms, relating sentence meaning to the global context, and so on. Which approach is more important—direct teaching of vocabulary toward automaticity, or more indirect teaching of guessing strategies which use the broader context? At this point we can only say that teachers need to be aware of the benefits and drawbacks of each approach; indeed, that is one of the major goals of this volume as a whole.

References


