

VOCABULARY LEARNING STRATEGIES OF GOOD AND POOR CHINESE EFL LEARNERS¹

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Ask any foreign language learner about his headaches in learning the language and one thing you will surely get is the difficulty in remembering words. And yet it is these words that make up a language, and ample evidence suggests that the vocabulary size of a learner is highly predictive of his entire language ability (e.g. Gui 1985, Meara and Jones 1987). The development of vocabulary in a foreign language is undeniably one of the most crucial and yet difficult issues that researchers can ill afford to overlook.

Since Meara's (1980) call for vocabulary research in applied linguistics, the last decade has seen a rapid development along this line. However, with the exception of work on contextual guessing, few empirical studies have, as yet, targeted the vocabulary learning mechanism. What we have on vocabulary learning processes are more often than not prescriptive in nature. For example, the linguistic paradigm on vocabulary learning tends to draw inferences from the descriptions of the target language at various levels. Richards' (1976) excellent analysis of what it means to know a word, Seibert (1945) and Clarke and Nation's (1980) detailed accounts of the linguistic and logical structures that underlie contextual guessing procedures, are all illuminating examples in providing the necessary thinking on what needs to be learned. Nevertheless, as Van Parreren and Schouten-Van Parreren (1981) rightly observe, these linguistic analyses are not psychological processes as such and hence do not tell us how vocabulary is learned. While there are some perceptive descriptions of the learner's target language vocabulary (e.g. McNeill 1994, Meara and Ingle 1986, Palmberg 1987), these studies give us insights on the output of the learner's interlanguage lexicon. We still do not know the mechanisms by which these lexicons came into being. And yet, it may well be true that the ways a learner learns vocabulary determine the retrievability and flexibility of his lexicon and, to a considerable extent, his overall language achievement (see Ahmed 1989). In other words, research is badly needed on the strategies and processes of vocabulary development that very possibly make the good learners good and the poor learners poor.

Research on memory mnemonics in remembering foreign language words is mostly done in the fields of experimental and educational psychology. Not surprisingly, psychologists' interest is almost entirely on memory strategies per se. To them, foreign language words are not much different from nonsense words or any meaningless materials for the purpose of experimental learning. While some psychologists (e.g. Beck et al. 1987) realize the complexity of 'the complete vocabulary knowledge', others (McDaniel and Pressley 1989) still maintain that 'regardless of the objectives of a vocabulary program, a key ingredient is often acquisition of vocabulary-word-definition associations' (p. 204). By far the most extensively tested vocabulary learning strategy is the keyword method devised by

Atkinson (1975), and results all point to a single conclusion, that the keyword method is superior to almost all other types of strategy (see Cohen 1987 and Paivio and Desrochers 1981 for comprehensive reviews). Nonetheless, the fact that the keyword mnemonic is still confined to laboratory truth after twenty years of rigorous research speaks for itself as to the applicability of mnemonics in the foreign language classroom. There is one single question the experimental psychologists cannot and perhaps would not care to answer, 'Has anybody ever successfully learned a foreign language using the keyword method or any other mnemonic devices?'

Unfortunately, few linguists who work on language learning strategies have bothered to focus on vocabulary. And perhaps more seriously, research on language learning strategies has been far too quantitatively oriented. Granted the reliability of questionnaire research that so characteristically epitomizes a large proportion of empirical studies in this area,² it takes more than strategy counts and correlations to understand why some learners gain by painstaking efforts whereas others fail despite laborious attempts. As has been repeatedly demonstrated (Gu 1992), using more varieties of strategies and using them more frequently may not necessarily guarantee success in language learning. How one uses a strategy may be just as important, or even more important, to learning than the number of strategies one employs. It is thus the contention of the present author that qualitative methods may start to reveal exactly where quantitative methods fall short. For example, both the successful and the unsuccessful learners will look up unfamiliar words in the dictionary, and they may well report similar frequencies of dictionary use in answer to a questionnaire item. However, they may differ dramatically in terms of which word to look up, when to look it up, how to look it up, what to look up, and what to take down after they have looked up a word. As Ahmed (1989) demonstrated, it may well be these micro strategies and processes of learning that determine the success or failure of the learning outcome.

With these contentions in mind, the following study is designed to explore and describe the authentic strategies and processes of vocabulary learning employed by Chinese learners of English and to see in qualitative terms if these processes are in any way related to the result of learning. In so doing, three stages are examined, i.e. how a new vocabulary item is handled during the initial encounter; how it is then looked up in the dictionary, if at all; and how it is reinforced afterwards.

Method

Subjects

This article reports part of a larger study that based its sample on 24 Chinese learners drawn from a total population of 978 third-year non-English majors learning English at Beijing Normal University. By the time the study took place, these learners had all had six years' experience of learning English as a course in their secondary schools around China, plus more than two years of English learning

experience at BNU. Expressed in hourly terms, this would mean that a typical third-year non-English major would have spent more than 1,212 classroom hours (932 in secondary schools, and 280 in university) learning English as a foreign language (The State Education Commission 1986a, 1986b).

Two learners (one 'good', the other 'poor') were chosen for a case study in this report. They were selected on the grounds that first of all, they had similar backgrounds before entering university, both coming from key secondary schools in urban environments, and secondly both reported high levels of motivation and desire to learn English and had spent numerous extracurricular hours on English learning, and yet while Learner One was highly successful (getting a score of 96.5 in the national College English Test, Band 4), Learner Two suffered miserably with a score of only 31 in the same test. Intelligence-wise, although Learner 2 did not perform as well as Learner 1 who boasted a score beyond the 95 percentile point among young urban Chinese of his age on Raven's Standard Progressive Matrices (SPM), she was fairly competent for nearly reaching the 75 percentile point on the SPM. It was thus felt that their striking difference in English achievement could have resulted from the ways they had been learning English, including, of course, the ways they had been learning vocabulary.

Instruments

Two reading passages³ (see Appendix 1) were selected for intensive reading,⁴ Text 1 for the top group, and Text 2 for the bottom group.⁵ A pilot new word density analysis among 13 randomly selected third-year non-English majors at the same university revealed that Text 1 had a familiar to unfamiliar word ratio of 43.7:1, while Text 2 had a ratio of 91.3:1, indicating roughly that for typical students of the same grade, Text 1 contained about twice as many new words as Text 2.

The texts were broken up into meaningful segments marked with small red strokes which acted as reminders for the subjects to stop reading and verbalize their thinking processes. Think aloud protocols on the reading processes as well as on vocabulary learning while and after reading were obtained from both subjects. In addition, immediate retrospective interviews based on the researcher's field notes were also conducted immediately after each task was finished so as to capture anything of interest that could not be revealed by the think-aloud process.

Procedures

The study as reported here was completed in one session. Each subject began with a think-aloud training of roughly 30 minutes using another text that was rated in the previously mentioned pilot study as easier than Text 1 but more difficult than Text 2. They were then told to read the text the way they would normally do when preparing for the Intensive Reading lesson and to verbalize anything that was going through their head, even when they needed to look up a word in the dictionary and

when they took down notes. The researcher prompted them along the way with 'What are you thinking now?' or 'Could you tell me how you arrived at that conclusion?' when the subjects fell into silence and when they failed to verbalize a point. The subjects were then asked a few questions pertinent to their respective passages concerning things they failed to verbalize. Next, they were requested to do what they normally do with vocabulary items that had been identified as unfamiliar. They were provided with enough pieces of paper for note taking and for whatever other purposes pertinent to vocabulary learning. This stage was also followed by retrospective questions wherever the need arose. The whole process of vocabulary learning starting from identifying a problem word in the reading passage to the reinforcement of the word after reading was tape recorded with the subjects' permission.

Analyses

The think-aloud recordings were next transcribed for analysis, with a keen focus on vocabulary learning processes and strategies. The three stages of vocabulary learning that were built into the original design served as the framework for analysis. Namely, the initial handling of a problem word after its identification, the dictionary strategies the learner revealed when checking the word, and the reinforcement strategies the learner used in order to commit the word to his/her long-term memory. The transcripts were then studied meticulously to see how each subject went about learning vocabulary and to uncover any strategies and processes within each of the above-mentioned stages that could distinguish the good learner from the poor one. A descriptive model in the form of a flow chart was then drawn up to illustrate each learner's processes of vocabulary learning. The two learners were finally compared and contrasted stage by stage on the metacognitive as well as cognitive levels.

Findings

Learner 1: Male, 21

Vocabulary learning through reading.

Learner 1 read his passage three times. Firstly, he went through the passage trying to get the gist of what was being said and underlined words that were unfamiliar to him, words he thought he would go back to later. He guessed at the meaning of each of his unfamiliar words at this stage and did not bother to stop reading and check them up in the dictionary. Secondly, he glanced through the passage and scanned for his underlined words or any other unfamiliar words he had overlooked during the first reading. He then looked up these words in his dictionary and located the meaning that he thought was appropriate to the context. For words that were important and interesting to him, he would look for their usages, and other

meanings and usages that had little to do with the context. Occasionally, he would also browse through the same page in the dictionary where the target word lay, just to see if there were any other words that were of particular interest to him, e.g. words that resembled the target word in spelling or sound and were easily confused with the target word. And in extreme cases, he would become so interested in a totally irrelevant word that he went on to look that word up. He took two types of notes along the way. For words that he thought were especially interesting and useful to him, he would note down the meanings, usages, and sometimes examples on a piece of paper he had been instructed to use as his notebook. Also included in his notes were pronunciations of words that were thought to be difficult (e.g. sewerage) and synonyms from the text and from his own vocabulary repertoire (e.g. hem: n. edge, fringe; v. hem in: enclose, surround⁶). For the rest of the unfamiliar words that were useful for text comprehension, he would write their meanings in the margins or between the lines of the original text. Finally, after completing all these procedures, he would go through the whole text again very quickly, focusing on an overall understanding of the passage, pausing only when special attention was needed on certain words or phrases that were thought to be worthy of emphasis.

Vocabulary learning after reading.

Next, Learner 1 demonstrated what he would normally do to reinforce vocabulary items he identified as unfamiliar during reading. Thirty five vocabulary items in all (including words and phrases, totalling 8.43% of the entire text) had been identified as either unfamiliar or partially familiar. By far, his emphasis was on the words and phrases he noted down in his notebook (the separate sheet of paper). First of all, he would take a quick glimpse of his definition/explanation of each item either in Chinese or in English and raise his head to recall the original English word/phrase. For words that were long and difficult to spell, he would also scribble them down rapidly on a piece of paper. In addition, he attempted to recall everything he had gone through to understand a particular item, from the contextual meaning to other related or unrelated meanings, from words that looked similar, synonyms, to phrases and examples he had found out in the dictionary. He even made up sentences of his own using some of the items that were of special interest to him. Finally, he went through his list very swiftly two more times, going firstly top-down and then coming back bottom-up. The whole process, interview time excluded, took him roughly 90 minutes. The following is an example showing all the procedures Learner 1 went through in learning the verb 'smart'.

Example 1: Smart
Text Segment No. 03 (Text No. 01)

Protocol

Strategies

[guesswork]

S: Smog SMARTS *the eyes and chokes the senses*, SMART, I know it's an adj, but here it must be a verb, a verb, *SMART the eyes* must be hurting the eyes. I'm not absolutely sure about it, though, should have it confirmed later, needs to be carefully studied when I have time later. [A015-017]

Inferring from part of speech and knowledge of the world
Postponing

[dictionary work]

S: SMART is usually an adjective, it doesn't seem an adjective here. SMARTS, (reads in dictionary). SMART, SMART is definitely not an adj here, so I'll go for the verb. Oh, there's such a meaning for SMART, it means to sting. No? *SMARTS the eyes*, oh, yes, it is to sting, it's this meaning then. SMART, let me see if there're any set expressions that go with it. Ah, I see an adj with a similar meaning here. 'a SMART blow, a SMART blow', a good beating [wrong in dictionary], this, need to remember this.

Using part of speech to locate meaning

Negotiation of meaning
Extended dictionary use

R: Why do you think you need to remember this?

S: This 'SMART blow' is, you know, somehow I feel it's commonly used, so I gave it a look. Actually I didn't do it with much intention. When I saw this word, this giving sb a good blow, seems to be a commonly used expression, for instance, I gave him a smart blow, I should remember how it is said [in English]. 'a SMART blow' means a good blow, I need to go back to the verb, for verb, it's only the meaning to sting. Oh, let me see the example sentences. Wha what's this? [?] it can be an intransitive verb, and then, feeling painful, [?] 'with, from, from [?]', here's an expression, I don't want to remember it, can't remember everything anyway. Are there any other expressions? 'as SMART as a new pin', very handsome [wrong in dictionary]; ahh, this I'll remember. Very handsome is something quite often used. 'Pin' seems interesting to me, like a needle. 'as SMART as a new pin', 'pin' does seem interesting, like a needle.

Selective attention
(personal interest)

Monitoring

Looking for usage

Selective attention

Personal interest

I'll look it up. 'Pin' I know it's sort of a needle, as handsome as a needle? it doesn't seem, (reads in dictionary) 'pin', here it is, 'pin', needle, panel pin, [?], tiny things, pin through, sting, limit, accuse, [?], no, I can't solve my problem. Then I've got no other choices but to remember it [as it is], 'cause a pin is nothing but a pin. I'll remember it then. Let me see if there're any others. [?] 'as SMART as a new pin', eh, nothing else, I'll remember this then. (writes down under smart as ~ as a new pin) Right, then, so much for this, now I'll come back, 'SMARTS the eyes', apparent by now, it's stings the eyes painfully. [A194-237]

Extended dictionary use

Monitoring

[Reinforcement 1: during 3rd reading]

S: Smog SMARTS the eyes and chokes the senses, now here, when I meet SMART, when I read SMARTS the eyes, I tell myself to remember it, to remember SMARTS the eyes, it's to sting the eyes painfully. And also CHOKE the senses, 'cause I remember I took it down in the notes, now I better reinforce it. It's no more than telling myself to pay attention to it, and I'll certainly read on. [B097-101]

Reinforcement while reading

[Reinforcement 2: after reading]

S: (reads the Chinese equivalents while recalling the original English words) [see immediate retrospection for confirmation] SMART, I have it here as a good blow, 'a SMART blow', now, let me try to use it. "give somebody a SMART blow. I gave him a SMART blow yesterday" (laughs). I gave him a good beating yesterday, useful word (laughs). Sting, sting, now I remember, SMART the eyes, it's what's in the text. This is easy, 'give sb a SMART blow', I think I've remembered it. Stings the eyes, it's also easy. Oh, there's another, eh, 'as SMART as a new pin', eh, very handsome, interesting, very handsome, "He, He is as SMART as a new pin", this is interesting. "He is", he's very handsome, "He is as SMART as a new pin." So much for this. [B347-361]

Delayed reinforcement

Activation

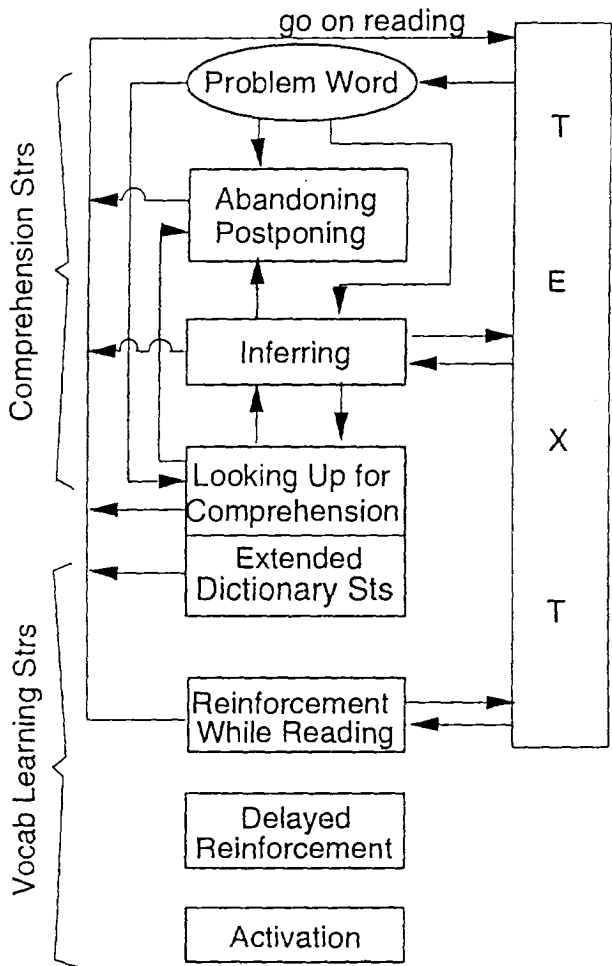
Evaluation

Activation

A descriptive model.

Based on the previous analysis, the following descriptive model is drawn up to illustrate more clearly and dynamically the process of vocabulary learning Learner 1 went through (See Figure 1). Most of the procedures in Figure 1 can be borne out by previous descriptions and the example above, others are traceable in the protocols.

Figure 1
Vocabulary Learning Through Intensive Reading:
Descriptive Model of a Good Learner



When Learner 1 identified a problem word in the text, he would immediately abandon it if it was a word of no significance either to text comprehension or to his personal interest (e.g. the Greek Premier's name). He could also postpone the understanding of a word to a later stage. For words the meaning of which he thought impossible to infer, he would go to the dictionary. In most cases, however, he used various clues to guess the meaning of a word from its context. This strategy sufficed for a very general understanding of the text, and satisfied his first aim of reading, i.e. to answer the question 'Why is the city dying?' Nonetheless, he was not completely contented with his understanding of the passage until he had checked those words he was still not sure of in the dictionary. In Figure 1, I have labelled his strategies so far as Text Comprehension Strategies.

What followed epitomizes how 'reading to learn' is possible. Learner 1 did not stop after making sense of the text, he went on to consult his dictionary to find out how an interesting word could be used, how this word was related to other words he knew. And moreover, he would consciously tell himself to remember a word when it appeared again later in the same text. In other words, Learner 1 was not just reading, he was deliberately learning the words he regarded as meaningful and useful to him.

After making sure he had understood both the passage and the crucial vocabulary words, Learner 1 did reinforcement as well, rehearsing his notes several times and relating new words to his existing vocabulary stock. He also found it interesting to make up his own sentences using some of his favourite new words. To distinguish these strategies from the Text Comprehension Strategies mentioned above, I have dubbed them Vocabulary Learning Strategies. In reality, however, vocabulary learning starts right from the outset when a problem word is identified as important or interesting.

Learner 2: Female, 22

Word for word translation as reading.

Learner 2 read her passage only once, and stopped at every unfamiliar word to check its meaning in her dictionary. To be more exact, quite a proportion of her unfamiliar words were in fact familiar to her, e.g. ability, create, rather, certain, no longer, etc. These were usually words she had met and rehearsed time and again. On no occasion, however, did Learner 2 demonstrate any guessing strategies to infer any of the unknown or partially known words. In using her dictionary, Learner 2 rarely had any problem locating a word, but she had serious problems locating the right meaning, especially under multiple-meaning entries. Her strategy at this point was to 'find the general or common meaning' under that particular entry (Tape Position: 01B050-238) and write it down along the margins or between the lines. And that was about everything she did for note-taking. No part of speech, no pronunciation, no usage, no examples, nothing but the Chinese equivalent, albeit not always the right one. After making sure that every unfamiliar item within a

sentence had been looked up, she would then try to understand the sentence by stringing together all these words, now their Chinese 'equivalents', along the order of the original English sentence. When this did not make any sense, as was very often the case unless the English syntax of the sentence under question was exactly the same as its Chinese translation, her strategy, though subconsciously applied, was to impose Chinese syntax upon the string of Chinese words now still in the order of English syntax, and reconstruct the often meaningless word-chain into a more or less meaningful sentence by adding or deleting any words as were necessary and occasionally shifting the order of words as needed. This done, she would feel she had already understood the sentence, disregarding the fact that she still could not string the sentences thus made into a meaningful text. She did attempt, though in vain, on a number of occasions, to postpone the understanding of the current sentence until she finished reading the following sentence(s) and/or until she read the preceding sentence again. After about two hours of painstaking effort (interview time excluded), however, no single sentence had been completely understood. The following is an example showing how Learner 2 decoded a sentence.

Example 2
From Learner 2
Text Segment No. 20 Tape Position: 2A318-2B018

Problem word identified: Visual

Other possible problem items: what is more, hard, sense, appearance

- | | |
|---|--|
| <p>S: <i>What is more, it becomes hard to make sense of one's own</i>, don't know the word that follows. V-I-S-U-A-L, (looks it up), seems to be sight [wrong part of speech]? (silence). I don't know <i>what is more</i>, how can I put it, what is a lot? what is more than a lot? Isn't it too [?] (laughs), somehow I feel it should be more complicated than this direct translation of mine. What is it that is more then? It becomes, <i>become hard to</i>, (long silence), <i>make sense of one's</i>, use your own sight, <i>make sense</i>, (thumbs through dictionary) [end of side A of Tape 2]</p> <p>More is, use the, make your own sight, and the sensation is made? Oh, it's to make the, work hard to make the, sort of sight, one's own sight. This is what I feel. How do I say it?</p> <p>R: Do you feel you've understood it?</p> <p>S: I feel I have.</p> <p>R: One's visual what?</p> <p>S: One's visual sight becomes, eh, pretty difficult.</p> | <p>Looking for meaning only, disregarding part of speech
 'What-is-more': Word-for-word translation</p> <p>Mixed up with 'make use of'</p> <p>Changing word order
 Adding and deleting words</p> |
|---|--|

To illustrate more clearly the process by which Learner 2 went about making sense of an English sentence, the previous example is crystallized into the following three steps:

Steps Used by Learner Two to Decode a Sentence

- Step 1: Translate every translatable word, leave out the function words such as 'to' and 'of' as well as words that do not seem important. In short, get the meaning of each word, and do not bother about anything else.
- Step 2: String these meanings together and see if they make sense, if not, make up a meaningful sentence by either changing the word order where necessary, or by adding or omitting words when needed.
- Step 3: Continue refining the sentence using the strategies in step 2 until it becomes a reasonably acceptable, at least syntactically acceptable, Chinese sentence.

These procedures first resulted in something that bore much resemblance to some unsophisticated machine translation, which, after the second and third steps, turned into Chinese sentences more or less of the 'Colourless green ideas sleep furiously' type.

Whatever the analogy, perhaps all previous illustrations can be boiled down to the following implicit guideline this learner appeared to be following. Each word has a definite meaning which comes either from the word list at the end of each unit in a textbook or from the dictionary, and that things seem so fluid and arbitrary to her beyond the word level that she has to manipulate word orders in order to make the resulting sentence a more meaningful one. In effect, it is no overstatement to say that Learner 2 was imposing meaning onto text rather than extracting meaning out of text. Why can this be possible, and after more than eight years of English learning? The way she remembered vocabulary provides further clues.

Mechanical rehearsal as vocabulary learning

When asked to show what she would normally do with the 43 vocabulary items (8.88% of the entire text) she identified as problematic, Learner 2 did exactly what she often did with vocabulary appearing in her textbooks. Firstly, she wrote down each problem word two to seven times with its Chinese equivalent copied beside it one to five times. These words were arranged in the order they appeared in the text, e.g. the word 'locate' appearing far away from 'location'. Though she did murmur each item she was copying, letter by letter, followed by pronouncing the whole word and its Chinese translation, she recalled later that the murmuring itself

did not serve much purpose, it was the shape and spelling of each word together with the Chinese version that were what she was trying to internalize.

After finishing every item in this manner, Learner 2 did another 6 rehearsals. The second rehearsal began when she copied down all the items she had just rehearsed in one column on the far left and their Chinese equivalents beside them in another column. Next, she covered the English version with a piece of paper and tried to recall it by looking at the Chinese, taking off the piece of paper from time to time for items she could not recall. After that, she covered the Chinese and attempted to recall it from the English. And this process continued until she did the seventh rehearsal. Somehow she arbitrarily stopped copying the bottom half from the third rehearsal on, perhaps realizing she was wasting too much time. The entire process of rehearsing lasted about 90 minutes.

A descriptive model

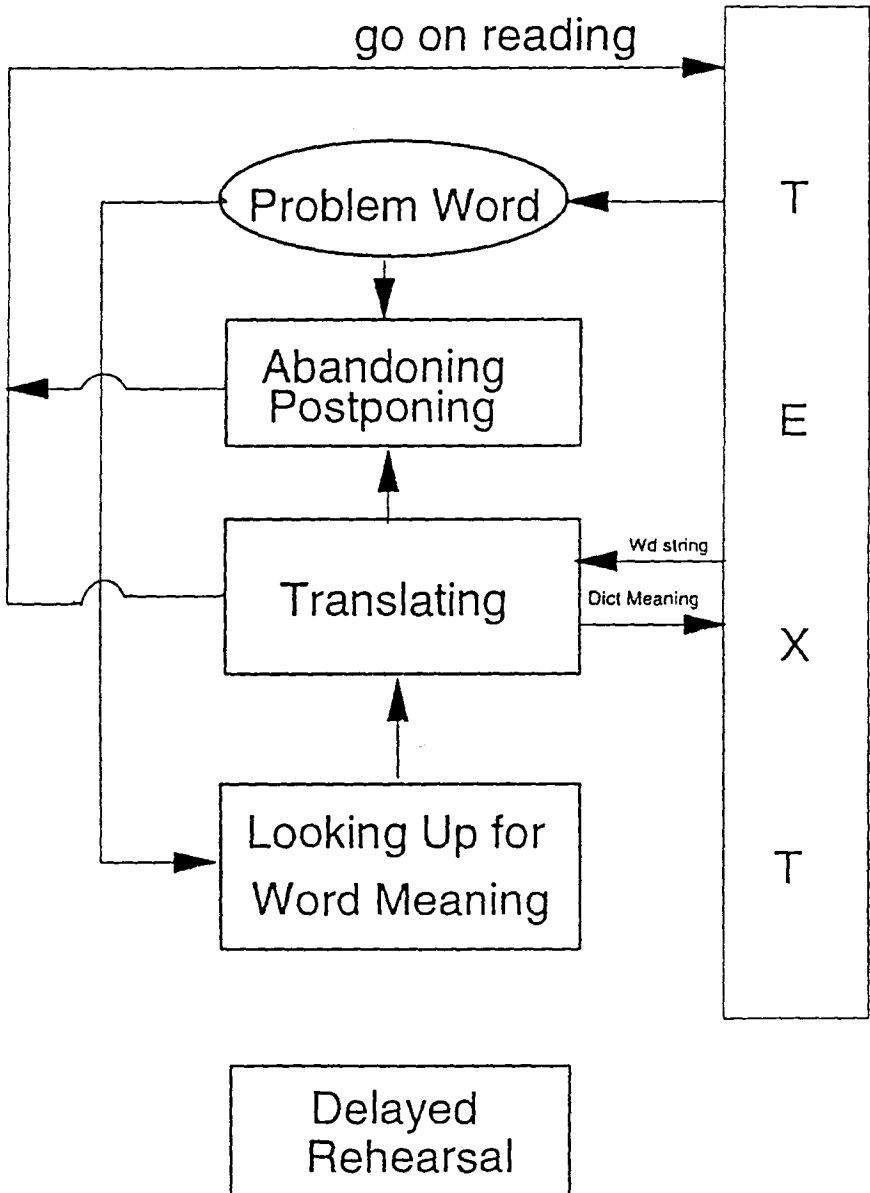
Learner 2's whole process of intensive reading and vocabulary learning is summarized in figure 2.

When a problem word was identified in the text, Learner 2 would either ignore it or go to the dictionary immediately, and she went to the dictionary for nothing but lexical meaning. As a result, the definition she got from the dictionary was often not the meaning appropriate to the context. And yet, instead of negotiating between the dictionary and the text for a suitable definition, Learner 2 would impose onto the text a 'general meaning' she derived from the dictionary. When the resulting string of Chinese 'equivalents' did not make sense, she would impose Chinese syntax onto it and, as it were, forcibly add or omit words in order to make it sound like a sentence. This completed, she would have a false judgment that she had already understood the sentence. Even when she did not believe in her own interpretation, she would either abandon the sentence or 'wait until the teacher explains it later.' 'And if the teacher doesn't, it's not important anyway.'

No intentional reinforcement was done during reading, although she so often expressed deep concern over the words she had rehearsed so many times and still had to resort to dictionary. Reinforcement only came after reading, and it was only in the form of mechanical rehearsals. No attempt was made to relate these words to words she already knew, to the context where it appeared, or to any syntactic roles that the word could play.

Figure 2

**Intensive Reading and Vocabulary Learning:
Descriptive Model of a Poor Learner**



Moreover, for Learner 2, learning English had almost been tantamount to remembering word lists. In a subsequent interview, she revealed that she viewed vocabulary as the most important part of English learning, and she had spent over sixty percent of all her English learning time on reciting the word lists at the end of each lesson exactly the way she did for me. 'I just write them like that, again and again, on any piece of paper I can get hold of.' Worse still, she had been spending most of all her university study time on English! 'I can't remember what else I have done for the past two years and more, whenever I go to the study room, the only things I carry would be my English textbooks.'

Discussion

Comparing the Two Learners: Where Do the Differences Lie?

Anyone experienced in analyzing expert and novice behaviours will know that 'the good are simply good and the poor simply poor' (R.K. Johnson, and Q.F. Wen, personal communication 1993). They are different anyway one looks at them. I will confine myself, however, to focusing on the metacognitive and cognitive processes in which Learners 1 and 2 demonstrated dramatic differences in their vocabulary learning (See Table 1). In so doing, I will briefly touch upon another important aspect as well, i.e. the emotional state each learner was in and the influence of this upon the learning process.

At the metacognitive level, the expert learner (Learner 1) saw intensive reading as a process of learning as well as information decoding. He was therefore actively aware of any learning opportunity during reading by constantly relating all vocabulary items in front of him to his own lexical stock. He evaluated the familiarity of every item and determined its relative importance and hence the level of processing the item needed (in this case, whether an item needed to be attended to, abandoned or guessed, checked in the dictionary for meaning, studied more carefully for usage, reinforced during or after reading, or even activated for firmer control). All these decisions were made according to two criteria:

1. an item's relevance to text comprehension;
2. its relevance to his personal interest.

The pace and scope of learning was also carefully monitored so that he would not go too far away from completing the central task of reading and learning within a period of time that was reasonable both to his general time management and to his judgment of the experimental condition. In addition, he was very aware of how well he was going through each step, and made decisions as to the amount of extra time and energy he needed to reach his target. He did err from time to time, but overall, he was in comfortable control.

Table 1
Comparing the Two Learners

Strategies	Expert Learner	Novice Learner
Word selection	<ol style="list-style-type: none"> 1. relevance to text comprehension 2. relevance to personal interest 	Non-selective
Abandoning/ Postponing	highly selective	rarely at the word level; always at and beyond the sentence level
Contextual Inference	<ol style="list-style-type: none"> 1. frequent 2. using varieties of cues 	rarely using cues, no successful attempt, only word for word semantic matching between L1 and L2
Using dictionary to comprehend	negotiating between text and dictionary meaning - fitting dictionary meaning into text	impose dictionary meaning onto text
Using dictionary to learn	yes, and highly selective	No
Reinforcement while reading	yes, and highly selective	No
Delayed Reinforcement	<ol style="list-style-type: none"> 1. encoding of declarative + procedural knowledge of word 2. rehearsal of declarative + procedural knowledge of word 	rehearsal only and then only of declarative knowledge of word
Activation	yes, and highly selective	No

The novice learner (Learner 2), on the other hand, did not have a clear idea of what intensive reading was for, and aimed for only 'a rough idea of a passage.' She was thrown into a vicious circle in which she had to spend so much time decoding the passage that she would be left no time learning whatever language points she thought important to learn; and yet, the less time she spent on the usages of these items, the less English syntax she would be able to reconstruct in her mind, and hence the more she would have to cling to Chinese syntax for comprehension, which in turn would result in more time, less comprehension, and therefore more frustration. As a result, in order to understand more, she was desperate to go for every word that came without due evaluation as to its importance to comprehension, let alone her personal interest. Apparently, the poor learner was overwhelmed, not by words she did not know, but by not being able to make sense of words she thought she knew. She was monitoring very little, not because she did not have the ability to control the timing and scope of her learning process, but because she lost control psychologically, and was not even able to use her common sense. In fact, she had to stop for a while when reading the third paragraph, and had to be comforted for a few minutes in order to go on. Likewise, she seemed unable to evaluate her own learning appropriately in much the same way as a desperate drowning person would not be able to evaluate the usefulness of a straw. This is understandably aggravated by the cruel fact that after learning English this way for more than eight years, she would certainly be frightened at any incomprehensibility and would hence easily enter the state of desperation. 'I see this as my last chance', she said in a fainting voice, referring to her participation in my research. In fact, metacognitive control over learning and the attached emotional feeling of being in or out of control can never be overemphasized, so much so that disregarding these two aspects would render any interpretation of the following cognitive strategies void.

At the cognitive level, the good learner selected vocabulary items for different purposes, while the poor learner dealt with the same list of problem words throughout the whole process. For example, while the good learner was highly selective when choosing words to abandon or postpone, the poor learner almost never abandoned a word and looked up every word she thought problematic. However, she had to abandon a sentence or postpone her understanding of it simply because she probably had to do it anyway. In addition, the good learner frequently tried to use a variety of cues in order to guess the meaning of a problem word before looking it up, the poor learner rarely used any cues and made no successful attempt. The dictionary was used by the good learner as an aid to comprehension and a source to learn from. When a word was being looked up, one could see him negotiating between dictionary explanations and contextual meaning. His purpose was to find an appropriate dictionary meaning and fit it into the context. The poor learner, on the other hand, took the dictionary as a collection of nearly absolute lexical meanings and tried to find a 'general meaning' under a dictionary entry and impose it onto the text. And a dictionary to her served only this purpose and nothing more. While the good learner had the leisure to stop at any interesting point while reading and to tell himself which word needed more attention to be reinforced, the poor learner was too much engrossed in puzzling out the general

meaning of the text to bother about the learning of any word, not to mention its reinforcement. When it came to remembering vocabulary items identified in the text, the good learner managed to relate new items to relevant familiar items in his repertoire, to the context where the item appeared, and to his knowledge schemata in general. In so doing, his attention was not just on linking a lexical form with its corresponding meaning, he also showed interest in remembering the usages of the word. He rehearsed as well, in much the same manner as the poor learner did, but while he did it with meaning and in addition to encoding strategies, the poor learner did nothing but mechanical rehearsal, without even relating the noun form and the verb form of the same word. And more importantly, the content of the poor learner's rehearsals was almost exclusively the connection between a written symbol and one or two, as it were, fixed explanations, which explains why she confused 'imagine' with 'image', and 'shape' with 'sharp'. It was small wonder then that when the good learner was able finally to activate an item, the poor learner was profoundly baffled for failing to retrieve words from her mental jungle of unrelated and arbitrary associations between written forms and their dictionary meanings.

Theoretical and Practical Implications

Word knowledge: the least a learner needs to acquire. Since Richards (1976), applied linguists have nearly come to a consensus as to what it should mean to know a word. To most theorists (e.g. Richards 1976, Carter 1987, McNeill 1994), knowing a word in a second or foreign language means knowing the form and structure of the word, the semantic, affective, and pragmatic meanings associated with the word, the syntactic behaviours of the word, the likelihood of encountering the word in normal discourse, and how the word is associated with other words in the target language lexicon. To most foreign language learners, however, this is too much to expect of them. For example, the affective, stylistic, and pragmatic entailments of a word are simply luxuries the beginning foreign language learner cannot afford. The full knowledge of every word should be the ideal end toward which a learner ought to strive for, and therefore may not necessarily be needed to succeed in using the target language with considerable ease. Are there any essentials, then, without which a learner will most probably fail?

One of the questions I asked in a subsequent interview was 'What does it mean to you to have learned a word?'. Learner 2 did not hesitate to reply 'I think it's to have remembered it. I can recognize it when I see it,' whereas Learner 1 gave the following thoughtful answer: 'To have learned a word doesn't just mean to know its meaning. It's best to put it in a context, to be able to use it in various contexts, for instance, what sort of a situation or a state the word describes, how it is used, and with what words it collocates.' Obviously, to the poor learner, learning a word means to memorize the form and meaning association, but to the good learner, it means not only seeing the form and meaning association in contextual lights, it also means 'putting the word in a context', i.e. anchoring the form and meaning association in a sentence. Reflecting back on what each learner did to learn

vocabulary, I conclude with the following tentative proposition: so far as vocabulary learning is concerned, the least a learner needs to acquire is the form, the referential meaning and the basic syntactic behaviour of each word.

Dynamic vocabulary competence. A vocabulary in a language is never the simple addition of individual words with static meanings listed out in dictionaries (Richards 1976, Carter 1987). It is a whole dynamic network of interrelated words each playing a semantic, syntactic and pragmatic role when activated. This would mean that even with the simplest form of comprehension, the dynamic vocabulary competence has to be activated in order to determine the types of entailments of each word in a sentence.

To date, however, the lion's share of attention on vocabulary learning strategies has been given to the memory of form-meaning pairs, as if the meanings associated with a particular form were static. And moreover, rarely do we see any warning to the learners that committing vocabulary items to memory should not be an end in itself. While I do not oppose the employment of memory strategies in vocabulary learning, I do see the danger of overemphasizing the memory of form-meaning word pairs (cf. Carter 1987), for this would give some learners the false impression that remembering the form and its corresponding native language equivalent is all that is required of vocabulary learning. And in turn, inadequate vocabulary learning strategies might be induced due to the previous false impression. Unfortunately, while poor memory strategies and/or lack of more efficient ones will only affect the pace of vocabulary learning, inadequate understanding of what vocabulary is, and the consequent lapse of attention on the dynamic nature of words, which involves their contextual entailments and syntactic behaviours, would, as has been shown in Learner 2 in this study, result in very serious consequences. For example, the good learner's vocabulary, however small and however incomplete in the various aspects of vocabulary knowledge discussed earlier, is one that is dynamic and alive, but the poor learner can hardly be said to have an English vocabulary, as her repertoire of words are mostly unrelated forcible connections between orthographic forms and one or two of their dictionary definitions.

How can the poor be helped?

Elsewhere (Gu 1992) I have likened the language learning strategy researcher's efforts to Robin Hood's mission of robbing the rich to feed the poor. This study, however, has thrown this endeavour into doubt. If it is only the number of strategies and the frequencies of strategy use that deprive the poor of improvement, providing them with more alternatives obtained from the strategically rich and telling them to use their strategies more often would easily solve the problem. The real picture is unfortunately much more complicated. The poor learner in this study employed a much narrower range of strategies, but she probably also used the rehearsal strategy, for instance, more often than most people did, and hence had become so used to it that she would fall back on it after trying other strategies that had no immediate effect. Will it be much help telling her to negotiate between

dictionary explanations and the contextual meaning when in fact she cannot make sense of the context? Similarly, showing her how the good learner went all the way to looking up words irrelevant to the text he was reading would probably do more harm than good.

Poor learners like Learner 2 have usually been paralysed by their inadequate strategies for too long. For people who have never been on their own feet before, telling them to walk this or that way certainly would not help. Learner 2 needs to remember not just the meaning of a word, but to relate the word with other words she knows, and above all she should pay attention to the usage of words. These and other good strategies can only work if she learns how to choose the right words to focus on, and how to monitor and evaluate her own strategy use as well as her learning process. In other words, she needs a systemic treatment that takes everything analyzed in this article into account, i.e. at least in EFL learning, she needs special education care. To help learners like her, researchers and especially teachers would be better off taking up the role of a nurse, pushing the wheel chairs of the strategically disabled, guiding them, encouraging them patiently to stand up again.

Specifically, to give her English a touch of life, Learner 2 needs to be helped to realize that words are dynamic in nature, and that learning a foreign language is far more than remembering the target language equivalents of all native language words. She should therefore pay special attention to the syntactic behaviours of each word (cf. Nattinger 1980, 1988). As a first step, she must form the habit of knowing at least the part of speech of every word she tries to remember. She then needs to read as much as she can and intentionally cultivate a sense of, as it were, English grammar in action, as opposed to the rules she learned in grammar books. Finally, after she can make sense of English sentences without translation, she should be encouraged to develop contextual guessing strategies and pave the way for vocabulary acquisition through reading.

To help enhance her memory, she should be guided to organize her repertoire in both paradigmatic and syntagmatic dimensions (Meara 1984) so that vocabulary learning is diverted from simple addition of new items and mechanical rehearsal of existing ones to an integration of old and new items by means of reconstruction, i.e. she should shift from surface level to a deeper level of processing (Craik and Lockhart 1972). Finally, she should change from her mainly visual memory of words to a combination of visual and acoustic memory, so as to release the burden of letter strings on short-term memory, and to add a helpful method of encoding (cf. Hill 1993).

Conclusion

This article scrutinizes in detail the vocabulary learning processes of two Chinese EFL learners. It shows how the way students deal with vocabulary can, to a considerable extent, contribute to success or failure in foreign language learning.

It was demonstrated that in order to succeed, one must take the dynamic nature of words into consideration so that the resulting interlanguage is made up of a vocabulary that is alive. By contrast, seeing vocabulary as nothing but paired associations between form and definition is a sure way to fail.

It should be noted that while I would not claim the representativeness of these two learners, I do not wish to play down the seriousness of some of the reported problems either. Given the enormous population of English learners in China, even if Learner 2 represented only a tiny proportion (though my intuition suggests otherwise), it would still include tens of thousands of people. Therefore, besides providing estimates of these and other vocabulary related problems, future research should logically focus on finding possible solutions, be they providing the poor with what we get from the rich, or helping the poor develop their own self-sufficient vocabulary learning strategies.

Notes

1. This article is based on part of the data taken from the author's Ph.D. project. The author wishes to thank Dr. R. Keith Johnson for his patient encouragement and enlightening supervision. Special thanks are also due to Mr. Arthur McNeill, Prof. John Biggs, and so many others at the Faculty of Education of HKU whose friendship and guidance have made my work possible and enjoyable. I am also indebted to Prof. Robert B. Kaplan who generously offered invaluable comments to an earlier draft of this paper. Finally, thanks also to all subjects at Beijing Normal University whose kind cooperation provided me with insightful data.
2. But see Gu, Wen, and Wu (1993) for a detailed discussion on reference ambiguities and other problems of the Likert-scale in research on learning behaviours.
3. Both passages were taken from Walter's (1982) *Authentic Reading*. In fact, Text 1 was adapted from an article in *Time* magazine, and was about pollution in Athens; whereas Text 2 was an article introducing the felt image people have about their bodies and was adapted from an article in *The Guardian*.
4. Intensive reading in China means much more than reading intensively. Its aims are at least twofold: reading to comprehend and reading to learn, with the latter being probably the most important form of English learning. In fact, a course entitled *Intensive Reading* often provides the major source of English input.
5. Paradoxically, we lose comparability at the textual and linguistic level by using two texts instead of one; on the other hand, we reduce the comparability at the strategy level if only one text is used. Two texts were chosen in this study in view of the present focus on vocabulary strategies. Readers interested in this issue are referred to Kletzien (1991) for further arguments.

6. In this example, 'hem', 'hem in', and 'fringe' appeared in Text 1 and were identified by Learner 1 as new vocabulary items, whereas 'edge', 'enclose', and 'surround' were words he retrieved from his own lexical repertoire. Notice he was not only regrouping and hence recoding words semantically for himself, linking new words with words he already knew, he was also classifying words according to their grammatical functions, here, their part of speech.
7. See Appendix 2 for the legends of transcription and translation.

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Appendix 1

The Two Texts in Segmented Form

Text 1

- 01 Stinking buses, their passengers pale and tired, jam the crowded streets.
- 02 Drivers shout at one another and honk their horns.
- 03 Smog smarts the eyes and chokes the senses.
- 04 The scene is Athens at rush hour.
- 05 The city of Plato and Pericles is in a sorry state of affairs, built without a plan, lacking even adequate sewerage facilities, hemmed in by mountains and the sea, its 135 square miles crammed with 3.7 million people.
- 06 Even Athens' ruins are in ruin: sulphur dioxide eats away at the marble of the Parthenon and other treasures on the Acropolis:
- 07 As Greek Premier Constantine Karamanlis has said,
- 08 'The only solution for Athens would be to demolish half of it and start all over again.'
- 09 So great has been the population flow toward the city that entire hinterland villages stand vacant or nearly so.
- 10 About 120,000 people from outlying provinces move to Athens every year,
- 11 with the result that 40% of Greece's citizenry are now packed into the capital.
- 12 The migrants come for the few available jobs, which are usually no better than the ones they fled.
- 13 At the current rate of migration, Athens by the year 2000 will have a population of 6.5 million, more than half the nation.
- 14 Aside from overcrowding and poor public transport, the biggest problems confronting Athenians are noise and pollution.
- 15 A government study concluded that Athens was the noisiest city in the world.
- 16 Smog is almost at killing levels:
- 17 180-300 mg of sulphur dioxide per cubic meter of air, or up to four times the level that the World Health Organization considers safe.
- 18 Nearly half the pollution comes from cars.
- 19 Despite high prices for vehicles and fuel (\$2.95 per gallon), nearly 100,000 automobiles are sold in Greece each year;
- 20 3,000 driver's licenses are issued in Athens monthly.
- 21 After decades of neglect, Athens is at last getting some attention.
- 22 In March a committee of representatives from all major public service ministries met to discuss a plan to unclog the city, make it livable and clean up its environment.
- 23 A save-Athens ministry, which will soon begin functioning, will propose heavy taxes to discourage in-migration,
- 24 a minimum of \$5 billion in public spending for Athens alone, and other projects for the countryside to encourage residents to stay put.
- 25 A master plan that will move many government offices to the city's fringes is already in the works.
- 26 Meanwhile, more Greeks keep moving into Athens.

27 With few parks and precious few oxygen-producing plants, the city and its citizens are literally suffocating.

(415 words)

Text 2

- 1 When you close your eyes and try to think of the shape of your body, what you imagine (or, rather, what you feel) is quite different from what you see when you open your eyes and look in the mirror.
- 2 The image you feel is much vaguer than the one you see.
- 3 And if you lie still, it is quite hard to imagine yourself as having any particular size or shape.
- 4 When you move, when you feel the weight of your arms and legs and the natural resistance of the objects around you,
- 5 the 'felt' image of yourself starts to become clearer.
- 6 It is almost as if it were created by your own actions and the sensations they cause.
- 7 The image you create for yourself has rather strange proportions:
- 8 certain parts feel much larger than they look.
- 9 If you poke your tongue into a hole in one of your teeth, it feels enormous;
- 10 you are often surprised by how small it looks when you inspect it in the mirror.
- 11 But although the 'felt' image may not have the shape you see in the mirror, it is much more important.
- 12 It is the image through which you recognize your physical existence in the world.
- 13 In spite of its strange proportions, it is all one piece,
- 14 and since it has a consistent right and left and top and bottom,
- 15 it allows you to locate new sensations when they occur.
- 16 It allows you to find your nose in the dark, scratch itches and point to a pain.
- 17 If the felt image is damaged for any reason
- 18 -- if it is cut in half or lost, as it often is after certain strokes which wipe out recognition of one entire side --
- 19 these tasks become almost impossible.
- 20 What is more, it becomes hard to make sense of one's own visual appearance.
- 21 If one half of the felt image is wiped out or injured, the patient stops recognizing the affected part of his body.
- 22 It is hard for him to find the location of sensations on that side,
- 23 and, although he feels the doctor's touch, he locates it as being on the undamaged side.
- 24 He loses his ability to accept the affected side as part of his body, even when he can see it.
- 25 If you throw him a pair of gloves and ask him to put them on, he will glove one hand and leave the other bare.
- 26 And yet he had to use the left hand in order to glove the right.

- 27 The fact that he can see the ungloved hand doesn't seem to help him, and there is no reason why it should.
- 28 He can no longer reconcile what he sees with what he feels
- 29 -- the ungloved object lying on the left may look like a hand,
- 30 but, since there is no felt image corresponding to it, why should he claim the object as his?

(484 words)

Appendix 2.

Transcription Legends

Original text in English	<i>Italics</i>
Word in Focus	CAPITALIZED
Subject Talk (direct translation from Chinese)	S: normal
Researcher Talk (direct translation from Chinese)	R: normal
Subject Write	bold
Researcher Comment	[]
Researcher Observation	()
Recording Unclear	[?]
Irrelevant	{ ... }
Omission	(...)
Inserted English Words	' '
Subject Emphasis	<u>Underline</u>
Made-up Sentences	" "