



LUND UNIVERSITY

When the learned system is activated

Gao, Hong

2001

[Link to publication](#)

Citation for published version (APA):

Gao, H. (2001). *When the learned system is activated*. (Working Papers, Lund University, Dept. of Linguistics; Vol. 48). <http://www.ling.lu.se/disseminations/pdf/48/Gao.pdf>

Total number of authors:

1

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

When the learned system is activated

Gao Hong

Abstract

This paper focuses on the discussion of the general characteristics of 12 Swedish learners' oral production of the Chinese aspect markers *le*, *guò*, *zài*, and *zhe*. Their oral performance is discussed with respect to Krashen's Monitor hypothesis (1978, 1981, 1987) on the role of conscious learning. The functions of the Monitor in planning, editing and correcting is discussed respectively in relation to the specific conditions of the learners' production and with reference to the results.

1. Introduction

In Chinese, grammatical morphemes, aspect markers in particular, are the grammatical devices for assigning syntactic roles to sentence constituents. From the perspective of language acquisition, they are important devices in predicting the learning processes led by linguistic differences between the learner's native language and the target language. Based on Krashen's Monitor theory (1978, 1981, 1987), this paper focuses on the discussion of twelve Swedish learners' oral production of the Chinese aspect markers *le*, *guò*, *zài*, and *zhe*. In light of the two facts that the condition for this study is set in an elicited style, and that the experiment is focused on grammatical morphemes that have less resemblance between the target language and the native language of the subjects, the subjects' production is assumed, in the first place, to be the output of the learned system. With reference to the present results, Krashen's hypothesis on the role of the Monitor is also discussed. In the end, a further prediction of the Swedish learners' acquisition processes of the aspect marker *le* is given from a linguistic as well as a cognitive perspective.

2. Basic functions of aspect markers in Chinese

The expression of tense and aspect categories do not correspond to each other in Chinese and Swedish (Sigurd & Gao 1999:189). Chinese is a context sensitive language. The way of perceiving action is in terms of aspect, which is to observe an action within an event from a specific point of view without considering speech-time. In contrast, Swedish, similar to English, is less

context sensitive, and its way of perceiving action is more precise and time-conscious, in terms of tense.

Swedish tenses are formed either by verb morphology or by an auxiliary verb, while Chinese tenses are not expressed morphologically. Instead, a number of grammatical morphemes or particles are used as aspect markers. The aspect markers and their functions are (cf. Li & Thompson 1981:184-236):

<i>le</i>	perfective aspect (PFV)
<i>guò</i>	experiential aspect (EXP)
<i>zài</i>	imperfective durative (applied mainly to activity verbs) (DUR)
<i>zhe</i>	imperfective durative (applied to an activity verb that signals an ongoing action or situation) (DUR)

Previous studies have provided detailed analyses of the grammatical functions of these aspect morphemes (e.g. Chao 1968; Li & Thompson 1981). Their basic uses can be seen from the following sentences:

- (1) W€ qùnián qù *le* zh4ngguó.
I last year go PFV China
I went to China last year.
- (2) W€ xué hàn% li!ng nián *le*.
I learn Chinese two year PFV
I have studied Chinese for two years.
- (3) W€ qù *guò* zh4ngguó.
I go EXP China
I have been to China.
- (4) W€ *zài* xué hàn%.
I DUR learn Chinese
I am studying Chinese.
- (5) W€ sh€u l# ná *zhe* y3 b"n sh5.
I hand in hold DUR one CL book
I am holding a book in (my) hand.
(CL = classifier)

Each Chinese sentence above contains an aspect marker. *Le* in (1) indicates that the act of going took place before the time of speaking. Time expressions referring to the past are often used together with *le*. Such sentence meanings are expressed with a past tense in Swedish (similar to the English translation). The *le* in (2) indicates an action that has been carried on for a certain period of time by the time of speaking. From the translation we can see that the perfect tense in English (and in Swedish as well) can also be achieved by *le*. (3) has

the same perfect tense in English as in (2) but it is expressed by the aspect marker *guò*. This is because the choice of *le* depends on the aspect. Most of all, Chinese aspect does not correspond directly to Swedish or English tenses.

The difference between *le* and *guò* is that, in general, *le* indicates that an action has been completed, though it may be applied in other different sentence conditions, while *guò* indicates that an action has taken place at least once (Wang 1965:458). The durative aspect markers *zài* and *zhe* in (4) and (5) both indicate ongoing activity. There are no tense differences in the corresponding English sentences. Both are in the present continuous tense. However, when such a tense is represented as a durative aspect in Chinese, the choice of *zài* or *zhe* is to be made on the basis of the semantic types of verbs that are used as predicates in the sentences (Li & Thompson 1981: 217).

For those verbs that signal activity (e.g. *d!* 'hit', *tiào* 'jump'), or represent activities or active participation (e.g. *xuéxí* 'study', *klihuì* 'have a meeting') the aspect marker *zài* should be used. For those verbs that have activity meanings and may also refer to the states associated with their activity meanings (e.g. *ná* 'take, be holding', *chuln* 'put on, be wearing'), *zhe* is to be taken as the durative aspect marker. Besides, *zhe* also applies to those verbs that denote postures or physical dispositions of an entity at a location (e.g. *zuò* 'sit', *zhàn* 'stand').

As a matter of fact, aspect marker functions can be even more complicated. For instance, *zài* as an aspect marker occurs pre-verbally. Note, however, that the pre-verbal *zài* has another form that is associated with a static locative meaning. But what is focused here is purely its function as a progressive aspect marker, though the progressive aspect marker *zài* and the locative *zài* are closely related, both diachronically and synchronically, as discussed by Chao 1968 and Chen 1978. Chao 1968 proposed that the construction *zài+V* – the common progressive form – is a contracted form of *zài+LOC+V*; the locative object is left out in the former.

The syntactic function of an aspect marker in Chinese makes it possible for a sentence meaning to be explicit even when isolated from its context. However, its application in different positions in the sentence may alter its relation to other parts of that sentence. An illustration of the complicated functions of the aspect marker *le* can be seen in a comparative way, as in (6) and (7):

- (6) W€ xi" le li!ng pi!n wénzh!ng.
 I write le two CL essay
 I wrote two essays.

- (7) W€ xi" le li!ng pi!n wénzh!ng le.
 I write le two CL essay le
 I have written two essays (so far).

In these sentences, there is a clear distinction in meaning. (7) can be used to indicate that the action is not yet complete, so that there are more essays to be written in addition to the two already written. If we were presented with the appropriate context this would be more apparent. From a discourse perspective, we can imagine a context for (6) that would necessitate the use of the perfective marker to make the communication successful. For example, if someone were describing a series of events that he participated in yesterday, if the clause above, *I wrote two essays*, happened before one event and after another, the context would dictate the use of the perfective marker, or at least a perfective interpretation of that event. The same type of situation can be applied to (7) in that the context surrounding this sentence ultimately dictates its meaning. However, it is assumed that the acquisition of such complicated uses of the aspect marker *le* has not yet occurred to the subjects in this study.

3. Research questions

The properties of aspect markers in Chinese have raised interesting questions from many different aspects, since their interactions with other parts of speech can be observed starting from the word level up to the sentence level. From a language acquisition point of view, aspect markers are the unique elements for the learners to grasp. For those whose mother languages are far from the Chinese language family, such as Swedish and English learners, aspect marker acquisition may not be a matter as simple as memorizing certain construction rules. Following Krashen's hypothesis (1981, 1987) that there are two independent knowledge systems of second language performance: the *acquired system* and the *learned system*, one would predict that the aspect marker production would not be the pure output of the acquired system before the overall concept of aspect markers is perceived. In addition, as Krashen's hypothesis states that the learned system has only one function, and that is as Monitor or Editor, which comes into play only to make changes in the form of the utterance after it has been produced by the acquired system, one would predict that the output of the learned system, especially in an experimental setting, would be taken as a sound ground for the prediction of the learner's acquisition processes.

4. Method

As part of my three month follow-up investigation of Swedish learners' acquisition of Chinese, a production experiment was designed to investigate the above questions by eliciting the subjects' productive speech in an experimental setting. 12 subjects who are native speakers of Swedish and who were studying Chinese as non-degree students participated in this experiment. The 12 subjects' Chinese proficiency level is from basic to an intermediate level ranked by the Swedish credit system: 20 poäng (6 subjects), 40 poäng (3 subjects) and 60 poäng (3 subjects). In this credit system, 20 poäng refers to the lowest level, where the subjects had finished one full term's study of Chinese, 40 poäng equals two full terms' study, and 60 poäng three full terms' study.

The data used in this paper are mainly from two sessions of my recording. First, there was a free talk session, where the subjects were asked to talk about themselves focussing on topics such as their previous and present studies of the Chinese language, their experiences of travelling or studying in China, and their future plans. Secondly, there was a picture description session, where a number of pictures from children's book were shown to the subjects, and the subjects were asked to describe the pictures in detail giving as many different imaginative time settings as they could.

In both sessions talks were carried out in an interactive way between the subject and myself. When a speaker stuck in searching for a word or an expression, the correct one was supplied only after the speaker had made several wrong efforts or indicated that they had no idea of how to express themselves. Each testing session for an individual subject took about 15 minutes. Subjects' talks and descriptions were audio-taped for later analysis.

5. Results

The three subjects at Level 3, the highest level in this study, showed very good results of different aspect marker application. However, the production results in general from the nine subjects at Level 1 and Level 2 did not show that they had a good command of aspect marker rules. The three subjects at Level 3 produced appropriate sentences with almost all types of aspect markers, while the nine subjects at lower levels failed to apply an aspect marker in most of the cases. As the errors involving incompatible aspect markers were hardly found among the three subjects at Level 3, the analysis will be focused upon the production of the nine subjects from the first two levels. With respect to the applications of different aspect markers, the distribution of missing cases, wrong uses, and correct uses is shown in Table 1.

Table 1. Level 1 and Level 2 subjects' application of aspect markers

aspect marker		aspect marker missing	aspect marker wrongly used	aspect marker correctly used
1.	le	55%	22%	23%
2.	le	33%	23%	44%
3.	guò	44%	33%	23%
4.	zài	66%	0%	34%
5.	zhe	55%	11%	34%

The aspect marker *le* is listed as two items (1) and (2) in the table. This is because the *le* indicating an act that takes place before the time of speaking is distinguished from the *le* indicating an act that has been carried on for a certain period of time by the time of speaking. (1) refers to the former case and (2) refers to the latter.

From the percentage distribution given in Table 1, we can see that the errors of missing aspect markers occurred more than those of misusing them. Such a distribution should not be considered surprising since these nine subjects were at the stage of learning the basic functions of aspect markers. Some examples that represent the most common utterances are given in (8) to (12). The sentences in brackets were the correct constructions that the subjects intended to utter.

- (8) *Tàiyáng q#lái.
Sun rise-come
(Tàiyáng (sh2ng) q#lái le.)
sun rise rise-come PFV
The sun has risen.
- (9) *W€ qí m! le.
I ride horse le
(W€ qí guò m!.)
I ride EXP horse
I have ridden a horse.
- (10) *1994 nián w€ rènshi guò y3 gè xi1ngg!ng rén.
1994 year I know guo one CL Hong Kong person
(1994 nián w€ rènshi le y3 gè xi1ngg!ng rén.)
1994 year I know PFV one CL Hong Kong person
In 1994 I came to know a person from Hong Kong.
- (11) *Li!ng gè háizi d4u shuìjiào.
Two CL child all sleep

(Li!ng gè háizi d4u zài shuìjiào.)
 two CL child all DUR sleep
 Both children are sleeping.

- (12) *Y3 gè n&hái zài d5n, t1 ná zhe hu1.
 One CL girl zai squat, she take zhe flower

(Y3 gè n&hái zài d5n zhe, t1 ná zhe hu1.)
 one CL girl DUR squat DUR, she take DUR flower
 A girl is squatting and she is holding flowers in hand.

The examples above represent the typical errors in the use of the different aspect markers. After discussion with the subjects and examining with them the context in which these utterances were produced, it is clear that these subjects did not make a clear association between the functional property of an aspect marker and its aspectual meaning played in the sentence, though certain aspects (e.g. progressive aspect) are very close to the tense concept in Swedish and many other Indo-European languages (cf. Comrie 1976; Vlach 1981).

In terms of the inherent temporal properties of situations marked by the aspect marker *le*, let us examine some typical examples of mistakes found in the subjects' utterances:

- (13) *Zuóti1n w€ lái. Level 1
 Yesterday I come

(Zuóti1n w€ lái le.)
 Yesterday I come PFV
 I came yesterday.

- (14) *W€ qù zh4ngguó s1n gè yuè le. Level 1
 I go China three CL month le

(W€ qù le zh4ngguó s1n gè yuè.)
 I go PFV China three CL month
 I was in China for three months.

- (15) *Xi!o g5niáng zài p!o le wánr, zhu1 húdié le. Level 2
 Little girl zai run le play, catch butterfly le

(Xi!o g5niáng zài p!o zhe zhu3 húdié wánr.)
 little girl DUR run DUR trace butterfly play
 The little girl is running joyfully, tracing the butterfly.

- (16) *W€ méi shu4 h!o le zhè zh1ng huà. Level 2
 I not learn good Le this CL picture

(W€ hái méi shu4 h!o zhè zh1ng huà.)
 I still not speak good this CL picture
 I haven't described this picture well.

(13) and (14) are utterances produced by subjects at Level 1. In general, subjects at this level had the intention of either avoiding any aspect markers or using *le* in any situation when talking about events in the past, even though they were told in the beginning of the recording session that aspect marker application was the focus of the test.

As we can see, (15) and (16) produced by the subject at Level 2 are more complicated than the first two examples. (15) is a description about a picture in which a little girl was running joyfully, tracing and trying to catch a butterfly. The two actions, running and tracing, trying to catch the butterfly were happening at the same time. In a narrative style, the series of events can be treated as a present temporal situation in which the aspect markers *zài/zhe* should be accordingly applied. It seems that this subject was clear about the basic grammatical functions of both *zài* and *le*, but obviously mixed them in a seemingly complicated situation.

(16) is an example of *le* application constrained by negation. After the discussion with the subject who produced this utterance, it was made clear that this subject was actually applying the declarative sentence pattern of *le* to its negative one. A grammatical rule that states that the lexical word *méi* ‘not’ functioning as negation does not allow the co-appearance of *le* is obviously beyond the knowledge of the subject.

The types of failures or errors in application of aspect markers suggest that full acquisition of aspect markers in Chinese did not occur yet to the subjects of this study. According to Krashen’s 1987 theory of ‘comprehensible input’, learners acquire new structures when they are exposed to language that is a little beyond their current level of competence, but which is comprehensible through some context. An overall grasp of the use of aspect markers seems to be a bit far beyond the subjects’ current level of competence in this study.

6. Discussion

The most fundamental aspect of Krashen’s Monitor theory is the Acquisition-Learning distinction. According to Krashen 1981, 1987, there are two independent knowledge systems of second language performance: the acquired system and the learned system. The acquired system is the utterance initiator, while the learned system performs the role of the Monitor or the Editor. The learned system, or the Monitor acts in a planning, editing and correcting function when the following three conditions are met:

- (1) Time
- (2) Focus on form
- (3) Know the rule

The investigation reported in this paper was carried out in such a manner that the first two conditions, 'Time' and 'Focus on form', were perfectly met. During the whole recording the subjects were given sufficient time for their descriptions or replies to any questions given. Subjects were also informed, before each recording session, of the focused grammatical categories that were to be expected for production. Clearly affected by the elicited style, the production results, as revealed from the recording, were convincingly the output of the learned system in all the production marked as 'aspect marker missing' and 'aspect marker wrongly used', as shown in Table 1. From the average percentage of the correct application of each aspect marker (see Table 1), it turns out to be evident that all the learners at their respective learning stages could not be considered as having a clear understanding of the aspect marker functions. Therefore, a full percentage of correct application of aspect markers was beyond the subjects' current level of competence in this study.

Due to the fact that all the wrong and missing aspect marker utterances were confirmed by the subjects, who were required to rethink when an error occurred, it is certain that these error productions were definitely the output of the learned system. The output percentage of the learned system for each aspect marker is distributed as *le* covering 66%, *guò* 77%, *zài* 66% and *zhe* 55% respectively. These high figures, together with the setting conditions for the investigation, provide positive support for the prediction that the aspect marker production would not be the pure output of the acquired system before the overall concept of aspect markers is perceived. In other words, the output of aspect markers from the acquired system was not fully available yet to the subjects of this study.

As a matter of fact, in the situation of oral tests, regardless of the format whether it be an interview, an elicited style or question-and-answer type, as long as the subject is aware of what is being tested, this subject may easily go through a conscious process before an utterance occurred. Therefore, we can say that the subjects in this study were predetermined for the Monitor Model, and consequently, in one way or another, became overusers of the learned system. Since it has been found out that the role of conscious learning is somewhat limited in second language performance, the overusing of the learned system may also be due to the fact that the investigation was focused on the production of grammatical morphemes that are missing in the subjects' native

language. A recent parallel investigation has revealed that such an overuse of the learned system was hardly seen among the Chinese-speaking children when given similar grammatical tests (Gao 2000). They did not seem to have a conscious mind to give their speech a more 'polished' appearance. This accords with what Krashen has found in one of his previous case studies that the operation of the Monitor Model deals with adult performance on 'grammatical morphemes' (cf. Krashen 1978:176).

In addition, Li 1999 has shown that Chinese-speaking children at an early age (from ages 3 to 6) are sensitive to the semantic constraints between the position of the aspect marker and the verb meaning in the sentence. However, in this study adult learners of Chinese did not show much sign of making such a link. From the figures in Table 1 we can see that the speakers had quite a low percentage of correct aspect marker usage. They either forgot to use them, or chose a wrong one such as using *le* when *guò* should be used or vice versa. It seems that aspect marker acquisition is one of the most difficult tasks for adult Swedish learners of Chinese. This may be partly because Swedish has no similar grammatical morphemes. Also, it may be because the learners begin to learn aspect markers by equating them with tenses in Swedish or English. Such a strategy seems applicable at the beginning level of learning, but it may become an obstacle on the way to form an overall conception of this particular grammatical category. Learners taking such a strategy may soon be discouraged by knowing the fact that aspect markers in Chinese contain aspectual notions rather than simple time relations.

Krashen 1978 also suggests that there is individual variation among language learners with regard to Monitor use. His suggestion is supported by this study, where the subjects showed a clear variation in the frequency of activating their learned system. Those subjects who used the Monitor all the time (over-users) were the learners who had never had experience using Chinese in everyday use in a Chinese-speaking environment. Those subjects who preferred not using their conscious knowledge (underusers) were those who had used the language in a natural environment (e.g. traveling or studying in China) and who showed strong confidence. Although there was not much proof shown in this study that there is a clear correlation between the percentage of correction and the activation of the learned system, it did show that the learner's psychological profile played a big role in activating the Monitor in the process of an utterance.

As Chinese is a language that is characteristic of presenting its grammatical meaning of a category as a semantic reality, Swedish learners find it difficult to

understand the notion of aspect. The evidence appears to show that language acquisition is a long process of a gradual construction of a mental grammar (Pienemann & Håkansson 1998). Also, these learners' inclination of constantly using or missing certain aspect markers makes us wonder again if such errors are simple evidence of the learners' linguistic incompetence, or some extra reasons behind what represents the Sapir-Whorf Hypothesis: different languages give rise to different thought patterns. To find this out the present study is far from reaching the key. Besides linguistic analysis, experimental work in psychology and psycholinguistics is needed (Whorf 1956; cf. Lee 1996).

However, as Krashen's (1978, 1981, 1987) Monitor hypothesis states that the output of the learned system will not occur until after it has been produced by the acquired system, we can confidently believe that the production of these subjects in this study comprises a conscious process which results in conscious knowledge about the Chinese language, knowledge of aspect marker application rules in particular. Consequently, the good result from the three subjects at Level 1 and the various production distribution of the nine subjects in Levels 1 and 2 (see Table 1) evidently proves that the output of the learned system coincides with the current levels of the subjects' learning stage. At this point, we can see that the nine subjects who did not show good results of aspect marker application provided a proof from a different angle for the existence of the third condition for the activation of the learned system: 'Know the rule'. These subjects' high percentage of ungrammatical utterances revealed that they just had not come to the stage of a complete understanding of the basic functions of aspect markers. Or, we would rather say that they knew the existence of the rules but had not yet acquired the competence of using them correctly.

Why, then, does one or two full terms of study not give the learners a good command of the Chinese aspect markers? It does not seem to take this long to learn Swedish or English tense constructions. An interesting study done by Yang 1999 with a group of native English speakers learning Chinese may in some way give us some clue to this problem. His study reveals that the worldview these native-English-speakers hold in observing action is shaped by their native tongue and interferes with their use of the Chinese aspect marker *le*. This is an interesting result. If worldview is proved to play a part even in the acquisition of grammatical morphemes of a foreign language, it definitely takes a much longer time to grasp.

In this study we were not confronted with all kinds of errors that a Swedish learner may make in learning the aspect markers. Based upon the errors collected and my discussions with the subjects afterwards, I assume that aspect markers are one of the most difficult notions to understand. From a language process perspective and taking the aspect marker *le* as an example, I am tempted to make the assumption that Swedish learners learning to use the aspect marker *le* appropriately have to go through five basic processes, they must:

- (1) identify *le* as a separate morpheme with a combinative potential of carrying many different functional meanings
- (2) figure out the basic meaning of *le* that indicates the completion of an action (Wang 1965)
- (3) understand the various interpretations of *le* with respect to the type of verb applied and the kind of situation described (it may be confusing and even more difficult for foreign learners to learn *le* than what Lu (1994:303-311) claimed as having only one central message regardless of its contextual situation)
- (4) learn the complicated syntactic behavior of *le* – e.g. functioning as a perfective aspect marker in most situations but also found appearing in sentences with a verb phrase marked for future tense
- (5) learn that *le* can be placed after a verb in a declarative sentence rather than in a final position depending on the verb type.

It seems that the subjects, at least the nine at Level 1 and 2, in this study are at the stage of going through the first three processes of learning. Their production had no sign of understanding the last two functions. Only when all this knowledge is in mind, can a learner find out himself a systematic or predictable way to account for the various interpretations of *le*.

In conclusion, the study has shown that before having a good command of certain grammatical rules, especially the application rules of aspect markers in Chinese, Swedish learners overuse the learned system. From the perspective of language acquisition procedure, this makes it possible to take its output as the base for the prediction of the learning processes led especially by linguistic differences between the learner's native language and the target language. These Swedish learners showed some specific features in their acquisition of aspect markers that can be seen not only as coming from the different grammatical constructions between the home language and the target language, but also from a mutual disturbance in the speakers' learning process

between the already-existing deep-set concepts and a new perspective of conceptualizing the existing world revealed in the target language. On the basis of Krashen's Monitor theory, the analysis of the experimental data proves that frequent activation of the learned system is an unavoidable process that may exist temporarily at certain stages of learning, especially at the stage of learning grammatical rules, and errors made at this stage cannot be prevented by only improving the language proficiency. A correct production with full confidence requires reorganizing the internal conceptual structure for a new linguistic competence. The present study also reveals that a language system built up by a particular language group reflects very much a particular way of viewing reality. Therefore, foreign language acquisition is not simply an accumulation of memorizing new structures of a target language. The language acquisition process seems to go parallel with the understanding of a particular new worldview.

References

- Chao, Yuen Ren. 1968. *A grammar of spoken Chinese*. Berkeley: University of California Press.
- Chen, Chung-yu. 1978. 'Aspectual features of the verb and the relative positions of the locatives'. *Journal of Chinese Linguistics*, 6, 76-103.
- Comrie, Bernard. 1976. *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.
- Gao, Hong. 2000. 'A cognitive strategy in the acquisition of noun classifiers in Chinese'. Submitted to *The Third International Conference on Cognitive Science (ICCS2001)* August 27, 2001, Beijing, China.
- Krashen, Stephen D. 1978. 'Individual variation in the use of the monitor'. In William C. Ritchie (ed.), *Second language acquisition research. Issues and implications*, 175-83. New York: Academic Press.
- Krashen, Stephen D. 1981. *Second language acquisition and second language learning*. London: Prentice Hall International.
- Krashen, Stephen D. 1987. *Principles and practice in second language acquisition*. New York: Prentice-Hall.
- Lee, Penny. 1996. *The Whorf theory complex – A critical reconstruction*. Amsterdam: John Benjamins.
- Li, Charles N. & Sandra A. Thompson. 1981. *Mandarin Chinese. A functional reference grammar*. Berkeley: University of California Press.
- Li, Ping. 1999. 'Zai and ba constructions in child Mandarin'. *CRL Newsletter* 5:5. University of California, San Diego.
- Lu, John H.T. 1994. 'One interpretation or multiple interpretations for *le*?'. In M. Y. Chen & O. J. L. Tzeng (eds), *In honor of William S-Y. Wang: interdisciplinary studies on language and language change*, 303-31. Taipei: Pyramid Press.

- Pienemann, Manfred & Gisela Håkansson. 1998. 'A unified approach towards the development Swedish as L2: processability theory'. *Studies in Second Language Acquisition* 21, 383-420.
- Sigurd, Bengt & Gao, Hong. 1999. 'Outline of a computerized Chinese grammar enabling English and Swedish translation'. *Working Papers* 47, 181-99. Lund University, Dept. of Linguistics.
- Vlach, Frank. 1981. 'The semantics of the progressive'. In P. Tedeschi & A. Zaenen (eds), *Syntax and semantics 14: Tense and aspect*, 271-92. New York: Academic Press.
- Wang, William S-Y. 1965. 'Two aspect markers in Mandarin'. *Language* 41, 457-70.
- Whorf, Benjamin Lee. 1956. 'Grammatical categories'. In J. Carroll (ed.), *Language, thought and reality: Selected Writings of Benjamin Lee Whorf*, 87-111. Boston: MIT Press.
- Yang, Li-qiong. 1999. *The Influence of worldview on second language acquisition: A study of native English speakers acquiring the Chinese aspect marker -le*. Unpublished Master's thesis. Anthropology Department, Oregon State University.