# Research Forum

## Detecting Cross-Linguistic Difficulties in Learning English: Using a Text Reconstruction Program

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This article examines cross-linguistic difficulties in learning English in a group of Cantonese-speaking students in Hong Kong. It also discusses the usefulness of a text reconstruction program in detecting linguistic difficulties in second language students learning English. A cross-national study involving the comparison of performance between first language English speaking (L1) secondary students in England and second language English speaking (L2) secondary students in Hong Kong on a text reconstruction task is described. Results showed that the performance of the L2 students was adversely affected by cross-linguistic differences between English and Cantonese. The potentials of using the text reconstruction task in teaching English as a second language are also explored.

この記事は香港における広東語話者の中国人英語学習者の学習上の困難点を調べるものである。さらに第二言語として英語を学ぶ学生の言語面での障害を探知するために、テクスト再構成プログラムがどのように役立つかを論ずる。イギリスの中等教育における英語を第一言語とする学生と、香港の中等教育における英語を第二言語とする学生に、テクスト再構成のタスクを課し、その結果を比較した。第二言語として英語を使用する学生の成績には、英語と中国語の違いが不利にはたらくことがわかった。第二言語として英語を教えるためにテクスト再構成タスクを使う可能性も探究されている。

Secondary school students in Hong Kong find it very difficult to learn English, their second language. Although English is the medium of instruction for the majority of secondary schools, a great deal of Cantonese is used by language teachers alongside English to help struggling learners grasp the ideas.

To most students, the learning of English takes place only in schools and is entirely irrelevant to their needs because virtually every act of communication in or out of school is effected through the medium of

Cantonese. Cantonese is a spoken Chinese dialect used in Hong Kong and it has no written form of its own. In school, students have to learn to write in Modern Standard Chinese, which is very different from English in morphological, lexical and phonological terms, and understandably face difficulties when learning these language.

Chinese is an uninflected language and its sentence structures are very different from English (Lo, 1992). For example, there is no need to add an '-s' or '-es' at the end of the verb in the third person singular case or in plural nouns as the words will be the same whether they are singular or plural in Chinese. Such grammatical structures as present, past, continuous, perfect, and future are absent in Chinese. Thus, students writing a sentence in English have to think carefully about which tense they need to use to indicate the time.

These and other cross-linguistic differences which cause difficulties for Cantonese-speaking Chinese students learning English need to be identified by language teachers. Very often, teachers feel disheartened to find that students are making the same kinds of grammatical mistakes repeatedly in their writing. The prevalent approach to the teaching of writing, emphasising the assessment of the final product, does not seem to help students tackle the problem of grammatical difficulties.

At present, the use of computers in teaching English is minimal in Hong Kong, although they are available in each school for the teaching of computer literacy. According to Scarborough (1988), there are four kinds of programs to practise language techniques: gap-filling, text manipulation, text reconstruction, and simulation. Gap-filling exercises involve finding the missing words in texts. In most programs using gap-fill exercises, the gaps may be limited to, say, prepositions or articles. Text manipulation involves mutilation of texts by jumbling the order of words, sentences or paragraphs or taking words out and the learner restoring the text. For text reconstruction, the program deletes all words in the text, leaving only dashes to represent the original letters. The task of the students is to reconstruct the whole text. Simulation programs allow students to simulate real life situations and at the same time practise language in an integrative manner.

The present article examines the possible exploitation of a text reconstruction (TR) task to improve learning of English in Hong Kong. The text reconstruction program known as *Copywrite*, developed by Davies and Higgins (1982), interested a lot of language teachers of English (Davies, 1986). The learner's task is to reconstruct the text to its original form based on the orthographic pattern displayed on the screen by keying in the missing words, starting with any word anywhere in the

text. If a correct word is attempted, every instance of its use in the test appears on screen in the right locations. (See Appendix 1 for a partially completed text and Appendix 2 for the original.) If the entry is wrong, the computer will respond with a "no word found" message in the lower left corner of the screen and the learner has to try again.

A score showing the performance of the learner is given in the lower right corner of the screen, serving as an incentive to complete the task. A learner who gets stuck can make use of the help facility which provides assistance in one of the following ways: revealing the first letter of the next uncompleted word as a clue; revealing the next uncompleted word; or reading the text again for as long as the learner desires. This, however, will result in the deduction of points: 5 for a letter, 10 for a word, and 50 for seeing the whole text. From my own experience with secondary and university students learning English, they persisted for hours in order not to lose points.

The program is also capable of recording all entries attempted, as well as the time in seconds taken for each entry, and printing them out (Appendix 3) at the end of the reconstruction task. The teacher then marks the correct entries, incorrect entries, and help entries. The number attached to the last word indicates the total time taken to complete the entire reconstruction task and the difference between any two entries shows the time required to generate each new entry.

The record sheet enables the teacher to reconstruct the mental processes of the learner during the task and the recorded information provides insights into aspects of language that are causing difficulties in reconstruction, making the teacher better able to detect problems encountered by the learner and thus facilitating the planning of remedial actions. There is also an authoring program in *Copywrite*, allowing the user to create text, the length of which is restricted to one screen, and store it on a floppy disk. This helps teachers to generate plenty of new texts without much trouble.

Brett's (1994, p. 331) experience with TR is that "learners are interested, challenged, and motivated by the task, and keen to complete it once started." Using *Copywrite* to teach Cantonese speaking L2 learners of English, Dolan and Lo (1990) have similarly found that students are delighted with the use of computers, applying tremendous application to the task and, on some occasion, spending more than three hours to reconstruct a 100-word text. Having developed TR programs, Davies (1986, p. 69) observes that *Copywrite* "encourages intensive reading and gives the student valuable insight into language redundancy and the way words tend to combine and suggest what is coming next." Davies

(1988) further remarks that TR encourages learners to apply their linguistic and world knowledge while searching for appropriate words.

Legenhausen and Wolff (1990) found that second language learners of German used both text-independent strategies activating linguistic knowledge not explicitly related to the text and text-dependent strategies with reconstructed words further stimulating the use of linguistic and general knowledge of the world. In the same vein, Brett (1994, p. 331) suggests that TR stimulates a great deal of explicit and implicit linguistic knowledge and "the rationale for the use of the TR task is that learners are provided with a motivating and unique linguistic problem-solving task, which involves and engages them with authentic texts." Brett (1994) further points out that a reconstructed text can be exploited more fully in one of the following ways: using the reconstructed text to generate new text on related topics; involving students in analyzing the language form and pattern of the text in order to sharpen their language awareness; or examining the record sheet to find out possible reasons for incorrect entries.

The present study is concerned with an additional function of TR: the diagnosis of students' difficulties in learning English by examining the record sheet containing all entries made by the learner. In addition to the aforementioned benefits, TR can help teachers detect more precisely students' problems in learning English. This is a cross-national study comparing the performance of first language (L1) English-speaking students in England and second language (L2) English-speaking students in Hong Kong on a text reconstruction task. L1 students were included in the study as a reference point for native language competence. In addition, the potentials of using text reconstruction tasks to enhance learning English as a second language are explored.

## Method

### *Instruments*

*Copywrite* was used in the present experiment and a text related to Chinese New Year (Appendix 2) was stored in the program and presented for reconstruction. The topic was familiar to the L2 subjects in Hong Kong but less so to the L1 subjects in England. A text more familiar to the L2 subjects was chosen so that processing of text would not be affected by conceptual unfamiliarity.

### *Subjects*

The sample consisted of two groups: 80 English-speaking L1 subjects selected from a mixed ability comprehensive school in England

and 80 Cantonese-speaking L1 subjects studying English as an L2 from a mixed ability secondary school in Hong Kong. One half of each national group were in their second year of secondary school, approximately 12-year-olds, and the other half in their third year, 13-year-olds. For each year in all groups, one half of the subjects were male and the other half female.

Both L1 and L2 students ranked average in their language ability as determined by examination results the previous year. Students of average ability were selected because it was believed that the results would represent a wider range of the population. The L2 students had started to study English as a subject in Primary One at the age of six and English began to be used as a medium of instruction when they commenced secondary education at the age of eleven. To try to ensure greater reliability, all subjects were drawn from virtually the same socio-economic background.

*Procedure*

Instructions were given in the subjects' L1 in order to avoid misunderstanding. The test was conducted individually with the researcher sitting alongside each subject throughout the experiment, making notes on every entry made. The experimenter would occasionally talk with the subject to find out the reason for attempting a particular entry and the difficulties being encountered in the reconstruction task. Throughout the test, the experimenter talked to the subjects on average four to five times for this purpose. There was no time limit on the task, allowing subjects to think clearly before attempting each entry.

With regard to seeking help, the researcher designed a new procedure in which subjects did not need to follow the order of uncompleted words on the screen when seeking help. They were told that if they pointed to a word which they would like to know, this word would be told to them by the researcher. The word would then be entered as a "correct entry" but would be marked as "requesting help" by the researcher in the subsequent analysis. The entries, total time taken on the task, and the time spent between entries were automatically recorded by the program. The results of the reconstruction were thus available on the computer printout.

*Analysis*

The performance of subjects was analyzed in terms of number of "total entries," "correct entries," "incorrect entries," "help," and "time taken." Data were processed using programs devised by Youngman (1976). Means and standard deviations were calculated and between-group analysis, using a

t-test, was applied to check statistical significance of differences. Then, all entries made by the subjects were analyzed. Mistakes reflecting cross-linguistic differences were identified and frequencies calculated in both L1 and L2 samples to facilitate comparison of the two groups.

## Results

Table 1 summarises the overall performance of the L1 and L2 groups on time taken, total entries, correct entries, incorrect entries, and help. It may be seen at a glance that the L2 subjects took significantly longer to complete the task and requested significantly more help on the reconstruction process, differences statistically significant ($p < .01$) on both.

For "correct entries," again the L1 subjects made significantly more correct responses than L2 subjects, significant at the $p < .05$ level. As both groups produced similar numbers of "total entries" and "incorrect entries," the t-test indicated non-significant results.

The L2 subjects required about twice the time on task (6809.64 seconds) as the L1 subjects (3412.47 seconds). Examining the relationship between "time taken" and "total entries" reveals that L2 subjects required double the amount of time to generate the same number of

Table 1: Comparative Performance of L1 and L2 Samples

| L1 and L2 Samples | | Time on task (sec.) | Total Entries | Correct Entries (%) | Incorrect Entries (%) | Help (%) |
|---|---|---|---|---|---|---|
| L1 | mean | 3412.47 | 103.32 | 44.91 | 37.50 | 17.59 |
| n=80 | s.d. | 1000.44 | 19.10 | 14.75 | 12.44 | 5.34 |
| L2 | mean | 6809.64 | 103.15 | 38.39 | 37.60 | 23.51 |
| n=80 | s.d. | 1662.14 | 19.75 | 11.94 | 10.59 | 8.08 |
| Between-group analyses | 't' | 8.67 | -0.04 | -2.27 | 0.04 | 3.89 |
| | p | <.01 | not sig. | <.05 | not sig. | <.01 |

Note: Significance set at $p<.05$

entries. The data here are not able to throw light on which aspects of language were causing difficulties for the L2 subjects. Examination of entries recorded in the record sheet was able to reveal some aspects of difficulties experienced by the L2 subjects.

Table 2 shows the mistakes made by the L1 and L2 subjects on the omission of '-s' in verbs for third person singular case and plural nouns on the reconstruction task. The findings were based on examination of the record sheet for each subject. On the average 70 L2 subjects (94%) entered "packet" to fill in the blank for "packets" in the text. On discovering that this was wrong from the message given by the computer, they tried the plural form. This phenomenon occurred for a number of other nouns in the passage such as "uncles" (75%), "aunts" (65%), "shoes" (58%), and

**Table 2: Omission of '-s' on Verbs and Plural Nouns for L1 and L2 Samples on Reconstruction Task**

| | | Frequencies (%) | |
|---|---|---|---|
| Actual word in text | Mistake (entry) | L2 sample (n = 80) | L1 sample (n = 80) |
| packets | packet | 70 (94%) | 15 (19%) |
| parents | parent | 68 (85%) | 32 (40%) |
| uncles | uncle | 60 (75%) | 23 (29%) |
| dances | dance | 55 (69%) | 20 (25%) |
| aunts | aunt | 5 (65%) | 24 (30%) |
| shoes | shoe | 4 (58%) | 12 (15%) |
| streets | street | 4 (50%) | 25 (32%) |
| clothes | cloth | 3 (42%) | 28 (35%) |
| eats | eat | 2 (34%) | 30 (38%) |
| | Total | 451 | 209 |

"streets" (50%). The situation was the same for the verb form of the third person singular case. Fifty-five L2 subjects (69%) entered "dance" in the blank for "dances" and 27 L2 subjects (34%) attempted "eat" to fill in "eats."

The frequencies of this type of mistake was clearly lower for the L1 subjects on this respect, with the total frequency of such kinds of mistakes less than one half that of the L2 group.

## Discussion

The results show that cross-linguistic difficulties brought down the performance of the L2 students, causing them to take considerably longer to complete the reconstruction task (Table 1) because they needed to think about the correct forms of verbs and nouns. Even though they got the right word and the correct spelling, they still needed to make trials before they could inflect the verbs and nouns appropriately, reducing

the number of correct entries.

Such kinds of mistakes are easily detected by teachers in students' compositions but it is hardly possible for them to work out how much time students require and the mental processes they go through to arrive at the correct forms without the use of a computer program which can record every entry students make and the time taken between entries. Although teachers usually prepare plenty of grammatical exercises to train students, the same kind of error seems to occur repeatedly. The TR program used in the present study was able to provide immediate feedback to students so that they would be alerted to the problem and make appropriate changes in the entry if it was wrong.

On-task observation by the researcher suggests that such prompt feedback provided by the computer was highly efficient in sharpening students' awareness of a particular grammatical structure. Most students were able to enter the correct form on the next trial after they had received the "no word found" message from the computer. They immediately counted the number of dashes on the screen to confirm that the word itself was correct and that it was the omission of an '-s' or '-es' that made it unacceptable. Knowing that the word was correct, some insisted on making several trials of the same word and eventually discovered that they had left out an '-s' or '-es' at the end. Hence, in a TR exercise like this, students were able to correct their own mistakes with the help of the computer.

Working on these TR exercises was also highly motivating as it encouraged students to think very carefully before making entries because they knew they would lose points if they made wrong entries or sought help from the program. On many occasions, the researcher observed that students thinking long and hard for an entry rather than seeking help in order not to lose points. Some L2 subjects showed very strong determination to tackle the task without resorting to help. The scoring system seemed to have served as an incentive to persevere with the task.

## Conclusions and Implications

It may be concluded that cross-linguistic differences between English and Chinese caused difficulties in reading English and this was manifested in L2 students' poorer performance in terms of taking a longer time to complete the task, making fewer correct entries, and seeking more help. TR tasks help teachers diagnose students' difficulties so that appropriate help can be given. The data sheet for every

exercise can be accumulated to build up a profile of students' language competence and to track down other errors.

In addition to traditional grammatical exercises that train students to make appropriate inflections on nouns and verbs, reading aloud practice focusing on the reading out of final consonants can also enhance students' awareness on this aspect. In the tight schedule of teaching English in Hong Kong, this area of training might have been neglected.

Since the students in the present study were highly motivated to do the TR task, teachers may use the program in class in order to make full use of the computers available in school. At present, every secondary school in Hong Kong has at least 20 computers. For a class of 40 students, two students may share one computer to do the task. Teachers can provide the text and the pair of students work out the entries. Students can also be involved in creating texts for one another to work on. There will thereby be a natural integration of reading, writing, and speaking skills in the classroom. To further enhance motivation, TR activities can be done in the form of competition, with students comparing scores among themselves.

TR is also valuable in promoting independent learning. It offers flexibility in dealing with individual abilities, interests, and language development. Teachers can tailor-make materials for students using the authoring facility. Provided with a variety of language exercises, students can choose ones appropriate to work to gear the practice towards their needs. At the same time, learning can be extended to out-of-school hours to fit students' own work schedules.

Language teachers in Hong Kong seldom have the opportunity to interact with students to provide immediate feedback because of the large class sizes, generally about 40 students. Lessons are usually conducted in a tense atmosphere with heavy emphasis on assessment and traditional teaching that involves little student participation. The use of TR tasts heralds a change. By maximizing learning and involvement, it benefits learners and teachers alike. Future research might further explore how TR stimulates learning of English as a second language.

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## Appendix 1: A Partially Completed Text on the Computer Screen

Chinese New Year

— — — the lion —— in the Chinese New Year ————. The lion ——— in the ——— and —— — ——— of —— —— ———— —— —— ————. — —— —— —— the lion —— —— —— ——— —. The Chinese New Year is a —— — the ——— to —— ——— —— —— —— and —— ———. The —— —— — —— —— ——— —— — — — ——— —— ———, ——— and ——. ——— —— to —— new ——— and new —— — the —— — — the ————. Chinese ——— —— to ——the —— — the —— ———— —— —— —— the —— is ——.

## Appendix 2: The text used in the experiment

Chinese New Year

You can see the lion dance in the Chinese New Year Festival. The lion dances in the streets and eats red packets of lucky money which hang from doorways. People hope that the lion will bring good luck. The Chinese New Year is a time for the family to wish each other good luck and good health. The children are very happy because they also get red packets from parents, uncles and aunts. People like to wear new clothes and new shoes on the first day of the festival. Chinese people like to hear the sound of the drum because they know that the lion is near.

## Appendix 3: Sample of a Marked Result Script

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Text: | | Lion (Seen) | | 471 | 11 | they | √ | 2723 | 36 | to | √ |
| Subject No.: | | 1 | | 484 | 13 | from | √ | 2860 | 137 | come | X |
| Nationality: | | L2 (L1 | | 554 | 69 | in | √ | 2953 | 92 | wish | √ |
| | | Cantonese) | | 585 | 31 | families | X | 3023 | 69 | for | √ |
| Form/Year: | | 3 | | 615 | 29 | roar | X | 3044 | 21 | each | √ |
| Sex: | | F | | 632 | 17 | a | √ | 3052 | 6 | other | √ |
| Time: | | 4790 sec. | | 675 | 42 | bring | √ | 3168 | 115 | person | X |
| Total: | | 84 | | 692 | 17 | is | √ | 3318 | 150 | fruits | X |
| Correct: | | 55 (65%) | | 728 | 36 | get | √ | 3358 | 39 | come | X |
| Incorrect: | | 20 (24%) | | 746 | 18 | wear | √ | 3594 | 236 | money | H |
| Help: | | 9 (11%) | | 892 | 145 | on | √ | 3603 | 9 | lucky | √ |
| | | | | 961 | 69 | roads | X | 3620 | 16 | which | √ |
| 76 | 76 | Chinese | √ | 1028 | 67 | will | √ | 3663 | 43 | send | X |
| 89 | 9 | new | √ | 1085 | 57 | sweets | X | 3807 | 143 | you | H |
| 99 | 9 | year | √ | 1134 | 48 | at | X | 3812 | 5 | can | √ |
| 131 | 32 | the | √ | 1156 | 22 | that | √ | 3851 | 39 | date | X |
| 155 | 23 | lion | √ | 1178 | 22 | streets | √ | 3911 | 59 | need | X |
| 169 | 14 | festival | √ | 1322 | 143 | as | X | 3986 | 74 | friend | X |
| 177 | 7 | people | √ | 1377 | 55 | take | X | 4038 | 52 | sound | H |
| 185 | 8 | red | √ | 1437 | 37 | says | X | 4045 | 6 | hear | √ |
| 194 | 8 | packets | √ | 1572 | 134 | also | √ | 4055 | 10 | like | √ |
| 201 | 7 | good | √ | 1596 | 24 | shoes | √ | 4236 | 180 | hope | √ |
| 207 | 6 | luck | √ | 1606 | 10 | of | √ | 4546 | 308 | aunts | √ |
| 213 | 5 | and | √ | 1740 | 133 | know | √ | 4552 | 6 | uncles | √ |
| 224 | 11 | health | √ | 1800 | 60 | said | X | 4574 | 21 | drum | √ |
| 234 | 10 | children | √ | 1820 | 19 | day | √ | 4672 | 98 | family | √ |
| 242 | 7 | parents | √ | 1871 | 51 | luck | X | 4719 | 46 | near | H |
| 272 | 40 | clothes | √ | 2478 | 606 | dance | H | 4738 | 18 | hang | H |
| 355 | 72 | are | √ | 2492 | 13 | dances | √ | 4752 | 24 | doorway | X |
| 431 | 76 | happy | √ | 2561 | 68 | gets | X | 4774 | 12 | doorways | H |
| 448 | 17 | because | √ | 2594 | 33 | see | √ | 4780 | 5 | time | H |
| 459 | 9 | very | √ | 2687 | 92 | first | √ | 4790 | 10 | eats | H |