

Roles of mental translation in first and foreign language reading

International Journal of Bilingualism

15(4) 373–387

© The Author(s) 2010

Reprints and permission:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1367006910380038

ljb.sagepub.com

**Jia-ling Charlene Yau**

Providence University, Republic of China (Taiwan)

Abstract

This study integrates both quantitative and qualitative approaches to examine the roles that mental translation plays in reading classical Chinese and English as a foreign language among Taiwanese high school students. Gadamer's theory of hermeneutic experience and the Vygotskian social-cultural theory provide the theoretical frameworks for this study. The quantitative data consist of reading comprehension tests and translation surveys, while the qualitative data are composed of think-aloud protocols and interviews with the participating students and their teachers. At least two prominent findings emerge from the data analyses: (1) mental translation appears to have positive and significant associations with reading comprehension across two languages; (2) ambivalent perceptions of and attitudes toward the employment of mental translation for reading classical literary Chinese and English are discerned. The findings support Gadamer's contention that humans learn to translate as they are learning a language. The views and ideas expressed by the participating teachers and students uncover a sociocultural dimension of reading, as proposed by Vygotsky.

Keywords

bilingual education, high school education, reading comprehension, second language reading, translation

'Yingwen jiuxiangshi meiyou fanyi de wenyanywen, hen na fanyi chula [English, similar to unabridged texts written in classical literary Chinese, is extremely difficult for me to translate],' said a struggling bilingual reader named Xiaomin to his English as a Foreign Language (EFL) teacher.

This struggling reader's statement made me pause and after led me to wonder how reading may be associated with translating. In other words, to what extent does reading a text written in the classical form of Chinese, known as *wenyanywen* or *wenyan*, pertain to reading a foreign language, namely, English? I am also a Chinese–English bilingual reader, and so I began exploring the role that translation plays not only in movement between multiple languages but also within a single language.

'No text can be completely original because language itself, in its very essence, is already a translation: first from the nonverbal world, and then, because each sign and each phrase is a translation of another sign, another phrase,' proposed the Nobel laureate Octavio Paz (1992,

Corresponding author:

Jia-ling Charlene Yau, Providence University, 200 Chungchi Road, Shalu, Taichung 43301, Taiwan, ROC.

E-mail: jlyau@pu.edu.tw

p. 154). As an example, Paz (1992) points to the way in which children learn their native language. When a child asks his or her mother about the meaning of a word, the child, in fact, asks her to translate the unfamiliar object or expression into words the child already knows. Humans learn to translate as they are learning a language. In this respect, reading itself is a form of translation. What a reader does is similar to what a translator does, as postulated by the German philosopher Hans George Gadamer (1973; cited in Biguenet & Schulte, 1989, p. ix). A reader renders the meaning of a text, develops general comprehension, integrates information, writes, and critiques a text; so does a translator (Gadamer, 1973; cited in Biguenet & Schulte, 1989, p. ix). Gadamer's statements explicitly suggest a link between reading and translation, as I propose.

In the past three decades, one line of research (e.g., Jarvis & Jensen, 1982; Kern, 1994; Malakoff & Hakuta, 1991; O'Malley & Chamot, 1990) has scrutinized the impact of translation on reading one's second/foreign language (L2/FL). One salient theme derived from these studies thus far is that translation can be regarded as an important developmental aspect of L2 reading processes (Jarvis & Jensen, 1982; Kern, 1994; Malakoff & Hakuta, 1991; O'Malley & Chamot, 1990). This can be best illustrated by the following studies. Kern (1994) explored the extent and context in which mental translation was utilized by American college students learning French as a foreign language. In this study, mental translation was described as a mental reprocessing of L2 words, phrases, or sentences in L1 forms while reading L2 texts. Fifty-one American college students with three reading levels – high, middle, and low – participated; the major data consisted of interviews and think-aloud reports. Two of the prominent findings are as follows: (1) the students' metacognitive use of mental translation was mostly for accurate comprehension; (2) L2 readers with a lower level of proficiency relied more on translation than those with a higher level of proficiency. The latter finding was in concert with that reported in O'Malley and Chamot's (1990) study in which American high school students at the beginning levels of learning to read a foreign language such as Spanish and Russian showed more reliance on translation than those at a more advanced level. In their study, the American students at all levels of learning to read Spanish, as a matter of fact, reported using translation most frequently compared to the other cognitive strategies such as rehearsal, note taking, substitution, and contextualization (O'Malley & Chamot, 1990). As Kern (1994) posited, mental translation functions as a cognitive strategy that aims to facilitate semantic and syntactic processing.

Previous and current studies have focused more on reading a second or a foreign language, but very few have explored the roles and functions of translation in reading one's native language. Neither have they explored the impact of translation on text comprehension from perspectives other than linguistics and cognition. The act of translation conveys not only linguistic information but also information about identities, ideologies, and relationships between those involved, as Cahnmann (2005) contends. Ye (1994/2004, p. 79) further asserts that translation should be 'a dialectical interaction between two histories and two cultures.' Following the aforementioned views and perspectives, this study explores the roles that mental translation plays in first and second language reading comprehension. *Mental translation*, a unique strategy for bilingual readers (Grabe, 2002), is a kind of literal or rough translation on which language learners draw while reading (Cohen & Dörnyei, 2002). Gadamer's theory of hermeneutic experience (Gadamer, 1973, 1977, 1960/1989) and the Vygotskian social-cultural theory (Vygotsky, 1962, 1981, 1987) provide the two major theoretical frameworks for this study. As Gadamer (1973) argued, comprehensive investigation of the reading process is the first step of all acts of translation. As such, this study examines the processes by which readers re-establish and rediscover the uncertainty of words, phrases, and sentences from texts written in their two languages. Likewise, this study investigates the relationship between reading, translating, and thinking, with an emphasis on

Vygotskian theories that all mental processes have social origins (Vygotsky, 1981) and children learn word meanings in school instruction as part of a system of knowledge (Vygotsky, 1987). Therefore, an internal structure of discourse influences positions and social relationships, which in turn produce the discourse itself (Bernstein, 1999).

In this study, *first language* and *second language* are referred to as the chronology of learning languages (Stern, 1983). Mandarin Chinese, consisting of classical and contemporary forms, is deemed a first language, whereas English, which is not a person's home or main language, is a foreign language. The role of mental translation is investigated by analyzing students' and teachers' ideas and perceptions related to how it operates in the reading process. Three key research questions framed this study:

1. To what extent does mental translation promote or distract text comprehension?
2. What are the beliefs and practices of Chinese–English adolescent readers with regard to utilizing mental translation in the process of reading their two languages?
3. What are the teachers' ideas and perceptions with respect to mental translation employed by their students during reading?

Research methodology

This two-year study integrated both qualitative and quantitative approaches to facilitate an exploration of the roles that mental translation plays in reading one's first and second languages. Also, it aimed to bring together findings derived from quantitative and qualitative investigations to clarify the relation of mental translation and text comprehension. The methods for data collection and analysis are discussed in the subsequent section.

Instruments for the qualitative study

Semi-structured interviews and think-aloud protocols were the major instruments for the qualitative study that aimed to scrutinize students' knowledge of strategic reading and text comprehension, along with their teachers' views of, perceptions of, and attitudes toward mental translation. These sets of data were mostly collected during the 2004–5 school year while the teachers' interview data were collected in the subsequent school year.

Participants. The participating students were first selected through snowball sampling, a method for locating critical cases (Patton, 1990). The criteria for selection included teachers' recommendations, grade reports, scores from the regional and nationwide basic competence tests, and think-aloud skills. Initially, a total of 17 participating students, consisting of nine seniors (Grade 12) and eight freshmen (Grade 10), participated in this study. They all read the designated passages and took part in a semi-structured interview. In the second phase of selection, five participating students were deemed higher performing readers of Chinese and English, including three seniors (1 boy and 2 girls) and two freshmen (1 boy and 1 girl). On the other hand, five participating students were identified as lower performing: three seniors (2 boys and 1 girl) and two freshmen (1 boy and 1 girl). The ages of the seniors were between 17.1 and 17.9 while those of the freshmen were between 15.1 and 15.9 as of September 2004. Overall, the higher performing students were in the top 10 per cent of their cohort at school in English literacy performance, while the lower performing students were in the bottom 10 per cent. The higher performing students were in the top 15 per cent for Chinese literacy performance, and the rest were in the bottom 15 per cent of their cohort.

Aside from the student participants, eight teachers from the participating school, consisting of seven women and one man, took part in this study; half of them taught Chinese language arts and the other half taught EFL. In terms of teaching experience, three had more than ten years, two had more than five years, and the rest had fewer than five years of experience at the time of this study. The ages of these participants fell between their late twenties and forties.

Data collection and procedure. Data derived from this study were gathered from semi-structured interviews, think-aloud protocols, and relevant documents (e.g., scores from a variety of tests).

Interviews. All of the participating students ($N = 17$) were interviewed for 20–30 minutes in order to understand their views, perceptions, and attitudes with regard to reading their two languages, as well as their knowledge and application of mental translation while reading. The interviews were conducted in Mandarin Chinese, audio-recorded, and subsequently transcribed for analysis. Participating teachers were also invited to comment on or express their ideas concerning the roles of mental translation in reading either the classical Chinese or English texts. For example, one of the questions posed to the teachers of Chinese language arts was, ‘What would you tell your student if he or she asked you about how to read a classical Chinese passage?’ A similar question was also addressed to the teachers of EFL, but instead about reading a passage in English. In addition, the teachers’ views and perceptions concerning literal translation were determined by asking such questions as, ‘According to your knowledge and experience, what do you think of literal (word-for-word) translation as your students read an English text?’ An identical question was addressed to the teachers of Chinese language arts, but instead about reading a classical Chinese passage.

Think-aloud protocols. Each student interview was followed by a think-aloud protocol, which is regarded as an effective means for discovering the processes and knowledge underlying reading behaviors (Baker & Brown, 1984). All of the participating students were trained for the think-aloud protocol by watching a demonstration film and practicing by reading one or two Chinese passages. Next, the students’ prior knowledge about important concepts or ideas in a designated passage was examined before reading. They were asked to jot down the meanings of words and phrases taken from the passage and respond in writing to a prompt about its central ideas. The prompts were given in both Chinese and English, and the students read the designated passage afterwards. The think-aloud protocols were both audio- and video-recorded.

Altogether, each participating student read four passages: two narratives and two expository pieces; two of these were written in classical Chinese (*wenyan*), and two in contemporary English. The rationale for the selection of the texts written in the classical literary styles of Chinese (*wenyan*) was that, on average, 65 per cent of the language arts curriculum for Grades 10–12 consisted of texts written in the classical literary styles, according to the Department of Secondary Education at the Ministry of Education in Taiwan (n.d.). Classical Chinese – a form of written Chinese used prior to the early 20th century – is distinguished from contemporary Chinese (*baihua*) in at least four aspects: pronunciation, lexical items, sentence structure, and discourse organization (Kuo, Tang, Ho, Jiang, & Tien, 1999). An essay in classical Chinese is deemed challenging to modern Chinese readers partially because of its concise and compact use of language and partially because of its demand on culturally specific knowledge for reading comprehension. The reading levels of the designated Chinese passages were for high school students and beyond, while those of the English passages were selected from two children’s books written for young native readers of English between Grades 3 and 6. In terms of the lengths, the Chinese passages contained 264 and 516 characters, whereas the English 255 and 270 words, respectively.

Measurement. The notion of story grammars was adopted to assess the students' understanding of a narrative, while the concept of idea units was used to measure their understanding of an expository text (Graesser, Golding, & Long, 1996; Weaver & Kintsch, 1996). A story grammar is described as 'a formal device for capturing the important properties of a story schema' (Graesser et al., 1996, p. 179). This concept can be illustrated by the story 'Two large stones' in Arnold Lobel's *Mouse soup* (1977, pp. 22–31). This narrative contains five basic elements of a descriptive narrative: situation (the background for action), conflict (friction), struggle (the manner of dealing with the conflict), outcome (the result of the struggle), and meaning (the significance of the story). In addition, an idea unit is a proposition that contains a basic unit of meaning. An expository text can be broken down into propositions, each of which contains predicates and arguments. A predicate is 'the relationship between objects,' while an argument represents 'the objects and concepts mentioned in the text' (Weaver & Kintsch, 1996, p. 233). The expository text applied here, 'Traveling time' in Chapman and Robson's *Exploring time* (1995, p. 28), consists of 33 basic units of meaning, which were identified and subsequently implemented for assessing the participating students' reading comprehension. The application of idea units serves well as a means to gauge the content and quality of mental translation elicited by the participating students during reading. For example, the proportion of total idea units in one designated passage provided information with regard to the extent to which the participating students translated at a word and sentence level.

Data analysis. Data analyses employed the constant comparative method developed by Glaser and Strauss (1967). At first, the researcher read and reread transcripts and notes and then created an initial profile for each participating student. Next, the data were coded and categorized based on the research questions of this study; the categories included notions, functions, issues, and levels of mental translation. Third, patterns, regularities, and significant themes were identified and later evaluated by cycling back and forth between theory and data. For example, each participating student's ideas or perceptions concerning the use of mental translation were coded and analyzed. These two sets of data would be further examined by comparing them with established theories and perspectives of translation. This process also involved making comparisons between different parts of the data. The final stage of analysis involved the triangulation of qualitative data sources, 'comparing and cross-checking the consistency of information derived at different times and by different means within qualitative methods' (Patton, 1990, p. 467). Data within one participating student's profile were extensively compared to data from the other students. By using information from multiple sources, the findings were validated and cross-checked.

Instruments for the quantitative study

The quantitative data were mostly collected during the school year 2005–6, consisting of two sets of reading tests and two sets of questionnaires, one for Chinese and the other for English.

Assessing reading comprehension. Two sets of reading comprehension tests, one each in Chinese and English, were designed in a multiple-choice format and administered to sophomores (Grade 11) during the 2005–6 school year at the participating school. The Chinese test contained two passages, while the English one included three passages. The passages on the tests were primarily those also used in the think-aloud protocols (see the earlier section 'Instruments for the qualitative study'). The rationale of reusing the passages from the qualitative study was to examine the levels of text comprehension in a larger sample size.

There were 134 out of 143 sophomores, consisting of 46 males and 88 males, who completed the Chinese test, while 137 students, composed of 48 males and 89 females, completed the English one. Rasch analysis, performed using WINSTEPS (Linacre, 2006), was used to estimate item difficulty and student ability. The Chinese test's reliability (i.e., Cronbach's alpha) was .5, suggesting classical Chinese texts were relatively challenging even among higher performing readers of Chinese, whereas the English test's reliability was .82, which was acceptable (Bryman & Cramer, 2004).

Self-reported use of translation in reading. The students' awareness of using translation while reading was measured by means of two questionnaires: one for reading Chinese and one for reading English. There were three statements given on the questionnaire pertaining to the use of translation when reading a classical Chinese text: (1) I think about information in my mother tongue (Taiwanese, Mandarin, Hakka, or others); (2) I use contemporary Chinese (*baihua*) to guess the meaning of unknown words or phrases from the classical Chinese text; (3) I translate it to contemporary Chinese to increase my understanding. Similarly, there were four statements given on the questionnaire pertaining to the use of translation when reading an English text: (1) I translate from English into my native language (Taiwanese, Mandarin, Hakka, or others); (2) I think about information in both English and my mother tongue (Taiwanese, Mandarin, Hakka, or others); (3) I use my mother tongue to guess the meaning of unknown English words or phrases; (4) I translate it into contemporary Chinese (*baihua*) to increase my understanding when an English text becomes difficult. All responses were written in contemporary Chinese. Each item used a five-point scale ranging from 1 ('I never or almost never do this') to 5 ('I always or almost always do this'). As proposed by Oxford and Burry-Stock (1995, p. 12), three types of usage were identified: high (mean of 3.5 or higher), medium (mean of 2.5–3.4), and low (2.4 or lower).

There were 134 out of 143 sophomores (Grade 11), consisting of 47 males and 87 females, who filled out the questionnaire pertaining to the use of translation in reading classical Chinese, whereas 137 sophomores, 48 males and 89 females, completed the questionnaire concerning the use of translation in reading English as a foreign language. It is worth mentioning that the subjects who completed the tests and surveys were from the same sample pool. Among them, eight students participated in the qualitative study at the previous school year.

Data analysis. Two major methods formed the basis of much of the quantitative analyses: correlational analysis and *t*-tests. Correlational analysis was employed to obtain a statistical estimate of the strength of the relationship between reading performance and self-perceived use of translation. *T*-tests were utilized to determine whether there was a difference in the rates of the students' reported use of translation across differing reading proficiencies. Levene's test was conducted to examine the equal variance assumption. An alpha level of .05 for all analyses ($p < .05$) was chosen to assess statistical significance. The following presents the salient findings from analyses of both quantitative and qualitative data. To keep the following presentation as succinct as possible, most data have been translated into and presented in English. All the names used in the text are pseudonyms.

Results

This study integrated both quantitative and qualitative approaches to explore the roles that mental translation plays in text comprehension. The first section presents the major findings that indicate the extent to which the use of mental translation is connected to L1 and L2 text comprehension. Notions of and attitudes toward the application of mental translation stated by the participating students, as well as their teachers, are provided and extensively discussed in the subsequent section.

Table 1. The descriptive statistics for survey items

Survey statements	M	SD
<i>When reading a classical Chinese text:</i> (N = 134)		
Thinking about information in one's mother tongue	3.17	1.26
Using contemporary Chinese to guess unknown words or phrases	3.05	1.31
Translating into contemporary Chinese	3.54	1.26
<i>When reading an English text:</i> (N = 137)		
Translating into one's mother tongue	3.61	1.15
Thinking about information in both languages	3.46	1.28
Using one's native language to guess unknown words or phrases	3.28	1.34
Translating into contemporary Chinese to increase understanding	3.46	1.22

Note: The range for each item was between 1 and 5.

Descriptive statistics

The mean and standard deviation (in parentheses) for the Chinese test ($N = 134$) were 17.57 (3.41) within the range of 8 and 24, while those for the English test ($N = 137$) were 20.0 (5.33) within the range of 6 and 32. Additionally, Table 1 presents the descriptive statistics (means and standard deviations) for each item on the surveys.

Positive associations with reading comprehension

As a whole, there were positive, although low ($r < .3$), correlations between mental translation and text comprehension across two languages. Positive and significant relations between the Chinese test score and the following use of strategies were discerned: thinking about information in one's mother tongue ($N = 134$, $r = .21$, $p < .05$); using contemporary Chinese (*baihua*) to guess the meaning of unknown words or phrases ($N = 134$, $r = .20$, $p < .05$); translating into contemporary Chinese (*baihua*) to increase text understanding ($N = 134$; $r = .29$, $p < 0.01$). Correspondingly, there were low correlations ($r < .3$) between the students' performance on the English reading test and the self-perceived use of the following strategies: (1) translating from English into one's mother tongue ($N = 137$; $r = .18$, $p < .05$); (2) thinking about information on the text in both English and one's mother tongue ($N = 137$, $r = .20$; $p < .05$); (3) translating from English to contemporary Chinese (*baihua*) to increase text comprehension ($N = 137$, $r = .25$; $p < .01$). Although L2 reading performance positively correlated with the strategy involving the use of one's native language (Taiwanese, Hakka, or others) to guess the meaning of unknown English words or phrases ($N = 137$, $r = .14$), this relation did not reach a significant level ($p = .1$).

Differing reading levels, gauged by the subjects' performances on the given tests, are also associated with the application of mental translation to reading across languages. The subjects who scored in the top 33 per cent were considered higher performing, while those who scored in the bottom 33 per cent were lower performing. On the Chinese test, not only did the higher performing subjects ($N = 38$, $M = 21.53$, $SD = 1.18$) score significantly higher than the lower performing students ($N = 47$, $M = 13.85$, $SD = 2.12$; $t(83) = 19.98$, $p < .0001$), they ($N = 38$; $M = 3.95$; $SD = 1.06$) also reported a higher rate than their less proficient counterparts ($N = 47$, $M = 3.12$, $SD = 1.26$) on their use of translation (i.e., the third item on the survey) at a significant level ($t(83) = 2.94$, $p = .004$). In the same way, on the English test, the higher performing subjects ($N = 45$, $M = 26.77$, $SD = 2.78$) scored higher than their lower performing counterparts ($N = 39$, $M = 13.87$, $SD = 3.45$) at

a significant level ($t(82) = 18.63, p < .0001$). Likewise, these higher performers ($N = 45, M = 3.51; SD = 1.14$) reported a higher rate than their lower performing counterparts ($N = 39, M = 2.85, SD = 1.16$) on their use of translation, especially when an English text was perceived to be challenging; the mean difference between them was significant ($t(82) = 2.64, p = .01$).

Although the higher performing subjects reported higher frequencies than their lower performing counterparts on their self-perceived use of the following five strategies, the mean differences between them did not reach a significant level (i.e., $t < 2, p > .05$). Two strategies were related to the reading of classical Chinese texts: (1) thinking about information in one's mother tongue ($t(83) = 1.85, p = .07$); and (2) using contemporary Chinese (*baihua*) to guess the meaning of unknown words or phrases ($t(83) = 1.63, p = .11$). Moreover, three strategies were deployed with reading English texts: (1) translating English into one's mother tongue ($t(82) = 1.86, p = .07$); (2) thinking about information in one's mother tongue ($t(82) = 1.97, p = .05$); and (3) using one's mother tongue to guess the meaning of unknown words or phrases ($t(82) = 1.36, p = .18$).

In addition to the findings derived from quantitative analyses, one prominent theme emerging from the analysis of think-aloud data is that the ability to translate is to a great extent associated with literal comprehension. In this study, all of the higher performing participants translated many more phrases and sentences than their lower performing counterparts, in particular when reading the English passages. Yet, this ability may be insufficient for understanding the significance of a text. This can be best illustrated by the way in which one proficient bilingual reader in this study approached texts across two languages.

Yulin in Grade 12 appropriately translated at least three-fourths of the sentences stated from the designated classical Chinese and English passages. This student carefully and slowly translated each phrase and sentence into vernacular Chinese. After translating, Yulin organized the ideas into a more or less coherent proposition. Her readings of classical Chinese and English passages appeared to follow the procedure detailed in the construction–integration model of reading, postulated by Kintsch (1998, 2004). In terms of her text comprehension, Yulin, strictly speaking, demonstrated two levels of understanding: ‘reading the line’ and ‘between the lines’ (Alderson, 2000, pp. 7–8). In other words, this student showed an understanding of literal meanings as well as implicit meanings in the text. Take how well this student understood the English passage, ‘Two large stones’ (Lobel, 1977, pp. 22–31), and the classical Chinese passage, ‘Freeing birds’ (Wu, 2003, p. 141), as examples.

‘Two large stones’ (Lobel, 1977, pp. 22–31) is a descriptive narrative containing five basic elements of a story, and yet the main implication of the text is not explicitly stated in the text. Yulin successfully translated nearly 100 per cent of the phrases and sentences from the passage. Her summary identified the story characters (two large stones, one bird, and one mouse), settings (two sides of a hill), conflict (the stones would like to find out what is on the other side of the hill), struggle (two differing messages received from the story characters), and solution (the stones at last choose to believe the message given by the mouse). Yulin drew a conclusion, ‘Butong de ren kandao butong de shi ba! Jiushi meigeren kandao de dongxi buyiyang [People see things differently. In other words, everyone sees things differently].’ Yulin’s recounting of story events demonstrated her understanding of words, phrases, sentences, and rhetorical structures, on the one hand; on the other, her understanding of the significance of the story was characteristically partial and incomplete. Her statements, as a whole, did not elaborate on the reasons for the story’s characters’ different standpoints. According to the text, the bird can travel much higher and further than the mouse can; as a result, the bird saw towns and castles from the air, whereas the mouse only saw such objects like grass and earth from ground level. Overall, Yulin demonstrated an understanding of the line and between the lines, but she did not read beyond the lines. She was not alone, however.

Both higher and lower performing participants of English expressed difficulty in understanding its main implications. It is likely that the L2 readers may not possess sufficient knowledge of text genre and structure to assist them in comprehending the complex web of relationships among the elements of English writing.

The classical Chinese text, 'Freeing birds' (Wu, 2003, p. 141), is likewise a descriptive narrative in which the author explicitly presents two historical events as an illustration to support his arguments – adversity spurs life, while comfort breeds death. Yulin successfully translated approximately three-fourths of the phrases and sentences, and, subsequently, provided a summary of the text after reading. Again, her summary consisted of the basic elements of a descriptive narrative: situation (the author bought four exotic canaries and kept them in his study); conflict (it is against nature to keep the birds in cages); struggle (the master decided to set the birds free); outcome (the birds showed hesitation in leaving their master's house); and meaning (indulging in a life of ease eventually leads to destruction). This student's summary was characteristically cohesive and coherent. Like Yulin, the rest of the participating students were able to discern the meaning of the classical Chinese passage to some extent, even though they showed difficulty recognizing words and phrases depicted in the classical Chinese text that are not frequently used. Neither did they possess sufficient culturally relevant knowledge to fully understand the details that the author uses to support his implications. More specifically, none of the participating students showed an understanding of the two historical events to which the author alluded in order to support his principal implications. These readers, on the whole, demonstrated an understanding of the story's significance. The findings derived from the qualitative analyses were relatively consistent with those found in the quantitative analyses. Slightly more than 75 per cent of the adolescent readers ($N = 134$) responded correctly to the question that asked them to discern the theme of this particular passage.

It is worthwhile to note that the higher performing readers of English from this study tended to translate many more phrases and sentences from the reading passages and exhibit better text comprehension than the lower performing ones. For example, the higher performing English readers translated propositional units derived from 'Traveling time' (Chapman & Robson, 1995, p. 28) above the average ($M = 13.68$ idea units, 42% of 33 units) whereas the lower performing readers translated below the average. Winnie and Yulin, identified as the higher performing readers of English, translated slightly more than 70 per cent of the propositional units from this passage. These two readers also successfully identified its main ideas alongside its supporting ideas soon after reading. By contrast, the struggling readers of EFL, such as Xiaomin – whose comment opened this article – and Lynn, merely translated 17 per cent of propositional units, and they also made many more errors in their translations than the higher performing students. Their overall comprehension was characteristically fragmented and rudimentary.

Ambivalent perceptions and attitudes

Overall, two differing perceptions of and attitudes toward translation emerged from qualitative analyses (see Table 2). In one sense, intra- and inter-language translation can be a supportive reading strategy; in another sense, issues and concerns about the impossibility of translation were manifested. Moreover, it should be noted that the teachers and students from the participating school shared relatively similar perceptions pertaining to the roles and functions of mental translation in reading texts written in either classical literary styles of Chinese or English. In this context, literal translation was specifically referred to as translating word by word and sentence by sentence within one language or between two languages.

Table 2. Notions regarding intra- and inter-language translation

Effects	Intra-language translation	Inter-language translation
Promote	Reading comprehension; writing competence; knowledge of Chinese linguistics; discovery of translation equivalents	Reading comprehension
Inhibit	Constraints of creative and critical thinking	Interference with text comprehension; distortion of meaning; deceleration of reading speed; difficulty in finding translation equivalents

Teachers' perspectives. Examinations of the statements given by participating teachers demonstrated two contradictory issues and concerns. On the one hand, the act of reading is deemed an act of translation; on the other hand, concerns about 'fidelity' and 'equivalencies' were shown. The participating teachers were, roughly speaking, divided into two groups, one in favor of translation and the other having reservations regarding its use. Two teachers of Chinese language arts were in favor of the use of mental translation in the reading of classical Chinese passages, and yet the other two were skeptical and cautious about using it. In the same vein, two EFL teachers expressed their support for student use of mental translation in the reading of English passages, whereas the other two were suspicious of it.

Those in favor considered the use of translation inevitable for text comprehension, and their statements indicated that translation can take place between languages and within the same language. The following statements given by Teacher Ma provide a good example:

In the process of translating sentence by sentence, students can understand the meanings of the words, phrases, syntactic structures, and ornate literary styles stated in ancient Chinese texts. Also, they can understand the variation of both ancient and contemporary Chinese in terms of language usage. In doing so, students can grasp the themes and main ideas straight away, understand parts of speech and patterns of sentence structure in classical literary Chinese, and thereby enhance their reading comprehension.

According to Teacher Ma, employing intra-language translation promotes text comprehension and develops linguistic competence in literary Chinese. The gap between ancient and contemporary literary Chinese can be narrowed through translation. Accordingly, translation is regarded as 'a form of linguistic and conceptual enrichment' (Schulte & Biguenet, 1992, p. 9), as well as a bridge between the past and the present in terms of history and culture (Ye, 1994/2004). Additionally, translation can function as 'a revitalizing force of language' (Schulte & Biguenet, 1992, p. 9). This idea can be best illustrated by the following statements given by Teacher Lee, who possessed more than 20 years of teaching experience in Chinese language arts: 'The ability to translate classical literary Chinese [into contemporary Chinese], of course, can improve our writing skills. Those who can comprehend ancient Chinese essays, I think, can easily compose an essay written in contemporary Chinese.' As Teacher Lee explained, intra-language translation can function as a revitalizing force for one's own language – here, contemporary Chinese (*baihua*) – and continuously stretches the linguistic boundaries within the language.

The impossibility of translation, however, is one of the main concerns articulated by the teachers who were not particularly in favor of translation when students read the passages written in classical

literary styles of Chinese. Those teachers argued that an overreliance on translation would eventually weaken a student's ability to evaluate a text in a creative manner and that this strategy does not enable the reader to adequately understand the text's implications. The following presents Teachers Lin's and Wu's contentions:

Lin: I don't encourage students to read translated versions [of the Chinese classics]. Developing an ability to read Chinese literary texts begins with the recognition of infrequent words. Overreliance on translation can weaken our ability to evaluate the text read; therefore, we should avoid doing so.

Wu: Translating word by word and sentence by sentence tends to break meaning into fragments that [eventually] lead to the distortion of original meaning. Also, the coherence within sentences will be lost, and the meaning created through the context will be imprecise when a text is translated word by word and sentence by sentence. Literal translation is needed only if one tries to analyze phrases and sentences as well as to locate their translation equivalents.

The distortion of meaning and the constraint on creativity were the two main concerns articulated by the teachers. Literal translation was deemed only appropriate as a means of solving problems at a word and a sentence level. Learners of classical Chinese are reminded to use this strategy vigilantly, as proposed by Teacher Wu.

In a similar vein, the participating EFL teachers were also divided into two distinct groups: one was in favor of translation and the other not. Again, translation was perceived as an effective reading strategy on the one hand; on the other, the reader might misunderstand the author's meaning due to the impossibility of locating appropriate translation equivalents. The following statements given by Teacher Ho and Teacher Su, respectively, illustrate the views of and attitudes toward inter-language translation:

Ho: When explicating an [English] passage, I would describe to my students what each sentence means. I start with explaining sentence structures and then translating [the sentences]. However, translating into Chinese, which is merely one of the methods, is for the enhancement of my students' text comprehension.

Su: Sometimes it [translation] helps. When a sentence structure is relatively complex or its meaning is vague, translating into Chinese can ensure a reader's text comprehension.

Translation, as a strategy, can provide a means of clarifying and confirming the meaning of an English text, according to Teachers Ho and Su. Two other participating EFL teachers, on the other hand, elaborated on the possible setbacks students may experience by employing translation during reading. The following excerpt, derived from the comments provided by one participating EFL teacher, named Teacher Ting, specifically enumerated four disadvantages of translation:

Ting: [Literal translation] does not help. First of all, we don't need to find out the meaning of an unfamiliar [English] word when it, in fact, does not interfere with our understanding of the text. Next, it slows down our reading speed. We will waste our precious time [on translating] particularly when one is taking a test. In addition, one more step is needed when translating from English to Chinese in comparison with reading the original directly. And last, English and Chinese do not correspond with each other sometimes; neither can they be translated literally. Misunderstanding occurs sometimes if one must mediate English through Chinese.

Interference with text comprehension, deceleration of reading speed, difficulty with finding translation equivalents, and distortion of meanings are the major drawbacks of employing translation during reading, according to Teacher Ting. To summarize the perspectives presented thus far, the participating teachers expressed ambivalent viewpoints relating to the application of mental translation to the reading process. Translation can be a strategy to enhance literal comprehension; however, readers should not overly rely on it, in part because of the differences between the languages themselves. Similarly, the participating teachers' concerns and speculations echo those articulated by the students who participated in this study. This connection is discussed in the following section.

Participating students' perspectives. Regardless of language proficiency and grade level, all of the students ($N = 17$) who participated in this study consistently acknowledged the application of backward translation (from L2 to L1) in reading an English passage. Additionally, inter-language translation was regarded as essential for promoting text comprehension by all of the participating students. For example, Hans, a lower performing EFL reader, stated that translation could help him better understand an English text. So did higher performing EFL readers such as Yulin. She explicitly stated that translating from L2 to L1 was essential for her as she tried to make sense of an English passage. This finding supports Kern's (1994) contention that translation serves as a means for facilitating reading comprehension and helping students develop a better understanding of the content and syntactic structure of a text.

Nevertheless, adequate translation can be challenging for readers. In this study, more than half of the participating students, in particular those who struggled, articulated their frustration at being unable to employ translation to make sense of what they read. Some of their statements were, 'Constant translation is troublesome,' 'translation is not an easy task,' 'I don't translate because I'm very often unable to translate from Chinese to English.' On the other hand, the limitations of translation were also elaborated by some of the participating students. For example, Willy, a higher performing reader in Grade 10, discussed the obstacles that hindered him from adequately translating idioms from one language to the other, especially when readers lack culturally specific knowledge. A case in point was the English idiom *a piece of cake* and the Chinese idiom *yi ru fan zhang* which means 'as easy as one turns one's palm over.' As Willy posited, it would be difficult for Taiwanese learners of English to understand why the English idiom *a piece of cake* is associated with an effortless, painless, and simple action. By contrast, it is relatively easy for Chinese readers to comprehend the connotative meaning of *yi ru fan zhang* for they could visualize how little effort it requires to turn the palm of one's hand over. Their statements support the notions that learning a language involves translation (Paz, 1992). Readers translate an object or expression with which they are unfamiliar into the words they already know. The initial process of translating often involves moving back and forth between the language that the reader already understands and the language that he or she is learning (Gadamer, 1960/1989; Johnson, 2000). This is also along the lines of Vygotsky's (1962) idea that 'Thought development is determined by language, i.e., by the linguistic tools of thought and by the sociocultural experience of the child' (p. 51).

Discussion and implications

This study examined the possible influences of translation on bilingual reading among Taiwanese adolescents. Three prominent findings emerged from the data analyses. First of all, both intra- and inter-language translation appear to have positive and significant connections with text comprehension at this stage of bi-literacy development. This finding is in line with Gadamer's (1973) contention that learning a language involves learning to translate, along with Vygotsky's (1962)

tenet that inner speech is the foundation of thought. The higher performing subjects consistently reported higher rates on their use of intra- and inter-language translation than their lower performing counterparts. The finding suggests a developmental trend in the students' application of translation to reading as well as a positive link between the ability to translate into contemporary Chinese (i.e., *baihua*) and reading comprehension within one language and between languages. Likewise, the higher performing readers in this study tended to translate more propositional units than the lower performing readers did as they read the English texts. The phenomenon suggests that the meaning of L2 words and sentences are often mediated through the first language and that proficiency in an L2 can speed up the translating process from one language to another (Kroll & Tokowicz, 2001).

Next, it is noted that the ability to translate literally appears to promote reading comprehension at a word and sentence level. Yet this ability may not be substantial for understanding the implications of a text. Knowledge of text conventions and rhetorical strategies seems to contribute to an understanding of a text's significance and its implications. As put forward by Alexander and Jetton (2000, p. 292), 'knowledge of text genres and structures allows readers to access information more readily and accurately, as they construct their personal interpretations of the texts.' Apparently, it was relatively challenging for the EFL readers in this study to discern the relationships among key ideas or metaphorical expressions from an English passage in order to facilitate their understanding of its implications. These findings imply that teaching text/genre conventions is important in particular for foreign language learners. They also suggest that the ability to translate within one language or between languages can reflect what linguistic knowledge the readers possess, how well they can use the language(s), and how well they can communicate through or beyond the language(s).

Lastly, but equally important, the perceptions of and attitudes toward translation manifested by the participating students and their teachers correspond. The views and ideas of how a reader should read ancient literary Chinese expressed by the participating teachers uncover a sociocultural dimension of reading. Translation appears to be more than a linguistic operation that merely aims at understanding a difficult text. It can as well be viewed as a path to bridge two cultures and two histories. That is to say, intra-language translation in this Taiwanese context connects both the ancient and contemporary pan-Chinese cultures; inter-language translation narrows the gap between the East and the West. Furthermore, a possible influence of school instruction on the development of literacy within a language and between languages is also uncovered. A grammar-translation method – i.e., a strong emphasis on bilingual translation (Adamson, 2006) – seems to be prevalent in the teaching of language arts in this particular context. The reliance on literal translation while reading tends to place a strong emphasis on textual meaning, indicating that meaning is locatable because it is embedded in the text (Beach, 1993). These findings are along the line of Vygotsky's (1981) tenet: higher mental functioning in the individual has its origins in social activity. Further investigations on the extent to which literacy instruction impacts the use of intra- and inter-language translation are called for.

On the whole, mental translation serves as a processing strategy with which readers locate an internal meaning system while comprehending language. It is, in a sense, a manifestation of both the internalization and externalization of verbal thought, either within one language or between two languages. Likewise, the ways in which the Taiwanese adolescent readers approached the complex tasks of comprehending and processing language(s), reflect, in part, culturally and educationally specific experiences. As Szalay and Windle (1968) postulated, different conditions of learning can bring out different conceptual organizations. It is inevitable that teachers must examine how institutions, such as schools, socialize readers to respond in a certain manner (Beach, 1993). Understanding the ideological stances embedded in certain cultures helps us to gain a more thorough understanding of the ways in which a reader approaches reading in his or her first or

second language, or both. Human activity can be understood only if the tools and signs that mediate that activity are examined, as proposed by Vygotsky (1981).

Acknowledgments

An earlier version of this article was presented at the 15th European Conference on Reading held in Berlin, Germany, 5–8 August 2007, and published in *Providence Forum: Language and Humanities* at Providence University, Taiwan, December 2009. I wish to thank the participating school, teachers, and students for their contribution to the research, along with the two anonymous reviewers for the detailed comments on the earlier version.

Funding

The research reported in the article was supported by the National Science Council in Taiwan, Republic of China (NSC #94-2411-H-130-005).

References

- Adamson, B. (2006). Fashions in language teaching methodology. In A. Davies & C. Elder (Eds.), *The handbook of applied linguistics* (pp. 604–622). Malden, MA: Blackwell.
- Alderson, J. C. (2000). *Assessing reading*. New York: Cambridge University Press.
- Alexander, P. A., & Jetton, T. L. (2000). Learning from text: A multidimensional and developmental perspective. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. III, pp. 285–310). Mahwah, NJ: Lawrence Erlbaum.
- Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of reading research* (Vol. I, pp. 353–394). New York: Longman.
- Beach, R. (1993). *A teacher's introduction to reader-response theories*. Urbana, IL: National Council of Teachers of English.
- Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education*, 20, 157–173.
- Biguenet, J., & Schulte, R. (1989). Introduction. In J. Biguenet & R. Schulte (Eds.), *The craft of translation* (pp. vii–xvi). Chicago, IL: The University of Chicago Press.
- Bryman, A., & Cramer, D. (2004). Constructing variables. In M. Hardy & A. Bryman (Eds.), *Handbook of data analysis* (pp. 17–34). London: Sage.
- Cahnmann, M. (2005). Translating competence in a critical bilingual classroom. *Anthropology and Education Quarterly*, 36, 230–249.
- Chapman, G., & Robson, P. (1995). *Exploring time*. Brookfield, CT: Millbrook.
- Cohen, A. D., & Dörnyei, Z. (2002). Focus on the language learner: Motivation, styles and strategies. In N. Schmitt (Ed.), *An introduction to applied linguistics* (pp. 170–192). London: Arnold.
- Gadamer, G. H. (1973). Wieweit schreibt sprache das denken vor? [To what extent does language prescribe thinking?]. *Zeitwende*, 44, 289–296.
- Gadamer, G. H. (1977). *Philosophical hermeneutics*. (D. E. Ling, Trans.). Berkeley and Los Angeles: University of California Press.
- Gadamer, G. H. (1989). *Truth and method*. (J. Weinsheimer & D. G. Marshall, Trans.). New York: Crossroad. (Original work published in 1960).
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Grabe, W. (2002). Reading in a second language. In R. B. Kaplan (Ed.), *The Oxford handbook of applied linguistics* (pp. 49–59). New York: Oxford University Press.
- Graesser, A., Golding, J. M., & Long, D. L. (1996). Narrative representation and comprehension. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. II, pp. 171–205). Mahwah, NJ: Lawrence Erlbaum.
- Jarvis, D. K., & Jensen, D. C. (1982). The effect of parallel translations on second language reading and syntax acquisition. *Modern Language Journal*, 66, 18–23.

- Johnson, P. A. (2000). *On Gadamer*. Belmont, CA: Wadsworth/Thomson Learning.
- Kern, R. G. (1994). The role of mental translation in second language reading. *Studies in Second Language Acquisition, 16*, 441–461.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Kintsch, W. (2004). The construction-integration model of text comprehension and its implications for instruction. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1270–1328). Newark, DE: International Reading Association.
- Kroll, J. F., & Tokowicz, N. (2001). The development of conceptual representation for words in a second language. In J. L. Nicol (Ed.), *One mind, two languages: Bilingual language processing* (pp. 49–71). Oxford: Blackwell.
- Kuo, X., Tang, Z., Ho, J., Jiang, S., & Tien, R. (1999). *Gudai hanyu* [Classical Chinese] (Vol. 1). Beijing: Shangwu.
- Linacre, J. M. (2006). *WINSTEPS Rasch measurement computer program* [computer software]. Chicago, IL: Winsteps.com.
- Lobel, A. (1977). *Mouse soup*. New York: Scholastic.
- Malakoff, M., & Hakuta, K. (1991). Translation skill and metalinguistic awareness in bilinguals. In E. Bialystok (Ed.), *Language processing in bilingual children* (pp. 141–166). New York: Cambridge University Press.
- Ministry of Education, Republic of China (Taiwan). (n.d.). Gaojizhongxue kecheng biao zhun [Curriculum benchmarks for secondary education, Grades 10–12]. Retrieved October 16, 2005 from <http://www.ylsh.mlc.edu.tw/~teach/course>
- O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.
- Oxford, R., & Burry-Stock, J. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for learning SILL. *System, 23*, 1–23.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury, CA: Sage.
- Paz, O. (1992). Translation: Literature and letters. In R. Schulte & J. Biguenet (Eds.), *Theories of translation: An anthology of essays from Dryden to Derrida* (pp. 152–162). Chicago, IL: The University of Chicago Press.
- Schulte, R., & Biguenet, J. (1992). Introduction. In R. Schulte & J. Biguenet (Eds.), *Theories of translation: An anthology of essays from Dryden to Derrida* (pp. 1–10). Chicago, IL: The University of Chicago Press.
- Stern, H. H. (1983). *Fundamental concepts of language teaching*. London: Oxford University Press.
- Szalay, L. B., & Windle, C. (1968). Relative influence of linguistic versus cultural factors on free verbal associations. *Psychological Reports, 22*, 43–51.
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Vygotsky, L. S. (1981). The genesis of high mental functions. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 144–189). Armonk, NY: Sharpe.
- Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky: Problems of general psychology* (Vol. 1). New York: Plenum Press.
- Weaver, C. A., III, & Kintsch, W. (1996). Expository text. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. II, pp. 230–245). Mahwah, NJ: Lawrence Erlbaum.
- Wu, L. (2003). Fangniao [Freeing birds]. In Q. Tian (Ed.), *Taiwan gudien sanwen xuandu* [Selected Taiwanese writings of classical prose] (pp. 141–142). Taipei: Wunan.
- Ye, W. (2004). Debunking claims of xin, da and ya: The afterlife of translations. In L. T. Chan (Ed.), *Twentieth-century Chinese translation theory* (pp. 77–90). Amsterdam: John Benjamins. (Original work published in 1994).