

Reading motivation and reading comprehension in Chinese and English among bilingual students

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Abstract One hundred four Hong Kong Chinese fifth graders completed a questionnaire on eight separate motivational subscales related to reading separately for Chinese as a first language (L1) and English as a foreign language (EFL) in addition to measures of both Chinese and English reading comprehension. Motivations related to self-efficacy, curiosity, involvement, recreation, and social-peer attitudes were significantly higher for L1 as compared to EFL reading. No difference across EFL and L1 was found for the motivational subscales in the areas of school grades, instrumentalism, and social-family attitudes. Furthermore, instrumentalism was particularly strongly correlated with EFL reading comprehension, whereas recreation had the highest association with L1 reading comprehension. The eight subscales collectively explained 16% variance in Chinese and 12% variance in English reading comprehension. Results underscore the importance of different types of motivation for reading comprehension and the different roles each motivational aspect may play in L1 and EFL reading.

Keywords Reading motivation · Reading comprehension · English as a second language

Introduction

Reading behaviors are influenced by motivation across cultures and languages (Lorch & Van Den Broek, 1997; Oldfather, 2002; Wigfield, 1997a). Indeed, even the most skillful readers can hardly be effective readers if they lack motivation

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(Watkins & Coffey, 2004). A variety of motivation constructs are important correlates of reading performance (Wigfield & Guthrie 1997; Law, 2009; Wigfield, 1997a, b). For example, Wigfield (1997a, b) noted that intrinsic reading motivation, consisting of curiosity in learning about a particular topic of interest, the pleasure gained from being engaged in reading interesting materials, and the challenge in learning complex or difficult ideas, is an important component in students becoming proficient readers.

Across studies of Chinese students, some researchers have focused on motivation and reading for Chinese as a first language (L1) (e.g., Lau, 2004; Wang & Guthrie, 2004), while other researchers have considered the association of reading motivation to reading comprehension in English as a foreign language (EFL) among Chinese students (e.g., Chen, Warden, & Chang, 2005). However, few, if any, studies have directly compared similarities and differences in reading motivation for the L1 and EFL within the same students. The present study aimed to adapt and validate reading motivation subscales covering different aspects of motivation such that they could be directly compared in Chinese as a first language (L1) and English as a foreign language (EFL) among Hong Kong Chinese students. We also examined the relations of these motivational subscales to reading comprehension itself in both Chinese and English among Hong Kong Chinese students.

In Hong Kong, Chinese children are expected to perform well in reading both Chinese and English. Across many years, the Hong Kong government has invested considerable sums of money and numerous governmental initiatives aimed at enhancing students' reading performance in both Chinese and English. In Hong Kong, reading instruction in both languages generally begins early, in the first year of kindergarten, around the age of 3.5 years (e.g., McBride-Chang, 2004). Furthermore, Chinese and English are both part of the three "core" subjects (mathematics is the third) most widely tested and emphasized across primary and secondary school in Hong Kong.

However although Hong Kong society places great emphasis on English learning, English is still mainly taught, learned, and used only in formal classroom settings. In daily life, most communication is conducted in Chinese. This situation differs considerably from those discussed in western contexts (e.g., McBride-Chang, 2004) in which the school and peer language is typically English, though the home language is variable. In the Hong Kong context, English is truly a foreign language, and the context in which it is used is limited and formal. Thus, within this particular society, with its strong academic emphasis on English but primary communication in Chinese, understanding what does and does not serve to motivate young Chinese children to read, both in their native language and in English, is both practically and theoretically important.

Chinese reading motivation has been studied in various dimensions or aspects. Lau (2004) investigated the motivational aspects of self-efficacy, intrinsic, extrinsic, social motivation and attributional belief on Chinese reading among Hong Kong seventh graders, and their associations with Chinese reading comprehension and academic achievement. The results showed that self-efficacy, intrinsic motivation, and ability and strategy attribution were strongly related to reading comprehension

and academic achievement. These results are generally in line with those of Wang and Guthrie (2004). Wang and Guthrie examined the role of motivational processes in reading comprehension in both US and Chinese cultures. Their results suggested that intrinsic motivation, involving pleasure gained from being engaged in reading activity itself, positively predicted reading comprehension. In contrast, extrinsic motivation, encompassing participation in reading activities based on external values and demands, such as good grades, recognition from others, or required skills, predicted reading comprehension negatively in both cultures.

Despite this consistency across cultures, research findings on English as a foreign language learning are controversial. For example, Pae (2008) found that intrinsic motivations were relatively strongly associated with desire to learn English as a second language among Korean university students. However, Chen et al. (2005) revealed that instrumental motivation, defined as learners' interest in learning a foreign language and related to the practical and utilitarian advantages derived from language proficiency, such as better employment or salary (Dörnyei, 1990), rather than intrinsic motivation, is more influential for EFL learning among Chinese students in Taiwan. A stronger emphasis on instrumentalism for second language learning has been found in other studies as well (Grosse, Tuman, & Critz, 1998; Huang, 2008; Warden & Lin, 2000). It is possible that different cultural or environmental contexts might explain differences in motivation across studies.

One way to look at context relatively objectively would be to test its effects within the same students. In previous studies, results in relation to L1 and EFL reading were typically obtained for different participants making use of different motivational questionnaires. These differences across samples and measures could potentially lead to differing conclusions based on unsystematic measurement. For example, self-efficacy was included in studies of reading and motivation among those studying a first language by Lau (2004) and Wang and Guthrie (2004) but not included in a study of EFL reading and motivation by Chen et al. (2005). In addition, examining L1 and EFL simultaneously in one motivational scale enabled us to compare motivations for reading across languages directly. Given that, in the Hong Kong context, both English and Chinese are core subjects in school, it is of pedagogical interest to understand what motivates students' L1 and EFL learning, either across both languages or uniquely in relation to one.

Among various existing motivational scales, the Motivation for Reading Questionnaire (MRQ) developed by Wigfield and his colleagues (Baker & Wigfield, 1999; Wigfield, 1997a, b; Wigfield & Guthrie, 1997) is probably the most comprehensive and well-established of the reading motivational scales available. It was originally developed for use in English as a first language and later was established as applicable to English as a foreign language. Moreover, the MRQ has been validated in Chinese as the native language among Hong Kong students (Lau, 2004). Therefore, in the present study, the motivational scale used for assessing both L1 and EFL motivation among Hong Kong students was adapted from the MRQ.

The MRQ highlights multi-faceted aspects of motivation for reading by outlining three broad categories of motivational beliefs. The first category, termed "competence and efficacy beliefs" includes self-efficacy, challenge, and work avoidance. In essence, this category captures beliefs in one's willingness and ability to succeed

in reading. The second category focuses on both intrinsic and extrinsic motivational goals. Called “goals of reading,” this dimension includes intrinsic beliefs about one’s involvement in reading and the importance of reading, as well as extrinsic motivation aspects of reading for the purpose of recognized achievement competition, e.g., grades. The third category is referred to as “social purposes of reading.” This category acknowledges that reading is a social activity, often a mark of compliance with parents’ requests, for example.

Based on the previous MRQ studies on Chinese reading and motivation across languages, we assessed eight dimensions of reading motivation on both L1 and EFL among Hong Kong Chinese children in the present study. These were self-efficacy, curiosity, recreation, involvement, grades, instrumentalism, social-family aspects, and social-peer aspects. These dimensions were considered to be culturally appropriate and useful in relation to cross-language comparisons among Hong Kong Chinese students. Four (recreation, instrumentalism, social-peer, and social-family) were either created or expanded for the present study. The other four (self-efficacy, curiosity, involvement, and grades) came directly from Baker and Wigfield (1999). A description of each is outlined briefly below.

Self-efficacy is conceptualized as an individual’s expectations about his or her success, either in general or more specifically in relation to a specific task (Bandura, 1977). Several previous studies have reported that self-efficacy is positively associated with reading achievement and reading performance among school-age children (e.g., Schunk, 1991; Schunk & Rice, 1993). Self-efficacy is presumably relatively high when reading one’s native language as compared to a foreign language because the former may enhance one’s sense of control and decrease one’s perceived obstacles. Thus, we hypothesized that the self-efficacy motivation would be higher for Chinese than for English reading in our fifth grade sample.

The next two aspects of motivation included in the present study both fall under the intrinsic category of research on motivational structure. The first, curiosity, is conceptualized as the desire to learn about a topic of interest via reading (Renninger, 1992). The second, involvement, relates to a feeling of specific enjoyment or sense of purpose gained from reading (e.g., Schallert & Reed, 1997). For example, some may become engrossed in mystery stories in order to find out the answer of “who done it” to be revealed only at the end of the book.

We added a third, new dimension of intrinsic motivation in the present study—recreation. Recreation refers to a sense of purpose about reading as a desirable leisure activity. This concept has not received much attention in research on reading motivation for monolingual readers. However, the recreational component of reading attitude was one of the two strongest dimensions of attitude related to literacy in one study (McKenna & Kear, 1990). In addition, we were particularly interested in this dimension in relation to issues of foreign language reading. For example, Hong Kong Chinese children tend to read Chinese at least in some measure because of the desire for entertainment. In contrast, EFL reading itself may be relatively effortful and, thus, less associated with recreation as a motivation.

Grades and instrumentalism are two motivational aspects measured that can be conceptualized as extrinsic. Grades refer simply to reading for the purpose of attaining good grades, or marks, in school. Grades have often been used as a prime

example of extrinsic motivation. We also created an instrumentalism dimension to reflect extrinsic motivation. This idea of instrumentalism is similar to the concept of instrumentality, which is an important language learning motivation (e.g., Dörnyei, 2006). Instrumental language learning motivation is a desire to obtain something practical or concrete from the study of a language (Hudson, 2000). Language learning is utilitarian in the sense that it can equip one for future situations, including various career applications or the reading of technical materials to facilitate goals (e.g., learn how to build something from a manual). The idea of instrumentalism is similar to that of extrinsic utility value in language learning (Mori, 2002), again referring to the usefulness of an activity (Eccles et al., 1983). Perceived extrinsic utility value predicts both the intentions and actual decisions made to continue participating in language-learning courses (Eccles et al., 1983; Meece, Wigfield, & Eccles, 1990). Thus, in the present study, we hypothesized that the two above-mentioned extrinsic motivations, particularly instrumentalism, would be associated with EFL reading comprehension.

Given Baker and Wigfield's (1999) "social purpose of reading" concept in relation to motivation, we included two separate dimensions of this aspect in the present study. The first was termed *social-family* and the second was called *social-peer*. Social-family refers primarily to parents. Parenting practices (e.g., Bornstein & Bradley, 2003) and parental expectations (e.g., DeGarmo, Forgatch & Martinez, 1999; Parcel & Menaghan, 1990) are particularly important for children's school achievement. In Hong Kong, many parents place great emphasis on academic achievement and have high expectations for their children's commitment to studying (e.g., Shek & Chan, 1999). Hence, getting recognition from parents, fulfilling parents' expectations, and being perceived as a good son or daughter because of one's good study habits can all represent this focus on social-family reading motivation. In some ways, this social-family motivation is reflective of the concept of filial piety, the idea of honoring one's parents, which is increasingly recognized in Asia, particularly in Chinese cultures (e.g., Yeh, 2003).

Apart from family, peers were included as an additional source of social reading motivation in the present study. Social settings tend to exert major influences on the language learning process (Wong Fillmore, 1983). School is an increasingly important place for socialization, fostering children's ever-strengthening sense of peer solidarity (Harris, 1995). For example, the cooperative-learning structure of the classroom can improve students' reading motivation and reading achievement by utilizing peer influence (Isaac, Sansone, & Smith, 1999; Wentzel, 1993). Thus, reading may serve as a means by which to achieve perceived social competence in the classroom. Reading skills may be fostered in the classroom both by cooperation and by competition with peers.

To summarize, we had three aims in the present study. First, we aimed to adapt and validate a reading motivational scale with eight dimensions for both Chinese as an L1 and EFL using confirmatory factor analyses. Second, we aimed to compare motivations for reading Chinese and reading English across all eight categories. Third, we intended to examine the associations of each of these with actual performance on reading comprehension tasks separately in English and Chinese. We hypothesized that reading motivation would be higher for Chinese on the

dimensions of self-efficacy, curiosity, involvement, recreation, and social-peer aspects. We further hypothesized that English reading comprehension performance would best be explained by the instrumentalism dimension. In contrast, we anticipated that Chinese reading skills might be best explained by dimensions of intrinsic motivation, i.e., curiosity, recreation, or involvement, though we did not make specific predictions about which might emerge as of most importance.

Method

Participants

A total of 104 Hong Kong native Chinese (52 females and 52 males) fifth graders from one local elementary school voluntarily participated in this study. The ages of students ranged from 10 to 13 years old ($M = 10.28$; $SD = .59$). Most of them came from families of relatively high socio-economic status and parental education levels.

Among the participants, 65.3% reported that they lived in private housing and 51% had a maid at home; 35.6% had fathers who had attained a university or postgraduate educational level, and 32.7% had mothers who had attained the same level. Across participants, 88.3% reported that they subscribed to Chinese newspapers and/or magazines, and 37% of them reported subscribing to English newspapers and magazines.

Measures

The adapted motivation for reading questionnaire

Based on the Motivation for Reading Questionnaire (MRQ) (Baker & Wigfield, 1999), which was originally designed for measuring L1 reading motivation and has subsequently been used for measuring L2 reading motivations (Mori, 2002), as well as a focus group that provided ideas for four new dimensions of reading motivation, a 50-item questionnaire assessing the eight dimensions of reading motivations described earlier was administered. "I am a good reader" is one item on the self efficacy subscale, containing a total of four items, whereas "I enjoy reading books about people in different countries" is an example of an item from the curiosity subscale, comprised of six items. The involvement subscale is comprised of items such as "I form pictures in my mind when I read;" this scale was made up of six items. For the newly developed scale of recreation, one item was "During holidays, I choose to read for leisure." The recreation scale contained eight items. The grades subscale, made up of four items, consisted of items such as "I read to improve my grades," and the nine-item instrumentalism scale contained questions such as "I think reading can contribute to my future career." Finally, for the social subscales, "I read books in order to fulfill my parents' expectations" is one item from the social-family subscale, and "I like reading books that are recommended by my friends" is an example of one from the social-peer subscale. The social-peer scale

contains seven items and the social-family scale contains six items. These adapted eight subscales are presented in the “Appendix”. Children rated each item on a 4-point Likert Scale (very different from me = 1; a little different from me = 2; a little like me = 3, and a lot like me = 4).

In the focus group, six fifth graders were interviewed for approximately 1 h on reading motivation specifically in relation to the four subscales of recreation, instrumentalism, social-family and social-peer. Content was recorded and used to construct the new motivational subscales. A pilot test with ten fifth graders from the same primary school was subsequently carried out before formal testing to ensure that all items included on this questionnaire made sense to all participants.

This questionnaire was presented in Chinese only, but there were two versions given—one about motivation in English reading and the other about motivation in Chinese reading. It was forward-and-backward translated by two experienced translators independently from English to Chinese and back to English. The best translated version of each item was selected after comparison. Two sections were included in the questionnaire. The first referred to motivations for reading Chinese books, and the second focused on motivations for reading English books. All 50 items included were the same for Chinese and English reading motivation.

Chinese and English comprehension tasks

Reading comprehension was measured using materials from a study by Leong, Hau, Tse, & Loh (2007). These materials, used in the original study in Chinese only, were translated and back-translated independently by two university students and the final English versions were established through discussion on the best version of each. All students completed both an expository and a narrative passage in each language. The syntactic complexity of each passage was carefully balanced; all ranged from seven to eleven sentences. The contents of these passages included the Great Wall in China, falling peanuts, the Nobel Prize, and Hong Kong, of which the Great Wall and falling peanuts were Chinese passages and the Nobel Prize and Hong Kong passages were English passages. All students were asked to read the same four passages. All are suitable and familiar to 9–11 year-old Hong Kong Chinese children (Leong et al., 2007). These passages had been modified from the most recent series of Chinese text books published by the People’s Education Publishing Company in Beijing, so as to minimize the effects of prior learning and background knowledge on participants.

Following each comprehension task, students were asked to answer three open-ended questions included in the study by Leong et al. (2007), as well as three newly established multiple choice questions. Scores of 0, 1, and 2 were allotted, respectively, for open-ended questions judged to be incorrect, partially correct, and correct answers, following Leong et al. (2007). In addition, binary scores of 0 or 1 were given for each new multiple choice question to reflect incorrect and correct answers, respectively. Thus, total possible scores for each task ranged from 0 to 9 points.

Measure of demographics

Students were asked to report their demographic information including their own age, gender, type of residence, availability of a maid at home, parents' educational levels, and subscriptions to newspapers at home. Type of residence was indicated as public rental housing, subsidized home ownership or private housing. Availability of a maid at home and subscriptions to newspapers were measured dichotomously as yes or no only. Parents' education level was measured on a four-point scale: 1 = elementary school, 2 = secondary school, 3 = university, 4 = postgraduate.

Procedure

Once parents had returned slips granting permission for their child to participate in the present study, a testing session during school hours was arranged with the school administration. During that session, each participating student was given a set of tasks including the adapted motivation for reading questionnaire, two Chinese comprehension passages and two English comprehension passages within a single day at school. A total of five experimenters administered all tasks. These experimenters were university students who had been trained on administration procedures and instructed to deliver standardized instructions to all participating students in the classroom before distributing the materials. Assurances of confidentiality and independence of the study to school performance were additionally emphasized to minimize chances that participants would produce responses reflecting social desirability biases only. All students completed the adapted reading motivation questionnaire within the first 30 min of the testing session, and each reading comprehension passage was completed within 15 min. The whole procedure lasted for 1.5 h.

Results

Results are reported in two main sections. First, to examine how well our measures reflect their intended constructs and their equivalence across languages, confirmatory factor analyses of the Adapted Motivation for Reading Questionnaire both for English and Chinese were first conducted, and the relations among different dimensions are presented below as well. Second, the results of the relations between motivational dimensions and reading comprehension both in Chinese and English are overviewed.

Confirmatory factor analyses of the adapted motivation for reading questionnaire

Before performing confirmatory factor analyses (CFA), we first conducted parceling for each of the eight motivational dimensions in order to reduce the number of required parameter estimates and therefore increase the likelihood of convergence (Scullen, Mount, & Judge, 2003; Shahar, Henrich, Blatt, Ryan, & Little, 2003; Shahar, Henrich, Reiner, & Little, 2003). Items were combined for each dimension

based on their inter-correlations. As the dimensions of recreation, instrumentalism, social-family and social-peer were newly added dimensions, we retained more parceled items for these as compared to the other four well-established motivational dimensions. Finally 50 original items were combined into 20 parceled items with one for self-efficacy and grade, two for curiosity and involvement, three for social-family and social-peer, and four for recreation and instrumentalism, respectively. The same items were parceled together across the Chinese and English versions of the adapted MRQ. We then ran CFAs on the adapted MRQs using EQS 6.1. The model was specified such that the items would load on only one factor and the variances of the latent variables were fixed to one. Across all factor loadings, the relations among the latent variables and the measurement error variances for each variable were estimated. We report five frequently used goodness-of-fit indices: chi-square, the comparable fit index (CFI, Cheung & Rensvold, 2001), Joreskog and Sorbom's Goodness of Fit (GFI) index, the non-normed fit index (NNFI; Bentler & Bonett, 1980) and the root mean square error of approximation (RMSEA; Steiger, 1980). The goodness-of-fit indices for both Chinese and English adapted MRQ models are shown in Table 1. According to Cheung and Rensvold, acceptable model fits are indicated by CFI, NNFI and GFI values over .75 and RMSEA values below .15. Since the widely used chi-square statistic can be affected by various factors, such as sample size and the number of estimated parameters (Bentler, 1990), we focus on overall goodness-of-fit here. In general, the CFA results supported the hypothesized theoretical structure of the adapted MRQ for both Chinese and English, with CFI, NNI, and GFI measures all above .75 and RMSEA values below .15 across both versions.

Tables 2 and 3 show the standardized factor loadings for both Chinese and English. All factor loadings were significantly different from 0 at $p < .001$. The internal consistency reliabilities of the adapted MRQ for both Chinese and English are reported in Table 4. Reliabilities greater than .70 indicated reasonably good internal consistency (Baker & Wigfield, 1999). All motivational dimensions for English and most motivational dimensions for Chinese were above or closely approaching .70.

Correlations among these subscales for both Chinese and English reading motivations are presented in Table 5. For Chinese motivational variables, all intercorrelations were positive and significant at $p < .01$ level, and they were in the moderate range in general, from .21 to .72 with only two correlation coefficients at or above .60. For the English motivational variables, all intercorrelations were positive and significant at $p < .01$ level, and the correlation coefficients were in the moderate to high range, from .39 to .83.

Table 1 Goodness-of-fit indices for the adapted motivation for reading questionnaire models

	χ^2	<i>df</i>	CFI	NNFI	GFI	RMSEA
MRQ_Chinese	241.28	142	.87	.82	.8	.09
MRQ_English	200.8	142	.94	.92	.83	.07

Table 2 Standardized factor loadings for the chinese motivation for reading questionnaire

	Self- efficacy	Curiosity	Involvement	Recreation	Grade	Instrumentalism	Social- family	Social- peer
Parceled item 1	.92							
Parceled item 2		.55						
Parceled item 3		.80						
Parceled item 4			.64					
Parceled item 5			.87					
Parceled item 6				.74				
Parceled item 7				.46				
Parceled item 8				.69				
Parceled item 9				.74				
Parceled item 10					.91			
Parceled item 11						.66		
Parceled item 12						.82		
Parceled item 13						.86		
Parceled item 14						.71		
Parceled item 15							.47	
Parceled item 16							.54	
Parceled item 17							.78	
Parceled item 18								.72
Parceled item 19								.50
Parceled item 20								.87

Relations among motivational variables and reading comprehension

Means, standard deviations, and comparison statistics across the Chinese and English reading motivational variables and reading comprehension are shown in

Table 3 Standardized factor loadings for the English motivation for reading questionnaire

	Self- efficacy	Curiosity	Involvement	Recreation	Grade	Instrumentalism	Social- family	Social- peer
Parceled item 1	.93							
Parceled item 2		.77						
Parceled item 3		.77						
Parceled item 4			.75					
Parceled item 5			.83					
Parceled item 6				.91				
Parceled item 7				.60				
Parceled item 8				.83				
Parceled item 9				.82				
Parceled item 10					.92			
Parceled item 11						.52		
Parceled item 12						.82		
Parceled item 13						.72		
Parceled item 14						.76		
Parceled item 15							.54	
Parceled item 16							.52	
Parceled item 17							.86	
Parceled item 18								.75
Parceled item 19								.72
Parceled item 20								.82

Table 4. As shown in Table 4, students' self efficacy for Chinese reading comprehension was significantly higher than it was for English reading comprehension, as hypothesized. In addition, across all of the intrinsic motivation variables, i.e., curiosity, involvement, and recreation, L1 motivation was rated as significantly

Table 4 Descriptive statistics and comparison of all variables across Chinese and English

	Chinese (<i>N</i> = 104)		English (<i>N</i> = 104)		<i>t</i> Value
	Mean (SD)	Cronbach α	Mean (SD)	Cronbach α	
Self efficacy	2.84 (.65)	.64	2.50 (.78)	.78	5.04**
Curiosity	3.05 (.53)	.65	2.78 (.77)	.83	4.82**
Involvement	3.00 (.55)	.56	2.65 (.72)	.73	5.65**
Recreation	3.05 (.62)	.75	2.74 (.76)	.85	5.39**
Grade	2.30 (.69)	.59	2.23 (.81)	.74	.95*
Instrumentalism	2.63 (.62)	.74	2.70 (.54)	.81	-1.76*
Social-family	2.08 (.54)	.61	2.07 (.62)	.70	.26*
Social-peer	2.44 (.60)	.65	2.19 (.66)	.77	4.75**
Comprehension	9.12 (3.98)	.77	9.70 (3.92)	.73	-

* $p < .05$; ** $p < .01$

Table 5 Correlations among motivational variables and Chinese (upper half) and English (lower half) reading comprehension

	1	2	3	4	5	6	7	8	9
1. Reading	-	.22*	.28**	.14	.36**	.00	.15	.08	.10
2. Self efficacy	.21*	-	.50**	.42**	.53**	.27**	.58**	.37**	.42**
3. Curiosity	.19	.69**	-	.53**	.72**	.28**	.53**	.36**	.45**
4. Involvement	.11	.67**	.78**	-	.58**	.21*	.28**	.30**	.31**
5. Recreation	.13	.64**	.81**	.72**	-	.23*	.47**	.38**	.42**
6. Grade	.02	.43**	.43**	.37**	.45**	-	.54**	.39**	.30**
7. Instrumentalism	.29**	.52**	.61**	.54**	.55**	.37**	-	.41**	.41**
8. Social-family	.12	.49**	.57**	.49**	.57**	.40**	.37**	-	.60**
9. Social-peer	.13	.58**	.60**	.52**	.57**	.51**	.45**	.51**	-

* $p < .05$; ** $p < .01$

higher than that of EFL. Students' motivations on the grade and instrumentalism dimensions did not differ across languages, however. On the third category of social motivations, social-peer motivation was higher for L1 than for EFL, whereas no difference across languages on social-family motivation was found.

Correlations among the reading comprehension and motivational variables are shown in Table 5. Both Chinese and English reading comprehension were significantly correlated with self efficacy. However, of the remaining seven motivational subscales, Chinese reading comprehension was significantly correlated with recreation and curiosity, whereas English reading comprehension was significantly correlated with instrumentalism only.

To examine the extent to which each of the eight motivational variables contributed to reading comprehension performance in each language, we conducted separate regression equations for Chinese and English. In Table 6, 16% of the variance in Chinese reading comprehension was explained by these eight reading

Table 6 Regression analyses explaining Chinese reading comprehension from reading motivations

Variable	Beta	<i>t</i>	<i>F</i> value	<i>R</i> ²
			2.19*	.16
Self efficacy	.08	.66		
Curiosity	.10	.66		
Involvement	-.12	-1.01		
Recreation	.38	2.56*		
Grade	-.07	-.60		
Instrumentalism	-.03	-.22		
Social-family	-.02	-.18		
Social-peer	-.05	-.40		

The effect size of this regression analyses was $f^2 = .19$

* $p < .05$; ** $p < .01$

Table 7 Regression analyses explaining English reading comprehension from reading motivations

Variable	Beta	<i>t</i>	<i>F</i> value	<i>R</i> ²
			1.60	.12
Self efficacy	.19	1.31		
Curiosity	.12	.58		
Involvement	-.19	-1.13		
Recreation	-.08	-.43		
Grade	-.13	-1.15		
Instrumentalism	.29	2.31*		
Social-family	.04	.33		
Social-peer	-.00	-.01		

The effect size of this regression analyses was $f^2 = .14$

* $p < .05$; ** $p < .01$

motivations collectively, $F(8, 95) = 2.19$, $p < .05$. In the regression equation, only the subscale of recreation ($t = 2.56$, $p < .05$) emerged as a significant predictor in explaining Chinese reading comprehension.

Table 7 shows the results of the regression equation explaining English reading comprehension from all eight reading motivations. These eight motivational variables explained 12% of the variance in English reading comprehension achievement, though insignificant *F* value, $F(8, 95) = 1.60$, $p = .14$. Among these eight dimensions in the regression equation, instrumentalism motivation emerged as a unique significant indicator, $t = 2.31$, $p < .05$.

Discussion

The present study examined various motivational aspects in Hong Kong Chinese-English bilinguals and provided new information on both the commonly and uniquely important motivations related to learning Chinese as an L1 and EFL. Confirmatory factor analyses established a generally satisfactory fit for our eight subscales of reading motivation across languages. The study revealed significant differences across five of the eight reading motivations assessed in L1 Chinese as

compared to EFL. In addition, collectively, our set of eight motivations explained 16% of the variance in Chinese reading comprehension and 12% of the variance in English reading comprehension performance. Finally, among all eight motivations, recreation had the strongest association with Chinese reading comprehension and uniquely predicted Chinese reading comprehension, while the instrumentalism subscale was most strongly related to and significantly predicted English reading comprehension. Self-efficacy was associated with reading comprehension across both languages.

Consistent with our hypothesis, self-efficacy was higher in L1 than in EFL. This is probably because compared to L2 reading, students in L1 reading likely enjoy fewer obstacles and an enhanced sense of control. Though English and Chinese are both emphasized in formal school education, the majority of Hong Kong people's learning every day takes place using Chinese as the medium, including TV, radio, and internet exposure, as well as conversations with family, friends, teachers, and classmates. Thus, it is not surprising that students felt more confident about their Chinese skills.

The three intrinsic motivational variables, curiosity, involvement, and recreation, were consistently higher for L1 as compared to EFL. This is probably because students are more likely to read L1 language materials for fun or entertainment (McKenna, Kear, & Ellsworth, 1995). Reading in the L1 is more apt to be carried out to satisfy personal interest and also more likely to be tied to reading comprehension performance, as reflected in both the L1-EFL comparison and also in the correlational and regression analyses, respectively. In the regression analysis for L1 (but not for EFL), recreation was the motivation subscale that was uniquely significantly predictive of performance on our measure of reading comprehension. The association between valuing reading as a recreational activity and reading performance is likely bidirectional. Skilled readers consistently tend to treat reading as a pleasurable activity (Anderson, Tollefson & Gilbert, 1985; Mercurio, 2005). Leisure reading is an activity that represents a choice, and those who perceive its outcome as enjoyable are, in turn, more willing to read, increasing reading comprehension performance in L1 (Chiu & McBride-Chang, 2006). Given that Hong Kong Chinese students prefer reading L1 Chinese as compared to EFL if they have a choice (Tung, Lam & Tsang, 1997), they are more likely to treat L1 reading as entertainment.

In addition to our measures of intrinsic motivation, there were two extrinsic motivation subscales included in the present study. Though there was no difference in instrumentalism across L1 and EFL reading motivation, instrumentalism was relatively highly associated with reading comprehension performance for EFL, but not for L1. Moreover, of all the subscales included in the regression analysis, only instrumentalism was uniquely associated with EFL reading comprehension performance. In contrast, there were no significant findings for the other extrinsic motivation subscale, grade, either in L1-EFL comparisons or in correlational analyses.

Instrumental motivation reflects an understanding of the instrumental benefits of learning a second language. Across the world, students often highlight instrumental reasons for studying second languages, particularly English (e.g., Holt, 2001;

Lukmani, 1972; Salim, 1996). Hong Kong students easily treat English reading as a means to accomplish their instrumental purposes such as applying for a good job and raising their social status in the long run. For example, economic and career reasons have been identified as the most important rationales for English learning in Hong Kong (e.g., Tung et al., 1997). Although these goals may be particularly salient for secondary school and college students, the focus on English for “getting ahead” in Hong Kong may emerge very early in primary school.

The findings of our grade motivational subscale showing no group differences across L1 and EFL or any associations with our outcome variables in either language was, to some extent, expected in the present study. In elementary schools, Chinese, English and mathematics have, for a long time, been treated as the three main, or core, subjects, evaluated as more important than any other subjects. Chinese and English, thus, typically receive the most attention from parents and students throughout the primary school years in Hong Kong (Tung et al., 1997), but one is not judged more important than the other. Thus, a focus on getting high grades in each was not expected to differ in the present study. We did find it somewhat puzzling that the grade subscale had no association with reading comprehension in either language, however. The grade subscale focuses exclusively on the link between motivation for achievement and reading, and the association of this variable to performance indicates that grades per se as a motivation were not important for explaining actual reading success in either language.

The final category we included in the present study was a focus on the social aspects of reading. Social aspects included both family and peer associations. It is not surprising that peer motivation was found to be significantly higher for L1 than for EFL, because in daily life readings and communications among Hong Kong peers are in Chinese, and compared to EFL, children would be more likely to read Chinese. Interestingly, no association was found between social-aspects motivation and reading comprehension across L1 and EFL. This result seems contradictory to some of the previous studies which suggested that peers increased students’ interests in reading in many aspects. For example, in one study of adolescents in 43 cultures (Chiu & McBride-Chang, 2006), the more peers reported enjoying reading, the more targeted students tended to excel in reading comprehension. The relations of social aspects motivation and reading comprehension may be more comprehensively examined in future studies across languages and cultures.

We posit three implications from the results of the present study. First, students’ self-efficacy appears to be particularly important across languages, both in the L1 and in EFL, because high self-efficacy can increase children’s confidence in and positive attitudes toward language learning. This likely applies across cultures and individuals. For example, Hamamura and Heine (2007, 2008) found that people with lower self-enhancement or self-efficacy tend to use a strategy of avoiding failure in achievement situations. In contrast, those with higher self-enhancement or self-efficacy are more likely to make efforts to approach success. Although Westerners have more of a tendency to approach success whereas Asians tend as a group to be more focused on avoiding failure in relation to school success (e.g., Hamamura & Heine, 2008), both focuses emphasize the importance of self-efficacy

for achievement. Self efficacy is a key factor for reading comprehension across languages.

Second, the present results suggested that recreational motivation, an intrinsic motivation reflecting the sense of genuine interest in reading, was positively and uniquely important for reading comprehension in the native language. The sense of pleasure derived from reading may be particularly strong in reading in one's native language, because of increased reading fluency and relatively few vocabulary obstacles typically encountered in the process. As a way of improving reading comprehension, therefore, students should continue to be encouraged to enjoy reading in their leisure time, both by schools and by families.

Third, given a general emphasis on intrinsic motivation for learning in one's native one's language, it may be pedagogically important for educators to consider that some aspects of intrinsic motivation, such as involvement, reading for fun, and curiosity, may be less important in EFL as compared to native language learning. Perhaps this is due in part to the fact that, at least in Hong Kong, a relatively advanced society in terms of information access, items of interest described in a foreign language can also be easily and quickly obtained in one's native language. Thus, the traditional intrinsic motivation focus by itself may not be enough to motivate students to learn English. A de-emphasis on intrinsic motivation for learning may suggest alternative methods of EFL teaching in the long run. On a perhaps related note, the significant association of instrumentalism with reading comprehension in the EFL context in the present study suggests that perhaps educators should further highlight the instrumental importance of learning a foreign language. At the same time, however, we are not clear whether instrumental motivations are helpful for long-term success, given that some studies have suggested that language-learning motivated by instrumental goals tends to be quite fragile (e.g., Holt, 2001). This important issue of the role of instructional motivation in long-term reading success should be further investigated.

There were a number of limitations in the present study. An obvious and strong limitation is that the sample size in the present study was small. The validity of the proposed motivational scale should be further tested. In addition, as Hong Kong is a place where language instruction typically begins early, i.e., at age three, whether the adapted motivational scale could be generalized to other L1-EFL contexts requires further investigation. Moreover, as most students in the sample came from families of relatively high SES and parental education levels, it is important in future work to test whether the present results would be generally replicated among all Hong Kong students. Second, our data were correlational only, so no cause-effect relations between reading motivation and reading comprehension could be established. Although motivational subscales collectively explained 12 and 16% of the variance in reading comprehension in English and Chinese, respectively, it is not clear whether motivation was the impetus for improved reading or whether reading comprehension skills might be responsible for children's increasing motivations.

Third, reliabilities for each motivational subscale could have been even higher than they were. We strived to include identical items in each language, and some of these might have been more applicable in one language than the other, possibly

explaining part of the differences in reliabilities across subscales. Finally, because we thought it might be easier to examine correlations across students, we had children all read the same two excerpts in English and Chinese. However, it might have been a better design for us to have systematically varied all of the passages across children.

Despite these limitations, however, the present study systematically and comprehensively explored patterns of motivation in Hong Kong fifth graders for both English and Chinese. We have proposed a motivational scale which may be helpful for testing L1 and EFL motivation simultaneously. Moreover, we have established a number of clear patterns in these motivational components, with self efficacy being associated with reading in both L1 and EFL, intrinsic motivation variables tending to be higher in L1 than EFL and extrinsic motivation variables tending to not differ for the two languages. All of the motivation variables collectively explained substantial variance in reading comprehension performance in both English and Chinese, with recreation as a significant and unique predictor in L1 Chinese reading comprehension and instrumentalism as a significant and unique predictor in EFL reading comprehension. These findings demonstrate the importance of considering motivations for reading separately for first and second languages.

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Appendix: Adapted motivation for reading questionnaire

Self efficacy

1. I know that I will do well in reading next year.
32. I am a good reader.
38. I learn more from reading than most students in the class.
40. In comparison to my other school subjects I am best at Chinese/English reading.

Curiosity

5. If the teacher discusses something interesting I might read more about it.
8. I like to read about new things.
10. My purpose in reading is to absorb more information. (The wording is a little different to that from Baker and Wigfield (1999))
15. If I am reading about an interesting topic I sometimes lose track of time.
20. I enjoy reading books about people in different countries.
43. I read about my hobbies to learn more about them.

Involvement

- 2. I feel like I make friends with people in good books.
- 16. I make pictures in my mind when I read.
- 19. I read a lot of adventure stories.
- 22. I read stories about fantasy and make-believe.
- 29. I like mysteries.
- 49. I enjoy a long, involved story or fiction book.

Recreation

- 7. During the holidays, I choose to read for leisure.
- 26. I believe reading is a relaxing and delightful activity.
- 28. When I finish reading, I will feel happy.
- 31. I believe that reading is a kind of burden or responsibility. (reversed)
- 34. After finishing reading books, I always feel that I have had an enjoyable experience.
- 36. If the book has been produced as a film or television drama, I will be more interested in reading it.
- 44. Reading is one of my interests.
- 48. I read leisure books during recess time.

Grades

- 24. I look forward to finding out my reading grade.
- 35. Grades are a good way to see how well you are doing in reading.
- 39. I read to improve my grades.
- 45. My parents ask me about my reading grade.

Instrumentalism

- 4. I hope that I can strengthen and equip myself through reading.
- 9. I read books in order to get the school's reading award.
- 11. My purpose in reading is to enhance my reading ability.
- 12. I believe reading can make me be a person with abundant knowledge.
- 14. If reading can improve my thinking ability, I will read more.
- 33. I think that reading is a tool to learn how to be a person.
- 37. I think reading can contribute to my future career.
- 41. My purpose in reading is to absorb more information and broaden my horizons.
- 46. I will not read unrealistic and useless books.

Social-family

- 6. If I don't read books, my parents will punish me.
- 18. I sometimes read to my parents.

21. I read books in order to meet my parents' expectation.
25. I visit the library often with my family.
27. I often read to my brother or my sister. (If you don't have sibling, please skip this question)
42. I like to tell my family about what I am reading.

Social-peer

3. I like reading a book with my friends at the same time.
13. I like to tell my friends about what I am now reading.
17. I like reading books which are recommended by my friends.
23. I believe I can earn peer respect and liking by reading more books.
30. I like to help my friends with their schoolwork in reading.
47. My friends and I like to trade things to read.
50. My level of loving reading is similar to that of my friends.

Note: The number means the order in which an item was placed in the questionnaire.

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