A Systemic Functional Semiotic Investigation of Illustrations in Chinese Poem Books: An Ontogenetic Perspective[1]

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Abstract

While images have been sufficiently investigated from the systemic functional semiotic approach in various multimodal text types, illustrations in poem books have received relatively little attention. This paper analyzed 2233 images in 15 poem picture-books (IPBs) targeted at different age groups, and classified as pre-school, school and adult groups. Statistics herein show that visual meanings in different groups manifest significantly different patterns in terms of ideational, interpersonal and compositional functions. The distributions are clearly motivated by different pedagogical functions, moving from basic cognitive development, to literacy cultivation and affiliation, and finally to enculturation of aesthetics and social values. The study therefore informs IPB practitioners how to match the visual design of illustrations with the pedagogical needs of readers of different ages.

Keywords: illustration, image, poem picture book, systemic functional semiotics, pedagogy

1. Introduction

While storytelling has long been considered an important learning activity for literacy development in childhood education (e.g. Cekaite & Willen, 2018), reading poems and thus being enchanted is not only vital in terms of early literacy cultivation for childhood education (Vardell 2006), but also for lifelong education. In China, a large number of poem books have been published targeting different age groups ranging from children to adult readers. Recently, some Chinese scholars have begun to show interest in the pedagogic function of poems (e.g. Zhang, 2014; Zhao, 2019; Li et al., 2018; Liu, 2019). Zhang (2014), for example, studies how poems can be a powerful educational instrument to cultivate the aesthetic sense from a rhetorical perspective.

With the development of printing technologies, recent decades have seen more

publications of illustrated poem books (hereafter IPBs). However, choices of images in different IPBs are far from the same. For instance, a poem on the season of spring may be illustrated by a photo of blossoming flowers, a painting of drizzle or a picture of a man looking at green trees. Such differences are common in the 15 IPBs collected for the present study. Moreover, the patterns that arise seem to be pedagogically motivated. That is, they may be motivated by pedagogical functions for readers of different ages. Therefore, the following research questions are investigated:

(1) How are images[2] selected in IPBs?

(2) How are the meanings of the images distributed across various classifications of IPBs (targeted at different age groups)?

(3) What pedagogical functions do these images serve?

To answer these questions, 2233 images in 15 IPBs (all presenting poems from the Tang Dynasty) are investigated using the systemic functional semiotic (hereafter SFS) approach (see Kress & van Leeuwen, 2006; Painter et al., 2013). With this framework, the semiotic choices of pictures or images have been sufficiently explored in picture books (e.g. Painter et al., 2013), mass communication (e.g. Royce, 1998; Caple, 2010) and educational texts (e.g. Tann, 2010; Wilson, 2016; Chen, 2016). However, little attention has been paid to images in IPBs.

This paper contributes to the literature gap by drawing attention to how choices of images in IPBs are motivated by different pedagogical functions. First, previous researches on picture books from the SFS perspective, as well as studies on the educational functions of poems, are reviewed. Next, there is an introduction to the theoretical framework, methodology and data collection of the current study. Then, the findings of the data analysis are reported so as to illustrate how the images are distributed in relation to various pedagogical functions. The paper is concluded with a discussion, as well as stating its limitations and possibilities for future research.

2. Literature Review

This section reviews socio-semiotic studies on images in picture books and educational discourse, as well as previous studies on the pedagogical functions of Chinese poems.

2.1 Images in picture books

The picture book has recently become a major area of SFS research. Guijorro and Sanz (2008) apply the framework of Kress and van Leeuwen (2006) to analyze compositional, interpersonal and representational meanings in an illustrated children's narrative. They find that the writer and the illustrator collaborate to make the story accessible for the young child by a strong association between the point of departure of the text and illustrations of the story's main characters. Painter et al. (2013) further develop the system network of metafunctional choices in picture books, and reveal how words and images interplay in visual narrative. Their framework has been proven to be helpful in understanding the pedagogical role of picture books. They conclude that:

> Books like these are not only enjoyable and engaging for young readers, but offer a very important 'training' in becoming sensitized in how to read narrative texts (including monomodal ones) in ways that are educationally valued. (p. 156)

Similarly, Unsworth (2005, p. 21) suggests that knowledge about the visual resources can enhance the opportunities for learning in talk around texts and increase the potential for expanding young readers' interpretive reading practices. Unsworth (2015) uses the appraisal theory to analyze how language and images interact to construct judgments of propriety. He recommends that the study of persuasive narrative should be extended to multimodality in picture books. Also using the appraisal framework, Tian (2010) investigates the visual and linguistic construal of femininity in the bilingual picture book *The Ballad of Mulan*. It is found that the images contribute to enhancing the gender roles while constructing Mulan as a figure that shifts "freely in between stereotypically constructed male and female worlds" (p. 155). Some studies look into the gender roles in homosexuality. Sunderland and McGlashan (2012), for instance, analyze how homosexual parents are represented in children's picture books, revealing how sexuality could interact with gender roles in gay marriage.

2.2 Images in educational discourse

Education is one of the burgeoning fields in multimodality, such as images in mathematics text (O'Halloran, 1999), biology text (Guo, 2004), sex education (Liang, 2017), earth sciences (Wilson, 2016), literary text (Unsworth, 2015), and EFL textbooks (Chen, 2010, 2016; Liu & Qu, 2014). For instance, by investigating the integration of language, images and mathematical symbolism in mathematical texts, O'Halloran (1999) finds that the shift to the semiotic modality of mathematical symbolism involves semiotic metaphor that does not exist in verbal or diagram forms. The discovery of semiotic metaphor in mathematics adds new knowledge to the teaching of mathematics from the perspective of multimodality. In addition, the study of images in other educational contexts also boosts understanding of the role images play in relation to language in those contexts. For example, visual images extend and complement language used in biological texts (Guo, 2004). The use of images in instructions by middle school teachers is essential in facilitating students' comprehension of content in different subjects, such as earth sciences, language arts, mathematics and social studies (Wilson, 2016). However, discipline-specific differences are found in terms of social distance and subjectivity of knowledge. For example, images in earth science manifest the most social distance between subjects and viewers, depicting subjects located more than several miles away from the viewer. Images in earth science tend to imitate the external physical world whereas those in arts are more likely to be imaginative. Moreover, the use of language and image in digital formats of literary narratives could help the understanding of classroom-learning experiences (Unsworth, 2015). Illustrations, together with other semiotic resources, are found to be helpful in realizing attitudinal resources in Chinese EFL textbooks (Chen, 2010). The use of images in these textbooks cultivates those students' positive attitudes spelt out in the English curriculum. In addition, images also help realize different voices adopted in EFL textbooks, explicating the co-construction of text through engaging different voices in the texts (Chen, 2016). Similarly, in a higher education context, Liu and Qu (2014) find that intersemiotic differences are related to language difficulty of textbooks and English proficiency of target learners.

2.3 Pedagogical functions of Chinese poems

It is necessary to understand the functions of poem illustrations in association with the pedagogical signification of Chinese poems *per se*. Many Chinese scholars discuss the pedagogic functions of Chinese poems for children (Luo, 2013; Li, 2015; Yang, 2016; Zhao, 2019), teenagers (Qiu, 2014; Zhao, 2018; Chen, 2018) and adults (Li et al., 2018; Liu, 2019; Zhang, 2015).

In terms of the research on poem education on children, according to Luo (2013) and Li (2015), learning ancient poems helps to cultivate language skills and imagination. Yang (2016) stresses the part poems play in promoting moral codes, while Zhao (2019) studies poems in textbooks and proposes a system that cultivates the open mind in the early years of literacy development.

For those who receive primary and secondary education, Qiu (2014) calls for social awareness on the moral decline of juveniles and suggests that poems can build up a proper view towards the nation and its history. Zhao (2018) argues that poems have a natural link with traditional virtues. Chen (2018) identifies the way poems work in education as a body of knowledge, language and values.

For adults, Li et al. (2018) propose that learning poems can have a positive influence on their attitudes towards life. Liu (2019) elaborates on Chinese history of poem literature and concludes how poem education can contribute to public consensus. Overall, the pedagogical purposes vary in terms of different age groups as summarized in Table 1.

Table 1. Pedagogical purposes of different groups of audience

Audience	Pedagogical purposes
Children	language skills and imagination (Luo, 2013; Li, 2015); moral codes (Yang, 2016); linguistic awareness (Zhao, 2019)
Primary and secondary school students	national and cultural identity (Qiu, 2014); traditional virtues (Zhao, 2018); knowledge, language and values (Chen, 2018)
Adults	attitudes towards life (Li et al., 2018); personal and social development (Liu, 2018); public consensus (Liu, 2019), aesthetics (Zhang, 2015)

To sum up, literature shows that while images in picture books and educational discourse have been investigated robustly from the SFS perspective, the illustrations in IPBs have not received due attention in terms of their pedagogical functions. Investigating this gap can contribute to existing research, so as to address the pedagogic needs of learners in different age groups. Furthermore, in most of the studies above (but see Wilson, 2016), the methodology seems to be qualitative rather than quantitative. Therefore, this paper enriches the current literature by adopting a quantitative approach to observe how images change across different age groups.

3. Theoretical Framework and Methodology

Systemic functional linguistics views written language as a multi-layered social

semiotic system that is intertwined with three strands of meanings, viz. ideational, interpersonal and textual functions (Halliday & Matthiessen, 2014). The ideational function of language helps human beings to communicate and reflect on the physical and abstract world. The interpersonal function of language facilitates interpersonal relationships by enabling people to act upon each other or express their attitude. The textual function of language provides resources to enable the ideational and interpersonal meanings to hang together so that it becomes a comprehensible text. This model of language has been applied to the description of other semiotic resources such as images, actions, music, etc., and is known as systemic functional semiotics (c.f. Jewitt et al., 2016, Chapter 3).

The coding scheme used herein is based on two systemic accounts of images, namely, Kress and van Leeuwen (2006) and Painter et al. (2013). Kress and van Leeuwen (2006) attempt to establish system networks of choices in visual design in terms of representational, interactional and compositional meanings. More specifically, representational meaning can be categorized into narrative and analytical structures. Interactional meaning can be described in terms of contact, social distance, attitude and modality. Compositional meaning is analyzed in terms of information value, salience and framing. Painter et al. (2013) further develops the system networks based on data from picture books. In their framework, ideational meaning is described in terms of participants, processes, circumstances, and their inter-relations. Interpersonal meaning is analyzed through choices in focalization, pathos, ambience and graduation. Textual meaning is observed in terms of layout, framing and focus. Based on the two frameworks, the key parameters of this study's coding have been established, as stated below in Table 2.

Table 2. A comparison of metafunction-based visual grammar offered by Kress and van Leeuwen (2006) and Painter et al. (2013)

Metafunction	Basic choices in Kress and van Leeuwen's (2006) model	Basic choices in Painter et al.'s (2013) model
Ideational	narrative structures analytical structures	participants participant relations processes inter-event relations circumstances inter-circumstance relations
Interpersonal	contact social distance attitude modality	focalization pathos ambience graduation
Textual	information value salience framing	layout framing focus

3.1 Ideational meaning

For the ideational meaning, illustrations are coded herein in terms of two parameters,

viz. narrative and conceptual (Kress & van Leeuwen, 2006, Chapters 2 & 3).

Illustrations are coded as narrative when actors are represented as doing something to or for each other. In this study's data, actors such as the poet or some other characters can often be identified, and they are often either doing something or observing some phenomena in the world. Thus whether there are human characters, whose behaviors are recognizable, is one criterion to code the illustration as narrative representation. It should be noted that some pictures where the human characters are portrayed at such a long distance that their actions could not be easily observed or considered relevant are coded as conceptual representation. Personified objects or animals, on the other hand, are also similarly coded as narrative representation.

Illustrations are coded as conceptual when participants are presented in terms of their more generalized and more or less stable and timeless essence, in terms of class, structure or meaning. In this study's data, pictures depicting the landscape or objects are coded as this type of representation. There is usually no actor in this type of picture, and as mentioned above, when a human character is portrayed so small that they, as it were, merge into the landscape, the illustration is considered to be conceptual as well.

3.2 Interpersonal meaning

For interpersonal meaning, social distance, power and modality are coded (following Kress & van Leeuwen, 2006, Chapters 4 & 5). Social distance is coded as long, medium or close. The main criterion is the proportion of objects or persons in the illustration relative to the whole illustration. For instance, if an object or person occupies more than one third of the space, the picture is coded as close. If it takes up less than one tenth of the space, it is coded as long.

Power is coded as high, medium or low. The parameter is coded according to whether objects or persons are portrayed as being viewed from above, the same level, or from below.

Modality is coded according to how close the illustration is presented relative to reality or, in other words, how authentic the illustration is. Because the "modality marker" offered in Kress and van Leeuwen (2006, p. 160) is difficult to quantify, the modality parameters herein are simplified by assigning values (1 to 5) to different types of illustrations. Typical samples of illustrations were selected, including photos, paintings, comic drawings and sketches, with colleagues and students interviewed about how authentic they are to reality. According to the ranking, the modality scale is as shown in Table 3.

Table 3. The value of modality in various types of images

Value	Type	Description	Example
5	natural photo	a photo has not been altered or processed digitally in an obvious manner	
4	featured photo	a photo has been altered or processed digitally in an obvious manner	
3	painting	the shape or size of the objects is similar to the one in reality	
2	comic style	the objects are drawn in a minimalist or comic style	
1	sketch	details of objects are not presented	

3.3 Compositional meaning

For compositional meaning, layout, salience, and frame are coded (based on Painter et al., 2013). There are two parameters for layout, namely, polarized and centered. It depends on whether there is any object arranged in the center of the illustration. Frame is coded in terms of integrated or complementary according to whether the poem (the language) is integrated as part of the illustration. If the poem is put inside the frame of the picture, the frame is coded as integrated, and otherwise, complementary. Salience is coded according to whether a particular object is foregrounded, with "no" representing no salience and "yes" meaning there is salience. The coding scheme is outlined in Table 4.

Table 4. Coding scheme for illustrations in IPBs

Metafunction	Parameter	Value
Ideational meaning	representation	narrative/conceptual
Interpersonal meaning	social distance	long/medium/short
	power	high/medium/low
	modality	1-5
Compositional meaning	layout	polarized/centered
	salience	no/yes
	frame	integrated/complementary

4. Data Collection

All 2233 pictures in the 15 IPBs are coded. The books used in this research were obtained in two ways: on-line retrieval (through Kindle's e-book library) and physical collection (from a university library and local bookstore[3]). For comparability, the IPBs that concentrate exclusively on poems from the Tang Dynasty (BC 618-907) were deliberately chosen, with five in each of three age groups, namely, pre-schooling (2-6 years old), schooling (7-18 years old) and adult readers, respectively. The criteria for classifying the targeted age groups of IPBs are based on relevant keywords in their para-texts including preface, title, caption, etc. Wordings such as a clear reference to the age range (e.g. 2+ year-old) or addressing the early stage of children are considered as indicators of the pre-schooling group. A book that explicitly states that it accommodates the growth of children is considered as a member of the schooling group. As is in line with the prevailing publication standard[4], those that do not specify their targeted age are taken as members of the adult group. As shown in Table 5, the most frequent words in the titles of the books are "Tang Poetry" (唐诗) or "Three Hundred Tang Poems" (唐诗三百首). It should be noted that "three hundred" here is only an estimative quantification, and the books in this study's data include different numbers of poems even though some titles claim to contain three hundred Tang poems. However, they do share a typical feature, in that most poems, if not every poem, in the books are illustrated with pictures. The pictures show up in the form of a photo, a painting, a comic strip or a sketch, with texts of the poem either showing up in the nearby page area or integrated with the pictures, as exemplified in Table 9. In China, it is common practice to illustrate poems with pictures, as poems are taken to express deeper meanings that are not accessible by pure reading of the words.

The choice of publishers for this study is based on the following criteria: popularity, authority, expertise and publishing history in China. Most importantly, the publishers of these books are considered as market leaders in China. For example, Jilin Fine Arts Press, the publisher of the five books in this research, are pioneers in children's reading books and are recognized as being in the top 100 presses throughout the country. Jilin Fine Arts Press is also part of Jilin Publishing Group, a nationally renowned publisher for school textbooks, related reading materials and electronic publications[5]. Tongxin Press was established in August 1992 under the supervision of the Department of Public Relations of the Central Committee of the Communist

Party of China in Beijing, publishing a wide variety of award-winning books.[6] The Commercial Press, founded in Shanghai in 1897, is currently the most powerful and influential press in China[7]. Mongolia Children's Publishing House specializes in the publication of children literature, cartoons and science books in both Mandarin and Mongolian[8]. The other publishers are all elites in art-related publications. The books are categorized and coded as shown in Table 5 below. The coded name is composed of author, publication year and initialism of the publisher.

Table 5. Publication information of the 15 IPBs

Age Group	Coded Name	Year	Title	Publisher	Author
Pre-schooling	INSTITUTE2014JLMSA	2014	*Chanting Tang Poems in the Morning*	Jilin Fine Arts Press	INSTITUTE
	INSTITUTE2014JLMSB	2014	*150 Tang Poems*	Jilin Fine Arts Press	INSTITUTE
	SONG2013JL	2013	*Good Night, My Tang Poem*	Jilin Publishing Group Co., Ltd.	Song
	DONG2012JLMS	2012	*100 Tang Poems*	Jilin Fine Arts Press	Dong
	WANG2008JLMS	2008	*Chanting 150 Tang Poems in the Morning*	Jilin Fine Arts Press	Wang
Schooling	ZHANG2011NMGSNET	2011	*300 Tang Poems*	Mongolia Children's Publishing House	Zhang
	FENG2013JLMS	2013	*An Expert Guide to 300 Tang Poems*	Jilin Fine Arts Press	Feng
	HTTS2015YLSS	2015	*300 Tang Poems*	Yuelu Press	Hetangtuishi
	YU2015TX	2015	*Selected 300 Tang Poems*	Tongxin Press	Yu
	YU2009TX	2009	*300 Classic Tang Poems Which Influence Children's Lives*	Tongxin Press	Yu
Adult	KANG2009TBWY	2009	*A Review of the Essential Tang Poems*	Taibai Arts Press	Kang
	ZHANG2011ZHSJ	2011	*A Ranking List of Tang Poems*	Zhonghua Book Co., Ltd	Zhang
	INSTITUTE2009JLCBJT	2009	*300 Tang Poems*	Jilin Publishing Group Co., Ltd.	INSTITUTE
	ZENG2014HNWY	2014	*Tang Poem and Sketches*	Hunan Arts Press	Zeng
	REN2009HW	2009	*300 Tang Poems*	Huawen Press	Ren

5. Findings

Based on the analysis of the 2233 illustrations in this study, this section reports the findings from three aspects, namely, ideational, interpersonal, and compositional analysis. Table 6 below presents the findings from the perspective of ideational analysis of image and text relations from the three categories of IPBs investigated herein.

Table 6. Ideational analysis

Age Group	Ideational representation	
	Conceptual	Narrative
Pre-schooling	75%	25%
Schooling	33.40%	66.60%
Adult	45%	55%

As can be seen from Table 6, pre-schooling books are different from schooling and adult books in terms of the proportions of utilization of conceptual and narrative images in their illustration. Pre-schooling books utilize 75% and 25% conceptual and narrative images in their illustration respectively, with the former noticeably exceeding the latter, while the results in the schooling and adult groups show the opposite. In addition, the differential gap in the adult group is smaller than that of the schooling.

Table 7. Interpersonal analysis

Age group	Interpersonal						
	Social distance			Power			Modality
	long	medium	close	high	medium	low	
Pre-schooling	12%	67%	21%	19%	71%	10%	**3.9314**
Schooling	7%	79%	14%	19%	**79%**	2%	2.9235
Adult	8%	**81%**	11%	31%	62%	7%	3.0674

Table 7 shows the findings from the interpersonal analysis. As previously mentioned, there are three subcategories under interpersonal: social distance, power and modality. In terms of social distance, the three groups of books are similar, as they all have their highest percentage in the medium social distance, followed by "close" and then "long". Clearly, the most dominant social distance used here is the medium one, which on average takes up more than 70% of the total, indicating that the contrasts in these groups' semiotic patterns are not easily noticed at first glance. However, there are significant differences among the groups in terms of power. For instance, pre-schooling and schooling bear similarities in this regard, and the most dominant power adopted here is medium, which accounts for 71% in pre-schooling and 79% in schooling respectively, but the medium power in the adult group only constitutes 62%. The overall small proportion of low power, with 2% in the schooling group in particular, seems to emphasize the need to motivate readers in the relevant age group to use high and medium power images. Moreover, the use of high power images in the adult group takes a significantly large proportion, namely, 31% compared to 19% of per-schooling and schooling. In contrast, the use of low power shows an overall decline, dropping from 10% to 2% but rising to 7%, which interestingly correlates with the modality average of all the pictures in each group, with the highest being in pre-schooling (3.9314), the lowest in schooling (2.9235) and adult in the middle (3.0674).

Table 8. Compositional analysis

Age group	Compositional					
	Layout		Frame		Salience	
	Centered	Polarized	Integrated	Complementary	Yes	No
Pre-schooling	75%	25%	40%	60%	33%	67%
Schooling	40%	60%	37%	63%	10%	90%
Adult	56%	44%	20%	80%	13%	87%

As shown in Table 8, in terms of layout, 75% of pre-schooling books adopt "centered", while the figures are only 40% and 56% for schooling books and adult books respectively. For the semiotic choice of "frame", pre-schooling and schooling IPBs share similar percentages, with 40% of the books choosing "integrated frame" in the pre-schooling group, which means more images and texts are integrated in the books. However, the use of "integrated frame" is lowered to only 20% for the adult group, where most of the images serve a complementary function, taking up 80% of the total. As for "salience", most of the books adopt no salience, with 67%, 90% and 87% for pre-schooling, schooling and adult respectively, while the choice to adopt salience shows a declining tendency in the three groups of books, at 33%, 10% and 13% for pre-schooling, schooling and adult respectively.

6. Discussion

This section explains the statistical distributions presented in the findings above by applying the specific case of illustrations attached to the poem "Jiangxue" (translated as "River-Snow"). The poem is chosen as the illustrative case because (i) it is one of the most famous poems; and (ii) it is found in almost all versions of the poem books in the study's data and thus the illustrations are comparable between groups. The poem, written by the poet Liu Zongyuan in the Tang Dynasty, is a five-character quatrain depicting a fisherman fishing alone in the cold winter. It is generally believed that the poem reflects the mental state of the poet after he was exiled from his official position because of a failure in reform. One of the most artistic features of this poem is that the inner loneliness and frustration of the poet is merged into the lifeless surroundings.

   江雪
千山鸟飞绝，
万径人踪灭。
孤舟蓑笠翁，
独钓寒江雪。

River-Snow
A hundred mountains and no bird,
A thousand paths without a footprint;
A little boat, a bamboo cloak,
An old man fishing in the cold river-snow
(Translated by Bynner & Kiang, 1957, p. 97)

Two illustrations are selected from the poem "River-Snow" from each group of the poem books (see Table 9). With this illustrative case, the data is discussed in terms of pedagogical functions in the age groups in question.

Table 9. Illustrations for "River-Snow"

Age group	Illustration	
Pre-schooling	Sample 1 (DONG2012JLMS) 	Sample 2 (WANG2008JLMS)
Schooling	Sample 3 (YU2009TX) 	Sample 4 (YU2015TX)
Adult	Sample 5 (KANG2009TBWY) 	Sample 6 (ZHANG2011ZHSJ)

6.1 Literacy development in pre-schooling group

The visual pattern of the illustrations in the pre-schooling IPBs is motivated by the need to cater to children's basic vocabulary and literacy development. The general pedagogical purpose is to assist parents to guide their children to recognize objects in the natural world rather than learning about the meaning of the poem *per se*. The most evident pattern of the illustrations in this group is that they either foreground the objects, people or animals that exist in the poem's text, as the target of recognition by children. This foregrounding feature is further evidenced by the absence of an explanatory note of the poem in this group, which can be found in both the schooling and adult groups. Children at the pre-schooling stage are not yet able to (i) read and understand Chinese words or characters, or (ii) appreciate the poetic meaning of the poem. Thus, the function of the poems is to enhance their sense of how Chinese words are pronounced and to provide a preliminary awareness of rhythmic play in language (c.f. Luo, 2013; Li, 2015; Zhao, 2019). Given this pedagogical motivation, it can be understood, in terms of ideational meaning, why conceptual representations are predominant in this group of IPBs. The young children are not yet in the position to understand stories associated with the poem or narrative pictures. With respect to interpersonal meaning, the social distance tends to be close and the modality tends

to be higher because, in reality, young children need to be guided to perceive things in greater detail. The compositional meaning also serves this purpose by setting the observed object in the center. Also, the objects tend to be placed in focus with a close-up shot and a large occupation of the picture, hence the higher numbers for short distance and salience. This is made more obvious when looking at Table 9, samples 1 and 2, which do not really depict any stories, as only the silhouette of the actor can be recognized, without clear vectors. Attention has been drawn more to two objects, namely, the river and snow. At this stage, the poem and the illustration aim at fostering linguistic awareness by recognizing objects from the text in the illustration.

6.2 Literacy cultivation in schooling group

As children grow, the pedagogical function of this case's poem, apart from literacy development, turns to literacy cultivation. At this stage, emphasis is laid on in-depth comprehension of the poem as well as the historic background (c.f. Chen, 2018), where the most conspicuous feature of the illustrations becomes the sizable actor(s) with a clear vector. This pedagogical shift is evidenced by (i) the presence of intra-lingual translation or explanatory notes to the poem and (ii) more poems being characterized by some historic event. This pedagogical function seems to motivate the visual pattern of the illustrations in the schooling IPBs. In terms of ideational meaning, the narrative representation increases drastically, in contrast to a similarly dramatic reduction for the pre-schooling group of IPBs. The two schooling samples in Table 8, samples 3 and 4, demonstrate how the illustration has come to depict, in a very delicate manner, the action of a fisherman. Thus, the verbal-visual interplay is more prominent as the illustration specifies the latter two lines of the poem: a little boat, a bamboo cloak, and an old man fishing in the cold river-snow.

Such distinct narrative details cannot be seen in the samples of the other two age groups. Instead, the pedagogical function has been realized via interpersonal and compositional meanings. First, the modality has been shifted from photos to paintings or comic drawings, representing lower value of modality. The affordance of paintings, for example, provides greater convenience for composers to represent narrative structures, since, in terms of compositional meaning, the integrated layout (putting the poem inside the frame of image) is adopted to further combine the meaning of words and images. This could be considered as evidence of an expounding purpose. Children are positioned to comprehend what is happening in the poem with the assistance of the illustration. Therefore, for the schooling group, poems, in addition to their literary illuminating purposes, have come to function as the medium to learn about Chinese history and the underlining spirits such as patriotism, humanism and care.

6.3 Aesthetic cultivation in adult group

The illustrations in the adult IPB exhibit a significantly different pattern compared with that of the other two groups. As for the ideational meaning, conceptual and narrative representations take up almost the same amount. This tendency can be explained with the samples in Table 8. It can be seen that the fisherman has

been presented in a smaller size (KANG2009TBWY) or in a blurred manner (ZHANG2011ZHSJ). This indicates that the narrative aspect of the person in the photo has been backgrounded to give way for the overall landscape. In fact, when the illustrations in the adult group were coded, it became more difficult to decide whether the structure is narrative or conceptual because the actor, as it were, is often merged into the surroundings. Finally, it was decided to code them as narrative representations based on the criterion that the participants could be recognized as doing something with identifiable vectors. However, the conceptualization of the narrative structures is evident in most of the study's data. This visual pattern seems to be motivated by aesthetic reasons. Among the three age groups, illustration in the adult group is the most likely to be appreciated as art. In Sample 5, the curves of the mountains are distorted to symbolize steepness and thickness of the forests. In Sample 6, on the other hand, both the fisherman and the mountain are drawn in an impressionistic approach. This style of drawing indicates that the illustration could be appreciated alone without the poem. This is supported by the fact that the complementary layout is predominant over the integrated, as is shown in the data. Some other forms of aesthetic appreciation have been found in the adult group in particular. First, the calligraphy of the poem has been inserted in a polarized position within the painting (see Sample 5). Calligraphy is an important art form in China, and it is often displayed as artistic decoration. It has been a usual practice of the Chinese painting to incorporate calligraphy alongside the main image. The second aesthetic form is "natural frame", which refers to reworking the frame of the illustration into the shape of an artistic object (see Table 10). For example, in the book INSTITUTE2009JLCBJT, 14 illustrations are found to be in the shape of fans. To sum up, at this stage, the illustrations in the adult group educate the general public in terms of aesthetic appreciation (c.f. Zhang, 2015) and social values (c.f. Li et al., 2018; Chen, 2018).

Table 10. Numbers of illustrations in the shape of artistic objects

Books in the adult group	Fan	Other Shapes	Number of illustrations
INSTITUTE2009JLCBJT	14	1	242
ZENG2014HNWY	20	0	119
KANG2009TBWY	0	10	85

To sum up, the pictures chosen in this study's 15 IPBs develop from providing physical objects, to telling stories, and finally to symbolizing the "poetic world" or in Chinese, *yijing* (Tang, 2014). Moreover, the illustrating strategies serve three distinct pedagogical purposes: (i) literacy development, (ii) literary cultivation, and (iii) aesthetic cultivation. The illustrating strategies are summarized in Table 11.

Table 11. Semiotic choices in illustrations for different pedagogical functions

Age group	Pedagogical function	Semiotic choices
Pre-schooling	Literacy development	absence of explanatory note; conceptual representation; close social distance; high modality; centralized layout; close-up shot
Schooling	Literary cultivation, social value	presence of intra-lingual translation or explanatory notes; narrative representation; clear actions and characters; more verbal-visual interplay; medium modality
Adult	Aesthetic cultivation	presence of calligraphy; conceptual (characters merged into the scenery); complementary layout; polarized layout; natural frame

7. Conclusion

The paper investigates the visual meanings of illustrations in 15 Chinese IPBs from the SFS perspective. Statistics herein show that different versions of IPBs targeting pre-schooling, schooling and adult age groups manifest distinct semantic distributions in terms of ideational, interpersonal and compositional functions. These patterns reveal various pedagogical functions, conforming to the needs of basic cognitive development, literacy cultivation and affiliation, to enculturation of aesthetics and social values. To sum up, the illustrations in the pre-schooling group tend to be conceptual and rich in modality, preparing the children for basic literacy development. Those in the schooling group tend to be narrative and less rich in modality, aiming to pass historic events to children as collective memories, so as to build up affiliation. Those in the adult group tend to merge persona and surroundings, to symbolize a poetic world and infuse an aesthetic sense.

Finally, some limitations of the current study should be mentioned. Firstly, the data, though it contains over two thousand pictures, may not be representative enough to make an unbiased conclusion. A larger corpus is needed to further justify the results of this study. Moreover, some coding might be subject to personal interpretation, though the authors of the paper conducted discussions to reconcile contested results. Nevertheless, the visual trends in the data are quite conspicuous. It is hoped that future research can be done on IPBs across different markets and within different cultures.

Notes

1   The paper is part of the two research projects "Multimodal Analysis of Ancient Poem Books: Synchronic and Diachronic Perspectives" (共时与历时视角下古汉诗读本的多模态语篇研究) [2018WQNCX123] granted by the Department of Education of Guangdong Province and "2021 Guangzhou Philosophy and Social Science Planning Project" (广州市哲学社科规划2021年度课题) [2021GZGJ201].

2   The word "image" is used loosely in this article to refer to the same meaning as "picture".

3   To assure the diversity of source channels, books were also collected by off-line retrieval from the library in Guangdong University of Finance and Xinhua Bookstore.

4   The same publication standard is concluded from an investigation on 18581 books sold on http://book.dangdang.com/, a very popular on-line bookstore in China, in an article by Luo, X. Y. & Rong, Z. Z. (2019). The investigation and analysis on the current situation of the publication of traditional culture. *Publishing & Printing*, (2), 24-29.

5   The introduction information for this publisher is available at http://www.jlmspress.com/bsgl.aspx

6   The introduction information for this publisher is available at https://baike.baidu.com/item/同心出版社

7   The introduction information for this publisher is available at http://www.cp.com.cn/ourselves/outline/introduction.html

8   The introduction information for this publisher is available at http://se-cn.im-pg.com/bsjj.shtml

References

Bynner, W., & Kiang, K.-H. (Trans.). (1957). *The Jade Mountain: A Chinese anthology, being three hundred poems of the T'ang Dynasty, 618-906*. New York: Alfred A. Knopf.

Caple, H. (2010). Doubling-up: Allusion and bonding in multisemiotic news stories. In M. Bednarek & J. R. Martin (Eds.), *New discourse on language: Functional perspectives on multimodality, identity and affiliation* (pp. 111-134). London/New York: Continuum.

Caple, H. (2013). *Photojournalism: A social semiotic approach*. Basingstoke/New York: Palgrave Macmillan.

Cekaite, A., & Björk-Willén, P. (2018). Enchantment in storytelling: Co-operation and participation in children's aesthetic experience. *Linguistics and Education*, (48), 52-60.

Chen, A. M. (2018). On the significance of poetry education in Chinese courses at the school level. *Literature Education*, (10), 44-45.

Chen, Y. (2010). Exploring dialogic engagement with readers in multimodal EFL textbooks in China. *Visual Communication, 9*(4), 485-506.

Chen, Y. (2016). A study of multimodal engagement resources and voice interaction in pedagogic discourse. In J. Webster & X. Peng (Eds.), *Applying systemic functional linguistics: The state of the art in China today* (pp. 229-233). London: Bloomsbury Academic.

Guijarro, J. M., & Sanz, M. J. P. (2008). Compositional, interpersonal and representational meanings in a children's narrrative: A multimodal discourse analysis. *Journal of Pragmatics, 40*(9), 1601-1619.

Guo, L. (2004). Multimodality in a biology textbook. In K. L. O'Halloran (Ed.), *Multimodal discourse analysis: Systemic Functional Perspectives* (pp. 196-219). London/New York: Continuum.

Halliday, M. A. K., & Matthiessen, C. M. I. M. (1999). *Construing experience through meaning: A language-based approach to cognition.* London/New York: Continuum.

Halliday, M. A. K., & Matthiessen, C. M. I. M. (2014). *An introduction to functional grammar*. London: Routledge.

Jewitt, C., Bezemer, J., & O'Halloran, K. (2016). *Introducing multimodality*. London:

Routledge.

Kress, G., & van Leeuwen, T. (2006). *Reading images: The grammar of visual design*. London: Routledge.

Li, P. Y. (2015). *Shi Qing Hua Yi: Unity between semantic prosody of Chinese classic poems and imagery of paintings with flowers and birds*. Beijing: People's Publishing House.

Li, Y. J., Li, W. Z., & Pang, G. J. (2019). The effect of "life-long poetry education" and "life-long Buddhism education" on university students. *Journal of Shenyang Agricultural University. (Social Sciences Edition), 21*(3), 322-326.

Liang, J. Y., Tan, S., & O'Halloran, K. (2017). Representing sexuality and morality in sex education picture books in contemporary China. *Social Semiotics, 27*(1), 107-126.

Liu, C. (2018). On the relationship between poetry education and humanistic literacy under the background of educational modernization. *Education Modernization, 5*(40), 346-348.

Liu, C. J. (2019). How Chinese traditional poetry education rises to public horizon. *Social Science Front*, (2), 124-132.

Liu, X., & Qu, D. (2014). Exploring the multimodality of EFL textbooks for Chinese college students: A comparative study. *RELC Journal, 45*(2), 135-150.

Luo, Y. (2013). The effect of education of children's poetry in kindergarten activities. *Data on Language and Education*, (10), 72-73.

Martin, J. R. (2010). Semantic variation: Modelling realisation, instantiation and individuation in social semiosis. In M. Bednarek & J. R. Martin (Eds.), *New discourse on language: Functional perspectives on multimodality, identity, and affiliation* (pp. 1-34). London: Bloomsbury Academic.

O'Halloran, K. L. (1999). Towards a systemic functional analysis of multisemiotic mathematics texts. *Semiotica, 124*(1/2), 1-29.

Painter, C., Martin, J. R., & Unsworth, L. (2013). *Reading visual narratives*. London: Equinox.

Qiu, X. J. (2014). The tradition of poetry education and the cultivation of humanistic and moral literacy of adolescences. *Theory Research*, (27), 291-292.

Royce, T. D. (1998). Synergy on the page: Exploring intersemiotic complementarity in pagebased multimodal text. *JASFL Occasional Papers, 1*, 25-50.

Sunderland, J., & McGlashan, M. (2012). The linguistic, visual and multimodal representation of two-mum and two-dad families in children's picturebooks. *Language and Literature, 21*(2), 189-210.

Tang, Y. F. (2014). Translating across cultures: Yi jing and the understanding of Chinese poetry. *International Communication Studies, 23*(1), 187-202.

Tann, K. (2010). Imagining communities: A multifunctional approach to identity management in texts. In M. Bednarek & J. R. Martin (Eds.), *New discourse on language: Functional perspectives on multimodality, identity, and affiliation* (pp. 163-194). London: Bloomsbury Academic.

Tian, P. (2010). Playing with "femininity": An intermodal analysis of the bilingual picture book *The Ballad of Mulan*. In M. Bednarek & J. R. Martin (Eds.), *New discourse on language: Functional perspectives on multimodality, identity, and affiliation* (pp. 134-162). London: Bloomsbury Academic.

Unsworth, L. (2005). *E-literature for children: Enhancing digital literacy learning*. London: Routledge.

Unsworth, L. (2015). Persuasive narratives: Evaluative images in picture books and animated

movies. *Visual Communication, 14*(1), 73-96.

Vardell, S. M. (2006). *Poetry aloud here!: Sharing poetry with children in the library*. Washington DC: American Library Association.

Wilson, A. A., & Landon-Hays, M. (2016). A social semiotic analysis of instructional images across academic disciplines. *Visual Communication, 15*(1), 3-31.

Yang, J. (2016). On the role of moral education of children's poetry. *Jiangxi Education*, (30), 39

Zhang, Y. (2015). *Dimensions of poem teaching and aesthetics*. Beijing: China Social Sciences Publishing House.

Zhao, X. W. (2019). Cultivating children's innocent hearts with poetry. *Jiangsu Education*, (25), 68-69+71.

Zhao, X. X. (2018). Education of poetic etiquette: Approaching adolescence's education on traditional culture. *Moral Education China*, (23), 44-50.

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