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Teaching Culture through Language: Exploring Metaphor and Metonymy in Chinese Characters

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Abstract. Learners of Mandarin Chinese often find reading and writing Chinese characters extremely challenging. This study proposes a holistic approach that is anchored in the theoretic framework of Cognitive Linguistics to teaching Chinese characters for reading/writing by explicitly heightening learners' awareness of the cultural knowledge encoded in the radicals and characters. Radicals are keys to learning characters as they are a vital clue to the meaning of a word and help compose compound characters. Traditional ways of organizing and teaching radicals are in accordance with the number of strokes they have. However, the proposed approach organizes radicals by way of concepts that reflect the folk categories speakers of Chinese share. Learners were also taught how conceptual metaphor and metonymy motivate the formation of radicals and compound words. Twenty-nine international students at a university in Taiwan participated in the study. A survey was administered after 6 weeks of treatment yielding results that are favorable to the approach. It was also found that such an approach may not suit all learners depending on their prior knowledge.

Keywords: Chinese radicals, semantic cues, cognitive linguistics, metaphor and metonymy, language and culture.

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1 Introduction

The Sapir-Whorf Hypothesis claims that one's language, depending on whether it's the strong or weak hypothesis we are referring to, shapes or influences our world view. After the hypothesis was formulated in the early 20th century, a series of heated debates ensued, which have been followed by countless research and experiments to refute or support the hypothesis. Evidence so far has suggested that both the lexicon and the grammatical structure of a language do seem to influence certain key conceptualizations such as color, space, time, gender, and the event structure of various motions (Casasanto & Boroditsky, 2007). The evidence, in turn, supports the notion that language is also the product and manifestation of human conceptualization faculties that have been influenced by the physical, social and cultural environment humans live in.

This interrelationship is best encapsulated in the Embodiment Hypothesis proposed by Lakoff and Johnson (1980, 1999). The hypothesis posits that primary human cognition, which is mostly concrete, is anchored in embodied experiences such as using one's body to navigate space, motions, balance, and the senses of enclosure that create boundaries and dimensions. These in turn give rise to more abstract cognitive concepts such as time, causality, and container schemas that help in the comprehension of complex phenomena. In this light, language does not merely passively label objects or abstract concepts humans have, but participates in creating concepts at the same time. This understanding has formed the backbone of cognitive linguistics (CL) as it is known today (Dirk, 2006, pp. 1-20).

This linguistic insight opens up an exciting avenue for foreign language teaching and learning, particularly with respect to the role of culture, which comprises the values and beliefs a speech community shares. It also highlights the necessity of teaching language and culture simultaneously. One fruitful area is the vocabulary itself. Works on concept transformation in the naming of lexical items establish that the lexicalization process of a given language should consist of that which is "tantamount to category formation at the level of a whole culture." (Györi, 1998, p.99) In other words, the formation of a cultural category inevitably involves linguistic coding, as there is no other way for conceptual categories to spread in a culture and for it to become explicitly part of cognitive structures of the individual members of that culture. In this light, a closer look at the 214 radicals that structure over thousands of Chinese characters frequently used today reveal a rich conceptual system of categorization. It groups experiences of various interactions with the natural, social and cultural worlds ancient Chinese lived in. This conceptual system, as Lakoff (1987) and Johnson (1987) argue, converges on cognitive mechanisms of prototype, image schema, metaphor and metonymy. They in turn helped create more vocabulary through these radicals to form numerous compound characters and words as the language continued to evolve. Such insight forms the basis of a Chinese e-learning course, CRILL (Chinese Radical Integrated Language Learning) the researcher developed, which aims to explore its pedagogical validity.

The course consists of 15 units introducing 15 basic radicals denoting three groups of concepts encoded in Chinese vocabulary and idioms: body parts, natural phenomena and plants. Its design was originally to raise the awareness of Chinese social/cultural values for adult beginners learning Chinese as a Foreign Language (CFL) so as to increase language retention, cultural understanding, and enthusiasm. To explore the last two aspects, a small, preliminary study was launched with a five open question survey designed and distributed to 29 subjects of pre-intermediate level after over 6 weeks of training between 2012 and 2013. A survey was designed to address the following main questions: 1) Can a Chinese language course based on illuminating the metonymic and metaphorical concepts in the radicals and characters motivate the learning of reading/writing for pre-intermediate learners? 2) Can such a design enhance and motivate cross-cultural understanding? And finally 3) Does a learner's language background affect their perception of pedagogical efficacy and thus enthusiasm in such a course? For example, would Japanese learners or heritage learners who

had learned Chinese characters in school or at home find CRILL as useful as speakers of Indo-European linguistic heritage?

The findings of the study may have significant pedagogical implications for teaching CFL, particularly in terms of writing, reading and cultural learning. This study also provides some insight into the merit of holistic teaching by expounding on the metonymic and metaphorical concepts encoded in lexical items, and thus lending increasing support to the practical application of CL in modern language classrooms.

2 Background of the Study

Embodied Cognition and Cognitive Linguistics

The Embodiment Hypothesis proposed by Lakoff and Johnson (1980, 1999) claims that "Reason is not disembodied, as the tradition has largely held, but arises from the nature of our brains, bodies, and bodily experience." (Lakoff and Johnson, 1999, p.4) Hence, the functioning of our bodies is crucial for the structure of our conceptual system. Our conceptual system is, they argue, mirrored in language patterns, as in systematic use of metaphors. This view gives rise to their Conceptual Metaphor Theory (CMT) which has been extensively adopted by cognitive linguists to investigate a wide range of issues from lexicon meanings such as polysemy (Sweetser,1990) to grammar patterns (Talmy, 1988).

Some linguists argue that metaphorical concepts may have emerged from metonymic ones (Barcelona, 2000; Radden, 2000). Because of this connection , metaphor and metonymy are often intertwined to form "metaphtonymy" (Goossens, 1990). Consider this example : "She could read my mind ," given by Ruiz de Mendoza Ibáñez, (2000, p. 121). He explains that "read someone's mind" combines a metaphor of MIND IS A BOOK and the metonymy of MIND STANDS FOR THOUGHT, giving rise to the eventual understanding of "She understands me." Metaphors and metonymies are often found on phrasal or sentential level; however, they also help form lexical items.

Metaphors and Lexicons

Each language family utilizes different ways of encoding concepts in the lexical items, for example, Proto-Indo-European languages (PIE) employ morphemes which are mainly consisted of roots, prefixes, and suffixes, and the extension of meaning can be achieved through compounding, derivation, borrowing, the creation of neologisms, acronyms, etc. An equally efficient if not more productive way of extending lexical items, as Dirven (1985, p. 96) points out, is through the processes of metaphor. He uses the term 'metaphor' in its broad sense which also includes metonymy. Györi's (1996, 1998) work on concept transformation of naming lexical items in the course of their semantic changes in several major European languages illustrates these processes, which, he argues, are deeply anchored in culture. These studies of diachronic semantic changes strongly suggest that a word structure not only encodes semantic but also conceptual information. The primary motivation for these changes, as argued by Györi, is functional because it is based on a speech community's adaptation to its environment, which is not merely biological but, more importantly, a socio-cultural one.

Although Chinese has an entirely different writing system, it also extends its lexicon following similar rules as those of PIE. A Chinese character consists of one or more components put together in various ways in a typically square-shape format. As in most PIE, it is not an arbitrary process how certain components are combined to form new words or new meanings. Based on a printed posthumous work of a Chinese scholar Xu Shen (86 BC), the *Shou Wen Jie Zi*, ("Explains Simple Characters and Compounds") that was published in cir. 121 AD, there were10516 characters arranged under 534 to 544 primitive symbols which are the origin of the 214 radicals used today. The most common way of forming characters is to combine a radical component that stands for meaning and a component that stands for sound. This phono-semantic principle created nearly 95% of commonly used characters in modern Chinese (Dictionary of Chinese Character Information, 1988). This high rate reveals the significance of radicals in Chinese characters. Most of them are of pictograms, which as indicated in *Shou Wen Jie Zi*, can be divided into 1) Cosmology and Geology, 2) Plants, 3) Zoology, 4) Human Body Parts, 5.) Artifacts and Other Man-made Objects, 6) Clothing, and 7) Housing and Shelters. The radicals found in the current frequent words from both Taiwan and mainland China, of course, exceed these pictograms. Some radicals may fall under other categories not mentioned in *Shou Wen Jie Zi* such as Colors and Shapes, and different scholars may come up with slightly different groupings. (Zhou, 2012). Such groupings do not represent arbitrary divisions of the world; they in fact converge on the cognitive capacities of the human mind. These concepts are all based on cognitive salient prototypes the speakers of a community; these are folk categories rather than scientific ones (Ungerer & Schmid, 1996, p.19).

The radical, together with other components of a character, through metaphor or metonymy, give rise to the meaning of the character. Take the radical which is also a character, 心 xin, as an example. It is a pictogram of a human heart. The semantic analysis of the word (Hu and Fong, 2010) supports a prevalent metaphor that is HEART IS THE SEAT OF EMOTION, which in turn gives rise to numerous characters denoting various emotions. Consider these words: 怒 "anger",悶 "pent-up anger, depressed, "愁 "sadness", and 恨 "hate" as well as 憤 "anger" (radical of the last two words is 忄, a stylized 心), which are all composed of a semantic part and a phonetic part. However, the phonetic part is often necessary for meaning to emerge (Ma, 1997). The phonetic part, 奴 means "slave", so together with the metonymic concept of XIN STANDS FOR EMOTION, it requires the understanding of this concept, SOMEONE IS NOT IN CONTROL OF HIS/HER EMSOTION, through a metonymic process so as to arrive at the interpretation of anger. Another case in point is the word 恨 hèn. It consists of 艮 which means "tough, leathery, or blunt" for sound and 忄 for meaning, and it is necessary to blend these two concepts to arrive at the understanding that TOUGH EMOTION IS HATE. A further example that the phonetic component of such compounds is necessary for meaning to emerge is, for example, when the phonetic part 艮 gěn (the sound hèn might have evolved from gěn) was used to compose new words. A case in point is 狠 hěn, "cruel,"(compared with 恨 hèn) where the radical 犭 stands for four-legged

animals. Underlying the overall meaning is the metaphor: HUMANS ARE ANIMALS, and the understanding that four-legged animals are usually fierce, so when this feature is mapped onto a human, we come to the understanding of "cruelty." These examples also transpire the process of lexicalization of written Chinese through metaphors and metonymies.

Radicals Teaching in TCFL

Several studies have examined the role of radicals in teaching writing and reading Chinese characters to SL and FL learners of Chinese (cf. Shen, 2000, Shen and Ke, 2007, Wang and Koda, 2013). They have invariably demonstrated the effectiveness of teaching radicals through the semantic cues embedded in them to help recognize and retain words over more traditional methods such as rote learning. It was also established that semantic cues work best when the meaning of the word has direct connection with the radical; these characters benefit most from explicit teaching of semantic cues. (Dunlap et al. 2011)

In short, there are characters that are more transparent than others in terms of the predictability of the radical. The less transparent characters are those whose radicals are not directly related to their overall meaning. For example, Dunlap et al investigated a cluster of words that have the radical 禾 'grain, rice plant,' and they listed some characters that are not directly related to 'grain' which include 稅 'tax', 稱 'to weigh, to call', and 稍 'a little bit'; they are supposedly more difficult to learn and recall. However, as Zhou's (2013) study of the radical/character 土 'earth, soil' in *Shou Wen Jie Zhi* demonstrates, it was through the principles of CMT (and semantic field) that words related to 土 had emerged. Hence, on a closer inspection, applying CMT in examining the etymology of those words of 禾, one would find that they are still related to rice grain through various degrees of metaphorical and metonymic extension. For instance, 稅 is a combination of 禾 and 兌 'exchange', so considering the importance of agriculture in ancient Chinese society, using rice grain for tax payment was probably practiced in those days. In this case, 禾 stands for money or commodity used to pay for taxes—a metonymic principle made sense in a cultural context.

Shen (2004) espouses deep learning which is using semantic cues in teaching CFL; therefore, it would be of interest to investigate the role of metaphor and metonymy in even deeper learning. The challenge is how to make metaphorical and metonymic clues accessible to learners so that they can become teachable and learnable? The study discussed below explores this issue so as to answer the research questions raised earlier.

3 The Study

Experiment Material: CRILL

Based on the theoretical framework of embodied cognition, folk categories, metaphor, and metonymy as discussed above, an on-line, self-learning, asynchronized course CRILL (Chinese Radicals Incorporated Language Learning) for learning the Chinese writing system and culture for English speakers was designed between 2008 and 2010. Since September 2010, it has been made accessible to students who enrolled at the university in northern Taiwan

where the researcher works. It is accessible through an intranet platform, Campus (http://campus.viainno.com/campus/Homepage.aspx), that was developed and maintained by the digital learning center of the university who was also a partner in the development of CRILL. CRILL was designed to introduce Chinese culture through the writing system to novice adult learners in college. As most FL learners find Chinese writing difficult, they tend to find learning it rather daunting. Even while learning they find the experience frustrating as there are few rules for them to follow. CRILL therefore aims to help overcome these experiences by illustrating the universal as well as certain cultural-specific concepts in the formation of Chinese characters. Hence, characters are not grouped together by the number of strokes or sound. In tandem with the folk taxonomy found in the category system of Chinese radicals discussed previously, the characters are organized in accordance with the concepts the radicals share, starting from universal ones such as human body parts, to concepts such as nature and plants which can be regional and culturally specific, having been derived from Chinese geography and climate.

In view of this principle, there are fifteen units with the first seven units dealing with human body parts (outer and inner organs), followed by four units with nature, and the last four with plants. The figure (Figure 1) below shows the table of contents of CRILL as found on the website.

Figure 1 Page of Contents for Unit 3 in CRILL

Under the heading "Body", learners will find the radicals for eye 目, nose 耳, mouth 口, hand 手, foot 足, heart 心, and flesh 肉/(月?), whereas radicals for sun 日, moon 月, mountain 山 and water 水/氵 are under "Nature", and radicals for bamboo 竹, wood 木, grass 草, and rice 米 are under "Plant". These radicals were

chosen as they represent the most common concepts and thus have generated a rich vocabulary in Chinese with many of it suitable for beginners.

Each unit comprises of 12 to 13 sections. The following figure (Figure 2) shows one of the units, Unit 3 – Foot, as an example. The menu on the left gives learners a clear idea what the contents are.

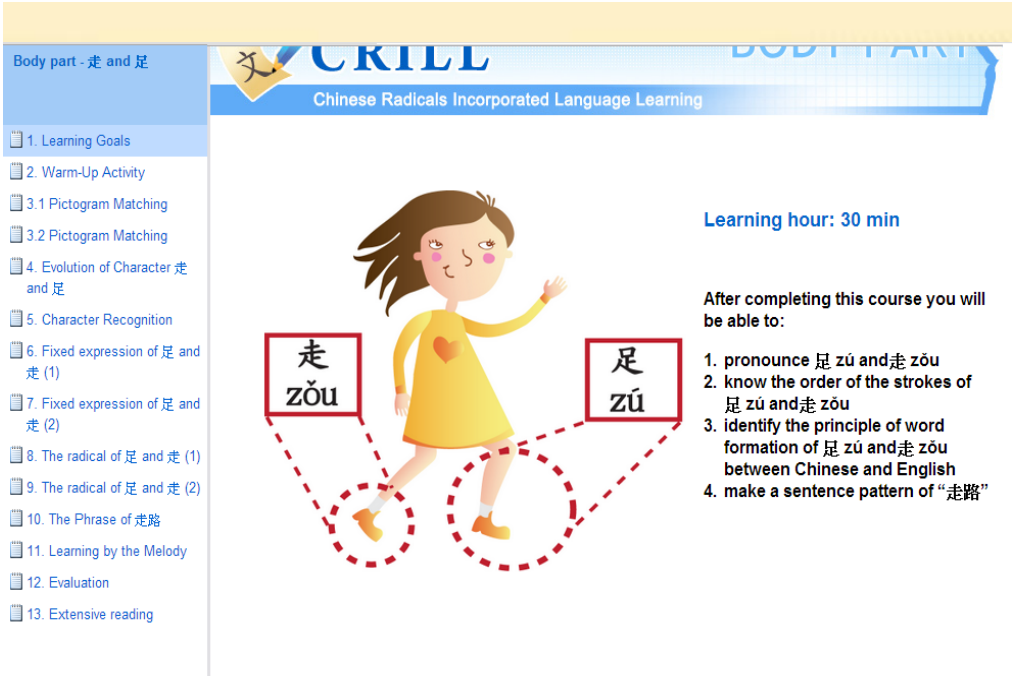

Figure 2 Lead-in Activities for Unit 3 in CRILL

Each unit is divided into three phases of learning: lead-in activities (Section 1 to 5), core learning materials (6-10), and post-learning exercises (11-13). As can be seen, the lead-in activities include 1) a list of learning goals, 2) warm-up activities that ask learners to think iconically about a body part or a natural/artificial object, 3) matching pictograms with the radical/character of the unit, 4) animation of the evolution of the radical/character, and 5) the recognition of the radical/character among various characters. The figure below (Figure 2) shows what learners see when one clicks on Section 4 for the historical evolution of 足 (the foot) and 走 (to walk), two radicals which are characters as well for the same body part, "foot", in Unit 3.

Figure 3 Evolution of Chinese Characters of 足 and 走

The second phase of learning (Sections 6 to 10) involves several compound words as well as fixed expressions that are commonly associated with the radical(s) of the unit. These phrases, with some being polysemous, are a mixture of concrete and abstract meanings so that learners can see the role metaphor and metonymy play in meaning extension. For example, in Unit 3 as seen in Figure 2, two radicals which are characters as well are introduced:足 and 走 with the former representing the physical body part, foot, while the latter represents the motions that are in tandem with the foot. In short, the same body part gives rise to two related concepts represented by two slightly different icons. When 足 (the physical foot) functions as a radical that helps create further semantic items, it is written as 𧾷 , which can be seen in many motion verbs that involve various actions involving the foot such as 踢 (to kick), 跑 (to run), 蹲 (to squat), and 跳 (to jump). Nouns such as 路 (the road), 跡 (track or trace) are semantic items extended from various interactions of the foot with certain objects. All these words are phono-semantic compounds encoding concepts that are, according to CM theory, metonymic, namely BODY PART STANDS FOR ACTION, and ACTION STANDS FOR CONCEPT. They are relatively concrete. However, 足 is polysemous, like most words in all languages. One of its senses which is more abstract in fact means "satisfied", deriving from the metaphor BODY IS A CONTAINER, so expressions such 足够 (enough, sufficient) and 滿足 (satisfied, content) capture this metaphorical sense.

Together with these phrases, there are also sentence patterns and sentence building activities included in these sections that help to provide some kind of context for association. Both phrases and sentences have all been controlled in terms of frequency and familiarity for the beginner's level. The final phase consists of post-learning exercises which usually uses songs, poems, or nursery rhymes that are associated with the radical/character of the unit (Section 11). Section 12 provides exercises with feedback for learners to gauge their own learning outcome. Finally, each unit ends with an idiom that contains the radical/character of the unit with a story explaining the origin of the idiom.

Procedure

In order to ascertain the perceived efficacy of CRILL and answer the questions raised earlier, a survey consisting of five open-ended questions was designed and distributed from 2012 to 2013 to twenty-nine international students who were studying at the university where the researcher works. They all enrolled in the Fall-semester course entitled "Cross-cultural Learning" the researcher offered. CRILL was an integral component, among other course materials, of the course syllabus, and it was assigned as self-study homework over six weeks each semester after the mid-term exam. Prior to that, participants had been taught about the concepts of metonymy and metaphor existing in all languages and they were assigned to specific tasks in identifying those found in their own language. They would present their findings in class so that they could also make some cross-cultural comparisons. Following that, the organization of Chinese radicals and the metaphorical and metonymic clues in Chinese radicals/characters were incorporated. These exercises were meant to prepare them for CRILL. Once they started with CRILL, they could decide when and how long they wanted to spend on CRILL. They were encouraged to raise questions in class should they have encountered any issues during their self-study. The website is equipped with a log recording the frequency and time they actually spent on CRILL, although this data was not taken into account in the final analyses.

At the end of the course, which lasted sixteen teaching weeks in total, participants would take a test on various course materials and CRILL. At the end of this test, a five open-question questionnaire was administered to investigate the efficacy of CRILL. By completing these questions, participants would receive extra points for the test.

Participants

The students that enrolled in the "Cross-cultural Learning" course from 2012 to 2013 came to Taiwan either as exchange students staying six months to one year, or as international students pursuing an undergraduate degree at the university. Their Chinese proficiency would be considered pre-intermediate at the time of enrolment, although speaking Chinese fluently was not a prerequisite for attending the course since the course was mostly conducted in English. Nonetheless, they all had previous Chinese writing experience before the course started.

Their writing experience differed according to the region they grew up in and the language they speak at home. Among the twenty-nine students, thirteen of them speak Indo-European languages coming from Europe and the Americas (N=13), nine of them speak Japanese coming from Japan (N=9), while seven of them come from other Asian countries (OACs, N=7) including Korea, Malaysia, and Vietnam. Such grouping is of particular interest when considering that Japanese learners learn Kanji –a script based on Chinese characters – at a young age. Would Japanese learners also find the radical based learning, as put forward in CRILL, beneficial to them? In short, would early and long exposure to Chinese writing make it easier or more difficult in understanding the explicit knowledge for the formation of Chinese characters compared with speakers of different

linguistic backgrounds? Although the number of participants for each group in this study was few, it still gives us some preliminary indications.

Students' Perceptions: Questionnaire

In order to address the research questions for the study, a questionnaire with the following five questions were designed and administered: A. What did you not know about Chinese language before starting with CRILL? B. What did you not know about Chinese culture before starting with CRILL? C. What do you like most about CRILL, for example, in what ways has it been helpful for your learning/reviewing? D. What do you NOT like about CRILL? In what ways has it been confusing and hindered your learning/reviewing? And E. Any suggestions you may have in order to make this platform better from a learner's point of view?

All questions address the research questions one and two, namely whether the design of CRILL can benefit and motivate learners learning Chinese characters and culture, with questions D and E focusing on their critical comments on CRILL. As for research question three, regarding learners' language background and their evaluation of CRILL, data elicited from the five questions (A, B, C, D, and E) in the questionnaire were further analyzed according to the participants' region of origin. The responses for each question were categorized and coded to be calculated in terms of percentage, so as to yield an overview of the participants' experience and evaluation of CRILL. For question A regarding what they hadn't known about Chinese language before they started with CRILL, participants' answers were able to be grouped into the following three codes: 1. No familiarity with the radicals, 2. Having familiarity with the radicals, and 3. Having some familiarity with the radicals. For question B, addressing what they hadn't known about Chinese culture before they started with CRILL, the coding was as follows: 1. Culture and idioms, 2. Culture and characters, 3. Neither of the above, 4. Festivals/culture, and 5. None. For Question C, which asked what they liked most about CRILL, for example, in what ways it was helpful for their learning/reviewing, their responses were categorized into: 1. Sentence/grammar, 2. Characters, 3. Idioms, and 4. Games/songs.

Responses from participants for question D and E received similar coding as they address related issues. Hence, the coding for question D is as follows: 1.Too easy, 2.Confusing translation, pinyin, or pronunciation, 3. Repetition, 4. Insufficient feedback, reading and composition input, 5. Insufficient examples (for the lexical items and sentence patterns taught in each unit), 6. Silly, 7. Technical issues, and 8. No problems. Similarly, the coding for question E were: 1.Too easy-should have more levels, 2. Correct or Confusing translation/pinyin/pronunciation, 3. Reduce repetition, 4. Give feedback; more reading and composition input, 5. Create more linguistic examples, 6. No songs, 7. Improve technical issues, 8. No problems, and 9. No change. With these codes, it was possible to measure some tendency in terms of percentage.

Analysis and Results

Overall results. Firstly, most of the participants (66%) were unfamiliar with how Chinese radicals are organized before they started with CRILL, despite the fact that they had all learned Chinese for several years. 10% of them reported some familiarity, while 24% good familiarity. This finding is further corroborated by the results of question B, in which nearly half of the subjects (45%) did not have any idea about the connection between culture and the formation of characters. This number could be higher when some subjects (7%) who claimed not to have any idea about the cultural meanings contained within idioms or characters before starting CRILL are also included. Nearly one third of them had no knowledge of the connection between festivals and culture (31%), and less than a quarter of them did not know the connection between culture and idioms (17%).

Although most participants were not familiar with the way radicals and characters were presented in CRILL, they liked and considered such design helpful to their learning with 69 percent of the participants expressing positive perception to its design, in contrast to other components (See table 1).

Table 1
Overall Results for Question C: What do you like most about CRILL?

Coding	N	Percentage
1	29	11%
2	29	69%
3	29	9%
4	29	11%

Note: 1= Sentence/grammar 2=Characters 3=Idioms 4=Games/songs

The results of questions D and E (Tables 2 and 3) provide some further insight into participants' criticisms and suggestions. The results of question D (Table 2) show that the level of difficulty in materials ranks as the highest complaint (28%), followed by "inconsistent translation and pronunciation" (17%). "No feedback /reading/composition input" and "insufficient examples for the lexical items and sentence patterns" (10% for each respectively) were also among the major complaints with "technical issues" being another one (10%). A small number of participants did find the design somewhat "boring and childish", specifically referring to the songs and nursery rhyme parts (7% and 3% respectively). However, 10 percent of them found no major problems in the design of CRILL.

As for suggestions for improvement (Table 3), participants ranked having "more feedback/reading/writing practices" (29%) as the most important, followed by having "technical issues corrected" (24%). A small number of them (7%) gave the suggestion of "adding higher levels to existing CRILL curricula" in the future. Participants considered "reducing repetition and improving consistent translation and pronunciation" more important than "adding higher levels" (17% and 14% respectively). A very small number of participants (3%) would have liked to see "some more linguistic examples" to be added to either fixed expressions or sentence patterns.

Table 2
Overall Results for Questions D: What do you NOT like about CRILL?

Coding	N	Percentage
1	29	28%
2	29	17%
3	29	7%
4	29	10%
5	29	10%
6	29	3%
7	29	10%
8	29	17%

Note: 1=Too easy 2=Confusing translation/pinyin/pronunciation 3=Repetition 4=Insufficient feedback, reading and composition input 5= Insufficient examples 6=Silly 7=Technical issues 8=No problems

Table 3
Results of Question E: Suggestions to improve CRILL

Coding	N	Percentage
1	29	7%
2	29	14%
3	29	17%
4	29	29%
5	29	3%
6	29	0%
7	29	24%
8	29	3%
9	29	3%

Note: 1=Have more level 2=Correct confusing translation/pinyin/pronunciation 3=Reduce repetition 4=Give feedback; more reading and composition input 5= Create more linguistic examples 6= No silly songs 7=Improve technical issues 8=No changes

Results by Group. When the results presented above are broken down into region, with participants' language background taken into consideration, the individual picture for each region resembles somewhat that of the overall results. However, there are some minute differences which can help answer research question three, regarding whether participants' language background would affect their evaluation of CRILL and their motivation to learn Chinese.

Firstly, although Japanese learners are exposed to Chinese characters in Kanji at an early age, the number of participants unfamiliar with the metonymic and metaphorical nature of Chinese character formation and the cognitive categorization of radicals is nearly the same as those speaking European languages such as French, German, and Spanish (69% vs. 67%). Even the participants from other Asian countries (OACs), some of whom were heritage learners, reported a lack of knowledge in a percentage similar to those from Europe/Americas (57% vs. 69%). However, a small number of participants from Europe/Americas and OACs said they were very familiar with the principles behind radicals and characters (15% and 14% respectively) before they started

with CRILL, whereas none from Japan claimed so. On the other hand, about one third of the participants from Japan (33%) said that they were somewhat familiar with radicals/characters, slightly more than those who claimed so in the OACs group (28%). Only 15% percent of the participants from Europe/Americas claimed to be somewhat familiar with the radicals and characters.

In terms of cultural knowledge encoded in the radicals/characters, most European language speakers (69%) and a good number of participants from Japan (44%) claimed what they learned in CRILL was new to them. However, if we also include the 15% of European languages speakers who claimed not to be familiar with the connections between idioms and characters with culture, the number of participants who were ignorant of the connection between language and culture in this group is much higher than that of the Japan group. Only a small number (14%) from OACs claimed they were unaware of the connection between culture and radicals/characters. Furthermore, about half of the participants from Japan and OACs said they were not familiar with the cultural meanings of the festivals introduced in CRILL, while a fairly small number of participants from Europe/Americas reported such a lack of knowledge (7.5%).

Not surprisingly, all participants from Europe/Americas (100%) reported a favorable perception of the presentation of radicals/characters in CRILL and found this design beneficial to learning, followed by a high percentage of participants from OACs who said so (85%). About half of the participants from Japan (55%) also liked and were motivated by such a design, with the other half split between grammar practice (22%) and games/songs (33%). A relatively smaller number of participants from the OACs group liked and were motivated by grammar practice (14%) and games/songs (14%), while a very small number to none of the participants from Europe/Americas considered these two components beneficial and motivating (7.5% and 0% respectively).

As for criticism, most of the Europe/America and Japan groups thought the skill-level taught in CRILL was too easy for them (38% and 33% respectively), whereas none of the participants from OACs said so. Similarly, the OACs group had the highest number of participants who did not find any major issue with the methodology of CRILL (42%). About a quarter of the participants in the Japan group (22%) also found no serious issues with CRILL. However, none of the participants in the Europe/Americas group expressed such an evaluation.

When we consider the ranking of the criticisms by group, it becomes clear that both the Japan and OACs groups had different emphases on what was missing when compared to the Europe/Americas group. The latter considered "not having feedback for exercises and no reading/composition input" (coding 4) a big drawback, whereas the former two groups did not share this criticism at all. They instead thought that the "number of examples for the phrases and sentence patterns were insufficient" (coding 5) and more of a hindrance to their learning.

Lastly, all three groups believed that there should be "more feedback with their exercises with additional reading/composition input and practices" (coding 4) along with "improving technical malfunctions" (coding 7). They also seemed to

agree that "repetition needed to be reduced" (coding 3). The suggestions for other issues are less unanimous.

4 Discussion

Benefit and Motivation

Although the analyses presented here are confounded by the small sample size of subjects and the preliminary nature of this study, some tentative observations can still be drawn. Firstly, in answering the research question one and two, when the overall data without group division being examined, it is safe to argue that the cognitive approach to teaching Chinese radicals/characters explicating some metonymic and metaphorical principles of word formation can benefit and motivate the learning of Chinese writing and culture.

Participants' overall perception indicates that CRILL was very favorably received, particularly with respect to how radicals/characters were organized and introduced, even though such learning approaches were new or partially new to them. These results lend a positive support to the pedagogical application of integrating cognitive linguistic theory into teaching Chinese as a foreign language. Cognitive approaches that incorporate metonymic and metaphorical knowledge with a touch of etymology (Boers et al., 2007) in language teaching has been found to be beneficial and motivating in the learning of English vocabulary (Boers, 2004; Boers and Lindstromberg, 2009), idioms (Hu & Ho, 2009), prepositions (Hu & Fong, 2010; Tyler and Evans, 2004), and phrasal verbs (Abreu & Vieira, 2009; Yasuda, 2010). There have been even studies and research in FL and SLA that call for the overall promotion of metaphorical competence in foreign language learning (Littlemore & Low, 2006).

There is substantial empirical evidence in support of the efficacy of explicating the semantic cues in the radicals for Chinese characters recognition and retention (Shen and Ke, 2007, Wang and Koda, 2013). However, none of these studies examined the role of metaphor and metonymy in word meaning, formation of compound words, and polysemy. There are also very few extensive teaching materials based on semantic cue nor cognitive approach in the field of TCFL.

In light of this, the design of CRILL is making an important step in the direction of developing efficient approaches and teaching materials to teaching the Chinese writing system. Similar to semantic cues, CRILL seeks to guide learners with patterns and principles so that learning to write and read is not an arbitrary and mundane task. Although semantic cues are useful in recognizing and predicting the meaning of characters, they work best in transparent characters. However, the approach applied in CRILL went further by incorporating metaphorical and metonymic clues, so that hopefully less transparent characters, compound words, and polysemy can be better explained, thus, recognized and retained. Above all, cognitive approach highlights the rich cultural background encoded in the characters and compound words/phrases. If teaching a language is concerned with passing on cultural knowledge at the same time, CRILL is certainly more satisfying in this respect and the results of the study arguably support this assertion.

Language Background

In addressing whether the linguistic background or any previous knowledge in the cognitive nature of Chinese radicals/characters could motivate and benefit learners or not, the results suggest that Indo-European speakers from Europe and the Americas tended to enjoy the cognitive method provided in CRILL more than Japanese speakers. Even speakers from OACs considered this approach more positively than those from Japan. This finding came as a surprise when the number of participants in each group who had not had any knowledge of Chinese radicals before their participation of the CRILL program is fairly comparable.

According to the Japanese participants, they had to learn Kanji from a young age but had never been taught explicitly about the cognitive principles involved in the composition of characters. Despite a lack of prior knowledge, they did not find this approach as engaging and motivating as their counterparts in the Europe/Americas group and OACs. At this point it is difficult to determine whether the difference in attitude is because of a language issue, that is, the familiarity with Kanji which could give participants the impression that these cognitive clues encoded in the radicals/characters are not that challenging or interesting. This observation is supported by their own admission in class to the researcher that they found Chinese (character) writing relatively easy, while learners from Europe/Americas found the opposite. The latter considered speaking easier than writing, whereas the former regarded speaking harder to master.

There could be other factors that contributed to the difference. As CRILL is in English, and the classroom language was also English, with learners from Europe/Americas having higher English proficiency than those from Japan and OACs, there was a possibility that learners from the former group enjoyed the approach more because they understood more. The other factor could be learning style, with Japanese students considered to be more closure-oriented (Hansen & Stanfield, 1981: Joy & Kolb, 2007; Oxford, 1990), and thus, it was possible that they enjoyed holistic teaching less.

Criticism of CRILL

Judging from participants' criticism and suggestions, they tended not to be satisfied with general on-line language learning and the technical issues associated with it. Research has shown in several cases, the efficacy of on-line learning over traditional face-to-face classrooms, at least in higher education settings (Xu & Jagger, 2013). However, failure does occur when inadequately equipped e-learning systems are implemented (Hara & Kling, 2000; Zhang, et al 2004). The results from question D and E reflect some of the key challenges many on-line language learning tools are facing nowadays: feedback and technical issues. For language learners using an interactive, self-learning, and asynchronized on-line learning tool, it is frustrating when they are unable to check their own input. Although CRILL is equipped with some feedback mechanism for character writing and vocabulary as well as grammar practice, the technology involved is fairly basic and breaks down occasionally due to the

limitation of available technology and funding. These issues can certainly create frustration.

Despite these issues, it is encouraging to learn that participants' overall perception of CRILL in terms of radicals/characters and how they compose other characters and vocabulary was positive. Participants also enjoyed the incorporated cultural learning. In light of these indications, the design of CRILL has achieved its primary goal which was to illustrate Chinese cultural beliefs and values through its writing system as an introductory course to beginners. It, however, may fall short as a full-fledged language learning program.

Limitations and Implications of the Study

As the sample size of each group is not always comparable, with OACs comprising the smallest group (N=7), it was difficult at times to determine whether the difference observed was due to individual preference or affected by other variables such as language, learning style and culture. Despite the fact that in some cases, there seem to be a difference between participants from the Europe/Americas and those from Japan, it was quite difficult to measure any effect from the OACs group as their number was too small. Therefore, any observation regarding this region is tentative.

Furthermore, the study could not provide a definite answer to the question of the efficacy of CRILL as pre- and post-test were not administered. It also did not examine how the CRILL approach can facilitate greater learning in writing and reading Chinese characters. The study, at most, examined the perceptions of the participants based on self-reporting, and it is also not clear whether the learning approach adopted in CRILL is more effective than other approaches as there were no control groups. Better experiment designs are undoubtedly required for any future research.

The pedagogical implications for this study are crucial for effective learning approaches and on-line tools in the future. In fact, a new Chinese on-line learning website has been under development that has sought to rectify the shortcomings of CRILL while also continuing to develop its positive features. These undertakings hope to demonstrate the importance of combining sound theories with viable practices in language teaching and learning.

5 Conclusion

This study set out to explore the viability of a teaching approach based on the linguistic insight gained from CL in recent years. The results so far can establish its overall merit in the field of TCF by providing a holistic view of the Chinese writing system and in what way it is deeply rooted in the social and cultural worlds of the people in the Chinese speaking communities. The study demonstrates that understanding metaphor and metonymy in lexicon extension can not only enhance the learning of Chinese characters but also promote the understanding of the social and cultural knowledge encoded in them. Such conclusions certainly require caution as it was found that this approach may suit learners differently. The learner differences could be partly individual or partly cultural. As CRILL was originally designed with American and European

learners in mind, it is of great interest to find that the Japanese learners in this study were not as motivated by the approach as their European and American counterparts. This finding is of value for any future development of teaching materials and pedagogy.

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