A Cognitive Study of Spatial Metaphors in English "Deep" and Chinese "Shen"

Yanting Wu[1]

[1] Faculty of English Language and Culture, Guangdong University of Foreign Studies, Guangzhou, China

Correspondence: Yanting Wu, Faculty of English Language and Culture, Guangdong University of Foreign Studies, China.

Abstract

This paper presents an analysis and comparison of the projection of Chinese "shen" and English "deep" from the spatial domain to other domains of time, sense, emotion, behavior, and society from a cognitive perspective by using the comparative and contrastive method, explaining the universality and differences of SHEN and DEEP in the metaphorical domain concerning their collocation, usage, and frequency under Chinese and English cultural contexts, which serves as an insight for foreign language teaching, translation practice and cross-cultural communication. The results show that since humans share a similar physical structure and living environment, the spatial adjectives "deep" and "shen" show a lot of similarities. However, the usage, collocation, and frequency of use of "deep" and "shen" still reveal some variations, which might have great implications for second language learning and teaching.

Keywords: shen, deep, spatial metaphor, cognitive study

1. Introduction

The concept of space underlies the human perception of the world, and many abstract concepts are formed and expressed through the application of spatial metaphors. Since the 1970s, with the rise of cognitive science, especially cognitive linguistics, spatial metaphors, especially the metaphor of spatial adjectives have received a great deal of attention across wide contexts. (see eg. Bierwisch et al., 2010; Clark, 1973; Fillmore, 1997; Greimas, 2001; Goy, 2002; Lyons, 1977; Lang, 2001; Vogel, 2004; Vandeloise, 1993; Wu, 2009; Ren, 2000) Language is a mediator between humans and the real world, and human beings as cognitive subjects observe the real world through language, so the exploration of spatial issues is inseparable from the involvement of language. Cross-language studies have found that there are both commonalities and differences in the way different languages describe the same physical space (Nichols, 1992; Levinson, 2003; Brown, 2006). On the one hand, human beings may have a certain degree of overlap in spatial cognition, because they are physiologically homogeneous and located in the same space and time; on the other hand, spatial cognition differs from one ethnic group to another as a result of their natural ecology, socio-cultural environment and the type of language they use. In the case of different language communities, the language is linguisticised in a particular form of notation, which not only reflects the typology of the language itself, but also the common and individual characteristics of the language users in terms of their thinking, cognition, and ethnic culture. (Liu, 2020) Thus in both English and Chinese there are a number of similarities and variations in the use of dimensional terms as a sub-category of spatial words. Compared with other spatial adjectives, the spatial adjectives English "deep" and its Chinese equivalent, "深(shen)", as an important set of conceptual categories within the human spatial cognitive system, with its [+downward] and [+inward] semantic connotations, has special features in terms of its semantic metaphor and metonymy, as well as its construction and syntactic features. (Jin, 2009) The special features of these special semantics and usage of "deep" are also difficult for international students to learn (Jin, 2009). Furthermore, the concepts of DEEP and SHEN are cognitively more prominent than those of SHALLOW and its Chinese counterpart "QIAN", as DEEP and SHEN deep are used much more frequently than the equivalent marked words. Given the semantic complexity, unmarked status, and cognitive salience of the terms DEEP and SHEN, it is appropriate to examine the two adjectives of DEEP and SHEN comparatively within a cognitive linguistic framework. From the perspective of the conceptual metaphorical theory, the paper seeks to provide insight into the semantic differences of the adjectives of "deep" and "shen" and the metaphors in

different cognitive domains. The paper also tries to present a profound comparison and contrast between "deep" in English and "shen" in Chinese with regards to basic meaning, linguistic expression, and metaphorical meaning.

2. Literature Review

2.1 The Cognitive Approach of Metaphor

The cognitive theory of metaphor pioneered by Lakoff and Johnson is a comprehensive, general, and empirically tested theory that proposes metaphor as a way of conceptualizing and thinking. Contemporary cognitive science generally considers metaphor not as a rhetorical imagination but as a cognitive activity that has a potential and profound impact on our understanding of the world, and thus plays a very vital role in the process of categorization, conceptualization, and reasoning in human thought (Wang, 2001). Metaphor is the process of using one thing to understand and experience another, extracting the similarities between the two objects and then drawing analogies. This cognitive process of mapping the core properties of one conceptual domain to another is a metaphor, and this is how people perceive the world, drawing on simple and concrete concepts in the source domain to understand complex and abstract concepts in the target domain (Lakoff & Johnson, 1980). In some cases, there is a continuous mapping, that is, a mapping from a concrete source domain to a destination domain, and then from this destination domain to other destination domains. The mapping of conceptual metaphors is unidirectional and is usually a process of mapping from concrete domains to abstract domains on a bodily and experiential basis. (Lakoff & Johnson, 1999)

2.2 Spatial Metaphors and Image Schemas

Spatial metaphor is one of the most frequently used and significant types of metaphor. It is a cognitive process in which spatial concepts as the source domain are mapped to other conceptual domains as the target domains such as color, degree, and social relations etc. by which the terms in the source domain obtain derived and abstract meanings. (Lakoff, 1987) In other words, the process of expanding the meaning of a dimensional word from a spatial concept to a non-spatial concept is a spatial metaphor. The spatial metaphorical meaning of a dimensional word is not arbitrary, but is based on the psychological similarity between the spatial and non-spatial domains. From the cognitive point of view, we first acquire the spatial meaning of a dimensional word in accordance with the concept of space, and then, according to the correlation and similarity between the objects in the spatial domain and those in other domains, the spatial concept of a dimensional word is extended to other non-spatial domains. Lakoff and Tuner (1987) argued that spatial metaphors can be explained by image schemas, which are essential to people's concept formation and categorization. Lakoff (1987) defines the image schema as a relatively simple, recurring construct in our everyday bodily experience, consisting of a trajectory (TR), a landmark (LM) and a path (PATH), representing the dynamic and static relationship between TR and LM. TR is the subject, LM is the reference, and PATH is the path through which TR passes, all of which act together to constrain the spatial location and spatial relationship. An image schema originates from concrete, recurring things around humans who extract the characteristics of these concrete objects to make connections with abstract concepts and to understand them, so image schemas can be interpreted as the abstract construct in the human brain. An image schema is initially simple and basic, and through the multiplication and combination of different fundamental image schemas, a complex, interlocking network of concepts can be constructed, eventually forming a fundamental system of spatial schemas. (Talmy, 2000; Talmy, 2011)

Due to the comparability of people's basic needs and living spaces and the dependence of human spatial concepts on physical space, there is a high degree of universality across languages and cultures with respect to the underlying semantic structure of fundamental system of spatial schemas. Nevertheless, it has also been suggested that the specific representations of spatial concepts may vary depending on factors such as cultural models and experiential perspectives (Kövecses, 2005; Kövecses, 2015). These different cultural differences between English and Chinese inevitably affect the way language is represented and used, and metaphorical expressions are no exception, both reflecting specific ethnic cultural attributes. Therefore, the shared and varied spatial concepts between English and Chinese are of great value in second language acquisition and teaching. Among the many words that represent spatial concepts, orientational words are relatively well studied, but a dearth of research focused on adjectives with spatial meanings such as "deep" and its corresponding Chinese expression "深(shen)". In addition, "deep" and "shen" are the most complex with two directions, being both perpendicular and parallel to the ground. Above all, the similarities and variations in the metaphorical use of "deep" and "shen" might lead to confusion and misuse in the second language learning, hence an in-depth comparative and contrastive research on this set of adjectives being highly imperative.

2.3 Previous Research on English "Deep" and Chinese "Shen"

DEEP and SHEN are adjectives indicating spatial attributes, their basic meaning involving two directions, both denoting "having a large distance from the top or surface to the bottom and from the front edge to the furthest point inside" (Modern Chinese Dictionary, Oxford Advanced Learner's English-Chinese Dictionary). "The distance from the outside to the inside" implies an inward direction instead of a vertical one. For example, The cave where the apes lived was deep and large, while "The distance from the top to the bottom" suggests a vertical direction, for example, The Lake is deep.

DEEP and SHEN, as dimensional adjectives, describe the extent to which an object is in space along various dimensions, characterized by [+Non-entity], [+Easy-Penetrability], [+Difficult-Visibility] and [+directionality] (Ren, 2000). The thing it describes must be seen as a container, with definable surface and internal dimensions (Clark, 1973). SHEN and DEEP were originally used to describe water, which had to be measured with the help of a container, thus measuring the depth of the "water" is equivalent to measuring the container (Clark, 1973; Jin, 2009). The concept of a container can also be projected onto other objects, or even something intangible and abstract in nature. As one's experience of the world accumulates, he concretizes and quantifies these intangible and abstract concepts, considering them being filled in a container (Wang, 2006).

In terms of research content, studies on DEEP and SHEN can be classified into metaphorical studies within a single language and cross-linguistic comparative analysis. Regarding the study of "deep" within a monolingual context, Ren and Teng (2001) and Wang (2006) explained the basic and metaphorical meanings of the Chinese spatial adjective SHEN from the perspective of metaphor theory and the lexical analysis theory of cognitive linguistics, centering on the properties of reference plane and directionality. Kong (2006) examined the semantic development of SHEN, and noted how SHEN evolved along two distinct routes. One was a linear route of semantic development from 水深 (deep water) to 山谷深和山洞深 (deep valley and deep cave) and then to 夜深 (deep night). The other was a radial route of semantic evolution by considering "水深" as the locus, with several senses such as 颜色深 (deep color), 程度深 (deep degree), 感情深 (deep feeling) developed with reference to 水深 (deep water). Jin (2009) systematically analyzed the basic, metonymical, and metaphorical meanings of SHEN and discussed its expansion routes. Wu (2011) compared several pairs of Chinese spatial adjectives and provide an elaborative account of the semantic features of the collocations of SHEN. In a cross-linguistic comparative study of "deep", Zhang and Sun (2009) investigate the mapping of the spatial domain to the temporal, color, degree, and relational domains of "deep and shallow" in Russian and Chinese with metaphor theory and discussed the similarities and differences. Zhang Xing (2015) compared Chinese and Japanese counterparts of "deep" and "shallow" in terms of semantic meanings. Zhang (2015) compared Chinese and Japanese counterparts of "deep" and "shallow" in terms of semantic meanings. Through cross-linguistic comparison, it can be concluded that cognitive distinctions across cultures can lead to variations in the linguistic pathways of metaphors. Liu (2017) analysed similarities and differences in the basic meanings of SHEN and DEEP and the semantic features of their collocation. Liu (2020) studied the metaphorical extension pathways between English "deep" and "shallow" and their Chinese equivalents, and proposed that different linguistic representations of "deep" and "shallow" in the two language systems might result from cultural factors and cognitive biases. To sum up, relevant research on the word "deep" has received scant attention. Although there is a growing body of research on Chinese character "深(SHEN)", the cross-linguistic comparison of dimensional adjectives, especially of English "deep" and Chinese "shen", is still insufficient. Liu (2017) made a generalization regarding the lexical collocation of English "deep" and Chinese "shen", but the discussion of this pair of adjectives was only limited to the spatial domain, without digging deeper into their linguistic properties in the metaphorical domains, which might best reflect different cognitive perspectives and cultural customs of Chinese and English. Liu (2020) shows a more scientific and grounded approach by using a corpus to analyze the extension of DEEP and SHEN in different metaphorical domains, but the statistics mainly deal with the comparison in the frequency of DEEP and SHEN in different domains, without perceiving them from the cognitive aspect. In this paper, I will address the above-mentioned limitations and make a detailed comparative analysis of the cognitive basis behind DEEP and SHEN in different metaphorical domains, and further, the similarities and differences in the use of DEEP and SHEN in spatial domains will be enriched.

3. Findings and Discussion Concerning Metaphorical Usage of DEEP and SHEN

Human beings perceive the environment they live in through their own bodily experiences, forming experiential perceptions through interaction with the environment. With the enrichment of their experiences, it becomes possible to understand, think and talk about non-spatial concepts through spatial concepts by using it as the origin domain, and the process of mapping from the spatial domain to the non-spatial domain is the spatial metaphor (Lan, 1999). The main mapping domains of spatial adjectives of DEEP and SHEN are as follows.

3.1 Comparison of English DEEP and Chinese SHEN in the Time Domain

Human beings began to depict time through the construction of space in as early as ancient times, which is much more concrete and visible. Obviously, "deep" and "shen" are constantly projected on the temporal domain in both language systems. Attached to different cultural contexts, deep and shen present similarities in usage as well as differences in the time domain. The most common expressions are as follows:

- 深更半夜 (deep into the night)
- 年久日深 (as the years go by)
- 深春 (in late spring)
- 深秋 (in late autumn)
- 深冬又一日，却已是新年。(It is another day in the late winter, but it is already the New Year)
- 夜深忽梦少年事。(In the deep of night, I suddenly dreamed of what happened in my youth)
- Deep into the night
- In the deep of night
- deep past

It is common to see this set of spatial adjectives of "shen" and "deep" collates with "night" whose feature of [+Difficult-Visibility] is consistent with that of what can be described with "deep" and "shen" in the source domain. As we can see, upon the arrival of night, with the passage of time the sky slowly darkened, and the sound and activities of people in general is gradually reduced, which is similar to what we experience when the depth of the water increase. Daytime, however, shares none of these characteristics, so people tend to pair "deep(深)" with "night(夜)" rather than with "day(昼)". Although "night(夜)" can be conceptualized by "deep(深)", their forms of expression varies with 深 immediately followed by 夜 while "deep" usually coupling with "night" by resorting to prepositions, which captures the most salient distinction of Chinese and English respective emphasis on parataxis and hypotaxis.

In addition, in Chinese, 深 is often paired with seasons, with autumn being the most prevalent, followed by spring due to the obvious changes of color in vegetation during autumn and spring. Plants gradually turn green in the spring and yellow in the fall, while there is no significant color change in the summer and winter. 深 can sometimes be matched with 冬(winter), yet the incremental change is mainly reflected in the temperature. English speakers rarely use deep to describe seasons, if any, it is more likely to be paired with "winter", which only appears 53 times in the COCA corpus, probably owing to the difference in the cognitive perception of the two peoples. Another distinction of the projection of "deep" and "shen" on the time domain lies in that DEEP can sometimes collocate with "past", meaning a long time ago, while 深 is never seen to collocate with Chinese equivalent of "past". It seems 远古 might be more frequently used to express long time ago as an equivalent of "deep past".

3.2 Comparison of English DEEP and Chinese SHEN in the Sensory Domain

DEEP and SHEN are most used in the sensory domain to depict color and sound. The color domain deriving from visual experience can be constructed directly in contrast to the abstraction of the time domain. However, the image schema of DEEP/SHEN employed in the time domain also applies to the color domain which is psychophysically considered to consist of three dimensions of brightness, hue, and saturation. (Langacker, 1987) These aspects of color are associated with different neural perceptual mechanisms, enabling us to identify variations in colors along its three dimensions. From this perspective, color space is three-dimensional by conceiving of all colors or one particular color as a three-dimensional bounded region. Therefore, in the color domain, it is common to use the spatial adjectives deep(深) or shallow(浅) to specify different colors and variables of the same color. Some typical examples are as follows:

- 太平洋在月光下呈现着一片深蓝色。(The Pacific Ocean is deep blue under the moonlight.)
- 老太婆扯了扯深灰色华丝葛夹袍的袍角，裹住自己的双腿。(The old woman pulled the corner of her deep grey silk gown and wrapped it around her legs.)
- 映入眼帘的竟是一片深棕色地毯。(what come into sight is a deep brown carpet.)
- And then they splashed into the deep blue sea.
- There are deep purple patterns beneath his eyes.
- And it's not just people like me living in a deep red county.

More specifically, the bounded area containing all colors is considered as a container with white, an unmarked color, used as a reference plane, and colors are quantified by measuring the distance away from the reference plane. The farther away from the reference plane, the deeper the color is, and the closer it is, the lighter it is. In addition, in terms of one specific color, people regard it as a separate container and distinguish it into marked and unmarked colors according to certain psychological criteria which might vary from person to person, which means a color in a normal state with regards to lightness and shade would be perceived as a general unmarked color or a reference plane. For example, the color of blue with its brightness and hue in a normal state would be considered as a typical blue or a reference plane in people's psychological norm. Milder brightness and richer hue indicated a deep blue, otherwise a shallow one. Ren (2001) and Wang (2006) held that the conceptual features of [+difficult-visibility] in DEEP and SHEN underlies the mapping of the color domain, for greater depth of color leads to increased invisibility. The pair of spatial adjectives "deep" and "shen" is a perfect match for the color field, from the perspective of both space and the features of spatial adjectives. In fact, many languages do not use spatial adjectives to describe colors, such as Russian and Korean, but in Chinese and English, the use of spatial adjectives "deep" and "shen" with colors has become so well established that people do not realize that it is a metaphor. It is possible that Chinese and English speakers experience and perceive color in a very similar way.

Similarly, sound also has its three-dimensional space enclosed by pitch, loudness, and quality. We conceptualize the sounds from around 20 Hz to around 20 000 Hz which an average person could hear as a container, and what might be called deep sounds located around or to the base of the frequency scale of the sound, usually not exceeding 250 Hz. According to the COCA corpus and the BCC corpus which are two large, comprehensive, and widely-used corpus in the academic community, we found that DEEP is used with a wider range of words, such as deep voice, deep laugh, deep moan, deep chuckle, deep groan, to name just a few, while SHEN is very limited both in terms of frequency of use and the variety of words used with it. And SHEN cannot directly precede words that denote sound, but is often used in tandem with the Chinese character of 沉, like 深沉的声音. In fact, the use of "low" to describe sound is more common than "deep" in both English and Chinese, implying a preference for the concept of increasing quantity to depict sound. The use of "high" and "low" to describe sound is a result of the projection of HIGH/LOW image schema from the spatial domain to the quantitative domain.

3.3 Comparison of English DEEP and Chinese SHEN in the Domain of Degree

The image schema of DEEP/SHEN in the spatial domain is extensively utilized in the degree domain, which can be divided into two categories: degree of emotional experience and degree of behavior

3.3.1 The Degree of Emotional Experience

Both English "deep" and Chinese "shen" can be used to indicate the degree of emotional experience. In most cases, "deep" and "shen" can be translated literally when paired with words about emotional experiences, such as the following examples:

· deep gratitude (深深的感激之情)

· deep sympathy (深切的同情)

· deep concern (深切的关心)

· deep resentment (深重的怨恨)

· deep regret (深刻的遗憾)

· deep respect (深受尊重)

· deep love (深爱)

The cognitive basis for the mapping from the spatial domain to the degree domain of emotional experience lies in the fact that the human heart is treated as a container holding a variety of emotions and these emotions as liquid-like substances. A large number of linguistic examples can explain this hypothesis. For example, My heart was full of gratitude. (我内心充满了感激); Her heart is filled with trouble. (她内心充满了烦恼); His heart overflowed with happiness. (他心中洋溢着喜悦); Sadness well up in her mind (心中充满了悲伤). It is evident from these examples that the human organs, especially the heart, tend to be viewed as a container, and feelings as contained fluid. In both cultures, the inner world is equivalent to an invisible container into which feelings and thoughts can flow, and hence the level of emotional intensity can be measured in terms of depth. However, the two languages show great differences in usage as a result of the abundant vocabulary in the emotional domain. English "deep" can be immediately followed by nouns expressing emotion to form noun phrases, and its cognate "deeply" serving as an adverb used to directly follow verbs expressing emotion. In contrast, the Chinese

character, 深, shows a great deal of complexity and flexibility in the way it is used. First of all, SHEN assumes dual identities, functioning both as an adverb and as an adjective. When served as an adjective, SHEN can rarely precede a noun directly, but often appears as reduplicative words like 深深 or with one another character to form adjective phrases, such as 深刻, 深切, 深重, and 深远 which share identical connotation with 深. In addition, the auxiliary word of "de" is indispensable by bridging adjective phrases formed by "shen" with noun phrases expressing emotional experience. When "shen" is used as an adverb, it cannot be placed directly before or after the emotional content verbs, for example, there is no such expression as "我怨恨你很深" "我同情你很深" "我关心你很深" in Chinese, but frequently modify the verbs with the help of the preposition, "为", or the verb, "感", such as: "我对你深感同情", "我对你深为关心".

3.3.2 The Degree of Behavior

English "deep" and Chinese "shen" are also very prolific and rich in expressions in the behavioral domain. The vocabulary of the behavioral domain includes words related to physically or mentally biological behavioral activities, such as breath, sleep, thinking, learning, etc. as well as to the results caused by the behavior of living organisms or other external forces, such as division and impression. Typical examples are as follows:

- 深入开展希望工程,青年志愿者和手拉手等活动。(People need to launch projects like the hope-project, the youth-volunteers project, and the hand-in-hand project extensively.)

- 这些缺点还有待于进一步深入研究。(These shortcomings are subject to further in-depth study.)

- 外部环境的彻底改善,还有待于市场经济的更深入发展。(A thorough improvement of the external environment is yet to be achieved by a deeper development of the market economy.)

- The opposition has been deeply divided for months.

- The story my father and uncle told of their departure has affected me deeply.

- This history asks us to think more deeply about the nature of "choice" per se.

In a very similar way to the cognitive basis of projection to the affective domain, the cognitive basis underlying that of "deep" and "shen" from the spatial domain to the behavioral domain pertains to the concretization of abstract concepts. But the lexicon in the behavioral domain is not expected to be treated as liquid. while what is served as a container in the emotional domain is often an organ such as the human heart or chest, the abstract concept of vocabulary in the behavioral domain is stored in an invisible container, and the further it extends, the greater the invisibility and its depth. But "deep breath" is a special case, in which the lung is used as a container, and the more air it holds, the deeper people breathe. "Deep sleep" is an example that is closely related to the feature of [difficult-visibility], for as people fall into deep sleep, their consciousness becomes fuzzy. In examples like "deep thinking" and "deep learning", what you think and learn are treated as containers, and human thoughts and learning behaviors edge ever closer to the bottom of the containers. In addition, the prototype of "deep division" and "deep impression" can be found in the spatial domain in which we have very perfect prototypes of containers such as valleys and grooves, as well as examples that are far from the prototypes like cuts and wounds. If we amplify cuts to infinity, the cuts and valleys actually share a similar shape. When people are divided, disagreement might lead to a "rift" which can be measured in depth. The same truth also applies to "impression". According to Collins Dictionary, an impression of an object is a mark or outline left after being pressed hard onto a surface. Similarly, its Chinese counterpart, "印象", also indicates the act of pressing. In other words, an impression can be amount to a mark left by pressing resembling a scar, which explains why people in these two different cultures unanimously use "deep" and "shen" to describe "impression". Although the cognitive basis of the projection in the behavioral domain between DEEP and SHEN is very similar, SHEN seems to be available to a broader range of words in the behavioral domain, which are rarely collocated with DEEP, such as 深入开展 (carry out), 深入贯彻(implement), 深刻揭示(reveal), 深刻指出(point out), 深入宣传(advertise), etc. In English culture, "deep" is more frequently paired with behavioral words that are overtly tied to the spatial domain, such as inhale, divide, hurt, and so on. This is probably because the English language is relatively abundant in terms of words indicating degree, such as extensively, far-reaching, profound, etc., which might be more prevalent in modifying abstract behavioral actions. In Chinese, the character of 深 or phrases containing it like 深入, 深为, 深深 perform all the duties, which though have preferences in different contexts, all convey the same meaning.

3.4 Comparison of English DEEP and Chinese SHEN in the Social Domain

The cognitive basis for the projection of the spatial domain to the social domain is very similar to that of the degree domain, especially for DEEP. In both cultures, both "deep" and "shen" can be used to characterize social status and social relations, such as,

- 资深秘书拿着她的大衣以及一大堆的讯息资料。(The veteran secretary took her coat and a large pile of

material.)

- 范占武"笑纳"了数万元人民币现金后，刘起山觉得："自己和老范的关系深了一层"。(After Zhanwu Fan accepted thousands of RMB in cash, Qishan Liu felt his relationship with Zhanwu had deepened.)

- True ecumenical work and mission rest upon transparency and deep friendship.

- Northam-with his strong ties to the state party and deep relationships with Democratic lawmakers-prevailed, winning by 11 percentage points.

However, as vocabulary in the social domain is deeply rooted in contextual culture and social ideology, "deep" and "shen" show considerable differences. In Chinese, there are expressions such as 深宫内院，深闺，侯门深四海，庭院深深深几许 in which 深闺 refers to the boudoir (mostly in the innermost part of the house) where the women of rich and noble families lived in the old days. (Modern Chinese Dictionary, 2016) The term often implies strict tutelage in wealthy families and the importance of a good match, revealing that women in ancient times were often sacrificed in marriages for interest and deprived of freedom. The term 深宅大院 refers to a large number of houses with wide and extensive courtyard, mostly referring to a wealthy family and often symbolizing status. The cognitive basis for this projection from the source domain to the target domain arises from the semantic features of DEEP, namely [-visibility] and [-accessibility], for the feudal concept is difficult to break, and prestigious status difficult to reach. This is very similar to people's original cognitive experience with DEEP. When these expressions are literally translated into English, no status is implied.

4. Conclusion

The above analysis has concluded the cognitive basis of DEEP/SHEN image schema projected to non-spatial domains and their similarities and difference with regards to collocation, usage, and frequency in English and Chinese culture. This study has found that both English and Chinese are able to project DEEP/SHEN image structure to the target domain of "time", "sense", "emotion", "behavior", and "society" by constructing the corresponding abstract conceptual categories through the metaphorical mapping mechanism. However, the Chinese character 深 and the English word "deep" show variations in the linguistic expression of metaphors. The commonality between English "deep" and Chinese 深 in the spatial metaphors stems from the similar daily spatial experiences and basic needs of human beings, while the difference from diverse cognitive preferences, cultural models, and experiential perspectives. This study provides some insights into foreign language teaching and learning, translation practice, and cross-cultural communication. However, it should be noted that this study only focuses on the DEEP/SHEN spatial concept as the source domain for comparative study, which does not provide a complete picture of the overall pattern of spatial metaphor use between English and Chinese languages. In the future, we can use other spatial concepts as the source domain to compare the spatial metaphors of the two languages and explore the universality and cultural differences between English and Chinese spatial metaphors in a systematic and in-depth way.

References

BCC Corpus. Retrieved from https://bcc.blcu.edu.cnl

Bierwisch, M., Lang, E., & Bierwisch, M. (2010). *Dimensional adjectives: grammatical structure and conceptual interpretation*. Springer-Verlag.

Brown, P. (2006). Language, culture, and cognition: The view from space. *Zeitschrift fur Germanistische Linguistik, 34*(1-2), 65-86. https://doi.org/10.1515/ZGL.2006.005

Clark, H. H. (1973). Space, time, semantics, and the child. *Cognitive Development and Acquisition of Language*, 27-63. https://doi.org/10.1016/B978-0-12-505850-6.50008-6

COCA Corpus. Retrieved from https://corpus.byu.edulcocal

Fillmore, C. J. (1997). *Lectures on Deixis*. CSLI Publications.

Goy, A. (2002). Grounding Meaning in Visual Knowledge. In Coventry K. R. & Olivier P. (Eds.), *Spatial Language*. Springer, Dordrecht. https://doi.org/10.1007/978-94-015-9928-3_7

Greimas, A. J. (2001). *Structural Semantics*. Baihua Literature and Art Publishing Press.

Jin, M. S. (2009). *Studies on the spatial adjective "shen"- The Chinese equivalence of the word meaning "deep"* (Doctoral dissertation, Beijing Language and Culture University).

Kong, L. Q. (2008). *The Polysemantic Category-Deep & Shallow and the Arrangement of Them in Chinese Teaching Materials* (Doctoral dissertation, Shanghai Normal University).

Kövecses, Z. (2005). *Metaphor in Culture: Universality and Variation*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511614408

Kövecses, Z. (2015). *Where Metaphors Come From: Reconsidering Context in Metaphor*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190224868.001.0001

Lakoff, G. (1987). *Women, Fire and Dangerous Things: What Categories Reveal about the Mind*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226471013.001.0001

Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. Chicago: University of Chicago Press.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.

Lakoff, G., & Turner, M. (1987). *More than Cool Reason: A Field Guide of Poetic Metaphor*. Chicago: University of Chicago Press.

Lan, C. (1999). Spatial Metaphors in Chinese from a Cognitive Perspective. *Foreign Language Teaching and Research*, (4), 9.

Lang, E. (2001). Spatial dimensional terms. In M. E. Haspelmath et al. (Eds.), *Language Typology and Language Universals. An International Handbook* (pp. 1251-1275). Berlin & New York: Mouton de Gruyter.

Langacker, R. W. (1987). *Foundations of Cognitive Grammar, Vol. 1: Theoretical Prerequisites*. Stanford: Stanford University Press.

Levinson, S. (2003). *Space in Language and Cognition: Explorations in Cognitive Diversity*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511613609

Liu, G. (2017). *A Contrastive Study of English and Chinese Spatial Dimensional Adjectives from a Cognitive Semantic Perspective*. Ph.D. dissertation, Northeast Normal University.

Liu, X. Y., & Liu, Y. B. (2020). The Universality and Cultural Differences of Deep/Shallow Spatial Metaphors in English and Chinese. *Modern Foreign Languages*.

Lyons, J. (1977). *Semantics*. Cambridge: Cambridge University Press.

Modern Chinese Dictionary. (2016). The Commercial Press.

Nichols, J. (1999). *Linguistic Diversity in Space and Time*. Chicago & London: The University of Chicago Press.

Oxford Advamced Learner's English-Chinese Dictionary. (2014). The Commercial Press.

Ren, Y. J. (2000). *Semantic analysis of spatial dimension terms in modern Chinese* (Doctoral dissertation, Yanbian University).

Talmy, L. (2000). *Toward a Cognitive Semantics: Concept Structuring Systems* (Volume 1). Cambridge MA: MIT Press. https://doi.org/10.7551/mitpress/6847.001.0001

Talmy, L. (2011). Universals of semantics. In P. Hogan (Ed.), *Cambridge Encyclopedia of the Language Sciences* (pp. 754-757). Cambridge: Cambridge University Press.

Vandeloise, C. (1993). The role of resistance in the meanings of thickness. *Leuvense Bijdragen, 82*, 29-47.

Vogel, A. (2004). Swedish dimensional adjectives. *språkstudier*.

Wang, H. J. (2006). Cognitive Interpretation of Chinese spatial words of "shen". *Science Information*, (11X), 1.

Wang, Y. (2001). Cognitive linguistics in Lakoff & Johnson's writings. *Journal of Foreign Languages*.

Wu, N. Y. (2009). *A Psychological Study of Metaphor*. Shanghai Baijia Press.

Wu, Y. (2011). *A Study on the Semantic System of the Spatial Dimensional Adjectives in Modern Chinese* (Doctoral dissertation, Wuhan University).

Zhang, X. (2015). Contrastive analysis of "deep/shallow" spatial dimension in Japanese and Chinese. *Foreign Language Research*, (1), 7.

Zhang, Z. J., & Sun, M. Q. (2009). Contrastive analysis of metaphorical cognition in "deep/shallow" spatial dimension in Russian and Chinese. *РУССКИЙЯЗЫКВКИТАЕ*, (3), 44-48.