

Going to Understand 柴? Evidence and Significance of Metonymic Chains in Chinese/English Translation



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Abstract Based on three researches using big data (Chinese/English corpora) and small data (translation of a particular Chinese character), and assisted by other diachronic and synchronic records, this article attempts to establish the central argument that metonymic chains do exist in Chinese/English Translation practice. By metonymic chains in translation, it is meant that a chain of correlatively motivated metonymic extensions or inferences that are found in the multiple target language renditions of the source language original, and these semantic extensions or inferences are in compliance with human metonymic operations. The first study is on the Chinese term 明白 [míng bái] and its English equivalents. The second research study investigates the relationship between the English verbal and grammatical phrase *be going to* and its numerous translated Chinese counterparts. The third is a small part of a meticulous analysis of the English translations of Wang Wei's 鹿柴 [lù chái/zhài], with the focus on the English translations of the Chinese character 柴. The findings show that many variations in Chinese/English translation cannot be a simple matter of unmotivated randomness or arbitrariness in style or diction. Rather, they are the demonstrations of different links in a metonymic chain that is justifiable by the cognitive rationale and can be uncovered when adequate diachronic and synchronic data are examined from the embodiment and frame semantics perspectives. In the translation practice, the metonymic conceptual movements are more fundamental than metaphorical projections, which are often found to be made by smaller metonymic operations in a chain. Based on the curves depicting the one-to-many relations between the source language originals and the target language renderings that constitute the metonymic chain, it is found that the Pareto Principle offers a close mathematical approximation of the data. In Chinese/English translation practice and studies, this means, about 20% of the data is able to account for about 80% of the total translation outputs. Pedagogically and theoretically, therefore, this 20% deserves our special attention.

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1 Introduction

This article is based on three researches using big data (Chinese/English corpora), small data (translation of a particular Chinese character), and other diachronic and synchronic records to establish the argument that metonymic chains (转喻链 [zhuǎn yù liàn]) do exist in Chinese/English translation.

Metonymy is a cognitive process that allows us to use one well-understood aspect of an entity to stand for the thing as a whole, or for some other aspect of it, or for the entity to which it is very closely related (Gibbs 1994, p. 11). As Littlemore (2018) rightly points out, metonyms function as shortcuts for our language, thoughts, and communication. For instance, a personal name can function as an effective shortcut to the reference of a particular human being. At a more theoretical and abstract level, according to Barcelona (2002, p. 246), a metonym is a mapping of a source domain to a target domain, both of which are in the same functional domain and are linked by a pragmatic function, whereby the target is mentally activated.

A classic definition of metonymic chains was proposed in Barcelona (2005, pp. 328–331), which refers to a “direct or indirect series of conceptual metonymies guiding a series of pragmatic inferences.” During these metonym-based pragmatic inferences, metonym X can trigger the inference of metonym Y when X is the main factor responsible for leading the comprehender to Y. Alternatively, a metonym X can also facilitate the inference of Y when X is able to provide part of the conceptual material that leads to Y. A typical example is that the nominal phrase “gas pump” can trigger the inference of a “gas station” through the SALIENT PART OF THE WHOLE FOR THE WHOLE metonym, because the gas pump can be the main factor that guides the comprehender toward the gas station. Then, a gas station in turn can facilitate the inference of a car, which in turn can further facilitate the inference of the insurance industry. Although the car is not the only factor with regard to insurance service, it does provide part of the conceptual context for it in the contemporary society. By the metonymic chain in this study, it is meant that a chain of such correlated semantic extensions or inferences found in the multiple target language translations that are triggered or facilitated step by step by the conceptual materials in the source language original, and these semantic extensions or inferences are in compliance with human metonymic operations.

The first research project is the study on the Chinese term 明白 [míng bái] and its English equivalents, in an effort to address issues on how abstract concepts like UNDERSTAND are expressed within a language and across languages and why they have happened the way that has been. The second investigates the relationship between the English verbal and grammatical phrase *be going to* and the numerous Chinese counterparts it has, which collectively traverse a wide range of meanings,

including movement, intention, future, and modality, to clarify the seemingly chaotic interchangeability between *be going to* and its Chinese counterparts. The third is a detailed analysis of the English translations of the Chinese character 柴 in 鹿柴 [lù chái/zhài], which is the title of a poem authored by Wang Wei.

The compelling evidence and interesting findings of the metonymic chain discovered in the 明白 [míng bái] project provided the enlightening and guiding principles in examining the data in the *be going to* and 鹿柴 [lù chái/zhài] projects, where the one-to-many relations are also strikingly similar. The outcomes of these efforts demonstrate that even with different sizes or sets of data, variations in translation can be accounted for by metonymic chains. In other words, these synonymous variations are motivated and linked by metonymic inferences.

In addition, the 明白 and *be going to* studies attempt to address the following three questions: Firstly, what are the English equivalents of the Chinese term 明白 and why it is so? Reversely, given the semantic/grammatical continuum that *be going to* can represent, how does the Chinese language manage to cover this continuum? Secondly, in these two pairs of the one-to-many relations (i.e. 明白 vs. many English equivalents, and *be going to* vs. many Chinese equivalents), how does “many” become the semantic equivalents of “one” in Chinese/English translation? Thirdly, is there a mathematical model that can approximate these relations and what theoretical and pedagogical implications could such a model bring to us?

Juxtaposing the naming elements of the three projects in English and Chinese i.e. “going to”, “understand” and “柴”, we arrive at the beginning portion of the title for this article: *Going to Understand 柴*.

2 Research Methodologies

2.1 The 明白 Project

The 明白 project examines the English equivalents of the Chinese lexical item 明白 [míng bái], utilizing such databases as

The Chinese-English Sentence Aligned Bilingual Corpus. Published by the Chinese Linguistic Data Consortium (CLDC) in 2007, it provides experimental data for the modeling and analysis of bilingual models based on statistics. It also affords samples of real text labels for extracting word pairs and phrase pairs for machine translation and information search among different languages. *The Chinese-English Sentence Aligned Bilingual Corpus* purchased by the Macao Polytechnic Institute Library contains one million pairs of sentences (cf. <http://shachi.org/resources/1215>).

Chinese Text Project (CTP) (中国哲学书电子化计划 [zhōngguó zhéxué shū diànzìhuà jìhuà]). This is an online open-access digital library that makes pre-modern Chinese digital texts available to readers and researchers all around the world, featuring a gold mine of valuable diachronic information (cf. ctext.org). Many of the Chinese texts are accompanied by their authentic English translation.

This continuously developing website is one of the rare resources offering free, powerful information for Chinese historical linguistics research.

CC-CEDICT. The objective of the CEDICT project was to create an online, downloadable (as opposed to searchable-only) public-domain Chinese-English dictionary (cf. <https://cc-cedict.org/wiki/>). This dictionary is integrated into the search and statistics tool home-developed for the 明白 project to provide the initial identification, retrieving, and frequency calculation of the English equivalents.

The Oxford English Online (OED) Premium Collection. This gigantic database presents the definitive record of the English language and offers the best resources for the etymological analysis of English. It is an indispensable tool for studying the semantic evolution of English lexical items.

百度百科 ([bǎi dù bǎi kē] *The Baidu Encyclopedia*, cf. <http://baike.baidu.com/>). Claiming to be the world's largest encyclopedia in Chinese, this vibrantly growing database advocates the noble principle that all people share knowledge freely and equally. For the research in this article, it is used as the second source for fact verification and data collection, especially for the issues in Chinese language studies.

The Chinese-English Sentence Aligned Bilingual Corpus was delivered to the Library of Macao Polytechnic Institute without any search and statistical capabilities. The data are found in the following format (without *Pinyin* and the gloss):

- (1) 然而，在许多国家设备陈旧，对确保数据质量及其及时转递都造成了严重问题，一旦设备出现故障，又出现如何处理遗漏的资料问题。

[ránér, zài xǔduō guójiā shèbèi chénjiù, duì quèbǎo shùjù zhiliáng jí qí jíshí zhuǎndì dōu zàochéng le yánzhòng wèntí, yīdàn shèbèi chūxiàn gùzhàng, yòu chūxiàn rúhé chǔlǐ yílóudì zīliào wèntí

but in many country equipment old, for assure data quality and timely transformation all make serious problem, once equipment have trouble, also occur how process missing data problem]

However, obsolete equipment in many countries poses severe problems for ensuring data quality and their timely transmission, as well as for coming to grips with missing information when equipment breaks down.

Therefore, it is essential that a searching tool be developed so that the desired data can be accurately and efficiently retrieved and presented. With the help from Mr. Terence Chi Ip Tai, Head of the Systems and Client Services of Macao Polytechnic Institute Library, a searching and statistical program as follows was designed and developed:

Through this tool, *the Chinese-English Sentence Aligned Bilingual Corpus* is queried step by step with regard to 明白 until satisfactory data are obtained.

2.2 *The Be Going to Project*

Through personal communication, the author was allowed the privilege of using the English/Chinese parallel corpus developed by Lu Wei of Xiamen University, China. At the time of my accessing, it contained 215,713 parallel English/Chinese sentences, 3,290,670 English word tokens, and about 5,370,429 Chinese character tokens. The search string is “going to” and all of the 765 valid hits thus generated are used. The acquired data are filtered through a home-grown computer program, whereby a number of individual Chinese characters or character strings are keyed in to parse the data and sort them out.

For both of the 明白 and *going to* projects, careful diachronic and synchronic analyses are conducted for the representative sentences and lexical items retrieved from the bilingual databases. The aim is to better understand and explain the drastic variations in translation renderings. Finally, frequency curves on the “many” parts are constructed and analyzed to find out a likely statistical model.

2.3 *The 鹿柴 Project*

The data source is from Weinberger, Paz, and Wang (1987), which lists 19 different English translations of a poem authored by Wang Wei and titled 鹿柴 [lù chá/zhài]. The diversified translation renderings form the typical one-to-many relationship between the Chinese original and its English translations. This provides us with a good sample with valuable clues to explore the grounds for the drastic variations in translating Tang Poetry into English. Specifically, the focus of the discussion and analysis here is on how one Chinese character 柴 is translated.

3 *The Data and Findings*

3.1 *Findings and Analyses of The明白 Project*

Based on the search and statistical tool described in Fig. 1 and after the further manual operation to consolidate the data, 明白 is found to have appeared 737 times in the *Chinese-English Sentence Aligned Bilingual Corpus*, with 49 different English equivalents, as in Table 1.

Below are some of the typical data:

(2) 明白: understand

重要的是岛国居民自己也明白这是一个不可避免的步骤, 因为唯一现实的选择就是共同前进。

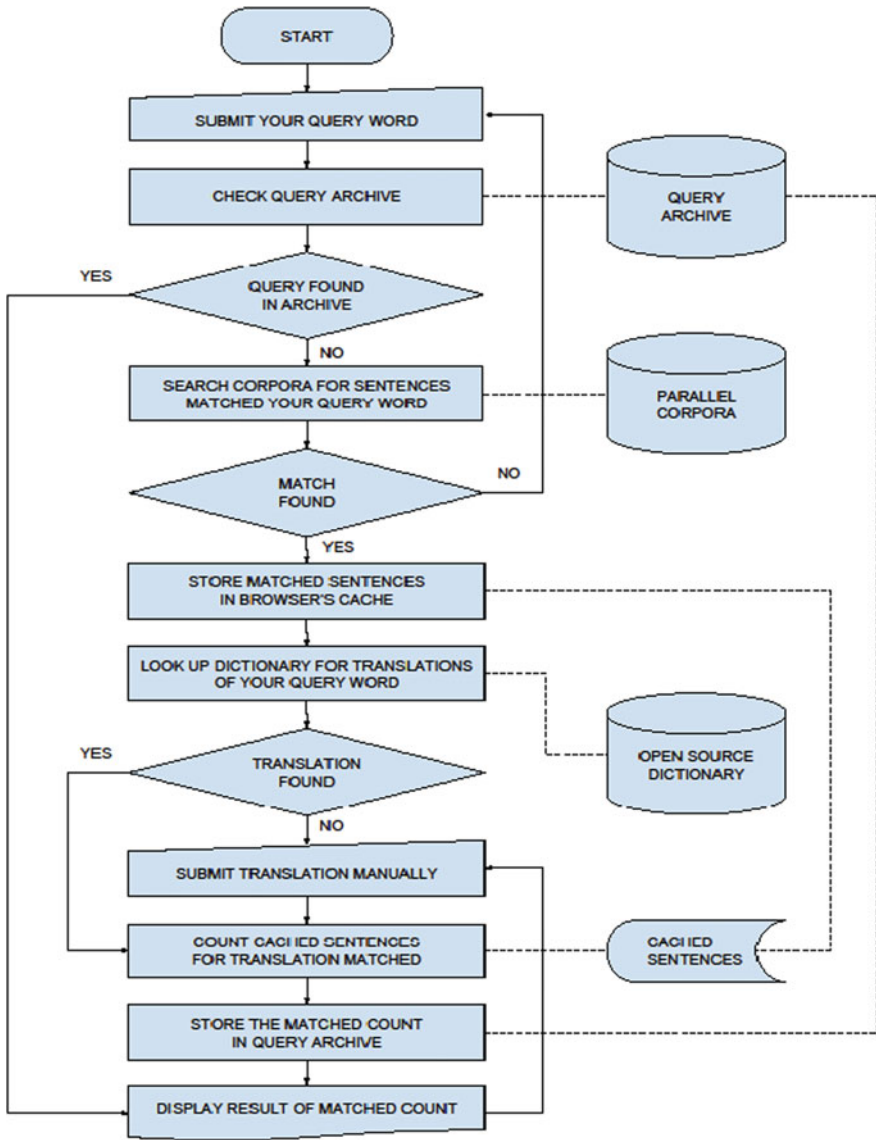


Fig. 1 The Searching and Statistical Tool Home-developed for the 明白 Project

zhòngyàodí shì dǎogúo jūmín zìjǐ yě míngbái zhè shì yīgè bù kě bimiǎnde bùzhòu, yīnwèi wéiyī xiànshíde xuǎnzé jiù shì gòngtóng qiánjìn.

important be island inhabitant self also understand this is a inevitable step, because only realistic alternative be together forward

It is important that the islanders themselves also understand that this is an inevitable step, because the only realistic alternative is to march forward together.

Table 1 明白 and its English equivalents

Serial number	English equivalents of 明白	Frequency
1	understand(ing)/understood	340
2	clear(ly)	124
3	know/knowledge	50
4	see	34
5	express	29
6	plain	28
7	aware(ness)	17
8	appreciate/appreciation	15
9	learn	11
10	obvious	11
11	explicit	9
12	realize	8
13	show	5
14	get the idea	4
15	find out	4
16	specific(ally)	3
17	intelligent(ly)	3
18	recognize	3
10	believe	2
20	has noted	2
21	committed	2
22	flatly	2
23	finally reached the place where it truck her	2
24	convinced	2
25	get the message	2
26	clarify/clarity	2
27	find their way	1
28	evident	1
39	apparently	1
30	comprehend/comprehension	1
31	grasp	1
32	familiar	1
33	spell out	1
34	perceive	1
35	make out	1
36	self-illustrative	1
37	self-explanatory	1
38	stark	1
39	unmistakably	1
40	profess	1

(continued)

Table 1 (continued)

Serial number	English equivalents of 明白	Frequency
41	surmise	1
42	reason out	1
43	dawn upon	1
44	bear in mind	1
45	hammer into our heads	1
46	catch your meaning	1
47	this is a clue to	1
48	give the reader a sense of	1
49	has the notion	1
Total		737

(3) 明白: clear

联柬权力机构向柬埔寨当局明白表示，他们必须对各少数民族提供充分的保护。

liánjiǎn quánlì jīgòu xiàng jiǎnpǔzhài dāngjú míngbái biǎoshì , tāmen bixū
duì gè shǎoshù mínzú tígōng chōngfēndì bǎohù

UNTAC to Cambodian authority clear express, they must to all minority provide adequate protection

UNTAC has made it clear to the Cambodian authorities that they are obliged to provide adequate protection to ethnic minorities.

(4) 明白: know/knowledge

全世界的农民们都明白季节的重要性和永恒性。

quán shìjiè de nóngmínmen dōu míngbái jìjié de zhòngyàoxìng hé yǒnghéngxìng
whole world POSS peasant all know season POSS importance and immutability

Farmers all over the world know the importance and immutability of the seasons.
(POSS = Possessive)

The data findings presented so far have partially addressed the first question posed earlier, namely, what are the English equivalents of the Chinese term 明白? Such a finding, however, is by and large descriptive and mechanical, because it does not explain why the Chinese term 明白 is able to afford so many English equivalents, a question that calls for a more insightful theoretical exploration diachronically and synchronically. To do so, we have to dig deep to reach the roots of this Chinese term in Classical Chinese, the written Chinese language that had been in dominant use from the fifth century B.C. until the beginning of the twentieth century, uncovering the original literal meanings of the two component Chinese characters 明 and 白 and examining their subsequent semantic extensions.

Simply put, we want to know how 明白 eventually evolved to mostly mean UNDERSTAND through a historical linguistics probe.

A careful research using the *Chinese Text Project* and 百度百科 (*The Baidu Encyclopedia*) reveals the etymological sophistication of the character 明 in the literature of Classical Chinese. First, 明 is a compounded ideograph made of 日 ([rì], the sun) and 月 ([yuè], the moon), both of which emit light. As a result, the original meaning of 明 was light. From this point on, a semantic network has been developed, as the data in Table 2 show (unless indicated otherwise, the English translations are retrieved from the *Chinese Text Project*).

Evidently, the light of the Sun and the Moon, as symbolized by the Chinese character 明, is bright and brilliant, and therefore provides the physical condition for humans to see with their naked eyes. Later on, the semantic contents of 明 ramified in several directions, mainly metonymically. Through the CONDITION FOR PHYSICAL ABILITY metonymy, there emerged EYESIGHT, and SEE CLEARLY, where LIGHT triggers EYESIGHT, and good illumination triggers SEE CLEARLY. Then, CLEAR, OBVIOUS, UNDERSTAND, and MAKE WISE are facilitated through the CAUSE FOR RESULT metonymy. When one can see something, it becomes obvious. When something becomes clear to him, he then can understand it. Once he understands, he can be wiser. Again, a metonymic operation refers to an association between two entities in one conceptual frame so that one entity can stand for the other (Evens and Green 2006, p. 167), with various relations in between (Bredin 1984; Kövecses 2013). In Contemporary Cantonese, which has inherited a great deal from Classical Chinese semantically and phonologically, 明 is still single-handedly used as a verb to mean UNDERSTAND, as in

(5) 明唔明?

ming4 ng6 ming2
clear not clear
Do you understand?

With regard to the semantics of 白 [bái], this pictographic character was first found in the oracle bone inscriptions with the shape of sunlight shooting up and down to denote the brightness of the sun (cf. hydc.com, a compressive site for different kinds of Chinese dictionaries). The brightness of the sun was perceived as white during the daytime. Therefore, one of the earliest uses of this character refers to daylight, as in

(6) 秋爲白藏。《爾雅·釋天》(403–221 B.C)

qiū wéi bái cáng
fall be white store

Table 2 Semantic network of character 明 in classical Chinese literature

The Meanings of 明 in the Literature of Classical Chinese	Data Sources	Examples
A combination of the light from the Sun and the Moon	《周易·系辭下》 (9 C. B.C.)	日往則月來，月往則日來，日月相推而明生焉。 rì wǎng zé yuè lái, yuè wǎng zé rì lái, rì yuè xiāng tuī ér míng shēng yān The sun goes and the moon comes; the moon goes and the sun comes; the sun and moon thus take the place each of the other, and their shining is the result
Bright, brilliant	《詩經·雞鳴》 (11–6 C. B.C.)	東方明矣、朝既昌矣。 dōng fāng míng yǐ、cháo jì chāng yǐ The east is bright; the court is crowded
Clear, obvious	《公孫龍子·白馬論》 (320–250 B.C.)	可與不可，其相非明。 kě yǔ bù kě, qí xiāng fēi míng Acceptable and unacceptable are clearly in opposition to each other
Eyesight	《孟子·梁惠王》 (468–376 B.C.) 《禮記·檀弓上》 (5th C.–221 B.C.)	明足以察秋毫之末。 míng zú yǐ chá qiū háo zhī mò My eyesight is sharp enough to examine the point of an autumn hair 子夏喪其子而喪其明。 zǐ xià sàng qí zǐ ér sàng qí míng When Zi-xia was mourning for his son, he lost his eyesight
See clearly	《荀子·勸學》 (Circa 313–238 B.C.)	目不能兩視而明，耳不能兩聽而聰。 mù bù néng liǎng shì er míng, er bù néng liǎng tīng er cōng The eye cannot look at two objects and see either clearly; the ear cannot listen to two things and hear either distinctly (Knoblock, 1988, p.139)
Straightforwardly, clearly	《孟子·梁惠王上》 (372–289 B.C.)	願夫子輔吾志，明以教我。 yuàn fū zǐ fǔ wú zhì, míng yǐ jiào wǒ I wish you, my Master, to assist my intentions. Teach me clearly
Clarify, make clear	《墨子·小取》 (468–376 B.C.)	夫辯者，將以明是非之分。 fū biàn zhě, jiāng yǐ míng shì fēi zhī fēn “Distinguishing” will be used to make clear the distinction between so and not so
Understand	《墨子·尚賢下》 (468–376 B.C.)	我以此知天下之士君子，明於小而不明於大也。 wǒ yǐ cǐ zhī tiān xià zhī shì jūn zǐ, míng yú xiǎo er bù míng yú dà yě Then I know the gentlemen understand only trifles and not things of significance

(continued)

Table 2 (continued)

The Meanings of 明 in the Literature of Classical Chinese	Data Sources	Examples
Wise	《道德經》 (Circa 5th C. B.C.)	不自見，故明。 bù zì xiàn, gù míng He is free from self-display, and therefore he shines/is wise
Make wise	《道德經》 (5th C. B. C.)	古之善為道者，非以明民，將以愚之。 gǔ zhī shàn wéi dào zhě, fēi yǐ míng mín, jiāng yǐ yú zhī The ancients who showed their skill in practising the Dao did so, not to enlighten the people, but rather to make them simple and ignorant

During the daylight in autumn, the harvest was stored.

Based on the semantic contents of light, 白 is also found to mean **MENTALLY CLEAR** and **UNDERSTAND**, as in

- (7) 禮義不加於國家，則功名不白。《荀子·天論》(316–235 B.C.)

lǐ yì bù jiā yú guó jiā, zé gōng míng bù bái

ritual not set up to state, then honor rank not clear understand

If rituals are not established for a country, the scholarly honor and official ranks cannot be clearly understood.

The compound 明白 was formed early, and has been polysemous with numerous meanings ranging from the concrete to the abstract concepts, such as bright/brilliant/daytime/clear, obvious/clarify/make clear/understand/straightforwardly/clearly/clean/wise/make wise/eyesight/good eyesight/see clearly. Some typical uses of this compound include

- (8) 此皆生於法明白易知而必行。《商君書·定分》(403–221 B.C.)

cǐ jiē shēng yú fǎ míng bái yì zhī er bì xíng

this all originate from law clear easy know and apply

All this originates from the fact that the law is clear, easy to know, and strictly applied.

- (9) 夫明白於天地之德者，此之謂大本大宗，與天和者也。《莊子·天道》

(403–221 B.C.)

fū míng bái yú tiān dì zhī dé zhě, cǐ zhī wèi dà běn dà zōng, yǔ tiān hé zhě yě

alas clear understand at heaven earth POSS virtue thing, this POSS call great root great origin, with heaven harmonize AFF (POSS = Possessive, AFF = Affirmative)

The clear understanding of the virtue of Heaven and Earth is what is called “The Great Root”, and “The Great Origin”—they who have it are in harmony with Heaven.

(10) 王冕看書，心下也著實明白了。《儒林外史》(1749)

wáng miǎn kàn shū, xīnxià yě zhǎo shí míng bái le

Wang Mian read book, mind also solid understand/see clear PERF (PERF = Perfective)

Wang Mian studied and began to see things clearly.

Hence, 明 and 白 originated from meanings that are relevant to light. In the later developments, both acquired other semantic contents. For 明 in particular, the semantic changes have been very diversified, covering a spectrum from the physical phenomena, namely, from LIGHT to the physiological ability of SEEING, then, to the cognitive capabilities of KNOWING and UNDERSTANDING. The relationship between LIGHT and SEEING can also be considered a PART AND WHOLE metonymical relation, because light is part of the conditions for a naked eye to be able to see. Consequently, the Chinese phrase 失明 ([shī míng], lose light) means losing one's eyesight or going blind, and 复明 ([fù míng], restore light) means regaining one's eyesight or being able to see again.

As such, the Chinese character 明 has therefore completed a remarkable semantic journey to become a word that eventually means UNDERSTANDING, only after a chain of metonymic extensions, as in the schema of (11):

(11) LIGHT → SEEING → UNDERSTANDING/KNOWING

In recent neural researches, it is found that although seeing and thinking are carried out by different parts of the brain, they also often interact intimately via feedforward and feedback interactions to give rise to conscious visual percepts (Carsetti 2004, p. 29). Such interactions form the neuron circuitry for the metaphor “THINKING IS SEEING,” and further “UNDERSTANDING IS SEEING,” which metaphorically maps our knowledge about vision onto the domain of understanding and knowing, causing words meaning SEEING to extend their meanings to UNDERSTANDING and KNOWING (cf. ICSI 2020). In fact, (11) represents a typical correlation-based metaphor, which emerges from frame-like mental representations through the metonymic stages whereby “one of the elements of a frame-like mental structure is generalized (schematized) to a concept that lies outside the initial frame in a different part of the conceptual system. The generalization process leads to sufficient conceptual distance between the initial and the new frame on which metaphors can be based” (Kövecses 2013). According to Evans and Green (2006, p. 211) and Evans (2007, p. 85), a frame or domain refers to a knowledge structure that is represented at the conceptual level and held in long-term memory relating. Words deleted and changed elements and entities associated with a particular culturally embedded situation from human experience. In essence, (11) can be argued to be a metonymic chain where the concept in one frame, i.e. LIGHT, is generalized to a new frame, i.e. SEEING, later from the frame

for SEEING to those for UNDERSTANDING and KNOWING. This means that conceptually, several metonymic steps can lead to the achievement of a longer distance conceptual projection across frames or domains, which is the essential condition for making a conceptual metaphor.

The verb 明白 in Chinese is not a loner. *The Oxford English Dictionary Online (OED) Premium Collection* undoubtedly shows that the original meaning of the English word *clear*, the second most frequently found English equivalent of 明白, is also closely related to light, as data in Table 3 indicate (cf. “clear, adj., adv., and n.”. OED Online. June 2020. Oxford University Press. [https://www-oed-com.rpa.library.ipm.edu.mo/view/Entry/34078?](https://www-oed-com.rpa.library.ipm.edu.mo/view/Entry/34078?rkey=UQYzO&result=1&isAdvanced=false)

rskey=UQYzO&result=1&isAdvanced=false (accessed August 07, 2020).

We can see that the semantic extension path of *clear* is similar to that of 明白 presented in (11).

The similar etymological paths of 明白 and *clear* show that because we humans possess the same physiological characteristics and functions endowed by our shared natural environments on the Earth, we have a broad common cognitive basis for our languages and thoughts. This constitutes the foundation of communication across

Table 3 Semantic contents and extensions of “clear”

Original or extended meanings	Literature sources	Examples
(1) Of light, color, things illuminated. a. <i>orig.</i> Expressing the vividness or intensity of light: Brightly shining, bright, brilliant	1297 <i>R. Gloucester's Chron.</i> (1724) 416	Ther come..a leme swythe cler & bryzte
(2) Of the day, daylight, etc.: Fully light, bright; opposed to <i>dusk</i> or <i>twilight</i> . <i>arch</i>	c1320 <i>Sir Beues</i> 755	A morwe, whan hit was dai cler, Ariseþ kniȝt and squier
(3) Of a vision, conception, notion, view, memory, etc.: Distinct, unclouded, free from confusion	1398 J. Trevisa tr. Bartholomew de Glanville <i>De Proprietatibus Rerum</i> (1495) ii. v. 32	Bryghte and clere knowynge of god
(4) Of the faculty of discernment: That sees, discerns, or judges without confusion of ideas	1340 <i>Ayenbite</i> (1866) 24	Clier wyt, wel uor to understonde
(5) Of words, statements, explanations, meaning: Easy to understand, fully intelligible, free from obscurity of sense, perspicuous	a1400 (a1325) <i>Cursor Mundi</i> (Vesp.) l. 11,615	þan com þe propheci al cler
(6) Of persons: Having a vivid or distinct impression or opinion; subjectively free from doubt; certain, convinced, confident, positive, determined	1604 S. Hieron <i>Preachers Plea</i> in <i>Wks.</i> (1620) l. 500	I am cleere in it, that many then in that darkness did..‘See day at a very little hole’

languages and second language acquisition. The nature of our thoughts and the way we understand meaning in language are closely tied to our bodies when we feel and act in the world. This is the central thesis of the embodiment revolution (Bergen 2012, p.7; Feldman and Narayanan 2004; Gibbs 2005). In the cases of 明白 and *clear*, the environmental factor is LIGHT, which allows us to see, discern, and eventually understand. Once we can understand, we gain knowledge and intelligence, and we are able to, among others, appreciate (cf. Lakoff and Johnson 2010; Lakoff 2015). The data from the Chinese/English bilingual corpora simply lend us more compelling evidence to confirm the argument based on the embodiment hypothesis.

Having studied the metonymic extension of 明白 and *clear*, we come to the second question concerning the relationship between Chinese 明白 and its English equivalents. We want to know how this one-to-many relationship (i.e. 明白 vs. many English equivalents) in Chinese/English translation managed to emerge.

Notice that (11) ends at UNDERSTANDING, which, however, is not the last stage for the semantic extension of 明白. Rather, UNDERSTANDING has functioned as the rendezvous for various synonymous semantic units, lexical or phrasal, to converge on, and that allows 明白 to be associated with more lexical varieties in English. Each of them comes from its own origins and has preserved its own inherited connotations. The cognitive mechanisms that build the association include metonymy, the conceptual small mover, and metaphor, the larger resultant cross-domain conceptual projection that is, nevertheless, often initiated by the continuing metonymic pushes. One of the typical examples is UNDERSTANDING IS GRASPING. According to *OED*, since Old English, one of the semantic equivalents of UNDERSTANDING is COMPREHENDING, which in turn originated from words describing physical actions, such as *seize*, *grasp*, *lay hold*, and *catch*. In this metaphorical extension, the source domain is about the physical action of grasping an object, which is interpreted as an idea. Metonymically, therefore, if you can get hold of a notion, you may understand the idea in it. In this sense, the grasper is seen as the understander, and the objects grasped, as the ideas understood (Dancygier and Sweetser 2014, p. 28). Consequently, failing to grasp becomes failing to understand. With the concept of GRASP comes into the scene, we now have a semantic scenario as in Fig. 2:

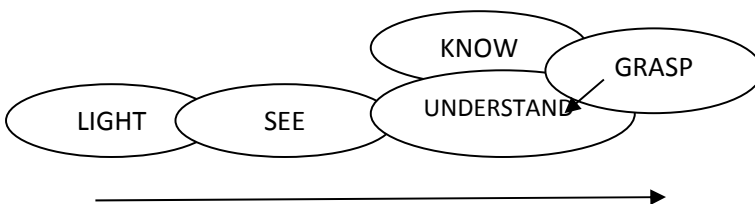


Fig. 2 Semantic rendezvous of LIGHT and GRASP at UNDERSTAND

In order to show that such a semantic rendezvous exists, we should be able to find examples in which the Chinese 明白 is equal to grasping or related meanings in English. From the data that we gleaned, this is exactly the case, as in

(12) 他不明白, 也不可能明白從他話裡單獨抽出來的字的意義。

tā bù míngbái, yě bù kěnéng míngbái cóng tā huàlǐ dāndú chōuchūlái de zì de yìyì

he not understand, also not possible understand/grasp from his word single extract out
POSS word POSS meaning (POSS = Possessive)

He did not understand, and could not grasp the significance of words taken apart from the sentence.

(13) 對不起, 我沒明白你的意思。

dùibùqǐ, wǒ méi míngbái nǐde yìsi

sorry I not understand/catch your meaning

I'm sorry I didn't catch your meaning.

Notice that in (12), 明白 is rendered into *grasp*, and in (13), into *catch*, which suggests that a successful comprehender has to be a successful catcher of the meaning emitted from its giver in communication.

The concept GRASPING facilitates to open up a new semantic horizon for 明白, because further metonymic ramifications from GRASPING can bring about rich lexical possibilities that 明白 may hitherto not have had in the English translations. For instance, since an idea can be treated as an object that can be grasped, it then should be able to be given, as is often seen in the exchange of objects in human activities. In fact, the data carrying such meanings are also available from the *Chinese-English Sentence Aligned Bilingual Corpus*, such as

(14) 為了讓讀者明白其重要性, “八國集團”(G8)這個詞後面通常緊跟著世界上“領先”、“最富有”、“最大”或“最重要”經濟體的描述。

wèile ràng dúzhě míngbái qí zhòngyàoxìng, “bā guó jítuán”(g8) zhègè cí hòumiàn tōngcháng jǐngēn zhe shìjièshàng “língxiān”、 “zui fùyǒu”、 “zui dà” huò “zui zhòngyào” jīngjìtǐ de miáoshù

for allow reader understand/give reader sense its importance, G8 this word behind often tight follow PRO world advanced, richest, biggest, or most important economy body POSS description (PRO=Progressive, POSS=Possessive)

To give readers a sense of their importance, the words “Group of Eight” are usually followed by “leading”, “richest”, “largest” or “most important” economies in the world.

In (14), 明白 is rendered into “to give somebody something”.

The English *give* is a di-transitive verb, involving moving the possession of an object from person A to person B. It is therefore logical that this movement can be generated by the verbs or phrases that originally indicate physical forces causing objects to move, whereby an idea, now seen as an object, is moved into the

possession of another human, whose head can function as the receiving container. In our data, this kind of movement is expressed by *hammer...into* and *strike*, as in

- (15) 哈尼夫先生(巴基斯坦)(以英語發言): 主席先生, 我願感謝你作出不懈努力, 並耐心地推遲作出決定的時間, 你終於使我們明白, 我們今年不可能有第三個議程項目。

hānífū xiānshēng (bājīstān) (yǐ yīngyǔ fāyán) : zhǔxí xiānshēng , wǒ yuàn gǎnxiè nǐ zuòchū bùxiè nǚlì , bìng nàixīndì tuīchí zuòchū juédìng de shíjiān , nǐ zhōngyú shǐ wǒmēn míngbái , wǒmēn jīnnián bù kěnéng yǒu disāngè yìchéng xiàngmù

Hanif mr. (Pakistan) (with English speak) chair mr. I would thank you make tireless effort, and patiently delay make decision POSS time, you finally make us understand/hammered into our head, we this year impossible have third agenda item (POSS = Possessive)

Mr. Hanif (Pakistan): I wish to thank you, Sir, for your tireless efforts and for your patience in delaying your decision, which you have finally hammered into our heads, that we cannot have a third item on the agenda this year.

Here, 明白 is rendered into *hammer something into something*. The verb *hammer* itself is a metonymic extension from the noun *hammer* through the OBJECT FOR ACTION metonymy. The force that causes the object to move originates from hitting the object with a hammer. In other words, the action of hammering or striking can be well triggered by the object hammer.

The example that is involved with *strike* is

- (16) 然後, 她覺得自己必須把錢存進銀行以保安全, 這樣發展下來, 到了最後, 她終於明白了, 享受十全十美的生活的大門還沒有打開。

ránhòu, tā juéde zìjǐ bīxū bǎ qián cúnjìn yínháng yǐ bǎo ānquán, zhèyàng fāzhǎn xiàlái dào le zuìhòu, tā zhōngyú míngbái le, xiǎngshòu shíquánshíměi de shēnghuóde dàmén hái méiyǒu dǎkāi

but she feel self must BA money deposit into bank for safety, this develop downward, reach final, she finally understand/strike, enjoy perfect life POSS big door yet not open (BA = Ba Construction) (POSS = Possessive)

Then she found she must put her money in the bank for safety, and so moving, finally reached the place where it struck her that the door to life's perfect enjoyment was not open.

The result of a give-take transaction is that the taker becomes the possessor of an idea or a notion, which in English can be expressed by the verbal phrase *to have something*, as in

- (17) 在聯邦儲備委員會(Fed) 1月份緊急降息和貝爾斯登(Bear Stearns)被迫嫁與他人的時候, 華爾街明白了政府不會聽任事情一敗塗地。

zài liánbāng chǔbèi wěiyuánhùi (Fed) 1 yuèfèn jǐnjí jiàngxī hé bèiersīdēng (bear stearns) bèipò jiàyǔ tārén de shíhòu, huá'ěrjiē míngbái le zhèngfǔ bùhuì tīngren shìqíng yībàitúdi

at Fed January emergent lower interest and Bear Stearns forced to marry other POSS time, Wall Street understand (have the notion) PERF government will not allow things get bad (POSS = Possessive, PERF = Perfective)

Along with the Federal Reserve's emergency interest-rate cut in January and the shotgun wedding of Bear Stearns, Wall Street has the notion the government won't let things get too, too bad.

Going along the pattern of having something, 明白 now expresses the idea of “having the notion.”

In addition, as some objects can be manufactured by human efforts, ideas can also be made through similar causal actions. In this case, the making process facilitates the outcome of making, which metonymically allows such phrases as *make out* to mean understanding, as in

- (18) “我總會和您的丈夫爭論；我不明白，他為什麼要去作戰。”皮埃爾向公爵夫人轉過身來毫無拘束地（年輕男人對年輕女人交往中常有的這種拘束）說道。

wǒ zǒng huì hé nín de zhàngfū zhēnglùn; wǒ bù míngbái, tā wèishénme yào qù zuò zhàn. ” piāiě xiàng gōngjué fūrén zhuàn guò shēn lái háowú jiūshù de (niánqīng nánrén duì niánqīng nǚrén jiāowǎng zhōng cháng yǒu de zhèzhōng jiūshù) shuō dào

I often argue with your husband I not understand/make out, he why want fight, Pierre princess turn COMP body COMP no restriction ADV (young men to young women communication inside often have POSS restriction) say

(COMP=Completive, ADV=Adverbial)

“I'm still arguing with your husband; I can't make out why he wants to go to the war,” said Pierre, addressing the princess without any of the affectation so common in the attitude of a young man to a young woman.

From the examples we have examined, we may construct the following semantic network with the converging rendezvous at UNDERSTAND, as in Fig. 3, which just shows only one part of the metonymic chain extensions found in the English equivalents of 明白.

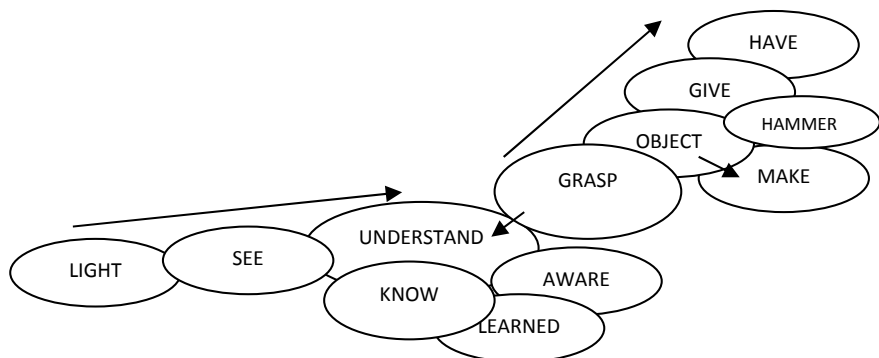


Fig. 3 Partial metonymic Chain extensions related to 明白

Hence, the semantic extension from 明 and 白 (LIGHT) to HAVE A SENSE has traversed a long distance and is punctuated by several directional changes in between. Nevertheless, the cognitive links connecting these notions do exist. These links are established by the driving force of metonym in human cognition, which is rightfully depicted by Radden and Kövecses (1999) as a cognitive process in which one conceptual entity provides mental access to another conceptual entity. In turn, accumulated metonymic extensions in a chain can make up a metaphorical projection across conceptual domains, which builds up the relationship between originally distant notions.

3.2 A Brief Account of the Story of “*be Going to*” and Its Chinese Equivalents

The lexical or grammatical meanings expressed by the Chinese equivalents of *be going to* can be classified into the following six categories. They include the following.

1. Physical Movement

The apparent movement senses are expressed, such as 去 ([qù], *go*), 到 ([dào], *go, arrive*), and 上 ([shàng], *ascend, go, attend*). The movement can be toward a concrete physical location or, more abstractly, to an event or occasion. In addition to the horizontal movement, the shift can be vertical in some Chinese idiomatic expressions. The following is an example:

- (19) As chance would have it he was going to London as well and was able to give me a lift.

趕巧他也去倫敦，所以能載我一程。(Location)

gǎnqiǎo tā yě qù lúndūn, suǒyǐ néng zǎi wǒ yī chéng
Coincidentally he also go London so able take me one leg

2. Intention + Movement

The combination of intention and movement senses, such as 要去 ([yàoqù] *want + go*), 打算去 ([dǎsuanqù], *plan + go*), and 会去 ([huìqù]: *intend + go*), 将 ([jiāng], *will + v*), as in

- (20) “I’m going to town,” she said.

“我要去城裡。”她說。

wǒ yào qù chéng lǐ tā shuō

I want go town inside she say

3. Stronger Intention Sense

Stronger intention senses, such as 要 ([yào], *want*), 会 ([huì], *will*), 打算 ([dǎsuan], *plan*), *intend*], 准备 ([zhǔnbèi], *prepare, intend*), and 想 ([xiǎng]: *think, want*). In these situations, the English *be going to* is usually followed by a verb that does not indicate a movement and so are its Chinese counterparts, as in

(21) “Get down on your knees,” said the genie, “for I’m going to kill you.”

“跪下,”魔鬼說,“因為我要殺死你。”

guì xià móguǐ shuō “yīnwei wǒ yào shā sǐ nǐ

kneel down genie say because I want kill you

4. Futurity and Modality

Be going to indicating the grammatical senses of futurity and modality:

(22) A new subject is going to be given next week.

下星期將給一個新課題。(Future)

xià xīngqī jiāng gěi yī gè xīn kètí

next week FUT give one CLF new subject

(FUT = Future or modal, CLF = Classifier)

(23) By all accounts, he is going to resign.

據說,他將辭職。(Possibility)

jùshuō tā jiāng cízhí

allege he FUT resign (FUT = Future or modal)

(24) It’s going to rain.

要下雨了。(Prediction)

yào xià yǔ le

FUT fall rain LE (FUT = Future or modal, LE = sentence final LE)

5. Combination of Modal/Future Grammatical Grams (Cf. Bybee et al. 1999, p. 2)

Combinations of the grams, such as 将会 ([jiānghuì], future gram + future gram) and 将要 ([jiāngyào], future gram + future gram) in the following:

(25) Some were going to be hanged in the next few days.

有些犯人將要在以後的幾天中被絞死。(Future)

yǒuxiē fànrén jiāng yào zài yǐhòu de jītiān zhōng bèi jiǎosǐ
 some prisoners FUT FUT at afterwards POSS several day inside PASS hang die
 (FUT = Future, POSS = Possessive, PASS = Passive)

(26) It's going to rain tomorrow.

明天將要下雨。(Prediction/Possibility)
 míng tiān jiāng yào xià yǔ
 tomorrow FUT FUT rain (FUT = Future or Modal)

6. Collocations of Temporal Adverbs with Grams

The collocations of temporal adverbs with the grams, as in 就会 ([jiùhuì], *right now + future gram*), and 肯定会 ([kěndìnghuì], *certainly + future gram*), as in

(27) I was going to pay the money back as soon as I saw you.

我一見到你就會還那筆錢的。(Immediate future)
 wǒ yī jiàndào nǐ jiù huì huán nà bǐ qián de
 I once see you immediately FUT return that CLF money AFF
 (FUT = future, CLF = classifier, AFF = affirmative)

(28) Milan is going to win the cup for sure.

米蘭隊肯定會贏得這個錦標賽。(Strong prediction)
 mǐlán duì kěndìng huì yíngdé zhègè jǐnbīāosài
 Milan team certainly FUT win this tournament (FUT = Modal)

Basically, the following semantic continuum/metonymic chain connoted in the English phrase *be going to* are rendered overt by different Chinese translations, according to the contexts, as in

(29) Movement toward a goal → Movement + Intention → Future + Modality

However, most of the Chinese future and modality markers originated from volitional verbs, such as 要, 想, 打算, which follow another path of grammaticization to change into future/modality markers:

(30) Volition or Desire → Intention → Future + Modality

It is at the **Intention, Future, Modality** (i.e. the semantic rendezvous) that the movement verbs meet with the volition verbs, and they become exchangeable in translation, as in Fig. 4.

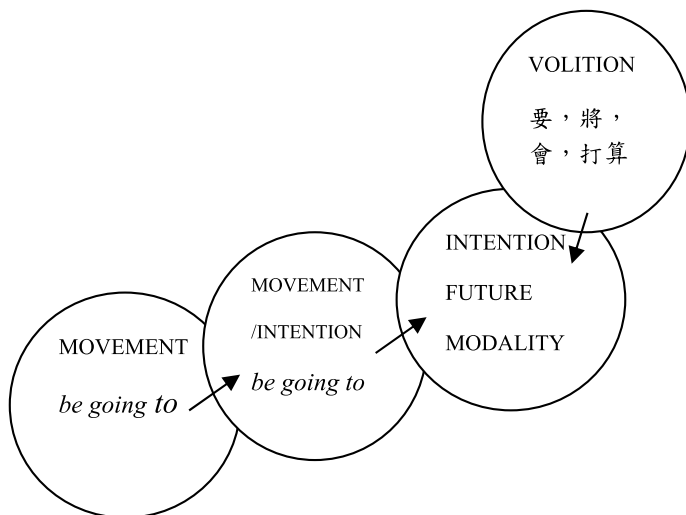


Fig. 4 Movement and Volition Meeting at Intention, Future, and Modality

That explains why we can find so many Chinese equivalents for *be going to*, as in Table 4, in which we have 21 different tokens that appear a total of 765 times in the bilingual corpus.

3.3 *The Mathematical Model for the One-To-Many Relationship in English/Chinese Translation*

The discovery of metonymic chains in the English/Chinese translation data and the unveiling of the one-to-many relations in the 明白 and *be going to* projects lead us to the inquiry about whether there could be a mathematical model that can capture the gist of the data. This is the third question we have posed.

Based on Table 4 and Table 1, respectively, the one-to-many relations in both projects constitute the two curves in Figs. 5 and 6.

Figures 5 and 6 bear considerable similarity to the typical Pareto Curves as presented in Fig. 7.

This suggests that Pareto Curves could probably approximate the “one-to-many” relationships we have been discussing.

The original Pareto principle, or the 20/80 rule, claims, among others, that about 20% of the population controls about 80% of the wealth. This principle is found extensively true in many social behaviors, such as the circulation of a library collection. It is often the case that only 20% of a collection could satisfy 80% of the library circulation needs. In terms of the Chinese future/modality grams used to indicate *be going to*, the 20/80 distribution can be arrived through the following

Table 4 *Be going to* and its Chinese equivalents

Serial number	Chinese equivalents of “be going to”	Frequency n	$n/765 \times 100\%$ (%)
1	將 [jiāng: future gram]	136	18
2	要 [yào: to want, future gram]	130	17
3	去 [qù: to go]	119	16
4	會 [huì: be able to, future gram [possibility/prediction]]	116	15
5	打算 [dāsuan: to plan, to intend]	91	12
6	準備 [zhǔnbèi: to prepare, to intend]	23	3
7	到 [dào: to go, to arrive]	21	3
8	上 [shàng: to ascend, go, attend]	20	3
9	要去 [yàoque: to want + to go]	19	2
10	想 [xiǎng: to think, to want]	18	2
11	將會 [jiānghuì: future gram + future gram]	12	2
12	將去 [jiāngqù: future gram + to go]	9	1
13	打算去 [dāsuanqù: to intend + to go]	8	1
14	能 [néng: be capable of]	7	1
15	將要 [jiāngyào: future gram + future gram]	7	1
16	正要 [zhèngyào: just + future gram]	6	1
17	要到 [yàodào: future gram + to go]	5	1
18	快要 [kuàiyào: fast + future gram]	5	1
19	打算到 [dāsuan dào: to intend + to go]	4	1
20	正打算 [zhèngdāsuan: just + to intend]	3	0
21	可以 [kěyǐ: can]	2	0
22	就會 [jiùhuì: right now + future gram]	2	0
23	想要 [xiǎngyào: to think + to want]	1	0
24	肯定會 [kěndìnghuì: certainly + future gram [possibility/prediction]]	1	0

calculation: 20% of the 24 Chinese equivalents translated from *be going to* is about 5, and these five are listed in Table 5.

These five Chinese equivalents constitute 78% (18% + 17% + 16% + 15% + 12%) of the total frequencies of 24 types, which shows what Fig. 4 presents is a Pareto curve in nature. Therefore, the human behavior in translating English *be going to* into Chinese is appropriately described by the 20/80 Pareto principle. Pedagogically, in our English/Chinese translation instruction regarding *be going to*, we may inform students that it is important to learn these five Chinese equivalents, because they represent 78% of the translation outputs from English. For a fuller discussion of the pedagogical issues related to *be going to* from the perspective of semantic similarity across languages, see Lin (2013).

For the 明白 data, the statistics is also close: 20% of the English equivalents is about 10, as presented in Table 6.

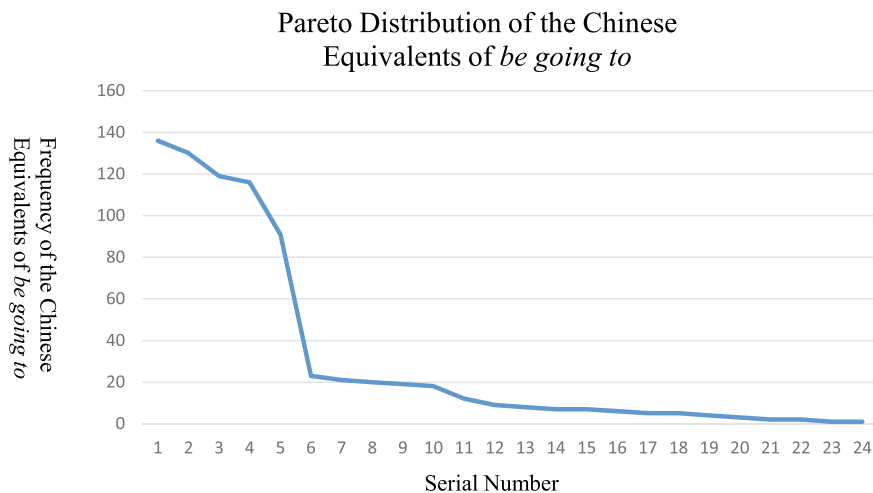


Fig. 5 Pareto Distribution of the Chinese Equivalents of *be going to*

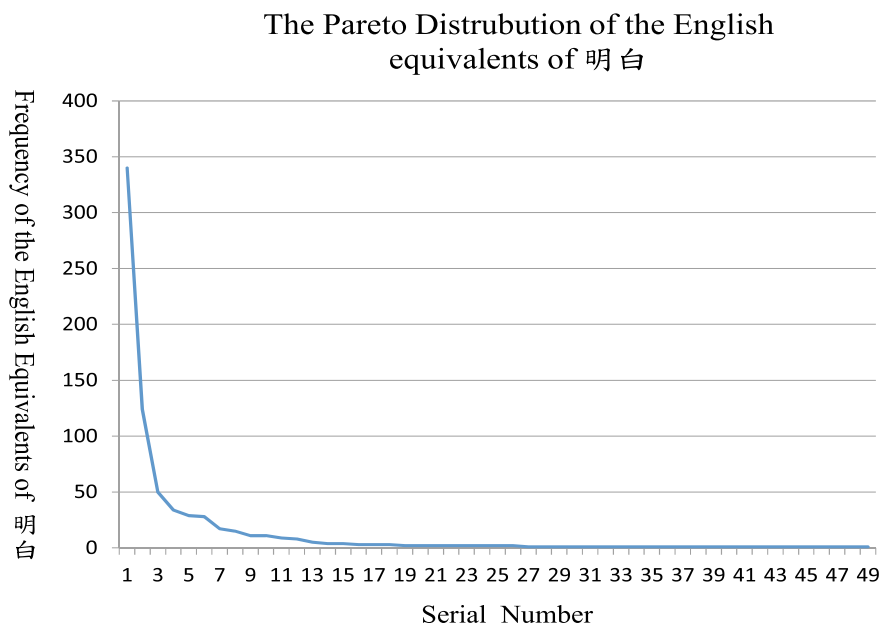


Fig. 6 Pareto Distribution of the English Equivalents of 明白

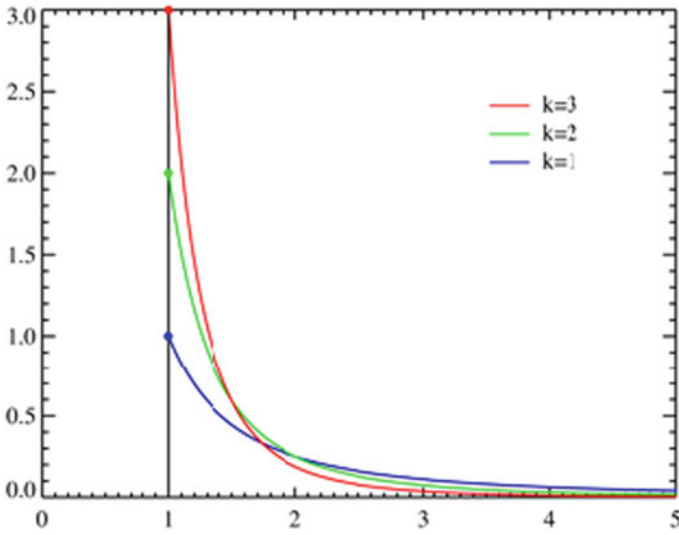


Fig. 7 Typical Pareto Curves

Table 5 20 of the Chinese Equivalents Translated from the English *be going to*

The Chinese Equivalents of <i>be going to</i>	Frequency	%
將 ([jiāng]: future gram)	136	18
要 ([yào], to want, future gram)	130	17
去 [qù: to go]	119	16
會 ([hui]: to be able to, future gram [possibility/prediction])	116	15
打算 ([dāsuan]: to plan, to intend)	91	12
Total %		78

Table 6 20% of the English Equivalents of 明白

The English Equivalents of 明白	Frequency	%
understand(ing)/understood	340	46
clear(ly)	124	17
know(n)	50	7
see/saw	34	5
express	29	4
plain	28	4
aware(ness)	17	2
appreciate/appreciation	15	2
learn	11	1
obvious	11	1
Total %		89

Namely, 10, or 20%, of the total English equivalents of 明白 can cover up 89% of the translated results. The instructional value of this finding is also significant: our students can be advised to pay special attention to these ten English equivalents from among at least 49 options that have been found.

In short, it is clear that the Pareto principle is able to provide us with a mathematical approximation of the data we have examined. The translated equivalents with lower frequencies, nevertheless, are by no means insignificant. Since they often display a higher degree of rarity, they can add to the semantic, stylistic, and rhetorical richness of the translation.

3.4 *English Translations of Wang Wei's 鹿柴 [Lù Chái/zhài]: Small Data and the Metonymic Chain*

Metonymic chains in English/Chinese translation not only exist in the bilingual corpora of considerable sizes but also can be found from small data, such as the translation of a poem or even the translation of a single word. This can be seen in the various English translations of the Chinese character 柴 in 鹿柴, the title of a poem authored by Wang Wei.

Wang Wei (701–761) is a well-known landscape poet whose works are vivid with painterly visions and often imbued with rich Buddhist connotations. One of his landscape poems is 鹿柴 [lù chái/zhài], the Chinese original, *Pinyin*, and gloss are given in (31):

(31) 鹿柴 [lù chái/zhài]

deer firewood

空山不見人 [kōng shān bú jiàn rén]

empty mountain not see person

但聞人語響 [dàn wén rén yǔ xiǎng]

only hear person speech sound

返景入深林 [fǎn yǐng rù shēn lín]

return scene enter deep forest

復照青苔上 [fù zhào qīng tāi shàng]

again illuminate green moss top

Two typical English translations of this poem are (32) by Egan (as cited in Cai 2012, p. 207) and (33) by Byanner and Kiang (as cited in Weinberger et al. 1987, p.10):

(32) The Deer Fence

On the empty mountain, no one is seen.

But the sound of voices is heard.

Returning: light enters the deep forest.

Again: it shines on the green moss.

(33) DEER-PARK HERMITAGE

There seems to be no one on the empty mountain....

And yet I think I hear a voice,

Where sunlight, entering a grove,

Shines back to me from the green moss.

In fact, Weinberger, Paz, and Wang (1987) list 19 different English translations of this famous poem. The diversified renderings found from such a one-to-many relationship provide us with the valuable clues to explore and examine the rationale of the drastic variations in Tang Poetry translation. For the sake of the discussion of metonymic chains in English/Chinese translation, we focus on the English translations of the title 鹿柴. A more comprehensive study of the English translations of the whole poem and related research in translating Chinese poetic works can be found in Lin (2017, 2018).

While the Chinese character 鹿 unequivocally means deer in the title 鹿柴, our curiosity is with the English translations of 柴, which has been rendered into several different English terms, such as fence or park + hermitage. Now the question is whether there exists a semantic footing in the Chinese original that licenses multiple English translated versions.

According to the earliest Chinese dictionary 說文解字 (*Shuo Wen Jie Zi: Explaining Characters*) compiled (circa 100 -121 A.D.) by Xu Shen, 柴 means “small and scattered tree branches or twigs”, or firewood. The metonymic operation involved in rendering “small and scattered tree branches or twigs” into a fence is the MATERIAL CONSTITUTING AN OBJECT FOR THE OBJECT metonymy, which is one of the PART FOR WHOLE relations. Specifically in this metonymy, because 柴 can be weaved into a fence, then the material 柴, namely, twigs, which make up the fence, is used to stand for the fence (cf. Wang, 2000, p. 483).

Interestingly, using 柴 ([chái]: small and scattered tree branches or twigs) to stand for “fence” has motivated this character to gain the other pronunciation [zhài], which is a homophone of the Chinese character 寨 [zhài], meaning “stockade” or “circumvallation”. In Chinese philology, one of the traditions is that when two characters have the same pronunciation, one of them can often be borrowed to mean the other. In our case, [zhài] is the pronunciation borrowed from the stockade 寨 [zhài] for the twig 柴 [chái], due to the semantic extension from its original meaning “twig/firewood” to “fence”.

The metonymic extension that started from the original meaning of 柴 does not stop at the fence. As given by OED, a fence is a structure made of wood or wire supported with posts that is put between two areas of land as a boundary, or around a garden/yard, field, etc. to keep animals in, or to keep people and animals out.

Fig. 8 A Fence Made of Twigs



Namely, a fence made of twigs can look like an object depicted in Fig. 8 (retrieved from https://commons.wikimedia.org/w/index.php?sort=relevance&search=Wattle+fence&title=Special:Search&profile=advanced&fulltext=1&advancedSearch-current=%7B%7D&ns0=1&ns6=1&ns12=1&ns14=1&ns100=1&ns106=1#/media/File:Wattle_fence,_West_Serbia.jpg).

One of the most salient physical properties of a fence is its enclosure that marks the boundaries, which, through metonymic association, facilitates the possibility to render 柴 into an enclosure in cognition and in translation.

In fact, “enclosure” is exactly the English translation by C.J. Chen and Michael Bullock (1960), Wai-lim Yip (1972) (as cited in Weinberger et al. (1987)), and Xu Yuanzhong (Xu et al. 1988, p. 87), where 鹿柴 is rendered into “The Deer Enclosure” and “Deer Enclosure”, respectively. Admittedly, salience is very much a matter of the beholder’s evaluation and therefore it is often subjective (Littlemore 2018, p.24).

Moreover, several translations rendered 柴 into “park”, as in “The Deer Park” (H.C. Chang, 1977), “Deer Park” (G.W. Robinson, 1973), and “The Deer Park” (Soame, Jenyns, 1944) (as cited in Weinberger et al. (1987)), where the concept ENCLOSURE again functions as the salient property facilitating such diction. OED tells us that a park refers to “any large enclosed piece of ground, usually comprising woodland and pasture, attached to or surrounding a manor, castle, country house, etc. and used for recreation, and often for keeping deer, cattle, or sheep”, and “in extended use: [it is] an enclosed piece of ground for pasture or cultivation; a field, a paddock” (“park, n.”. OED Online. June 2020. Oxford



Fig. 9 The Metonymic Chain in Translating 柴 into English

University Press. <https://www-oed-com.rpa.library.ipm.edu.mo/view/Entry/137946?rsk=RUiSMM&result=1&isAdvanced=false> (accessed August 14, 2020)).

It is interesting to note that 柴 is also translated into “forest” as in “Deer Forest Hermitage” by Chang and Walmsley (1958) (as cited in Weinberger et al. (1987)). This is a PART FOR the WHOLE metonymy that renders 柴 back to its original source. After all, the firewood is a part, or a produce, of a forest. Therefore, from the data we have analyzed, we can construct a metonymic chain to describe and explain the four different English translations of 柴, as in Fig. 9.

where the following metonymic operations are at work:

- (34) PART FOR WHOLE (0 to 1)
 MATERIAL FOR OBJECT (0 to 2)
 SALIENT PROPERTY OF A CATEGORY FOR THE
 WHOLE CATEGORY (2 to 3), (3 to 4).

The English translations of 柴 demonstrate that even from small data, the metonymic chain can be pieced together, based on the work of different individuals. This provides the evidence that although each individual employs the metonymic operation in the way that he deems fit, when these operations are examined collectively, a chain that logically connects these metonymic operations can appear. Moreover, when the conceptual shifts driven by a chain of metonymic operations are lumped together, such as from step (0) to step (4) in (34), we find a metaphor is made as a result of the long-distance conceptual projection supported by the metonymic movements in between. Hence, translation data from multiple sources give us the opportunity to detect the cognitive processes in action during the translation process.

4 Conclusion

Metonymic chains are a powerful driving force in human thinking, as has been abundantly borne out by studies in semantic extension and grammaticalization, and now they are attested by the variations in English/Chinese translation outputs.

From a wider perspective, variations in Chinese/English translation can broaden the angle of frame semantics, which concerns exploration and establishment of the knowledge structure that is needed in the understanding of a particular word or related sets of words (Evans 2007, p. 192). In this study, in order to fully understand

the semantic contents of 明白, *be going to*, and 柴 in Chinese/English translation, we have to study the knowledge structures around these words and phrases. The renditions in the target language actually substantiated the new knowledge structures woven together by metonymic chains, as in Figs. 3, 4, and 9. On the other hand, the semantic contents of many words and phrases are so volatile or protean that they can subtly shift meanings in different contexts of use (Evans 2009, p. xi). In a given context, a particular word or phrase often affords limited epistemic cues to multiple encyclopedic semantic frames. An epistemic clue refers to “any information that a hearer derives from his own knowledge and beliefs that then helps him determine the speaker’s intended target” (Talmy 2018, p. 11). Take *be going to* as an example, it has afforded the movement frame, the futurity frame, and the modality frame in different contexts.

In Chinese/English translation, each segment of the metonymic chains can be considered as a building block of a newly composited knowledge structure, each carrying the semantic flavor brought out from the source frame the linguistic expression originally belongs to. For instance, “hammer ...into” as an equivalent in translating 明白 in (15) has a flavor of the HAMMER AS A TOOL frame, which is obviously different from “have the notion” in (17), which are related to the POSSESSION frame and the CONCEPT frame. It is often in this manner that a translator would select his own portion of nuances that he deems appropriate in the translation process, which is usually considered contextually salient by the translator. When these “salient” portions are examined collectively on the basis of bilingual corpora, many phenomena hitherto unnoticed become overt. The emergence of the new knowledge structures metonymically chained together is one of them, which would not have been observable if data remain scattered or are only looked at individually. The discovery of metonymic chains from big data corpora sheds light on the examination of small data sets, where the validity of the chains still holds. Furthermore, with metonymic chains in place, many metaphorical projections in translation can be seen as having been caused by the metonymic conceptual movements and therefore can be better justified in translation practice. For instance, the semantic inference from TWIG to PARK in Fig. 9 is a long-distance conceptual projection between two distinct conceptual domains, a cognitive process that is typically characterized by conceptual metaphor. Without the metonymic chains in between, the projection would appear far-fetched. In short, the researches on 明白, *be going to*, and 柴 in this article are consolidated into a joint endeavor to discover and discuss these metonymic and metaphorical connections in the cognitive process of translation.

Pedagogically, the high-frequency tokens, such as *understand*, *clear* for 明白, and 將 ([jiāng]: future gram) and 要 ([yào]: to want, future gram) for *be going to*, should be first taught to simultaneous interpretation students who must gain the fastest access in their memory to the proper terms in the target language, not only because of its wider use and easier acceptance by the audience, but also because of the Conserving Effect (Bybee 2007, p. 10), which refers to the fact that repetition strengthens memory representations of linguistic forms, and makes them more accessible than lower frequency tokens. In simultaneous interpretation in particular,

fast accessibility of a term matters. On the other hand, the low-frequency equivalents in the target language, such as *hammer something into somebody's head* for 明白, can be discussed later. Yet, low-frequency equivalents can offer more stylistic diversities and often carry extra exotic semantic nuances. In a small-data situation, such as the English translation of 柴, although rendering frequencies are statistically less significant, they can still be ranked as a matter of factual choices made by previous translators.

Translation studies should be constantly informed by researches in other fields so that the rationale behind the intricate linguistic phenomena produced in translation can become clearer. Like many other human behaviors, translation outputs cannot be a mass of random, chaotic choices. Rather, they are manipulated by the rule-governed cognitive hands often hidden behind an opaque screen. This had been the difficulty caused by the lack or scarcity of systematic data. With the increasing availability of large parallel corpora, the opacity is being lifted. Translation study scholars should and can find what these rules are, and show how they operate. With their own data and findings obtained from large-scale bilingual corpora, they can either endorse or question the novel conclusions or hypotheses proposed by the neighboring academic disciplines, such as cognitive linguistics and neurolinguistics.

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