Translating Chinese Science Fiction: The Importance of Neologisms, Coined Words and Paradigms

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Abstract

Recently, Chinese science fiction literature seems to have gained unprecedented visibility in Western countries, since it is translated in many Western languages, in particular in English. The question of translation of this literature seems therefore to be a topical issue with several potential difficulties, such as the translation of neologisms and coined words, as well as that of the resulting encyclopedias (ECO; SAINT-GELAIS) and paradigms (ANGENOT). Hence, this paper aims to discuss the difficulties and possibilities of recreating Chinese written neologisms and coined words to Western alphabetic languages.

Keywords

translation, neologisms, paradigms, encyclopedia, coined words

1. Neologisms and Coined Words in Science Fiction

In *Metamorphoses of Science Fiction*, Darko Suvin suggests that what distinguishes science fiction from other literary genres is precisely the prominent place of a fictional *novum* (a novelty or innovation) that follows a cognitive logic (SUVIN 2016, 79). The articulation and explanation of this *novum* should therefore be the main driver of the science fiction text (LANGLET 2006, 38). The latter usually takes the form of neologisms or coined words that reinforce the science-fiction-specific sense of wonder¹ and also generate a sense of reading,² which is essential to science fiction. As Irène Langlet pointed out in *La Science-fiction. Lecture et poétique d'un genre littéraire*, it is worth noting that:

Fictional words display the science fictional identity and take on the role of stylistic signature. Even when they don't have a decisive role in the progression of the storytelling, they assume the task of generic signal, to which literary genres' theory — especially the one that is paying attention to the reader's ability — acknowledges its importance. $(2006, 33)^3$

That is why this paper will aim to address the translation problems caused by these neologisms and coined words. After all, as Larry Niven pointed out, "If it's alien, it probably has an alien name. If it doesn't exist yet, it will need a new name when it does exist, and that word may well be gibberish to [the author] and [the] present-time readers" (1976, 179).

Angenot identifies two categories of fictional words that are very common in science fiction: "Words that supposedly anticipate forms of language from the future or from 'parallel' universes" and "words that are supposedly taken from extraterrestrial languages" (1979, 12).

The first category therefore allows the reader to build a vision of the future society from its "contextual meaning" (ANGENOT 1979, 13), which is offered by the fiction word and the state of the imaginary society that it presumes. It "permits an attempt at a definition and gives the reader the impression that the word is a sociolinguistic clue, a symptom of the epoch described" (13).

Sometimes new words are created without proper etymological consideration, but neologisms and coined words are often formed according to some etymological mechanisms. This can help provide understanding of keys that can aid the reader in deciphering the meaning the author applies to them (ANGENOT 1979, 12). Very often, the author will choose specific etymological formations that have modernist connotations. This provides the reader with a vision of a futuristic society, by using, for example, Greek prefixes to forge fictional words, or even by inventing portmanteau words and heterogeneous compounds (13).

The second category will be referred to as exolinguistics, to quote the words of Myra Edwards Barnes.⁴ It allows us to "imply the existence of intelligent life and a fictive 'referential' world" (ANGENOT 1979, 14) even if there are not etymological considerations or if it is barely pronounceable by the reader.

"Fictional words can therefore involve much more than a science fictional 'setting' and its futuristic hardware, as long as we read them in their narrative with all their resonance"

¹ The sense of wonder is the pleasure specific to the reading of science fiction generated by the contents of the narration itself, which confronts the reader with new concepts and visions.

² The sense of reading is the pleasure experienced while reading science fiction, but is not generated by the contents of the narration (sense of wonder), but by "the devices that transform the first steps of the reader into the patient exploration of an encyclopedic labyrinth" (SAINT-GELAIS 1999, 225).

³ Translations from Chinese to English, as well as from French into English, are mine unless otherwise stated.

⁴ BARNES, Myra Edwards (1975). *Linguistics and Languages in SF-Fantasy*. New York: Arno Press, cited in Angenot (1979, 77).

(LANGLET 2006, 32). Indeed, science fiction seems to be fond of dysphonic sonorities and exotic dysgraphisms (30), which allows the reader to extrapolate a fictional world, the evolution of a language or a certain culture. These exotic words allow another culture to be presented, *inter alia* a consistent language and onomastic that can present homogeneous etymological roots. This point is brought up by Langlet, who states that "the cognitive deployment of a fictional word can therefore involve an estrangement at least as important as that involved by an enigmatic discourse or an unknown civilizational framework" (32).

As explained by Umberto Eco, during reading, we use a kind of "encyclopedia" that allows us to understand the text we are reading. This encyclopedia can be described as:

The memorized set of all the interpretations, objectively conceivable as the library of all libraries, since library also means archive of all the non- verbal information recorded in one way or another, from cave paintings to cinema. (2006, 110)

In other words, we can say that this "encyclopedia" is "the set of knowledge shared by a community and referring to a world" (SAINT-GELAIS 1999, 139). By using the same concept and applying it to science fiction narratives, Richard Saint-Gelais, in his *L'Empire du pseudo*. *Modernités de la science-fiction*, specifies that the encyclopedia described by Eco differs slightly from the one used by science fiction readers. Indeed, while reading a science fiction work, the reader has to operate some "encyclopedic readjustments," giving rise to a "xenoencyclopædia" (140) that the reader has to rebuild if he wants to understand the world in which the story takes place. The construction of this "xenoencyclopædia" therefore relies on the encyclopedia described by Eco. The reader modifies things with small strokes in order to see what Angenot nicely named the "absent paradigm" (SAINT-GELAIS, 1979, 10),⁵ since "a language is a mapping of the way people think, of the way they believe the universe works, and of what they consider to be important in that universe" (NIVEN 1976, 189).

As seen above, all of these language alterations and linguistic creations allow the reader to envision the foreign world presented in the texts they read. We will therefore see below that neologisms and other fictional words represent a certain difficulty for translators, and also bring on other challenges to translating.

2. Neologisms and Coined Words Formation

(a) Neologisms and Coined Words in the English Language

Stephen Ullmann, in *Semantics: An Introduction to the Science of Meaning*, identifies three main methods to creating neologisms. These methods are to "borrow a term from a foreign language or some other source" (xenism, loanwords, calque and so on), to "alter the meaning of an old word," and to "form a new word from existing elements" (ULLMANN 1967, 210). As for Peter Newmark, in *A Textbook of Translation*, he identifies twelve types of neologisms

⁵ According to Angenot, "In contrast to realistic fiction, SF is a *conjectural* genre in two respects. Its aesthetic goal consists of creating a remote, estranged, and yet intelligible 'world.' The narrative regarding such a world itself requires a conjectural reading. It does not call for the reader to apply the norms, rules, conventions, and so forth of the empirical world. It instead assumes a paradigmatic intelligibility that is both delusive and necessary. The reader, in the act of cognitively coming to terms with the text, shifts from the unfolding (syntagmatic) sequence of the plot to 'elsewhere'—to the semantic paradigms. Hence the immanent practical or theoretical models, which are supposed to confer meaning on the discourse. From a semiotic point of view, SF characteristically is a fictional discourse based on intelligible *syntagmatic* rules which also govern, and are governed by, delusive *missing paradigms*" (1979, 10).

called "old words with new senses," "new coinages," "derived words," "abbreviations," "collocations," "eponyms," "phrasal words," "transferred words," "acronyms," "pseudoneologisms," and "internationalisms" (2008, 140–150). However, since it is, logically speaking, more common in science fiction to be confronted with new linguistic creations than with loanwords or updated meanings of existing words, we will focus here on the methods that enable us to form brand new words in English.

The more common of word formation methods in English are "compounds" (*fuhefa* 複 合法), "affixations" (*paishengfa* 派生法) and "conversions" (*zhuanhuafa* 轉化法) (WANG and LU 1997, 38). Meanwhile, following the evolution of language and the development of the Internet, new methods appeared, like "blending" (*pinzhuifa* 拼綴法) and "homophony" (*xieyinfa* 諧音法), or even "back-formation" (*nishengfa* 逆生法) (JU and ZHOU 2016, 74).

What is meant by "compounds" is the combination of several words in accordance with specific logic and structure. Ju Yansong and Zhou Guobao identify five kinds: "noun + verb = noun," "verb + noun = verb," "noun + noun = noun," "adjective + noun = noun," and "modified locution" (*pianzheng duanyu* 偏正短語) (2016, 74–75).

In regard to "affixations," this is the combination of a radical with either a prefix or a suffix, or even both at the same time (JU and ZHOU 2016, 75). A "conversion" is when "a word [becomes] part of another lexical category without experiencing any changes and thus acquires a new signification and a new function, becoming thereby a neologism" (XU 2008, 21). Xu Hongxin gives, as examples, the words "question" and "auction," which are nouns that turn into verbs.

As for "blending," it is the combination of two words in order to form one word. Ju and Zhou identify three main methods to do so, which are the "elision of one part of the first word" (e.g. "brother" and "romeo" into "bromeo"), the "elision of one part of the second word" (e.g. "gay" and "marriage" into "gayriage"), and the "elision of one part of both words" (e.g. "Chinese" and "consumer" into "Chinsumer") (2016, 75–76).

Then, the "homophony" word play can contain several elements, such as the "homophony with numbers" (e.g. "forever" into "4ever"), the "homophony with letters" (e.g. "see you" into "CU"), and the combination of both of them (e.g. "see you too" into "CU2") (JU and ZHOU 2016, 76).

Finally, the "back-formation" is a method that consists of removing the suffix of a word in order to create a new one (for example, the word "televise," which is a back-formation of "television").

(b) Neologisms and Coined Words in the Chinese Language

If such an observation has been done in alphabetical languages, what about languages which have a very different writing system, such as the Chinese language?

Let us first look at how neologisms and exolinguistics have been created in the Chinese language, besides the literary field.

Following the introduction of Western sciences at the end of the nineteenth century and at the beginning of the twentieth century, the creation of new characters and words was an obligatory step. This neological creation can provide Chinese writers with some clues to create new characters, even if computing has significantly restricted scriptural innovation in Chinese. Take the case of the new chemical elements, which were introduced in China at that time. These new characters were, most of the time, composed with well-known radicals, which provide information on their characteristics at ambient temperature. This can be noted with words like metallic (*jin* \pm) and non-metallic (*shi* \overline{a}) for the solid state (*gutai* \mathbb{B}), as well as liquid state (*shui* $\frac{1}{N}$) and gaseous state (*qi* $\frac{1}{N}$). For the second part of the character, two options could be

chosen. The first one is a "phonetic translation" (*yinyi* 音譯) of the second part, which is a transcription of the pronunciation of the foreign originated word, which gives us "phonosemantic compounds" (*xingsheng* 形聲).

Erbium is composed with the radical \pm and the character \mp : *er* #. Natrium is composed with the radical \pm and the character \neg : *na* \Rightarrow . Lithium is composed with the radical \pm and the character #: *li* #. Iodine is composed with the radical $\overline{\alpha}$ and the character #: *dian* #. Manganese is composed with the radical \pm and the character $\underline{\pi}$: *meng* \pm .

The second option is a "semantic translation" (*yiyi* 意譯) of the second part, which describes the peculiarity of this element (such as its color, smell, weight, etc.), and gives us "compound ideographs" (*huiyi* 會意).⁶

Bromine, *xiu* $\hat{\mathbb{R}}$: the character *chou* $\hat{\mathbb{R}}$ specifies that this element does not have a pleasant smell. Platinum, *bo* $\hat{\mathfrak{B}}$: the character *bai* $\hat{\mathfrak{D}}$ specifies that this element is white. Hydrogen, *qing* $\underline{\mathfrak{A}}$: the character *jing* $\underline{\mathfrak{P}}$ refers to the word "lightweight" (*qing* $\underline{\mathfrak{P}}$). Carbon, *tan* $\overline{\mathfrak{K}}$: the character *tan* $\underline{\mathfrak{K}}$ refers to coal.

Besides words being created due to new discoveries or inventions, several other methods are generally used in Chinese. Some words are directly drawn from Chinese dialects (GONG 2012, 81) (such as laji 垃圾 [garbage], which is originally drawn from the Wu dialect [CHEN 2009, 145], but is now completely integrated into standard Mandarin). Others are drawn from Western languages (such as *zhishi* $\Xi \pm$ and *bashi* $\Xi \pm$ which are borrowed from the English words"cheese"and"bus"; and *miyue* 蜜月 which is calque for "honeymoon").⁷ Some words are also abbreviations (XU 2008, 8) (such as saomang 掃盲, which is the abbreviation for saochu wenmang 掃除文盲 [eradicate illiteracy]). Others are drawn from "Internet language" (such as shuaping 刷屏 [to flood a message board] or danmu 彈幕 [comments that scroll across the video screen]), while some are ancient and uncommon characters that are used with a new meaning (WANG 1992, 16) (such as the now-famous character *jiong*), which originally meant "bright," but is nowadays used as an emoticon that means "embarrassed"). Another interesting case, which is now difficult because of computing, is the use of "ideogram combinations" (hetizi 合體字) or "ideogram variations" (vitizi 異體字). There is the now-famous example on the Chinese Internet involving four combined ideograms written at the front of the main gate of a temple. These ideograms are almost a riddle, where the answer contains four characters of wellknown idioms (chengyu 成語): tianchang dijiu 天長地久 (eternal). The four combined characters that are written are 靝,"萬丈", 埊, and "多年".8

⁶ "Phono-semantic compounds" are the combination of a phonetic component that gives approximately the pronunciation of the word, and a semantic component that gives an element of the meaning of the word; "compound ideographs" are the combination of two or more pictographic or ideographic characters that gives the meaning of the word. See *Liu shu* 六書 (The Six Methods of Forming Chinese Characters). <u>https://zh/wikisource.org/wiki/說文解字/15</u>

⁷ "Borrowings" are foreign terms and expressions used in translation, while a "calque" is "a special kind of borrowing whereby a language borrows an expression form of another, but then translated literally each of its elements" (VINAY and DARBELNET 1995, 32).

⁸ The character *tian* \hat{n} is composed of *qing* (blue) and *qi* (gas), which refers to the sky (*tian*); *chang* " \ddot{n} \pm " is composed of *wan* \ddot{n} (ten thousand) and *zhang* \pm (unit of length equal to ten feet, which is

A remarkable example of exolinguistics created online is the so-called "Martian language" (*huoxingwen* $\&/ E \gtrsim$). The spread of the Internet indeed provides opportunities for the reversal of Chinese characters. If, at the very beginning, this practice may not have had a subversive goal, today it is often used to avoid censorship.⁹ By creating a coded language that mixes Chinese characters (both simplified as well as traditional ones), Japanese characters, pinyin, numbers and symbols, Western words (from English in particular), or even kaomoji (which is a mix of symbols that create an emoticon), Chinese web users are able to express themselves despite censorship being applied. Censorship can be seen applied to certain terms on Chinese social media websites, such as Weibo or Wechat. This coded language, which is referred to as "Martian language," can take many forms. It can go from being the most complex to rather simple,¹⁰ which can be observed with this post on Weibo:¹¹

苁妗兲起, 莪將鼡焱暒妏唻潑鎹嶶博, 洇潙鼡囸瑺妏牸講話, 浍被圄炷觜妑。汏傢竾 妸姒鉽①鉽。

This can be translated to both standard Chinese and English as the following:

從今天起,我將用火星文來發送微博,因為用正常文字講話,會被捂住嘴巴。大家也 可以試一試。

As of today, I will publish on Weibo in Martian language, because if I publish with standard characters, I will be muzzled. Everybody can also try it.

How about Chinese science fiction? What challenges are facing translators in Western languages? How can they manage to recreate the configuration of a logographic writing system into a different one?

3. Translation of Neologisms between Chinese and Western Languages

(a) Some Existing Examples in Chinese Science Fiction

Owing to the logographic written system of Chinese language, in which every lemma can be composed with one or several graphemes, or Sinograms. It is very common to see Chinese science fiction works contain a neologism or a fictional word composed of two-syllable, three- syllable, or even longer lemmas. This provides a great semantic richness to this lemma, as each of its composing Sinograms has autonomous meaning.

Take, for example, the case of the three-syllable lemma *qukun ling* 去困靈 in Han Song's 韓松 short story "Wo de zuguo bu zuo meng 我的祖國不做夢" (My Fatherland Does Not Dream), which can be literally translated to "which is efficient to suppress sleepiness." What is a single lemma to Chinese readers becomes an entire sentence to Western readers, or a

approximately three meters), and means "long" (*chang* 長). *Di* 埊 is composed of *shan* 山 (mountain), *shui* 木 (water) and $tu \pm$ (earth), which refers to the earth (*di* 地). The character *jiu* "多年" which is composed of *duo* 多 (many) and *nian* 年 (year), means "long time, old" (*jiu* 久).

⁹ LIU, Visen (2017). "In China, Internet Censors are Accidentally Helping Revive an Invented 'Martian' Language." *Quartz*, 30 July. <u>https://qz.com/1028258</u>. Accessed 6 September 2018.

¹⁰ There is this long text, which seems to be difficult for Chinese audiences themselves: <u>https://www.weibo.com/ttarticle/p/show?id=2309404127635872559410</u>. Accessed 6 September 2018. ¹¹ This post on Weibo was published on 1 July, 2017:

https://www.weibo.com/1977044831/Falt4qRlB?from=page_1005051977044831_profile&wvr=6&m od=weibotime&type=comment. Accessed 6 September 2018.

combined word such as "sleepiness suppressor." This quality and look then becomes questionable. In such a case, the French translator therefore considered that the use of Greek and Latin roots was the best way to translate such a lemma, since they maintain the briefness and shortness akin to the Chinese language. Indeed, as Li Bianye points out:

Most English words occupy more horizontal and linear space than Chinese characters. Therefore, the combination of English words is considerably restricted by its occupying of too much horizontal and linear space. You will seldom see a combination of two words that go beyond 15 letters because this will occupy too much space horizontally and, most likely, will be difficult to pronounce. It is more feasible to create a totally new word instead of creating a new combination of long English words. (2017, 1054)

This can be seen with the word "hypnofuge."¹² The same applies for other words of the same author, such as the extraterrestrial race *chongzu* 蟲族, or even the title of the short story "Meishi wutuobang 美食鳥托邦" (Gastronomic Utopia), which have been translated as "entomoids" and "gastronotopia" respectively.¹³ The first one, with the "-oid" suffix, has the ability to remind the reader of other very common words in science fiction, such as "android" or "droid." These words imply a "futuristic" tone. The second one uses epenthesis to evoke gastronomy rather than an inflammation of the stomach and intestines to the reader, and is therefore on the borderline between a coined word and a portmanteau.

Another case is the referenced neologism. Such neologisms can be found in Liu Cixin's 劉慈欣 famous trilogy Santi 三體 (The Three-Body Problem). To begin, take the word zhizi 智子 (LIU 2008a, 271) which, through its homophony with the word zhizi 質子 (proton), has the implication that it refers to an "intelligent proton,"¹⁴ or at least to an "intelligent particle." That is why the French translator, Gwennaël Gaffric, has chosen to translate it with the neologism "intellectron," (LIU 2016a, 387) which is a portmanteau of "intelligent" and "electron." English translator, Ken Liu, took a different approach, and preferred to translate it to "sophons," (LIU 2014, 388) which is a portmanteau of the Greek word "sophia" (knowledge, science, wisdom) and the subatomic particle suffix "-on" (such as in proton, neutron, electron). Another case is in the second volume of the trilogy and can be seen with the words *mianbizhe* 面壁者 (LIU 2008b, 12) and pobizhe 破壁者 (21), which literally mean "the one who faces the wall" and "the one who breaks the wall,"¹⁵ respectively. The first one is, surprisingly, what Peter Newmark called an "old word with a new sense," which is rather rare in science fiction. These two words have been translated in French as "colmateur" (plugger/clogger) (LIU 2017, 24) and "fissureur" (fissuror/cracker) (39), and by "wallfacer" (2016b, 15) and "wallbreaker" (28) in English, since the English language is more flexible than French.

Another case is the creation of "newspeak." We can see such an example in one of Wang Xiaobo's 王小波 short stories titled "Weilai shijie 未來世界" (The Future World). The story contains a narrator who explains the commonly-found abbreviation rules in his world to the audience:

¹² "Hypnofuge" is composed of the Greek prefix "hypno-" which means "sleepiness" and the Latin suffix "-fuge" which means "to move away, to repel." Such combinations also exist in everyday language, such as "hydrofuge" or "vermifuge."

¹³ "Entomoids" is composed of the Greek prefix "entomo-", referring to insects and the Greek suffix that means "form, aspect," such as in "humanoid." "Gastronotopia" is composed of the Greek prefix "gastro-", referring to the stomach, and is built on the same model as words like "utopia," "dystopia," and "heterotopia."

¹⁴ The character zhi 智 can mean "intelligent," "intellect," "knowledge" or "wisdom."

¹⁵ This is a concept originating from Buddhism and originally referred to a form of silent meditation while facing a wall.

各種症狀中最有趣的一條是厭倦話語,喜歡用簡稱。在公司受訓時, 聽到過各種例子: 有人把「精神文明建設」簡化到了精神,又簡化到了精,最後簡化成「米」;把「社 會治安綜合治理總公司」簡化成公,最後又簡化成了「八」;把自己從「重新安置後 人員」簡稱為員,後來又簡稱為「貝」。所以公司招我們這種人去訓話,(這句話未 經簡化的原始形態是:「社會治安綜合治理總公司向重新安置人員佈置精神文明建設 工作」)就成了「八貝米」;由拆字簡化,造成了一種極可怕的黑話。(WANG 2012, 120)

Here the author plays with the graphics of Chinese characters to create "newspeak," which makes translations into Western languages difficult. The French translator therefore chooses to play with phonetics rather than graphics:

Le plus curieux de tous ces symptômes était le dégoût pour la parole et l'engouement pour les abréviations. Il en existait toutes sortes d'exemples. En voici quelques-uns, entendus lors de la formation dispensée par la Société : certains abrégèrent la "Construction de la civilisation de l'esprit et de l'âme" en "esprit et âme" puis en "esprit" puis "rit"; "La société générale d'administration de l'ordre public" fut abrégée en "Société" puis "té"; le "personnel réinséré" devint "personnel" puis "perso" puis "so." Ainsi, quand la Société nous convoquait à une séance d'instruction morale (dont le nom complet était : "Présentation du travail de construction de la civilisation de l'ordre public"), cela donnait "riz sauté". Par ce système d'abréviation, on finit par créer une sorte d'argot terrifiant. (WANG 2013, 132–133)¹⁶

The translator, Mei Mercier, therefore uses a phonetic word play by using the syllables like "rit" (abbreviation of "esprit" [spirit]), "so" (abbreviation of "personnel"), and "té" (abbreviation of "société" [society]). By doing this she was able to transform the sentence, which can be seen with the following: "Présentation du travail de construction de la civilisation de l'esprit et de l'âme au personnel réinséré par la Société générale d'administration de l'ordre public" into "riz sauté" (rit-so-té, which phonetically is pronounced like "fried rice" in French).

(b) Difficulties and Possibilities of Recreating Chinese Written Neologisms and Coined Words into English

When facing neologisms that seem to be, *prima facie*, untranslatable, several researchers have tried to find solutions. Bao Huinan 包惠南, for example, recommends using phonetic translations when facing great cultural and linguistic disparities, which avoids having to retranscribe "all the cultural information bared by Chinese vocabulary" with a "correspondence" or an "equivalent" (2000, 345). Jin Huikang believes that to resort to xenism with a direct use of *pinyin* allows us to "preserve at most the peculiarities of Chinese traditional culture and the style of the Chinese ethnic language" (2003, 152). However, as Wang Yinquan also points out, "the translation strategy that consists of using *pinyin* to phonetically translate the cultural-bearer

¹⁶ My translation: "The most curious of all these symptoms was the disgust for speech and the craze for abbreviations. There were all kind of examples. Here are some of them that I heard during the training given by the Society: some shortened 'Building of the civilization of spirit and soul' into 'spirit and soul' and then into 'spirit' then 'rit'; 'the general society of administration of public order' was shortened into 'Society' then 'ty'; the 'reintegrated personnel' became 'personnel' then 'perso' then eventually 'so.' Thus, when the Society was summoning us to a session of moral instruction (where the entire name was: 'Presentation of the work of building the civilization of spirit and soul to the reintegrated personnel by the general of Society of administration of public order'), this gave us 'fried rice.' This abbreviation system led to the creation of a terrifying kind of slang."

words shows a certain limit" (2006, 75), especially when facing a neophyte readership that does not possess adequate knowledge relating to China, its language and its culture. As Marie-Laure Ryan points out, in order for it to be understandable by the reader, the strangeness of the science fiction narration cannot "come out of nowhere," but has to be extrapolated from data and referents that exist in the empirical reality. Indeed, according to Ryan:

We reconstrue the central world of a textual universe in the same way we reconstrue the alternate possible worlds of nonfactual statements: as conforming as far as possible to our representation of AW [the actual world]. We will project upon these worlds everything we know about reality, and we will make only the adjustments dictated by the text. (1991, 51)

That is what Ryan calls the "principle of minimal departure" (ibid.). It therefore seems to be unavoidable to respect, as much as possible, such a principle when we translate science fiction, since:

It is by virtue of the principle of minimal departure that readers are able to form reasonably comprehensive representations of the foreign worlds created through discourse, even though the verbal representation of verbal worlds is always incomplete. Without the principle, interpretation of verbal messages referring to APW's [an alternate possible world] would be limited to the extraction of strict semantic entailments. (RYAN 1991, 52)

The use of xenism and phonetic translation therefore seems to be inadequate, since it reinforces the strangeness of the narration to the extent that the text becomes unintelligible to the target reader. Since it seems rather difficult to preserve both form and content in translation, Gong Aihua recommends we "abandon the form and choose the meaning," while avoiding excessively explanatory translation, since that would be heavy-handed and unnatural (2012, 82). As Ullmann points out, there are "three types of motivation" in word creation: the "phonetic motivation (onomatopoeia)" and the "morphological and semantic motivation" (1967, 81–93). We should, therefore, try to respect these three motivations through translation, in order to stay as close as possible to the source text. However, as Liu Yunhong and Xu Jun point out, "the faithfulness in translation isn't actually only lying on language and written levels. The faithfulness to the original text is far from being restricted to a 'choice of words'" (2015, 266).

Newmark, as mentioned above, identifies twelve types of neologisms and also suggests translation strategies for each of them. Regarding neologisms that are created by the authors themselves, which we might see in Chinese, such as "new coinages" and "phrasal words," Newmark suggests the following strategies:

In principle, in fiction, any kind of neologism should be recreated; if it is a derived word it should be replaced by the same or equivalent morphemes; if it is also phonaesthetic, it should be given phonemes producing analogous sound-effects. For this reason, in principle, the neologisms [...] must be re-created systematically and ingeniously, always however with the principle of equivalent naturalness in mind, whether relating to morphology (roots and inflexion) or sound (alliteration, onomatopoeia, assonance). (2008, 143)

As for "phrasal words," English and Chinese languages seem to have the "facility in converting verbs to nouns" (147) in common, which could probably enable us to translate them into fairly convincing systems. We could therefore avoid all the pitfalls mentioned by Newmark, namely that "phrasal words [...] are often more economical than their translation [and] usually occupy the peculiarly [...] register between 'informal' and 'colloquial,' whilst their translations are more formal" (147).

In their article, Ju and Zhou identify four methods of neologisms created on the Internet that English and Chinese have in common, but they also found three differences (2016, 77–78).

For the purposes of translating the neologisms that we could face in science fiction works, we therefore can focus on converging and diverging points in order to highlight potential strategies.

The converging points are as follows: first of all, compounds, affixations, and homophony are all used in both English and Chinese languages. Then, the compounds are the main method of neologism formation, especially modified locutions, in both languages. After that, affixation methods are identical in both languages, namely "prefix + radical" and "radical + suffix." Finally, in both languages there are three kinds of homophony, which differ only in form (homophony between Sinograms and numbers in Chinese; homophony between letters and numbers in English).

As for the diverging points, English possesses more formation methods than Chinese, since Chinese does not use the blending method. So, in English affixation allows us to identify the nature of the created word (as, for example, "-er" that forms a noun and "-able" that forms an adjective), whereas in Chinese it is impossible to guess the nature of a neologism from the suffix that is used. Indeed, in Chinese, suffixes have a real meaning and are used to reflect the meaning of the word, whereas in English the suffixes have a relatively poor imagery function. Finally, since Chinese is a tonal language—with each tone enabling us to differentiate homophonous characters—many Chinese characters are homophonous, which means homophones are seen frequently in Chinese. Conversely, in English, there are relatively few homophones, since there are no tones. The creation of neologisms using this method is thus limited.

Regarding the question of "old words with new senses," like *mianbizhe* mentioned above, Newmark states that "they are usually translated either by a word that already exists in the TL [target language], or by a brief functional or descriptive term" (2008, 142). However, such a strategy does not apply in the case of *mianbizhe*, since it seems difficult to give an "economical descriptive equivalent" (142), as it also has to be the antonym of *pobizhe*, which is a new coinage.

4. Conclusion

In conclusion, as we saw above, neologisms and coined words play a significant role in science fiction literature. Being more than just fancy ways to bring a little exoticism, they lead the reader to another world, whether it is an earthly or extraterrestrial one. These words are therefore essential to the shaping and substance of creating the novel's paradigm, and their translation is, consequently, of paramount importance. Among all the forms of neologisms and coined words that exist in the Chinese language that we saw in this paper—such as portmanteau words created from existing characters due to new discoveries or inventions, words drawn from Chinese dialects or foreign languages (from English, in particular), abbreviations, Internet language (and the resulting *exolinguistics*), new meanings given to ancient and unused characters, and last but not least, mixed and variated ideograms—only a small number are used in Chinese science fiction. Indeed, the most frequent examples are abbreviations and portmanteau words (which are two syllables, three syllables or longer). Some authors also play with the Chinese characters' graphics (what can be considered as a kind of abbreviation) in order to create newspeak.

Facing these kinds of fictional words, Western translators generally use various translation methods, such as the use of Latin and Greek roots, the creation of portmanteau words, or neologisms in the target language. Regarding the word play based on Sinograms, they are often substituted by word play based on phonetics, which are more in line with alphabetic languages.

As we saw above, the Chinese language and English language have some wordformation methods in common (compounds, affixations and homophony with numbers and characters/letters), which facilitates translating Chinese written neologisms that belong to these categories into English. Regarding the Chinese neologisms that are formed with word-formation methods that do not exist in English (such as tonal homophony), translators have to find ways to render, as best as they can, the motivation of the author of the source text, whether it be a play on the morphology or on the phonetics of the neologism. To this end, the translators certainly have to use word-formation methods that are usually used in the target language, even if they do not exist in the source language.

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