

Title of article:

**Decoding and Encoding the Discourse meaning of Punctuation: a
Perspective from English-to-Chinese Translation**

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Abstract:

This exploratory research examines translation students' use of punctuation, by applying Newmark's (1988) classical idea of punctuation as a discourse unit for meaning demarcation. Data was collected from a group of 25 Chinese students studying specialised translation at a British university. The research focuses on the use of two punctuation marks: comma and period or full stop. The aim is to investigate how students of translation analyse the meaning of a source text with punctuation marks and how they subsequently convert this meaning into the target language again using punctuation marks. It is found that students generally do not mechanically copy the punctuation marks of a source text into the translation. They will customize or modify the original punctuation marks according to their meaning analysis of the text and their knowledge of punctuation in source and target languages. Finally, we will discuss the implications of the research for translation education.

Key words:

Punctuation; semantic relationship; discourse; translation pedagogy

1. Introduction

This research is an attempt to enrich data for filling the gap summarised by Rodríguez-Castro, which is that '[i]n the scholarly research in Translation Studies, the study of punctuation has not attracted much attention either from professionals or from researchers' (2011:43).

The research especially draws inspiration from a Master student doing her end-of-year Translation Project, where she and I, as her supervisor, discussed punctuation use in depth. For instance, we agreed that the use of the dash in the Chinese translation for the English text in [1] below, which is one of the headings of an academic paper, encodes the source meaning accurately and enhances both conciseness and clarity needed for a title when compared with the wordy version '幼兒口吃的鑑定與幼兒口吃的病例選擇準則' (yòuér kǒuchī de jìanding yǔ yòuér kǒuchī de bìnglì xuǎnzé zhǔnzé):

(1)

Source text (ST): Identification and Case Selection Guidelines for Early Childhood Stuttering

Target text (TT): 幼兒口吃——鑑定與病例選擇準則¹

(yòuér kǒuchī --- jìanding yǔ bìnglì xuǎnzé zhǔnzé)

This, together with the punctuation errors that I have observed in translation students' work, have made me become increasingly aware of the need to study punctuation use in translation as a way to analyse the discourse of a ST and re-organise the discourse of a TT in translation, and the need of designated teaching sessions for punctuation use. This concern is shared by

¹This student uses Traditional Chinese in her study and thus the TT here is in Traditional Chinese.

Rodríguez-Castro (ibid.), who refers to the punctuation problem as ‘more acute for translators’ than for writers (p.41).

A second motivating factor is, at the start of their study, most of the students for the current research seemed to disregard punctuation as part of the translation process and think what they need to do is to be ‘faithful’ to the source punctuation with changes perhaps merely in form. This indicates to me that the students were not conscious of the use of punctuation in signalling discourse meanings. For better professional training, therefore, I believe students need to be guided on how punctuation helps with decoding and encoding meanings in the translation process.

Additionally, existing criteria for assessing translation quality by both academic institutions and professional bodies all include punctuation as an element for assessment. For example, the ISO17100 asks translators to pay attention to punctuation, which is extended to include spaces and accents UNICODE/ASCII codes. And the UK Chartered Institute of Linguists includes punctuation as an element in one of the three aspects assessed in its Diploma of Translation examinations where a candidate needs to pass all three aspects in order to pass an exam. These requirements indicate that punctuation is an important part of translation, and deserves serious attention in translation pedagogy.

2. Translation procedures

Newmark states that punctuation is ‘an essential aspect of discourse analysis, since it gives a semantic indication of the relationship between sentences and clauses, which may vary according to languages’ (1988: 58). He, Xiao and Chen (2011) echo this view by stating that punctuation plays an important role in textual cohesion and coherence. Baker (2011), from a statistical perspective, points to the difference between English and Arabic in their use of punctuation. Citing a source text in English and its translation in Arabic, Baker says that ‘[t]he source text uses no conjunctions but relies instead on punctuation devices’ (p.202), as ‘English ... relies on a highly developed punctuation system to signal breaks and relations between chunks of information’ (p.193). By contrast, the translated version conforms more to Arabic than to English norms of cohesion, by using ‘typical Arabic conjunctions: *wa* (roughly: ‘and’), *hatha-wa* (literally: ‘this and’), and *kama* (roughly: ‘also’/‘in addition’), and by having ‘fewer sentence breaks’ (p.202). Alqinai (2013) further studies the salient differences between English and Arabic punctuation. Saldanha (2011) shows the function of emphatic italics in English and how this is translated in Portuguese. Hosseini-Maasoum and Mahdiyan (2012) have examined the difficulties or problems translation students have in dealing with English comma, colon and semi-colon when they translate from English to Persian. Similarly, Sojudifar, Nemati and Fumani (2014) have found significant differences between English and Persian in using comma, colon, semicolon, hyphen and dash. Catana-Spenchiu (2014) has revealed the important use of brackets, question mark and exclamation mark in translating biblical texts from Greek to Romanian. Two important corollaries can be made from these scholarly works.

Firstly, different languages may use punctuation differently. Thus, translators need to analyse the meaning of punctuation carefully enough so as to accurately capture or decode the meanings of a source text. In analysing a source text, translators need to treat punctuation as important for translation, in the same way as they treat words, syntax, etc. Secondly, Due to the differences between languages in punctuation use, some strategies or procedures are

necessary for translators to adjust punctuation use while encoding meanings in their translation for a target readership.

Punctuation use in translation involves both the formal and the functional aspects (Rodríguez-Castro 2011). In the formal aspect, punctuation may visually differ from language to language for the same function, thus a translator needs to make correct transference. In the functional aspect, punctuation in a source language may not function in the same way as the punctuation in a target language, thus direct formal transfer may not work, as also demonstrated by the Arabic case in Baker (ibid.).

With regard to English-Chinese translation, scholars (e.g., Jiang 2017) as well as my own freelance English-Chinese translation experience has shown that relevant translation procedures regarding punctuation are of four types:

- (a) direct transfer: the English punctuation is transferred to Chinese
- (b) replacement: the English punctuation is changed to a different type in Chinese or even to a word or phrase
- (c) addition: a punctuation mark is used where there is no punctuation in the source
- (d) deletion: no punctuation is used where there is punctuation at a corresponding position in the source.

The current research departs from this, and specifically focuses on how student translators deal with commas and full stops in English source texts. The research uses the grammatical sentence as the unit for discourse analysis, and studies how English-Chinese translation students analyse the use of punctuation in source texts and how they represent the outcome of such analysis in their target texts. The research aims to reveal some of the differences in punctuation use between the two languages of English and Chinese, thus highlight the implications for translation between the two languages.

3. Comparing the English and the Chinese punctuation

According to (Chan & Pollard 1995), Chinese punctuation is developed from translating European books, and thus is similar to English in use. For example, the full stop is used similarly in both languages, as well as the exclamation mark. Nevertheless, there are also differences between the two punctuation systems both in their visual forms and in their semantic function.

3.1 Differences in form

When one translates from English to Chinese, punctuation needs to be changed in its visual form first of all. For example, the English full stop is a solid dot whereas the Chinese full stop is a hollow one. Even for punctuation that looks similar, such as the English and the Chinese comma, they are actually different in that ‘whereas English punctuation marks take up a letter space, and simply join themselves to a word, every Chinese punctuation mark takes up a full typographical character space. Chinese punctuation is much more visible than its English counterpart’ (Pellatt & Liu 2010: 29).

Table 1 below lists some of the Chinese punctuation marks and their English counterparts that look similar but are actually different.

Table 1. Some visually similar punctuation marks for English and Chinese

Punctuation	English mode	Chinese mode
Brackets	()	()
Comma	,	,
Full stop	.	。
Quotation mark	" "	“ ”
dash	—	——
Question mark	?	?
Exclamatory mark	!	!
Colon	:	:
Ellipsis	...	… …

(Note: For the sake of format, the table is copied from the published version)

Given these differences in forms, it is out of question that when translating from English into Chinese (or vice versa), one needs to change the visual forms of punctuation.

3.2 Differences in function

First of all, there are punctuation marks that are unique to English or Chinese for specific functions, and so translators will need to employ the right punctuation. For example, in English, the inverted comma in the suffix 's serves to indicate a possessive relation (e.g. Shakespeare's), plurals for letters/numerals (e.g. four A's) or a contracted form (e.g. let's). When translating into Chinese, the inverted comma is left out and its grammatical function is translated by words instead. In Chinese, on the other hand, the following punctuation marks are what English does not have.

Table 2. Punctuation marks unique to Chinese

Punctuation	Symbol	Function
顿号 (<i>dùnhào</i>)	、	Used between listed items until the last one
书名号 (<i>Shūmíng Hào</i>)	《》	Used to enclose titles or names of books, songs, newspapers, etc
间隔号 (<i>Jiàngé Hào</i>)	•	Used in time phrases to separate month and date, or in translated foreign names to separate given name and surname
着重号 (<i>Zhuózhòng Hào</i>)	巴黎气候大会 (<i>bāilí qìhòu dànhuì</i>)	To emphasise words having the punctuation beneath

(Note: For the sake of format, the table is copied from the published version)

Dunhao, or the caesura sign (called 'sequence mark' in Pellat & Liu 2010, or 'pause mark' in Xiao & Hu 2015), 'serves to count off items in a list or sequence (including a sequence of two), whether those parallel items are noun phrases or verb phrases' (Pellat & Liu 2010: 31). *Shuming Hao* is used to indicate the title for a book, a song or a newspaper. As for *Jiange Hao*, Pellat & Liu (2010; 'separation dot' in their terminology) distinguishes two kinds: one is the dot that follows a number used to indicate items in a list, as in their cited example '1.

中国茶文化以儒家思想为核心 (zhōngguó chá wénhuà yǐ rú jiā sīxiǎng wéi héxīn), ...', and the other is the dot 'used to separate a foreign person's personal names' and 'the components of a date' (ibid.: 30). These two kinds of *Jiange Hao* are visually different in that the first kind is positioned at the bottom left corner in the square for a Chinese character whereas the second kind is right in the middle of the square. Table 2 above only lists this second kind of separate dot by following GB/T 15834-2011 (MoE: 2011). As for *Zhuozhong Hao*, in Chinese, it is a solid dot that is put immediately beneath the emphasised text.

In English, what corresponds to *Dunhao* and *Shuming Hao* are respectively the comma and the quotation marks. Hence, one needs to change the punctuation in their Chinese translation text. The case for *Zhuozhong Hao* is slightly complicated, because in English, bold type fonts, italics and quotation marks can all be used to indicate emphasis whereas in Chinese, bold type fonts and quotation marks have this function, but not italics. Hence, a translator will need to choose between bold types and quotation marks to replace italics. In the translation industry, relevant instructions are often to use bold type fonts.

Additionally, for the punctuation shared by English and Chinese, its function may not always be the same. As Pellatt & Liu point out, 'Chinese punctuation marks themselves may look similar to English marks, but they do not always work in the same way' (2010: 29). The Oxford Advanced Learner's English-Chinese Dictionary (1997: 1803), a widely referenced dictionary, also states in a full appendix on English punctuation usage that '英文标点符号用法与中文标点符号不尽相同, 请留意两者差异 (yīngwén bīaodiǎn fúhào yòngfǎ yǔ zhōngwén bīaodiǎn fúhào bú jìng xiāngtóng, qǐng liúyì liǎng zhě chāyì; *English punctuation is not completely the same as Chinese punctuation in terms of usage, please be careful with their differences*).

I take the stance that in translation while it is easy to implement the formal differences between English and Chinese punctuation, it may not be straightforward to tackle punctuation issues in relation to function. The current paper seeks to assess to what extent translation students are aware of the differences between English and Chinese in punctuation use.

4. Methodology

As I mentioned earlier, I drew upon Newmark (1988) in my study of punctuation use in translation. My research investigates the following two questions:

- (1) How do translation students use full stops, i.e. end-of-sentence punctuation, to analyse semantic relationships and represent them in their translation?
- (2) How do translation students use commas, i.e. within-sentence punctuation, to analyse semantic relationships and thereafter represent this in their translation?

My ultimate aim is to examine whether students are confined to the source punctuation or they are aware of the potential differences in punctuation use between English and Chinese, and thus will use other translation procedures than just formal transfer.

My research subjects consist of 25 postgraduate students studying specialised translation at a British university. They were taught solely by me, from February to March 2015 on a six-week translation module consisting of two hours each week. At the end of their study, they

were asked if they would be willing to let me study their punctuation use in both homework and assessment, and they were told they would be studied anonymously. All students agreed.

At the time of my data collection, the essential requirements for the module are: (a) each week before the class, the students would be sent a text of around 500 English words to translate; (b) the teaching would focus on discussing the translation of the text; (c) students' homework would be marked once, and (d) at the end of the sixth week, there would be a formal assessment, where the students would translate a text of a similar length and submit within 48 hours.

The data source for my research consists of the following:

- (1) the marked translation homework from Week 2 of my teaching;
- (2) the marked translation assessment from the end of Week 6 of my teaching.

For the purpose of my research, the source text used for the homework is named as Text 1 (See also the Appendix) and that for the assessment Text 2 (Also in the Appendix). Both extracted and adapted from *the Economist*, Text 1 (from an issue in 2012) and Text 2 (from an issue in 2015) are of a similar level of difficulty, but Text 2 is slightly harder than Text 1 in terms of punctuation use because it contains more sentences that have more commas, which needs attention when translating from English to Chinese. For comparison, punctuation marks common in Text 1 and Text 2 are first selected. There are four types of common punctuation marks: comma, dash, full stop and quotation mark. Since dashes and quotation marks occur only once respectively in both texts and therefore any potential conclusion out of studying them may not be representative or valid, they are disregarded for analysis.

Sentences in Text 1 and Text 2 are all numbered for easy reference, coded as 'Sx' where x is a number between 01 and 27. Data regarding students' treatment of the commas and full stops is extracted and studied. The number of erroneous sentences to do with such treatment in translation is also counted, but the errors are not analysed in this paper. Although the punctuation errors are not analysed. Their relevance to the research is discussed in Section 6.

5. Data analysis and findings

Following data collection, students' use and treatment of commas and full stops as well as the outcome are analysed. The results are presented below.

5.1 Use of commas

15 out of the 22 sentences in Text 1, and 19 out of the 27 sentences in Text 2, have one comma or more. When translating Text 1, one student missed Sentence 04 in her translation, and therefore data regarding this sentence is not included for analysis. Thus, the total number of sentences for the sample of comma use is respectively $(15-1) \times 25 = 350$ and $19 \times 25 = 475$.

The online Oxford Dictionaries lists the following functions of the English comma and the main cases when one needs to use a comma:

- in lists
- in direct speech
- to separate clauses
- to mark off certain parts of a sentence
- with 'however'

(<http://www.oxforddictionaries.com/words/comma>)

For the Chinese comma, China's Ministry of Education (MoE) lists the following cases for its usage:

- separate clauses
 - at the end of a long sentence subject
 - at the end of an adverbial clause beginning a sentence
 - before a long sentence object
 - after a modal particle following a subject or after a modal particle following other elements/constituents within a sentence
 - between long sentence subjects, long predicates or long sentence objects
 - before and after a parenthesis
 - following an exclamation or an address form
 - at the end of ordinal expressions beginning with ‘第’ (dì), ‘其’ (qí) or ‘首先’ (shǒuxiān)
- (MoE 2011: 4; translated from Chinese)

Comparing the Chinese and the English comma, it is clear that there are big differences between them. For example, whereas the English comma can be used in a list, this does not apply to Chinese and the Chinese punctuation is *Dunhao*. And even though both English and Chinese use commas to separate clauses, differences remain. Among the two texts, S09 in Text 1, and S16, S17, S19, S21 and S23 in Text 2 do not need any change in the use of the comma in question, apart from its visual form. All the other sentences containing commas will need to be adjusted in translation. Tables 3a and Table 3b respectively represent the ways in which students deal with the commas in the two source texts.

Table 3a. Text 1

Source sentences using commas	Treatment of source commas in translation			Number of erroneous sentences related to source comma
	Complete transfer	Partial transfer		
		Reduction or increase in number	Incorporating other treatment	
S02	0	16	7 (replaced with a full stop, including a case where one is replaced with a colon); 3 (replaced with a colon)	4
S03	4	20	1 (replaced with a full stop)	8
S06	1	21	2 (replaced with a dash); 1 (replaced with a pair of brackets)	14
S07	11	12	2 (replaced with a <i>Dunhao</i>)	11
S08	8	14	3 (replaced with a full stop)	5
S09	23	2		0
S10	12	5	8 (replaced with a full stop)	9
S11	2	23		2
S12	2	18	4 (replaced with a full stop); 1 (replaced with a semi-colon)	4
S17	6	19		2
S19	11	11	3 (replaced with a full stop)	6
S20	12	13		1

(Note: For the sake of format, the table is copied from the published version)

Table 3a. (continued)

Source sentences using commas	Treatment of source commas in translation			Number of erroneous sentences related to source comma
	Complete transfer	Partial transfer Reduction or increase in number	Incorporating other treatment	
S21	22	3		0
S22	6	1	18 (replaced with a <i>dunhao</i>)	4

Note. For S02 in Tables 3a and S14 in Table 3b, the figures in the second, third and fourth column of the row do not add up to 25, which is the number of research subjects. This is because the students used more than one procedure and thus the sentence in question is counted for more than once in the data, as explained where appropriate in Tables 3a and 3b.

(Note: For the sake of format, the table is copied from the published version)

Table 3b. Text 2

Source sentences using commas	Treatment of source commas in translation			Number of erroneous cases related to source comma
	Complete transfer	Partial transfer Reduction or increase in number	Incorporating other treatment	
S02	0	15	4 (replaced with a pair of dashes); 4 (replaced with a pair of brackets); 1 (adding a <i>dunhao</i>); 1 (replaced with a full stop)	8
S03	2	19	2 (replaced with a pair of brackets); 2 (replaced with a full stop)	2
S04	17	7	1 (replaced with a pair of brackets)	2
S05		25		3
S10	19	5	1 (replaced with a dash)	1
S12	1	24		5
S13	10	14	1 (replaced with a pair of dashes)	0
S14	0	11	12 (replaced with a colon); 3 (replaced with a full stop, including 2 also replaced with a colon); 1 (replaced with a semi-colon)	9
S15	1	5	18 (replaced with a <i>dunhao</i>); 1 (replaced with a pair of brackets)	24
S16	20	5		2
S17	21	4		0

(Note: For the sake of format, the table is copied from the published version)

Table 3b. (continued)

Source sentences using commas	Treatment of source commas in translation			Number of erroneous cases related to source comma
	Complete transfer	Partial transfer Reduction or increase in number	Incorporating other treatment	
S18	13	11	1 (replaced with a colon)	5
S19	24	1		0
S20	6	0	19 (replaced with a <i>dunhao</i>)	6
S21	16	9		0
S22	14	11		0
S23	24	1		0
S24	13	9	2 (replaced with a dash); 2 (replaced with pair of brackets)	3
S26	14	3	4 (replaced with a full stop); 2 (replaced with a dash); 1 (added with a colon); 1 (replaced with a pair of brackets)	7

(Note: For the sake of format, the table is copied from the published version)

The data in Table 3a and 3b shows that translation students are not confined by commas in a source text. That is, they do not just copy the source comma(s) into their target texts. Instead, they use source commas to analyse the semantic relationships within a sentence and then decide whether to increase or decrease the number of commas, or whether to change the source comma to a different type of punctuation. As shown in Table 3a and 3b, depending on the students' analysis of the source semantic relationships indicated by a comma, the comma can be replaced by a pair of brackets, a colon, a semi-colon, a dash, a *dunhao*, or a full stop. Among these punctuation types, the replacement with a full stop is such that the translation breaks away from the original semantic relationship demarcated by sentences. Below are some examples to illustrate the strategies used by translation students in rendering commas in a source text. The examples are all randomly chosen.

5.1.1 Reduced or increased use of commas

(2) Text 2 S02

ST: Security-conscious companies, from banks to newspapers, often hire, if not thieves, then the analogues of thieves, to test their computer systems for weaknesses.

TT: 从银行到报社，具有安全意识的公司通常雇佣黑客或类似黑客的专业人员来测试电脑系统的破绽。

(cóng yínháng dào bào shè, jùyǒu ānquán yìshì de gōngsī tōngcháng gùyòng hēikè huò lèisi hēikè de zhuānyè rényuán lái cèshì diànnǎo xitǒng de pòzhàn)

In this example, the ST sentence has altogether five commas, but in the translation, only one comma is used, as it is not acceptable to copy the comma before and after the ST 'hire

somebody to do something’ to the Chinese TT. Also, by moving ‘from banks to newspapers’ to the beginning of the TT sentence, one more source comma is lost, as the subject ‘security-conscious companies’ is short enough to make a comma unnecessary in Chinese.

(3) *Text 1 S08*

ST: The K-MAX is a ‘synchropter’, with two sets of intermeshing blades, synchronised so as not to hit each other.

TT: K-MAX 是一种同步交叉式双旋翼直升机，带有两套相互啮合的叶片，同步运行，所以不会互相击中。

(K-MAX shì yì zhǒng tóngbù jiāochā shì shuāng xuán yì zhíshēng jī, dài yǒu liǎng tào xiānghù chǐhé de yè piàn, tóngbù yùnxíng, suǒyǐ bú huì hùxiāng jízhòng)

In translating this source sentence, the student kept the original commas and also added one before the ‘so as not to ...’ structure. In doing so, the original prepositional structure ‘with ...’ and the adverbial structure ‘synchronised ...’ are both translated into a clause sharing the same subject ‘the K-MAX’.

5.1.2 Replacing with a pair of brackets

(4) *Text 1 S06*

ST: The helicopters are modified versions of the K-MAX, built by Kaman, an American aerospace firm.

TT: 直升机的机型是由卡曼公司（一家美国航空制造商）制造的 K-MAX 的改进型。
(zhíshēng jī de jī xíng shì yóu kǎ màn gōngsī [yì jiā měiguó hángkōng zhìzào shāng] zhìzào de K-MAX de gǎijìn bǎn)

In the source sentence here, the structure ‘an American aerospace firm’ has a parenthetical function, as it gives more information regarding ‘Kaman’. The use of a pair of brackets in place of the comma next to ‘Kaman’ in the translation is functionally equivalent to the source comma.

5.1.3 Replacing with a colon

(5) *Text 2 S14*

ST: “At the end of that process it has two piles,” says Graham Steel, one of Cryptosense’s founders, “one where [the target program] did what it was supposed to do, and another pile full of error messages.”

TT: Cryptosense 公司创始人之一格雷厄姆·斯蒂尔说：“在这个过程的最后阶段，渗透测试程序生成两堆命令，其中一堆命令让被攻击程序发出了预期的响应，而另一个堆命令则充满了错误响应信息。”

(Cryptosense gōngsī chuàngshǐ rén zhī yī gé lěi è mǔ sī dì ěr shuō: “zài zhè gè guòchéng de zuìhòu jiēduàn, shèntòu cèshì chéngxù shēng chéng liǎng duī mìnglìng, qízhōng yì duī mìnglìng ràng bèi gōngjí chéngxù fāchū le yùqī de xiǎngyìng, ér líng yī duī mìnglìng zé chōngmǎn le cuòwù xiǎngyìng xìnxī)

In translating this sentence, the student moved the part ‘says Graham Steel, one of Cryptosense’s founders’ to the beginning and changed the comma following it to a colon, both of which conform to the Chinese convention. As a result, two source commas are removed.

5.1.4 Replacing with a semi-colon

(6) *Text 2 S14*

ST: “At the end of that process it has two piles,” says Graham Steel, one of Cryptosense’s founders, “one where [the target program] did what it was supposed to do, and another pile full of error messages.”

TT: “在这个过程的最后，它有两堆命令，” Cryptosense 公司的创始人之一，格雷厄姆·斯蒂尔说道，“一堆命令使目标程序按预期响应；而另一堆命令都是错误信息。”

(“zài zhè gè guòchéng de zuìhòu, tā yǒu liǎng duī mìnglíng,” Cryptosense gōngsī de chuàngshǐ rěn zhī yī , gé lěi è mǔ sī dì ěr shuōdào, “yì duī mìnglíng shǐ mùbiāo chéngxù àn yùqī xiǎngyìng; ér líng yī duī mìnglíng dōu shì cuòwù xìnxī)

The focus of this example is on the source comma following ‘it was supposed to do’. The student changed this to a semi-colon, which brings out the implied contrast between the ‘two piles’ and thus highlights the significance of the work of professional hackers. This arguably is a very good translation procedure for the context.

5.1.5 Replacing with a dash

(7) *Text 1 S06*

ST: The helicopters are modified versions of the K-MAX, built by Kaman, an American aerospace firm.

TT: 这两架直升机是 K-MAX 起重直升机的改造版，后者由卡曼宇航公司——一家美国的航空公司——制造。

(zhè liǎng jià zhíshēng jī shì K-MAX qǐzhòng zhíshēng jī de gǎizào bǎn, hòu zhě yóu kǎ màn yǔ háng gōngsī ---yì jiā měiguó de hángkōng gōngsī--- zhìzào)

In contrast to Example [4] above, here the student used a pair of dashes instead of brackets to achieve the same purpose in translation.

5.1.6 Replacing with a *Dunhao*

(8) *Text 2 S20*

ST: Software is used by people, and people can be tricked, threatened or charmed into spilling secrets.

TT: 软件是由人操控的，而人可以遭到欺骗、威胁或是诱惑，从而泄露机密。

(ruǎnjiàn shì yóu rén cāo kòng de, ér rén kěyǐ zāo dào qīpiàn, wēixiě huò shì yòuhuò, conger xièlòu jīmi)

In this example, the focus is on the source comma following ‘tricked’. The function of this comma corresponds to that of a *dunhao* (See Table 2 of Section 2.2), as used by the student in question.

5.1.7 Replacing with a full stop

(9) *Text 1 S12*

ST: Unlike many large fixed-wing drones, which are flown under remote control by ground-based pilots, a modified K-MAX flies autonomously along a programmed course using GPS to navigate via specified way points.

TT: 很多大型固定翼无人机是由地面飞行员对其进行遥控飞行。与之不同的是，改进版的 K-MAX 直升机能够用 GPS 通过特定航点导航，从而沿预先编程设定的航线自主飞行。

(hěnduō dà xíng gùdìng yì wú rén jī shì yóu dìmiàn fēi xíng yuán duì qí jìnxíng yáokòng fēi xíng. Yǔ zhī bùtóng de shì, gǎijìn bǎn de K-MAX zhíshēng jī nénggòu yòng GPS tōngguò tèdìng háng diǎn dǎo háng , cóng ér yán yù xiān biān chéng shè dìng de háng xiàn zìzhǔ fēi xíng)

The translation of this source sentence demonstrates a lot of analytical work on the student's part. The student first extracted the part 'many large fixed-wing drones, which are flown under remote control by ground-based pilots' and put this in a separate sentence, which is the first sentence in the TT above as indicated by the first full stop. Then, the student replaced 'large fixed-wing drones' with a pronoun '之 (*them*)' in translating 'Unlike many large fixed-wing drones' for the sake of cohesion and coherence, and rendered the rest of the original sentence meaning in the second sentence of the TT above. Hence, the second comma in the ST becomes the first full stop in the TT. This way of translating makes the original meanings very clear to the target readers and also highlights the advantage of the 'modified K-MAX', which is the topic and message of the whole source text.

Apart from the above ways of dealing with source commas, the students also decided to keep them if they judged this as right for a context, as illustrated below.

5.1.8 Keeping the original commas

(10) *Text 2 S10*

ST: And many firms modify programs they have bought off the shelf, inadvertently introducing new bugs as they do so.

TT: 此外许多公司会修改他们所买的现成程序，在修改过程中无意间引发了新的漏洞。

(cǐ wài xǔduō gōngsī huì xiūgǎi tāmen suǒ mǎi de xiàn chéng chéngxù, zài xiūgǎi guòchéng zhōng wúyì jiān yīnfā le xīn de lòudòng)

In all, the procedures that students used in dealing with commas in an English source text are direct transfer of source commas into a target text, reducing or increasing their use, replacing with a colon, a dash or a pair of dashes, a full stop, a semi-colon, a *dunhao* or a pair of brackets.

5.2 Use of full stops

Text 1 has 22 sentences and 22 full stops. When translating Text 1, one student missed Sentence 04 in her translation, and therefore data regarding this sentence is not included for analysis. Text 2 has 27 sentences and 27 full stops. Thus, the total number of sentences for the sample of full stop use is respectively $(22-1) \times 25 = 525$ and $27 \times 25 = 675$.

Table 4a and 4b respectively present the use of these full stops in the two source texts and how they are represented in translation.

Table 4a. Text 1

Source sentences using full stops	Treatment of source full stops in translation			Number of erroneous sentences related to source full stop
	Transfer to TT	Non-transfer		
		Change to a comma	Other treatment	
S01	23	2		2
S02	25			0
S03	25			0
S05	25			0
S06	17	8		0
S07	25			0
S08	25			0
S09	24	1		1
S10	25			0
S11	25			0
S12	18	7		0
S13	25			0
S14	6	19		0
S15	25			0
S16	23	2		0
S17	25			0
S18	24		1 (missing)	1
S19	25			0
S20	25			0
S21	25			0
S22	25			0

(Note: For the sake of format, the table is copied from the published version)

Table 4b. Text 2

Source sentences using full stops	Treatment of source full stops in translation			Number of erroneous sentences related to source full stop
	Transfer to TT	Non-transfer		
		Change to a comma	Other treatment	
S01	25			0
S02	25			0
S03	21	4		4
S04	25			0
S05	25			0
S06	25			0
S07	25			0
S08	23	2		0
S09	25			0
S10	24	1		0
S11	25			0
S12	25			0
S13	25			0
S14	25			0
S15	25			0
S16	25			0
S17	25			0
S18	25			0
S19	25			0
S20	25			0
S21	24	1		0
S22	24		1 (missing)	1
S23	22	2	1 (dash)	1
S24	18	5	2 (semi-colon)	0
S25	25			0
S26	25			0
S27	25			0

(Note: For the sake of format, the table is copied from the published version)

The main use of the English full stop is ‘to mark the end of a sentence that is a complete statement’ (<http://www.oxforddictionaries.com/words/full-stop>; accessed 08 Feb 2016). The main use of the Chinese full stop is also to indicate the end of a statement, but

the statement may consist of a larger semantic group depending on the coherence or logical relationship of the sentence itself with its surrounding ones, as stated in the quote below:

A full stop is used according to the end of a bigger meaning group [bigger than the meaning group indicated by a comma; note added] in the tone of a statement. It does not have to do with sentence length. (translated from MoE: 2011:2)

The Chinese text for the above translation is ‘使用句号主要根据语段前后有较大停顿，带有陈述语气和语调，并不取决于句子的长短’ (shǐ yòng jù hào zhǔ yào gēn jù yǔ duàn qián hòu yǒu jiào dà tíng dùn, dài yǒu ché shù yǔ qì hé yǔ diào, bìng bù qǔ jué yú jù zǐ de cháng duǎn)。It is itself a good example to illustrate the use of the Chinese full stop. The clauses before and after the commas all talk about the function of the punctuation, and thus are put in one Chinese sentence signalled by the full stop. By contrast, when translated into English, the first two clauses are put in one sentence and the last clause in another, to indicate two ‘complete statements’.

With this difference, if all the full stops in an English source text are transferred to the Chinese translation text, the translation may read like translationese, though arguably it cannot be said to be incorrect unless the punctuation is missing (which happened once for S18 of Text 1 and once for S22 of Text 2). In other words, an English full stop may need to be adjusted in translation, depending on its semantic relationships with the neighbouring sentences as analysed by a translator. The translation procedures regarding ST full stops that are observed in this current study are illustrated in the following. Just like the case of commas, all examples are random chosen.

5.2.1 Replacing with a comma, to form a new sentence by incorporating the subsequent source sentence

(11) *Text 1 S14 and S15*

ST: The craft uses a number of sensors. These give the helicopter an awareness of its surroundings which is precise enough for it to land in total darkness.

TT: 这种无人机使用众多传感器来感应周围的环境，即使于完全的黑暗中也能够精准地降落。

(zhè zhǒng wú rén jī shǐ yòng zhòng duō chuán gǎn qì lái gǎn yìng zhōu wéi de huán jìng, jì shǐ yú wán quán de hēi àn zhōng yě néng gòu jīng zhǔn de jiàng luò)

As can be seen, the first full stop is changed to a comma. The student here split the second sentence into two meaning groups: ‘These give the helicopter an awareness of its surroundings’ and ‘which is precise enough for it to land in total darkness’. She then incorporated the first meaning group into the first sentence by omitting ‘these’, and appropriately changed its full stop to a comma, so that her translation reads as ‘The craft uses a number of sensors to give the helicopter an awareness of its surroundings, thus the helicopter can land precisely even though in total darkness’. In my view, this way of dealing with the full stop in question enhances the coherence of meanings in the paragraph.

5.2.2 Replacing with words

(12) *Text 1 S14 and S15*

ST: The craft uses a number of sensors. These give the helicopter an awareness of its surroundings which is precise enough for it to land in total darkness.

TT: 机身上装有许多感应装置以便直升机即使在黑夜中降落时对周围的环境也一清二楚, 精准降落。

(jī shēn shàng zhuāng yǒu xǔ duō gǎn yìng zhuāng zhì yǐ biàn zhí shēng jī jì shǐ zài hēi yè zhōng jiàng luò shí duì zhōu wéi de huán jìng yě yì qī èr chǔ, jīng zhǔn jiàng luò)

For the same source sentences as in Example [15], the translator here analysed the meaning groups in a similar way, except that she also moved ‘in total darkness into the first ST sentence. However, when incorporating into the first ST sentence the meaning group ‘These give the helicopter an awareness of its surroundings’, the translator deleted the first full stop and replaced it with a Chinese phrase ‘以便’ (yǐ biàn; *so that*), making her translation read like ‘The craft uses a number of sensors so that the helicopter has an awareness of its surroundings even though in total darkness, thus (the helicopter) can land precisely’. In my view, this strategy manifests what Newmark (*ibid.*) says about punctuation in that punctuation has a semantic meaning just like words. It thus follows that punctuation and words can be interchanged in a context.

5.2.3 Replacing with a semi-colon

(13) Text 2 S24 and S25

ST: Many of these are banks, which are frequent targets for hackers. Others operate in more esoteric settings.

TT: 这其中大多数来自银行, 也就是黑客常常攻击的对象; 其他的则在更加机密的设置中操作。

(zhè qí zhōng dà duō shù lái zì yín háng, yě jiù shì hēi kè cháng cháng gōng jí de duì xiàng; qí tā de zé zài gèng jiā jī mì de shè zhì zhōng cāo zuò)

Here, the first full stop in the ST becomes a semi-colon in the TT. Given the opening topic sentence of the original paragraph, the semi-colon helps make the source meanings even clearer in that it is clearer what Cryptosense’s customers are like.

5.2.4 Replacing with a dash

(14) Text 2 S23 and S24

ST: Nevertheless, the prospect of automated security checks has already garnered Cryptosense several customers. Many of these are banks, which are frequent targets for hackers.

TT: 然而, 自动化安全检测的前景已为秘感公司赢得了若干客户——其中绝大多数是经常成为黑客目标的银行。

(rán ér, zì dòng huà ān quán jiǎn cè de qián jǐng yǐ wéi mì gǎn gōng sī yíng dé le ruò gān kè hù--- qí zhōng jué dà duō shù shì jīng cháng chéng wéi hēi kè mù biāo de yín háng)

Here, the translator changed the first ST full stop to a dash. As the context shows, Cryptosense’s customers are more than banks. The use of dash here implies that banks are all about Cryptosense’s customers. This therefore makes the forthcoming sentence, S25, read contradictory in terms of coherence. Hence, the strategy used here is not appropriate or even incorrect for the context. This is the only procedure observed in this study that does not fit a context. But arguably, it may potentially work in other contexts which await research.

While the above examples demonstrate the differences in the use of full stops between English and Chinese, the two languages have similar uses most of the time, and consequently most of the time my research subjects keep the original full stops by only changing the physical form, as in the example below:

5.2.5 Direct transfer

(15) *Text 1 S07*

ST: They are used in a number of military roles and in civilian jobs, such as logging and power-line construction, as a sort of airborne sky-crane cum delivery truck.

TT: 它们被用作空中起重机兼货运车在许多军事活动与民用领域中执行任务，比如伐木或是电缆搭建。

(tāmen bèi yòng zuò kōng zhōng qǐ zhòng jī jiān huò yùn chē zài xǔ duō jūn shì huó dòng yǔ mǐn yòng lǐng yù zhōng zhí xíng rèn wù, bǐ rú fá mù huò shì diàn lǎn dā jiàn)

As in the case of commas, the analysis regarding full tops shows that English-Chinese translation students were not confined to the source full stops and instead were able to adjust their use according to the semantic relationships within the context.

5.3 Summary of research findings

In all, the analysis of students' use of commas and full stops when translating from English to Chinese shows:

(1) For commas, students' translation procedures indicate that they are able to analyse the relationship of a sentence with its surrounding ones and then re-organise discourse meanings according to what they see as appropriate in the target language. Specifically, this may result in the creation of a new sentence in the grammatical sense due to the replacement with a full stop.

(2) For full stops, students' translation procedures again suggest that they are able to analyse the relationship of a sentence with its surrounding ones and then re-organise discourse meanings according to what they see as appropriate in the target language. Specifically, an original full stop may be removed, which means the original sentence in the grammatical sense does not exist in the TT.

(3) Students are not confined to the use of punctuation in a source text by copying all into the corresponding target text; Instead, they use punctuation in both the processes of decoding the source discourse meanings and encoding meanings in the target discourse, though not without errors. In other words, students are trying to be 'faithful' to the function rather than to the form of punctuation.

6. Conclusion

The current research provides further support for Newmark's (1988) statement regarding the meanings of punctuation. As a full stop indicates an end-of-sentence semantic relation while a comma indicates an in-sentence semantic relation, students' decoding and encoding of their meanings in translation indicate that despite errors they are largely able to treat punctuation as an indispensable part of discourse. The research also provides evidence that the English

and the Chinese languages use punctuation differently and therefore in translating from one to the other, a translator needs to adjust its use depending on their analysis of the discourse meanings of punctuation.

The errors (See Tables 3a-4b) in translation students' punctuation use on the other hand suggest that they are not entirely clear of the differences between the two punctuation systems. As a matter of fact, there are much more punctuation errors than indicated by the statistics here because Tables 3a to 4b only present those errors with commas and full stops, but exclude errors with other types of punctuation where some errors even distort the source meanings. It is therefore worthwhile for translator trainers to design teaching sessions for punctuation use.

Finally, the findings from this research would be stronger if similar studies were conducted with English-Chinese translation carried out by professional translators.

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Appendix²

Text 1

Robocopter arrives

[S01]Unmanned attack aircraft have become a familiar part of modern warfare. [S02] But an army, famously, marches on its stomach, and campaigns can be lost as easily by a lack of supply as by a lack of firepower. [S03]That, combined with the increasing squeamishness of rich countries about taking casualties, is leading to the use of a new type of drone in the form of unmanned helicopters to deliver supplies. [S04] Pioneered by the armed forces, these hovering robots will also find civilian roles.

[S05]Two unmanned helicopters have been flying experimental combat missions delivering goods to American marine outposts in Afghanistan since December 2011. [S06] The helicopters are modified versions of the K-MAX, built by Kaman, an American aerospace firm. [S07] They are used in a number of military roles and in civilian jobs, such as logging and power-line construction, as a sort of airborne sky-crane cum delivery truck.

[S08]The K-MAX is a 'synchropter', with two sets of intermeshing blades, synchronised so as not to hit each other. [S09] It looks ungainly, but it is a robust system. [S10] The rotors turn in opposite directions to cancel out torque, the twisting action which requires conventional helicopters to use a tail rotor---a hazardous appendage. [S11] By August 2013, the two K-MAXs had flown 485 autonomous sorties carrying over 900 tonnes of cargo.

[S12]Unlike many large fixed-wing drones, which are flown under remote control by ground-based pilots, a modified K-MAX flies autonomously along a programmed course using GPS to navigate via specified way points. [S13] It can also be operated by remote control. [S14]The craft uses a number of sensors. [S15] These give the helicopter an awareness of its surroundings which is precise enough for it to land in total darkness. [S16]The American army is interested in adding a sophisticated camera to survey landing sites and spot potential threats. [S17] The camera could also help direct a helicopter from the ground and be used in civilian roles, like fire fighting or search and rescue.

[S18]The unmanned K-MAX carries its cargo externally on a 25-metre cable. [S19] The helicopters are monitored as they fly autonomously to a forward operating base, where a marine controller on the ground takes over using a portable device to direct the drop. [S20] However, the helicopters can deliver a load to given co-ordinates without any human intervention. [S21]The K-MAX has a four-hook carousel, so it can drop off supplies at several locations in one mission. [S22]The top speed of the K-MAX is only about 115mph, but it has all the virtues of unmanned aircraft: it never gets sick, tired or goes on leave.

² The numberings 'Sx' (where x is a number) indicate the coding of sentences.

Text 2

Hacking the hackers

Automating the search for loopholes in software

[S01] “SET a thief to catch a thief.” [S02] Security-conscious companies, from banks to newspapers, often hire, if not thieves, then the analogues of thieves, to test their computer systems for weaknesses. [S03] These professional hackers, called penetration testers, poke and prod at their clients’ systems. [S04] If they find a way in, they inform the client, who can then fix the problem. [S05] Penetration testing, though, is expensive—for the skills required to be a good tester are rare. [S06] That is why a French firm called Cryptosense is hoping to automate the job.

[S07] One part of ensuring that a program is secure is checking that it is free of bugs and that it responds to odd or malformed sequences of commands without spilling any of the secrets it is meant to be guarding. [S08] This is a big task. [S09] The number of combinations of commands that can be entered into a piece of software increases exponentially as it gets more complicated. [S10] And many firms modify programs they have bought off the shelf, inadvertently introducing new bugs as they do so. [S11] It is thus no use relying on what a programmer has told you about how his code works.

[S12] Cryptosense’s penetrator, therefore, starts from scratch. [S13] First, it works its way through the list of commands that can be given to the program it is trying to subvert, in order to see how it responds. [S14] “At the end of that process it has two piles,” says Graham Steel, one of Cryptosense’s founders, “one where [the target program] did what it was supposed to do, and another pile full of error messages.” [S15] Armed with those experimental data, the virtual penetrator can work backwards, reconstructing a simulacrum of the target program whose behaviour, mistakes and all, matches reality.

[S16] Thus armed, it can begin trying to break things. [S17] Even with a computer rather than a human being doing the testing, an exhaustive search of all possible sequences of commands can be time-consuming. [S18] But the testing algorithm is smart enough, says Dr Steel, to give priority to those combinations most likely to prove fruitful. (Unsurprisingly, he will not disclose how exactly that is done.)

[S19] Even if Cryptosense’s automated hacker can find and plug all the holes in a particular piece of software, there will still be weak links. [S20] Software is used by people, and people can be tricked, threatened or charmed into spilling secrets. [S21] Also, what works for the good guys can work for the bad. [S22] If automatic hacking proves itself, there is nothing to prevent malicious hackers coming up with their own versions, and using those to scan for weaknesses.

[S23] Nevertheless, the prospect of automated security checks has already garnered Cryptosense several customers. [S24] Many of these are banks, which are frequent targets for hackers. [S25] Others operate in more esoteric settings. [S26] Security experts like to tell tales of “back doors” built into weapon systems, designed to allow their makers to disable them remotely. [S27] Cryptosense has found at least one flaw in a security module used in a modern weapon system which seems capable of doing just that.