

A Quantitative Study on the Cohesion Problems in English Majors' Chinese Translation of English Texts*

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Abstract—Cohesion is an important means to achieve textual coherence. In translation instruction, it is important to raise students' awareness of textual cohesion in order to improve their translation competence. However, few studies have been conducted to investigate the problems of cohesion that may exist in students' translated texts. This article compares the cohesive devices used in the Chinese texts translated from English by 38 junior English majors studying in a major university in China with those in a reference Chinese version, for the purpose of revealing the cohesion problems that may exist in the students' Chinese translation and providing reference for translation instruction. The results show that the major problems include overuse of personal reference and conjunction, especially additive conjunction, insufficient use of ellipsis and repetition which are common cohesive devices in original Chinese texts. The problems reveal, on the one hand, that students may still be under the influence of the source language negative transfer, and on the other hand, that they may have insufficient understanding of Chinese textual cohesion and the differences between English and Chinese in this regard.

Index Terms—cohesion, English-Chinese translation, English major, translation instruction

I. INTRODUCTION

Translation courses for undergraduate English majors aim to cultivate students' translation competence, of which discourse competence is an important component (Campbell, 1998; Beeby, 2000; Neubert, 2000; Wang & Wang, 2008). Therefore, it is very necessary to investigate the cohesion problems in students' translation. However, both translation researchers and instructors in China seem to ignore this problem more or less. Taking "translation + cohesion" as the keyword, we searched CSCI journals through CNKI and got only 14 papers, including Wang (2004), Yin and Hu (2010), Ping (2012), Yang (2013), Li (2021), etc. Moreover, except Wang (2004) and Li (2021), all these studies only focused on the "correct" translation, that is, they extracted examples from well established translation to demonstrate how to ensure textual cohesion in translation, and did not take interest in the cohesion problems in students' translation. The neglect of this problem in the field of teaching practice is mainly reflected in the existing translation coursebooks: "Many coursebooks only focus on the translation skills at the lexical and sentence levels, ignoring the transformation at the discourse level. Even for those which do involve the transformation at the discourse level, their focus is often on the characteristics of different text styles, rather than the cohesion and coherence within the text" (Li, 2021, p. 30).

Only by investigating the cohesion problems exposed in students' translation, can we solve them in teaching, so as to cultivate their textual translation competence more effectively. Wang (2004) explored the cohesion problems in students' English-Chinese translation and found that they were influenced by the source language and overused third person pronouns in the Chinese translation. She argued that the instructors must have the awareness of teaching English and Chinese textual cohesion with a contrastive approach. However, she only focused on the use of third person pronouns, and the problems found were only the "tip of the iceberg", which could not fully reveal the cohesion problems in students' translation. A recent study (Li, 2021) attempted to make up for this deficiency by comprehensively disclosing the problems of textual cohesion in students' Chinese to English translation from five aspects: reference, substitution, ellipsis, conjunction and reiteration. The results showed that the problems disclosed include insufficient use of personal reference, possessive pronouns and ellipsis, overuse of repetition, and improper use of conjunction. However, this study only discusses cohesion in Chinese-English translation, not in English-Chinese

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translation. Due to the great differences in cohesion between English and Chinese texts, the problems existing in Chinese-English translation are different from those in English-Chinese translation. Therefore, it is necessary to conduct a study on the latter. Based on Halliday and Hasan's (1976) cohesion theory and the comparison of English and Chinese cohesive systems, we conduct an empirical study on the English-Chinese translation provided by 38 Junior English Majors in a university in Chongqing, China. In this study, we hope to comprehensively reveal the main cohesion problems existing in the subjects' English-Chinese translation texts, investigate the possible reasons and propose corresponding solutions.

II. COHESION THEORY

Halliday and Hasan (1976) held that cohesion was the relationship between the internal meaning of a text, which was the key factor to distinguish text from non-text. The understanding of one element in a text must depend on the understanding of another; the former is the prerequisite for the latter. That is to say, without the latter, the former cannot be understood. In this case, the cohesive relationship can be constructed. Only in this way can the two elements be integrated into a text. They divided cohesion in English texts into two categories: grammatical cohesion and lexical cohesion, and further distinguished a series of sub categories (Table 1).

TABLE 1
TYPOLOGY OF COHESIVE DEVICES IN ENGLISH TEXTS (Li, 2021, p. 31)

Grammatical cohesion	reference	personal
		demonstrative
		comparative
	substitution	nominal
		verbal
		clausal
	ellipsis	nominal
		verbal
		clausal
	conjunction	additive
		adversative
		causal
temporal		
Lexical cohesion	reiteration	repetition
		synonym
		near-synonym
		superordinate
	collocation	general word
		Some words often share "the same lexical environment" with others (Halliday & Hasan, 1976, p. 286), that is, they often appear together in the same text, which forms a collocation relationship. Because collocation involves a wide range and causes difficulties in data collection, it will not be considered in this study.

Although this typology was originally proposed for English, it is also generally applicable to modern Chinese. This can be verified in the research framework of Zuo (1995) and Zhu et al. (2001), both investigating the similarities and differences of cohesion between English and Chinese within the framework of the above mentioned typology. Hu's (1994) study also implied that this typology was applicable to Chinese since he cited examples from both English and Chinese to introduce Halliday and Hasan's cohesion theory.

Some studies have shown that the translational texts have the tendency of explicitation compared with the original texts (see Baker, 1993, 1995 for the concept of "explicitation"), that is, the translator tends to relate the original ideas more clearly in translation (Mu, 2011). In English-Chinese translation, this explicitation is often manifested in the cohesive devices. That is, translational Chinese tends to use more, or more explicit, cohesive devices than original Chinese (Huang, 2008; Wang & Hu, 2010; Ren, 2015; Xu & Xu, 2016). This is probably the result of source language transfer - because English uses more explicit cohesive devices than Chinese to achieve coherence. It may also be caused by the translator's state of mind, who may want to express the cohesive relationship and logical connection in the ST as clearly as possible to avoid misunderstanding or confusion. Nevertheless, in order to ensure fluency of the target text and strengthen its readability and acceptability, one should try his/her best to overcome the tendency of explicating textual cohesion; he/she should, in the translation process, highlight the differences between English and Chinese cohesive systems, and make the cohesive features of translational Chinese close to those of original Chinese.

Based on the above typology and previous studies on the differences between English and Chinese cohesion, this paper will investigate the cohesion problems in students' English-Chinese translation by comparing it with a reference version.

III. RESEARCH DESIGN¹

A. Subjects

We selected 40 junior students who were attending the course of *Translation Theory and Practice*, a compulsory course for undergraduate English Majors in a university in Chongqing, of whom there were 9 boys and 31 girls, with an average age of 20.5 years. This course would be delivered for three consecutive semesters (the first and second semesters of the sophomore year and the first semester of the junior year), with 32 class hours per semester. At the time of the experiment, the students were attending the third semester's lectures. Their English proficiency could be reflected by the scores of the Test for English Majors-Band 4 (hereinafter referred to as "TEM-4"), a national English proficiency test specially designed for all English majors in China's universities and administered by MOE. All subjects participated in TEM-4 17 months ago, with an average score of 65.83 (the full mark being 100), of whom 42.5% scored 70+. This indicated that the overall English proficiency of the subjects had reached or exceeded the level of Band 4.

B. Source Text

The source text (ST) used in this study was excerpted from an online commentary article by a native English-speaker titled "We need to ban or limit smartphone use in schools" (Baines, 2018), with a total of 310 words. And the Lexile range, which we used to measure its difficulty, was 1210-1400, which was equivalent to the difficulty level of the reading materials in TEM-4. That is to say, the difficulty level of the ST was consistent with the subjects' overall reading comprehension ability.

The text was argumentative by nature, in which the author, a middle school teacher, first described how his students, a group of teenagers, had been obsessed with smart phones, and then analyzed the possible harms caused by this, interspersed with the review of his own obsession with smart phones when he himself was a teenager. He used a number of cohesive devices, especially reference, conjunction and lexical cohesion, to state facts and opinions. In English-Chinese transformation, the translator has to fully take into consideration the characteristics of Chinese textual cohesion and the differences it has with English in order to achieve coherence and fluency of the translated text. In this sense, this text was appropriate for us to investigate the cohesion problems in the subjects' translation.

C. Procedures

1. Assigning the Translation Task

We assigned the above ST as an extracurricular translation task to the subjects and asked them to finish translating it into Chinese before the deadline. In order to ensure that they do the translation independently, honestly and earnestly, we demanded that no machine translation should be used and plagiarism should be carefully avoided. We told them that all their translation works would undergo a plagiarism check before they were strictly graded, and the scores obtained would account for a proportion of their academic performance.

2. Collecting Translated Texts

We collected the electronic texts of all the subjects' translation before the deadline, and compared them with the translations of several mainstream machine translation systems that were favored by Chinese college students (namely, Baidu, Youdao, Ciba, Google and Bing) one by one through *PaperPass*, a plagiarism check software. We found that two subjects' translations were very similar to the result of machine translation (the repetition rate was above 65%). Therefore, we marked them as "non-original translations" and deleted them from the data. In this way, the number of samples we obtained was reduced from 40 to 38. In order to conveniently use AntConc to extract relevant data, we saved the 38 texts as TXT documents respectively.

3. Preparing Reference Version

As was mentioned above, we would find the cohesion problems in the subjects' translations by comparing them with a reference version, so we had to create this version. Based on the principle of accuracy and fluency, we translated the original text, and then repeatedly revised the target text, especially the cohesive devices, so as to get rid of the constraints of the ST and approach the norms of the target language as much as possible, including using less personal reference and conjunction, leaving out the subjects, using more repetition, etc.

4. Extracting Data

Based on Halliday and Hasan's (1976) typology (Table 1), we manually labelled all the cohesive devices in the reference version (RV) and the subjects' translation (SJT) respectively, and then we used the Concordance of AntConc 3.4.4.0 to count the frequency of some of the cohesive devices (such as reference, substitution, ellipsis, conjunction, etc.). For those which were difficult to be counted by the software (such as repetition, synonyms, hyponyms, etc.), we adopted manual counting again. In the process of data extraction, we took notice of collusion (a subject copying from

¹ The material used in this study, i.e. the translated Chinese texts provided by the subjects, was extracted from the data collected in another study titled "Contrastive Study of Human and Machine Translation Quality in English-Chinese Language Pair in the Era of Artificial Intelligence" (the article has yet to be published). Therefore, the description of the subjects, source text and research steps in this section partially overlaps with that study. Besides, the research method of this study is a replication of Li (2021), so the description of the research steps here also overlaps with the latter.

another subject’s work) that might exist in the SJT and found none of such cases, so we could ultimately determine that all the 38 samples were qualified.

5. Analyzing Data

We used SPSS 26 to conduct single sample t-tests, by taking the frequency of the cohesive devices in the RV as the test value to investigate whether the differences in cohesion between the SJT and the RV were significant, so as to identify the cohesion problems that might exist in the former.

IV. RESULTS AND DISCUSSION

In this section, we will first report the general differences of cohesion between the SJT and the RV, and then present and discuss the differences of specific cohesive devices.

A. General Comparison

The frequency of the reference, ellipsis, conjunction and lexical cohesion is high in both the RV and the SJT, but that of the substitution is zero (in RV) or close to zero (in SJT where the mean frequency is 0.03) due to the limitation of the ST which rarely uses substitution. Therefore, in what follows, we will ignore substitution and only focus on the other four types of cohesion.

The results of single sample t-test (Table 2) show that for each of the four types of cohesion, there is significant difference between the SJT and the RV ($p < 0.05$). The gap in lexical cohesion is the largest, followed by ellipsis, reference and conjunction. The SJT used more reference and conjunction than the RV, but less ellipsis and lexical cohesion.

TABLE 2
T-TEST OF THE COHESIVE DEVICES

	Mean of SJT freq.	Mean difference	RV freq. (test value)	t	df	Significance (2-tailed)	95% CI	
							lower limit	upper limit
reference	26.61	7.61	19	16.12	37	.000	6.65	8.56
ellipsis	5.32	-5.68	11	-18.13	37	.000	-6.32	-5.05
conjunction	19.42	7.42	12	15.43	37	.000	6.45	8.40
lexical cohesion	12.95	-8.05	21	-21.57	37	.000	-8.81	-7.30

A comparison of the frequency of cohesive devices between the ST, RV and SJT (Table 3 and Figure 1) shows that the curve of the SJT is closer to that of the ST than the RV, especially in reference and conjunction. This indicates that, on the one hand, the SJT was negatively affected by the ST, in which the subjects used too much reference and conjunction, but on the other hand, compared with the RV, they used insufficient ellipsis and lexical cohesion. We will further verify these findings and discuss them respectively by examining the specific cohesive devices in the following sections.

TABLE 3
COMPARISON OF COHESIVE DEVICES BETWEEN ST, RV AND SJT

	reference %	ellipsis %	conjunction %	lexical cohesion %
ST	48.15	0.00	25.93	25.93
RV	30.16	17.46	19.05	33.33
SJT	41.37	8.27	30.20	20.13

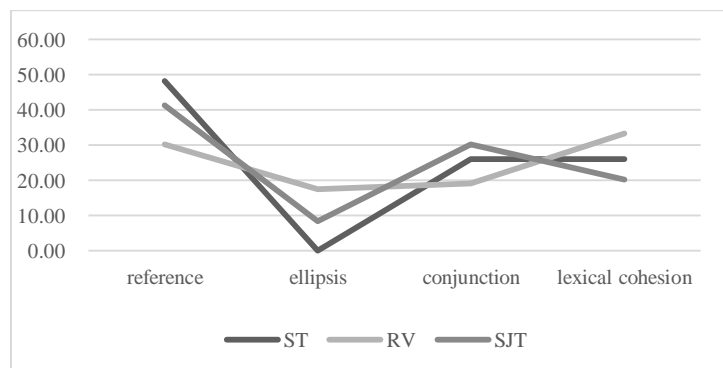


Figure 1 Comparison of Cohesive Devices Between the ST, RV and SJT

B. Reference

There are three types of reference: personal, demonstrative and comparative. The results of t-test (Table 4) show that there are significant differences in personal reference and comparative reference between the SJT and RV ($p < 0.05$) - the former used more personal and comparative reference than the latter, but there is no significant difference in

demonstrative reference.

TABLE 4
T-TEST OF REFERENCE

	Mean of SJT freq.	Mean difference	RV freq. (test value)	t	df	Significance (2-tailed)	95% CI	
							lower limit	upper limit
personal	19.08	7.08	12	19.85	37	.000	6.36	7.80
demonstrative	4.66	-0.34	5	-1.35	37	.186	-0.86	0.17
comparative	2.87	0.87	2	11.27	37	.000	0.71	1.02

Examining the specific signal words used (Table 5), we find that the use of personal reference in the SJT is more diversified than the RV: not only “我” was used to correspond to the first person “I” in the ST, the most frequently used personal reference in the source text, but also other personal pronouns such as “我们” (we), “他们” (they), “自己” (myself), “你” (you) and “它” (it), all of which except “自己” have an equivalent in the ST. This indicates that the SJT may be affected by the ST.

Even though the difference in the frequency of comparative reference between the SJT and RV is statistically significant, it is difficult to see the difference by examining the use of specific signal words. True, the use of words in the SJT is more diversified than the RV, but all of them except “比... 更...” (more than) appear less than one time, being a very low probability.

There is no obvious difference between the SJT and RV in the use of specific signal words of demonstrative reference either. “这” (this) and “这些” (these) are the two most frequently used words on both sides; even though the subjects used some other signal words, the probability was also quite low. Therefore, it can be said that the difference in reference between the SJT and the RV is mainly manifested in personal reference.

TABLE 5
LIST OF REFERENCE SIGNAL WORDS

		ST freq.	RV freq.	SJT freq. (Mean)
personal reference				
I, my	我	13	8	9.26
we, us	我们	3	1	2.84
they, their	他们	6	1	2.79
	自己		1	1.89
you	你	2	0	1.47
it	它	2	0	0.58
	他		1	0.24
Total		26	12	19.08
demonstrative reference				
these	这些	1	2	1.79
the	这	8	1	1.47
this	这种	1	0	0.76
	这样		1	0.45
	那		1	0.11
	那些		0	0.05
	那样		0	0.03
Total		10	5	4.63
comparative reference				
more... than	比...更.....	2	1	1.13
	越来越....		1	0.61
	比...		0	0.5
more	更...	1	0	0.45
	像...那样		0	0.13
	不如....		0	0.05
Total		3	2	2.87

Zuo (1995), Zhu et al. (2001) and Wang (2004) have all shown that personal reference and demonstrative reference are widely used in English texts, but insufficiently used or even deliberately avoided in Chinese texts. Instead, what is used in large number in Chinese texts is zero reference² and repetition. This difference provides evidence for the claim that Chinese is paratactic and English hypotactic (Zhu et al., 2001). The ST and RV in this study are consistent with this claim: the frequency of personal reference and demonstrative reference in the ST is more than twice that in the RV. Moreover, the types of personal reference used in the ST are also more than those in the RV. This indicates that the RV has broken away from the bondage of the source language in its use of reference and fits more closely with the

² A term coined by Hu (1994) who claimed that “the basic concept of zero reference is that the referential expressions that should have appeared in the text are omitted” (p. 64). In most cases it’s the subject of a sentence that is omitted because the word in this position already has an antecedent elsewhere before it. For most Chinese scholars, zero reference is actually a form of ellipsis. See the next section for more discussion on it.

preference of the Chinese language. However, the SJT is more similar to the ST rather than the RV in the use of reference, especially personal reference, which reflects again the impact of the source language negative transfer on translation learners. The following is an example:

- (1) There's no question in my mind that when **you** give a teenage student 24/7 fingertip access to an array of social media platforms – Facebook, Instagram, Snapchat – **you** have a recipe for a disengaged, lethargic, addicted and ultimately unhappy youth. (Baines, 2018)

SJT: 在我看来,毫无疑问,当**你**让一个十几岁的学生每周7天、每天24小时地通过指尖接触 Facebook、Instagram、Snapchat 等一系列社交媒体平台时,**你**就掌握了一个让他陷入忙碌、昏昏欲睡、上瘾、并最终变得不快乐的诀窍。

RV: 在我看来,让一个十几岁的学生全天候舞动着指尖流连于包括 Facebook, Instagram, Snapchat 在内的各种社交平台,毫无疑问会让他变得孤僻冷漠、昏昏欲睡、不能自拔,最终郁郁寡欢。

The ST uses the second person “you” to refer to anyone who can restrain and discipline the students. The RV omitted this general term, which sounds more natural and more in line with the Chinese norms. However, the SJT retained it under the influence of the ST, making the target text awkward to read.

Further analysis of the SJT shows that many subjects not only copied the personal reference of the ST, but also “created” reference, that is, they used personal reference where it was not used in the ST:

- (2) For a moment, I feel like I'm living an episode of *Black Mirror*, a satirical Netflix series that takes place in the near future and provides an exaggerated take on the dangers of modern technology, including smartphones and social media. (Baines, 2018)

SJT: 这一刻,我觉得自己处在“黑镜”中的一集电视剧里,**它**是 Netflix 的一部讽刺系列剧,将在不久的将来播出,**它**夸大了现代科技的危害性,包括智能手机和社交媒体。

RV: 有那么一会儿,我感觉仿佛置身于讽刺性电视剧《黑镜》的某个情节之中。《黑镜》由 Netflix 公司出品,()讲述发生在不久的将来的事,()以夸张的手法呈现包括智能手机和社交媒体在内的现代技术所带来的危害。

The ST uses an apposition “a satirical Netflix series that...”, which contains an attributive clause to explain the TV series *Black Mirror*. The SJT used two cases of “它” (it) to refer back to *Black Mirror*. Such personal reference is not only ambiguous (referring to “*Black Mirror*” or an episode of “*Black Mirror*”), but also unnatural in the Chinese sense. In order to avoid these flaws, the RV enhanced the readability by using repetition (“黑镜”) and zero reference (the omission of the subjects in the last two clauses starting with “讲述” and “以夸张的手法” respectively).

It can be concluded that the excessive use of personal reference in the SJT is possibly an impact of the negative transfer of the ST, but on the other hand, it may also be due to the subjects' lack of systematic learning and understanding of the characteristics of Chinese cohesion and its differences with English, which leads them to fail to realize that the excessive use of personal reference will result in poor coherence in Chinese texts.

C. Ellipsis

In this study, ellipsis is not found in the ST, but it is used in both the SJT and RV. What is in common is that both sides used the same two forms of ellipsis: ellipsis of the subject and ellipsis of the relative qualifier (for example, the qualifier “他们的” [their] before nouns such as “头” [head] and “脸” [face]). And for both sides, the proportion of the former is much higher than that of the latter (Table 6), that is, the main form of ellipsis on both sides is ellipsis of the subject. But as mentioned above, the frequency of ellipsis as a whole in the SJT is significantly lower than that in the RV (see Table 2), which shows that the subjects were not good at using ellipsis to achieve coherence in Chinese texts.

TABLE 6
COMPARISON OF ELLIPSIS

	RV freq.	RV ratio (%)	SJT freq. (Mean)	SJT ratio (%)
ellipsis of subject	8	72.73	4.37	82.18
ellipsis of qualifier	3	27.27	0.95	17.82
Total	11	100.00	5.32	100.00

Ellipsis in English falls into three categories: nominal ellipsis, verbal ellipsis and clausal ellipsis (Halliday & Hasan, 1976). In view of the hypotactic feature of English, most cases of ellipsis have morphological or formal marks (Zhu et al., 2001). For example,

- (3) Nominal ellipsis: Four other Oysters followed them, and yet another four. (Halliday & Hasan, 1976, p. 148).

- (4) Verbal ellipsis: I'd better see him. I don't really want to. (Halliday & Hasan, 1976, p. 173)

- (5) Clausal ellipsis: What did you draw it with? – A pencil. (Halliday & Hasan, 1976, p. 210)

Ellipsis in Chinese can also fall into the same three categories, but different from English, verbal and clausal ellipsis are rare in Chinese, while nominal ellipsis is very common, and in most cases it is the subject that is omitted (Zuo, 1995; Zhu et al., 2001). For example,

- (6) 脱下衣服的时候,他听得外面很热闹,阿 Q 生平本来最爱看热闹,()便即寻声走出去了。()寻声渐渐的寻到赵太爷的内院里,虽然在昏黄中,()却辨得出许多人,赵府一家连两日不吃饭的太太

也在内, 还有隔壁的邹七嫂, 真正本家的赵白眼, 赵司晨。(*The True Story of Ah-Q* by Lu Xun, as cited in Zhu et al., 2001, p. 71)

As has been mentioned in the previous section, ellipsis of the subject is also considered as a form of zero reference. In other words, it can be classified either as reference or as ellipsis. Here we follow most Chinese scholars (like Zuo, 1995; Zhu et al., 2001; Shi, 2004) and regard it as ellipsis.

The fact that no ellipsis is used in the ST but it was used in both the RV and SJT may be attributed to the fact that essential difference exists between ellipsis in English and in Chinese so that it can be, or even must be used where no cases of ellipsis in the ST are spotted, and vice versa. The subjects of this study, however, still restrained by the “English way of thinking”, used personal reference where it was more proper to use ellipsis, as is shown in Example 2 above in which the translation learner used two personal pronouns (它) in the position of the subject, instead of leaving it vacant by way of ellipsis. Here is another example,

(7) As an adult having recently crossed the threshold into my 30s, *I* look back on my own social media use among family and friends, at work, and attending classes at university. *I* realize that I was not much more disciplined than many of the kids I teach today. (Baines, 2018)

SJT: 作为一个刚刚步入 30 岁的成年人, **我**回顾自己在家人、朋友、工作和在大学课堂上使用社交媒体的经历, **我**意识到, 我其实并不比我现在所教的孩子守纪律多少。

RV: **我**是一个刚刚跨过 30 岁门槛的成年人, () 回顾自己在读大学和参加工作时使用社交媒体与家人、朋友交往时的情形, **我**发现当时的我并不比现在教给孩子们更懂得自律。

The word “我” was used twice in the subject’s translation, which did harm to the coherence of the target text. If the first “我” were omitted, it would be more readable.

The subjects’ insufficient use of ellipsis may also be attributed to the negative transfer of the source language and their lack of the knowledge that ellipsis of the subject is a typical feature of cohesion in Chinese.

D. Conjunction

The mean frequency of the conjunctions in the SJT is significantly higher than that of the RV (Table 2), but it is very close to the ST (see Table 7 below). Judging from the four sub-categories of conjunctions (Table 7 and Figure 2), the SJT, like the ST, used the most additive conjunctions, followed by adversative, temporal and causal conjunctions. In contrast, the RV used the most adversative conjunctions, followed by additive, temporal and causal conjunctions. The most significant difference between the SJT and RV exists in the frequency of additive and adversative conjunctions.

After a careful analysis of Table 7 and the specific signal words (given the wide variety of the signal words and the limited space, we do not provide a list here), we find that the majority of the additive conjunctions in the ST (most of which are “and”, followed by “or”) were omitted in the RV, and all the adversative conjunctions (including “but”, “in fact”, etc.) were retained, resulting in an increase in the proportion of adversative conjunctions and decrease in the proportion of additive conjunctions in the RV. By contrast, the SJT not only retained the adversative conjunctions in the ST, but also kept a large number of additive conjunctions (e.g. the extensive use of “和” [and], “并” [and], “或” [or], etc.), resulting in a high proportion of additive conjunctions, tightly followed by the proportion of adversative conjunctions. This proves once again that the SJT is greatly influenced by the ST in their use of conjunctions.

TABLE 7
COMPARISON OF CONJUNCTIONS

	ST freq.	ST ratio (%)	RV freq.	RV ratio (%)	SJT freq. (Mean)	SJT ratio (%)
temporal	1	4.76	2	16.67	2.68	13.81
additive	14	66.67	3	25.00	10.05	51.78
causal	0	0.00	1	8.33	0.42	2.16
adversative	6	28.57	6	50.00	6.26	32.25
Total	21	100.00	12	100.00	19.41	100.00

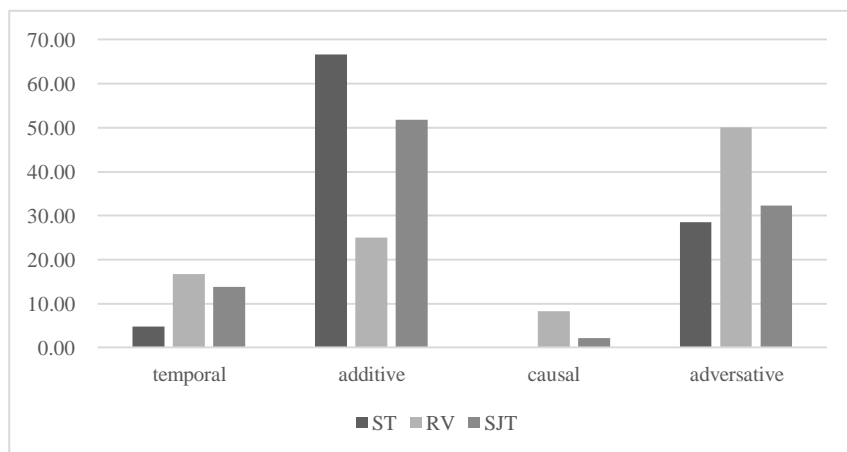


Figure 2 Comparison of Conjunctions

Soh (2010) cited the studies of Pinkham (1988), Xu (2001) and Xu (2003), among others, to point out that the frequency of conjunctions in original Chinese texts was lower than that in original English texts, even though conjunctions were also used in large number in translational Chinese texts as a result of explicitation. Zhu et al. (2001) believed that an important reason for the difference in the frequency of conjunction use between original English and Chinese is the difference between explicitness and implicitness of the two languages: English tends to be explicit, so it often uses conjunctions to express discourse relations, while Chinese tends to be implicit, so it does not rely on tangible conjunctions, but on intangible logical relations or sentence order to reveal discourse relations. The following paragraph, for example, contains an implicit causal relationship between the two sentences. If words such as the causal conjunction “因为” were added, the text would sound incoherent.

(8) 冯二成子喝足了酒，退出来了，连饭也没有吃，他打算到磨房去睡一觉。常年也不喝酒，喝了酒头有些昏。(The Garden in the Backyard by Xiao Hong, as cited in Zhu et al., 2001, p. 99)

In view of this, one should break away from the constraints of the ST and avoid excessive use of conjunctions in English-Chinese translation in order to ensure naturalness and fluency. However, the SJT in this study used a number of unnecessary conjunctions. The majority of the conjunctions in the ST are additive by nature, accordingly, the subjects' overused conjunctions were also additive. For example,

(9) The problems that arise from excessive social media have been well documented **and** cut across all ages, genders, races **and** socio-economic brackets. They include depression, social anxiety **and** insomnia. (Baines, 2018)

SJT1: 社交媒体所产生诸多问题已经被很好地记录下来，**并且**跨越了所有年龄、性别、种族**和**社会经济阶层，**而**这些问题包括抑郁、社交焦虑**和**失眠。

SJT2: 社交媒体过多导致的问题涉及所有年龄、性别、种族**和**社会经济地位的人，**且**已被记录在案，其中包括抑郁症、社交焦虑症**以及**失眠症。

RV: 已经有不少文献表明，过度使用社交媒体会引发一系列问题，包括抑郁、社交焦虑、失眠等，这些问题不分年龄、性别、种族、社会经济阶层，普遍存在。

The ST contains three cases of “and”, all of which were retained in the two SJT versions. SJT1 even provided an additional conjunction “而” (but) that did not exist in the ST, which makes the translation wordy and cumbersome. The RV, on the other hand, either omitted the conjunction (the first “and”) or converted it into a *dunhao*, a slight-pause punctuation mark uniquely used in Chinese (the second and third “and”), so that the translation does not read sloppy and is more in line with the norms of the Chinese language.

The subjects' tendency to overuse conjunction may also be a result of the negative transfer of the source language, and their failure to recognize the habitual use of implicit conjunction in the Chinese language.

E. Lexical Cohesion

Lexical cohesion is the type of cohesion whose cohesive effect is “achieved by the selection of vocabulary” (Halliday & Hasan, 1976, p. 274). It falls into two categories: reiteration and collocation, where the former is further categorized into five types: repetition, synonym, near-synonym, superordinate and general word (Halliday & Hasan, 1976). The ST, RV and SJT in this study all involved just three types of lexical cohesion, namely, repetition, near-synonym and superordinate. The data in Table 2 above shows that the mean frequency of lexical cohesion as a whole in the SJT is significantly lower than that in the RV. Considering the specific types (see Table 8 below), this difference is mainly manifested in the use of repetition ($t [37] = -23.89, p [2\text{-tailed}] = .000$), and the frequency of near-synonyms and superordinates on both sides is very low, with no significant difference.

TABLE 8
COMPARISON OF LEXICAL COHESION

	ST freq.	ST ratio (%)	RV freq.	RV ratio (%)	SJT freq. (Mean)	SJT ratio (%)
repetition	16	72.73	18	85.71	10.11	78.01
near-synonym	5	22.73	1	4.76	0.53	4.09
superordinate	1	4.55	2	9.52	2.32	17.90
Total	22	100.00	21	100.00	12.96	100.00

Figure 3 below shows that in addition to a large number of repetitions, the ST also uses a considerable proportion of near-synonyms. But both the RV and the SJT dominantly used repetition, the other two types accounting for a low proportion.

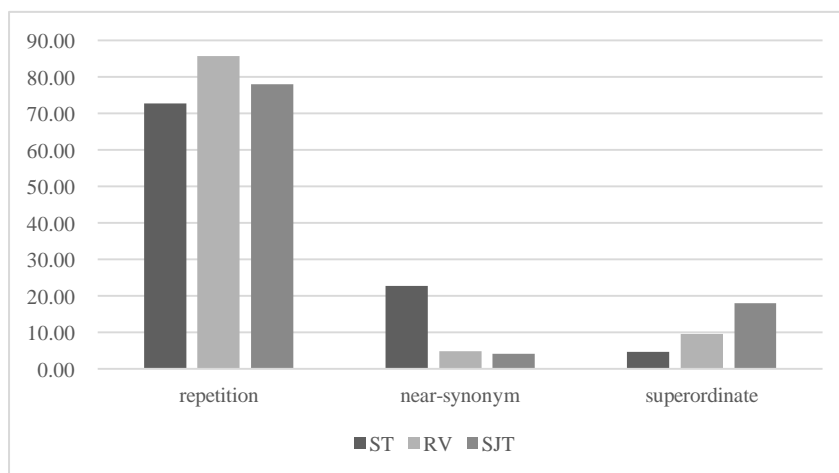


Figure 3 Comparison of Lexical Cohesion

In the ST, the words repeated are mainly the focal terms directly related to the theme of the article, including “smartphone”, “use”, “teenagers”, “students”, “technology”, “social media”, “depression”, etc. But the author also uses such near-synonyms as “teenager-youth-kids” and “isolated-lonely” to avoid repetition and achieve elegance. The RV retained most of the repetitions in the ST, omitted some, and added some by reverting the reference in the ST to the antecedent nouns, or repeating the nouns that have appeared before but are not repeated in the ST. The SJT, however, rarely reverted the reference in the ST to the nouns (which is one of the reasons why it has a significantly higher frequency of reference [see Table 4]), and less repeated the words that are not repeated in the ST, leading to a lower frequency and ratio of repetition than the RV. In Example (2), for instance, the repetition of “黑镜” in the RV was an added one, but in the subject’s translation, the English style was imitated, and the personal reference “它” was used to refer back to “黑镜” (and many other subjects used the demonstrative reference of “这” [this]). Below is another example:

- (10) The *problems* that arise from excessive social media have been well documented and cut across all ages, genders, races and socio-economic brackets. *They* include depression, social anxiety and insomnia. (Baines, 2018)

SJT: 过度的使用社交媒体所产生的问题包括抑郁、社交焦虑和失眠。它们已经被很好地在所有年龄、性别、种族和社会经济阶层中保留下来。

RV: 已经有不少文献表明, 过度使用社交媒体会引发一系列问题, 包括抑郁、社交焦虑、失眠等, 这些问题不分年龄、性别、种族、社会经济阶层, 普遍存在。

The RV reverted the personal reference “they” in the ST to the antecedent “问题” (problems), with a demonstrative reference “这些” (these) added before it. But the SJT retained “they” and translated it into “它们”. Although this translation accurately conveyed the original meaning, native Chinese speakers will find that the repeated use of “问题” is more natural than the use of personal reference “它们”.

As Lian (2010) has rightly pointed out, the general tendency of English discourse was to avoid repetition by means of substitution, ellipsis and transformation (i.e. using synonym, near-synonym, superordinate, etc.), but on the contrary, Chinese favors repetition, whose coverage and frequency far exceed that of English. What should be added to Lian’s claim is that in addition to the above-mentioned ways to avoid repetition in English, the use of reference is another important means. These different tendencies of English and Chinese are especially reflected in the co-reference of adjacent words: when the content words (often nouns) having just appeared need to be mentioned again, repetition is generally deliberately avoided in English, but not in Chinese. However, once the antecedent is far away from where it needs to be mentioned again, repetition may also be used in English, in addition to the use of synonyms, near-synonyms, superordinates and other lexical cohesive devices. This is why repetition accounts for a large proportion in the ST: in

many cases, the repeated words are not adjacent words, but words that need to be mentioned again after a certain distance.

The gap between the SJT and RV in terms of repetition shows that the subjects were again affected by the ST with its extensive use of reference. They were not good at reverting some cases of reference to the antecedents or using extra repetition wherever necessary, possibly because they ignored (or were unaware of) the fact that the Chinese language favors repetition.

V. CONCLUSION

In this study, we compared the cohesive devices in 38 junior English majors' English-Chinese translation texts with a reference Chinese version. The results show that there are significant differences in the use of the cohesive devices of reference, ellipsis, conjunction and lexical cohesion between the two sides ($p < 0.05$). It reveals that the subjects' cohesion problems include: (1) overuse of personal reference, (2) overuse of conjunctions, especially additive ones, (3) insufficient use of repetition, and (4) insufficient use of ellipsis, especially ellipsis of subject. The possible causes of these problems can be attributed to, first, the negative transfer of the source language which has constrained the subjects' work within the cohesion framework of the ST; and second, the subjects' failure to fully understand the characteristics of Chinese cohesion and the differences between Chinese and English cohesive systems.

To solve these problems, translation instructors may guide students towards a careful study of the cohesive devices in both English and Chinese, making them understand their respective characteristics, similarities and differences. Moreover, they may get students to apply what they have acquired about cohesion to translation practice by assigning them translation tasks, so that they can learn by doing and ultimately become skilled in the transformation of cohesive systems between English and Chinese.

The ST used in this study is limited to the argumentative text type and its length is also quite short, so the results can only partially reflect the cohesion problems of the English Majors in English-Chinese translation. In the follow-up study, we can try materials of different types, lengths and difficulty levels and see their impacts on cohesion in students' translated texts, so as to reveal more comprehensively the problems.

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