The Specificity of Translator's Notes

Textometrical Analysis of the Footnotes in Fu Lei's Translation of *Jean-Christophe* by Romain Rolland

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Abstract: In our work on the style of the translator, we focus on the visually most obvious aspects of the translator's interventions in the translation process: the notes added by the translator. We base our work on the French-Chinese parallel corpus that we developed containing Romain Rolland's complete work *Jean-Christophe* and its Chinese translation. We can find, count, display and classify semi-automatically the abundance of translator's notes in Fu Lei's translation using textometrical methods and software, allowing for rapid statistical measures on the subcorpus of translator's notes and the visualization of the distribution of different kinds of footnotes in the text.

The computation of the specificity of the vocabulary used in Fu Lei's notes reveals that, contrary to the common idea that the translator's note is predominantly a medium to overcome problems of un-translatability, he uses the notes to introduce his Chinese readers to Western culture. Moreover, his notes reveal his view on history and, more generally, on mankind as a whole. In this way, we can examine his ideas on the relationship between the author, the reader, and himself as a translator. The results, based on quantitative measures that allow for reproducible results not relying on personal aesthetic interpretations, confirm the special status of Fu Lei's work among Chinese translations.

Keywords: textometrical, translation studies, parallel corpus, translator's note, Fu Lei, Romain Rolland

Our work focuses on an important figure of Franco-Chinese literary translation: Fu Lei (傅雷, 1908 -1966). Thanks to him, the Chinese readers got acquainted with – and today still have access to – Western, mainly French, literature. The translations of Fu Lei are regarded as genuine literary masterpieces, and his style of translation was so remarkable that Chinese readers call it the "Fu Lei style".

When reading Fu Lei's translation of *Jean-Christophe*, one is easily impressed by the abundance of prefaces and footnotes[1]. What is the link between his style of translation and the

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[1] This article only addresses the footnotes, leaving an analysis of his prefaces to future research.

notes? In fact, the translator's note is an important issue in translation studies, because it is linked with many problems when we discuss the translator's legitimate place, his visibility and the problem of translatability.

Until now, many scholars and researchers in translation studies have engaged in studies and reflections on the subject of the translator's note. In the article *De l'érudition à l'échec : la note du traducteur*, Jacqueline Henry (2000) has systematically examined many sides of this subject: Linguistic, typographic, historical, and functional aspects of translator's notes. From stylistic and literary angles, Christelle Bahier-Porte (2005) has provided her interesting studies on the notes in the Eastern stories *The Thousand and One Nights* and *The Thousand and One Days*. But it is a pity to note that these existing studies are often limited to citations of notes scattered in the works, and there are few studies using computational corpus based methods, despite the increased importance of this issue in translation studies ever since their first introduction by Mona baker in 1993[2]. We should also mention the article by Jennifer Varney (2005) which deals with taboo subjects in translation by examining translators' notes in a big corpus: Italian translations of Anglo-American fiction from 1945 to 2005. However, her work still uses traditional methods.

In our present article, we focus on an empirical research on the footnotes in Fu Lei's translation, inspecting in detail what the translator puts into the footnotes. To do this, our works relies on textometrical methods (also called "lexicometrical" methods), i.e. a division of the text into units and an analysis of juxtapositions and co-occurrences to capture the meaning of the text[3]. The corpus of the present work is the source text and Fu Lei's translation of *Jean-*

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[2] Baker, M. (1993) 'Corpus Linguistics and Translation Studies: Implications and Applications', in Baker, et al. (eds.) *Text and Technology*, p.233-250. Amsterdam/Philadelphia: John Benjamins.
[3] Cf. Lebart L. and Salem A. (1994) *Statistique textuelle*. Paris: Dunod.

Christophe by Romain Rolland[4]. The size of the whole corpus is about 1.2 million words.

Besides the content of the footnotes, it is important to study their quantity, their locations, and their function. The present work will address these issues one after the other : Thus is our first section of this paper. The section 2 will analyze the reason for which Fu Lei wrote the footnote, and we will deal with this question in light of the theory of translation studies and specially in the examen of Fu Lei's personal experience in the social context.

A. The results of the experiments

After the preliminary treatment of our parallel corpus (cleaning, alignment, etc)[5] , we launch our experiment using the program *Lexico3[6]*.

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[4] Romain Rolland (1866-1944) received the Nobel Prize in Literature in 1915, mainly for his novel in 10 volumes *Jean-Christophe*. The novel appeared for the first time sequentially in the *Cahiers de la Quinzaine* between February 1904 and October 1912. The electronic version of the whole work is available at the website http://www.ebooksgratuits.com/ebooks.php. The first complete publication of *Jean-Christophe* in Chinese, published between 1937 and 1941, was translated by Fu Lei using the original version of 1926 from the editor of Librairie Ollendorff. *Jean-Christophe* was edited many times in varying versions and unfortunately, we don't have access to the version that Fu Lei based his translation on. We note that our French corpus lacks the prefaces of the first edition of Romain Rolland for Volume 1 and Volume 4 that Fu Lei translated. Our Chinese electronic version is based on the version from the website http://www.yifan.net/yihe/novels/foreign/yhklsdf/klsdf.html, but we have corrected the flaws in this electronic version according to the paper edition by the Anhui Literature Publishing House from 1998 (安徽文艺出版社), which in turn is based on Fu Lei's complete re-translation collected in 1957 by the Peoples Literature Publishing House (人民文艺出版社).

[5] For the Chinese part of the corpus, we used the automatic word segmentation from the *ICTCLAS* (Institute of Computing Technology, Chinese Lexical Analysis System). This program is under development since 2002 and available on the website: http://www.nlp.org.cn/project/project.php?proj_id=6. Then, we made use of *Alignator* program to realize a semi-automatic alignment of the French and the Chinese texts. This program is designed by Kim Gerdes available on elizia.net/alignator/alignator.cgi. In order to facilitate the comparison of the French and Chinese texts, among some other pretreatments, we changed all capital letters to lowercase in the French text, and the Chinese punctuation signs to their European forms in the Chinese text, and so on. For further information about the pretreatment, please confer to the articles *Comparaison textométrique de traductions franco-chinoises* (Miao et Salem, 2008) and *Donner accès à l'oeuvre de Fu Lei* (Miao et Gerdes, 2008) at the site http://miaojun.net. We use the abbreviation "RR" to refer to the original French text, and "FL" for the Chinese translation of Fu Lei. Note also that we have not included the prefaces in our present experience. They will be the subject of further research.

[6] The *Lexico3* textometrical program is produced by the university research team SYLED-CLA2T (Systèmes Linguistiques Énonciation et Discours - Centre Lexicométrie et d'Analyse Automatique des Textes), founded in 1997. This software was originally developed by André Salem. See the website: http://www.cavi.univ-paris3.fr/Ilpga/ilpga/tal/lexicoWWW/lexico3.htm for further details.

1. The number of footnotes in the translation

First of all, we intend to give the exact number of the footnotes in Fu Lei's translation. It seems not very difficult to count the footnotes, at least for a small book when the footnotes are not too frequent, for example, Henry (Henry 2000: 232) found 23 translator's notes in the French translation for the English book of David Lodge *Small World* (1985), translated by Mauritius and Yvonne Couturier (1991). But it is cumbersome to search, record, and count all the footnotes scattered in *Jean-Christophe*, a book containing 10 volumes and 1801 imprint pages[7].

The electronic version of the corpus and *Lexico3* allow us to overcome the counting problem. The tool *Form Groups* (tags), allows us to combine occurrences of different graphics into one group. In order to find the footnotes, we create the group consisting of the symbols used for footnotes in the translation, i.e. ①, ②, ③, ④[8]

Figure 1 : Form group of footnotes in Fu Lei's translation

We don't take into account the number used for the footnote as they only differentiate between

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[7] This counting refers to the edition by the Anhui Literature Publishing House 1998 (安徽文艺出版社).
[8] There is no page in the Fu Lei's translation which has more than 4 footnotes.

footnotes on a single page. Note also that the frequency count shown in *Figure 1* counts the actual symbols and since the same symbol appears in the position to annotate and in the beginning of the corresponding footnote, each footnote is counted twice. So, the actual number of notes is half of the frequency shown in *Figure 1*. We might think that the frequency should be an even number, but the footnote marker ① has an odd frequency (537). This is due to the fact that at one occasion, Fu Lei refers inside a footnote to another footnote labeled ①.

By computing (536 +138 +42 +8) / 2 = 362, we obtain the precise number of footnotes that Fu Lei used for the translation of *Jean-Christophe*: 362, corresponding to about one note per five pages.

In order to tackle the lexicometrical analysis of footnotes, we collect, by seeking the footnote markers, and copy-pasting, all the footnotes in one file, called "note". Then, we compare it with the text body without the footnotes. In the following, we present the basic properties of these files:

Table 1 : General properties of footnotes in Fu Lei's translation

Part	Occurrences	Forms	Hapax	Fmax	Form
Note	10359	3244	2091	464	的
Texte	572127	19055	6182	47454	的

Table 1 shows that the footnotes contains 10359 words, including 3244 different forms and 2091 hapaxes. With the total number of 362 footnotes, we can see that one footnote includes an average of 28.6 words.

It is important to point that among the footnotes in Fu Lei's translation, there are also the original footnotes, translated by Fu Lei into Chinese. But for these notes, Fu Lei put " –原注 " (*yuanzhu*, original note) after each footnote to emphasize that it was the author who wrote it.

This mark allows us to obtain easily the information about Romain Rolland's footnotes using the same method as before: We find that the original has 12 notes with 145 words, 82 different forms, and 59 hapaxes.

Thus, we discovered that the notes of the translator, excluding the author's original notes, (10359 – 145) / 572127= 0.0178, occupy approximately 1.8% of the translation.

2. Where are the footnotes?

After this general quantitative analysis we will turn to the position of the footnotes in the 10 volumes of the translation. How are they distributed? What words in the text have imposed footnotes?

2.1 Distribution of footnotes

To answer the questions mentioned above , we are launching, in a first step, the research on the footnote distribution in the translation, with the use of the form groups (①, ②, ③, ④) and statistics calculation (PCLC)[9] in *Lexico3*.

Table 2 : Footnotes distribution per volume in Fu Lei's translation

Formes/SR	01		02		03		04		05		06		07		08		09		10	
①	38		20	-4	8	-14	89		136	+17	28		66		34	-4	50		68	
②	2	-3	2	-3	0		36	+4	50	+13	2	-3	12		6	-3	8	-3	20	
③	0		2		0		18	+5	18	+7	0		2		0		0		2	
④	0		2		0		4		2		0		0		0		0			
TOTAL	40		26		8		147		206		30		80		40		58		90	

[9] PCLC (Principales caractéristiques lexicométrique du corpus et de la partition) refers to the main lexicometrical features of the corpus and the partition. The function PCLC of *Lexico3* allows a quick visual comparison of the parts according to their most important textometrical characteristics. See Lamalle, C. et al. (2003) *Outils de statistique textuelle Lexico3*. Paris: Université de la Sorbonne nouvelle- Paris 3. p.26-27.

The number on the top of the table indicates the volume number. Under each volume number, there are two columns of numbers, the left one shows the frequency of each form (the footnote marker) and the right is each form's specificity[10]. The last line shows the total frequency of the footnote marker in each volume.

It is easy to notice that the volume 5 (entitled *La foire sur la place*) contains the highest number of footnotes, with 206/2 =136 appearances. And the volume 3 (entitled *Adolescence*) possesses the least footnotes, with only 4 footnotes in the volume. So, *Table 2* indicates that the distribution of footnotes is not equal among the volumes. Thus results can be illustrated by a figure.
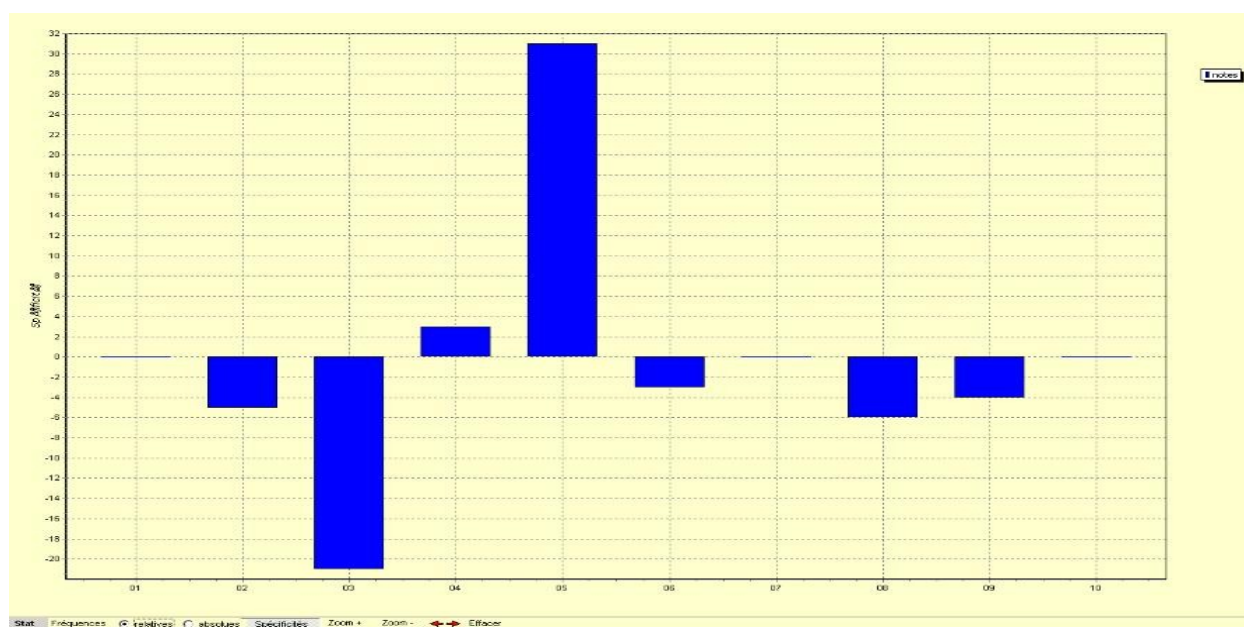
Figure 2 : Specificity of footnote per volume in Fu Lei's translation

Figure 2 sketches the specificity of footnotes in each volume. The highest pillar upturned shows volume 5 has the largest number of footnotes, with the specificity of about +31[11]. Meanwhile, the

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[10] The analysis of the specific serves to illustrate the frequency of each unit text in all parts of the body. Here, this feature allows us to examine the distribution of footnotes related to the length of each tome.

[11] The specificity of the footnotes in the volume is different to the accumulation of each footnote maker's specificity in the volume.

lowest pillar downward announces that the lest footnotes is in the volume 3: its specificity is -21.

We can further refine the graph by taking into account not only the volumes but the smaller chapters of the novel. This is an easy thing to do in *Lexico3*.

Figure 3 : Relative footnote frequency per chapter in Fu Lei's translation

Figure 3 shows in greater detail the frequency of footnotes in the whole work separated by chapters. Note that some chapters have no footnotes at all, for example the second chapter of volume 2 (022, entitled *Otto*) and the third of volume 3 (033, entitled *Ada*). The highest number of footnotes is encountered in the first part of Volume 5 (051, entitled *La foire sur la place*).

We cannot go into further details in the analysis of *Figure 3*, but we would like to emphasize that the unequal distribution clearly points to some specific needs at specific points in the translation. However, a purely lexicometrical analysis will not easily reveal these needs, one has to get back to the text and analyse the words in detail.

2.2 Cocordance of footnotes

In a second step, we investigate to which words Fu Lei has added footnotes. At this point, we will briefly present how *Lexico3* gives direct access to the parts of text that are annotated with its included concordance of the form groups (①, ②, ③, ④).
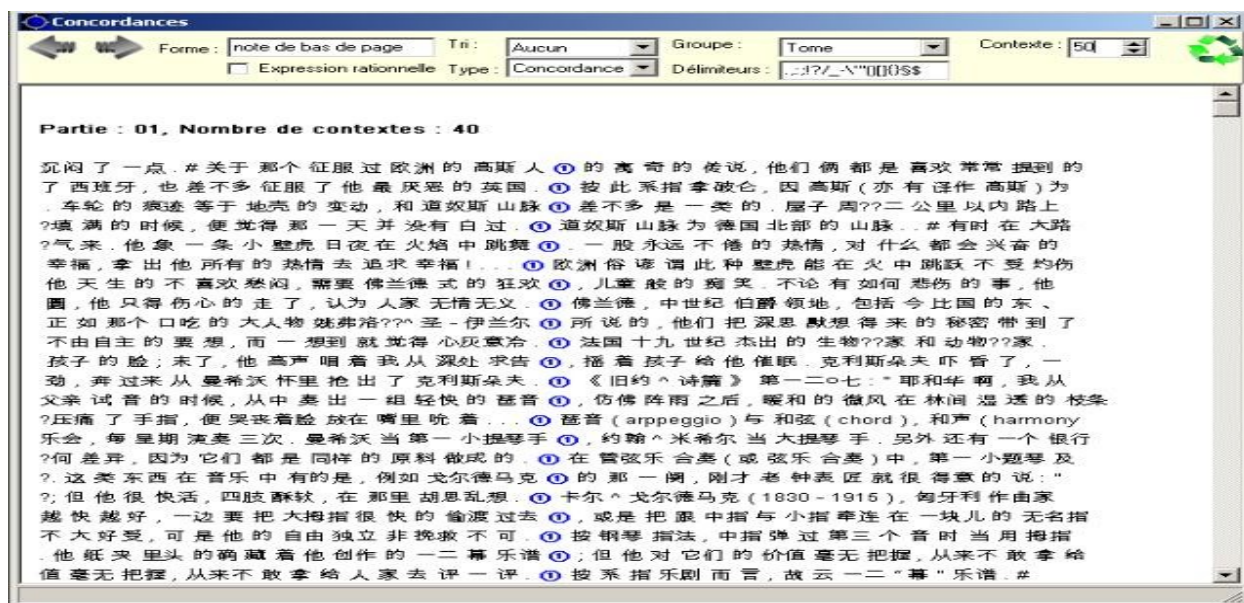

Figure 4 :   Footnote concordance in Fu Lei's translation (extract)

For this experiment, we choose the "volume" as the unit group, so, the footnote concordance results are listed and grouped by volume. As the size of the edition page is limited, we show above only the beginning of the concordance of the footnote marker in the first volume. It is also possible to specify the unit in which the results are presented. Finally, we can specify the size of the display window in number of occurrences (here we choose to present 50 words in the context). Note also that the system shows the total number of occurrences of the search term in the current volume. In the volume 1, there are 40 occurrences of footnote marker. This means 20 footnotes in this area – the result corresponds to the number that we obtained in *Table 2* above.

Let us see the first line of the result containing the footnote mark ①, it is for "高斯人" (g*aosiren*, Corse). Then, the next line indicates, after the marker ①, the content of the footnote

for the word "高斯人"[12] (g*aosiren*, Corse) in the precedent line :按此系指拿破仑[...] (here refers to Napoleon). Thus, by examining the intervals lines (the first line indicates the words annotated, and the line after shows its content), we can study, in a systematic way, not only the annotated words in the text, but also the contents of the footnote.

In this way, the program gives easy access to all the footnotes in a big corpus.

3. What do the notes say?

Let's now attack the content of the footnotes in Fu Lei's translation of *Jean-Christophe*. It is important to point out how the use of the software is different from a traditional analysis based on careful reading by the person doing the translation studies: A common reading will be subject to chance and to prejudice, as in the limit of some concrete citations from the text, it is very difficult for the researchers to grasp the whole concept of the issue they deal with. Moreover, the constraints of different understanding levels of the researchers add the difficulty and deviation.

In fact, just like Berenson and Lazarsfeld pointed out, a typical text of intercultural communication requires a technique for an objective description of the systematic and quantitative content in the communication[13]. We believe that it will be reasonable to address the translation problem with two methods: one is a quantitative approach on the language units in the translation text, the other is a qualitative approach on the analysis in the textual and social context.

In a first step, we use the specific words of *Lexico3* to catch the content of footnotes through

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[12] Now we use "科西嘉岛人"(*kexijiadao ren*)for the "Corse". There are differences between the place names in the Fu Lei's translation and the place names used now.

[13] Berenson, B. and Lazarsfeld, P.F. (1984) *The Analysis of communications content.* Chicago and New York: University of Chicago and Columbia University.

statistical data and mathematical calculations. In the next step, we want to make use of the automatic and simultaneous visualization provided by the tool *Alignoscope[14]* to analyse the footnotes in the context.

Through the examination of the question what the footnotes provide compared to the original content, we think we could reveal the translator's intention, and dissect the role played by the footnote in the translation.

In order to do this, we proceed in three steps: 1) listing the specific vocabulary in the footnotes compared to the content of the text; 2) contextualization of footnotes in the simultaneous visualization of source-target texts; 3) distinction of the types of the footnotes.

3.1 Specific words in the footnotes

We use again *Lexico3* to get the lists of positive and negative specific vocabulary in the footnotes compared to those in the translation text. In order to facilitate the reading of people who do not know Chinese/French, we put English equivalents next to the Chinese/French word.

Table 3 : Lists of specific and anti-specific words in the footnotes (extract)

Specific words in the footnotes				Anti-specific words in the footnotes					
Forms/SR		Note		Text		Forms/SR		Note		Text	
为	Be, mean, consider	328	★★★	1079	★★★	的	's, of	464	★★★	47454	★★★
①	①	269	★★★	0		她	She, her	1	★★★	8078	★★★
《	《	140	★★★	261	★★★	他	He, him	13	★★★	17654	★★★
》	》	140	★★★	261	★★★	着	Particle	3	★★★	7565	★★★
之	's, be	113	★★★	469	★★★	了	Particle	8	★★★	13593	★★★
法国	France	106	★★★	502	★★★	不	Not, no	27	−42	9348	+42
世纪	Century	105	★★★	65	★★★	是	Be	48	−35	10502	+35
均	Both, all	61	★★★	3	★★★	他们	They, them	2	−31	4312	+31
②	②	69	★★★	0	★★★	克利斯朵夫	Christophe	6	−30	4830	+30
此	this, the	65	★★★	105	★★★	把	Marker of disposal sentence	3	−26	3747	+26
即	namely	44	★★★	17	★★★	到	Arrive, to	4	−18	2920	+18

[14] The program has been designed by Kim Gerdes, see the website : http://miaojun.net/alignoscope/

系	namely	36	★★★	10	★★★	很	Very	1	−18	2382	+18
十九	19	34	★★★	2	★★★	你	You	6	−18	3150	+18
于	To , at	76	+49	361	-49	都	All, both	9	−16	3281	+16
∧	separator between names	78	+48	425	-48	这	The, this	2	−16	2247	+16
此处	Here	26	+47	0		自己	Self	5	−15	2591	+15
近代	Contemporary	27	+44	4	-44	要	Want, must	4	−14	2357	+14
歌剧	Opera	36	+44	35	-44	得	Must	5	−14	2496	+14
指	Refer, indicate	41	+42	72	-42	就	Already, at once	6	−13	2445	+13
至	To, until	33	+40	33	-40	什么	What	1	−13	1743	+13
以	According to, use, with	66	+40	363	-40	想	Want, would like	3	−13	1978	+13
时	time, period	49	+40	157	-40	在	At, be doing	68	−13	7987	+13
③	③	21	+38	0		里	Inside, in	1	−13	1751	+13
称	name	27	+35	22	-35	我	I, me	15	−13	3507	+13
及	And	27	+33	29	-33	跟	And, with	1	−12	1532	+12
乃	Be, so	20	+33	29	-33	说	Say, talk	15	−11	3254	+12
故	So, thus	24	+33	15	-33	会	Can, could	2	−11	1689	+11
与	And, with	89	+32	993	-32	和	And, with	7	−11	2279	+11
耶稣	Jesus	24	+32	17	-32	去	Go	5	−11	1996	+11
神话	Myth, fairly tale	22	+31	12	-31	来	Come	9	−10	2311	+10
其	Its, his, her	35	+31	100	-31	因为	Because	1	−10	1339	+10
亦	Namely	22	+31	11	-31	一个	A (an)	13	−10	2712	+10
德国	German	54	+27	28	-27	使	Make	2	−10	1469	+10
希腊	Greece	23	+27	28	-27	还	Also, too, even	3	−10	1629	+10

Table 3 gives us some idea of what the footnotes talk about. We mention here only some important information provided by this table. First, look at the most frequent word "为" (*wei*, be/ mean/consider, 328 times) in the first row of the table, which immediately expose the abundance of the designation meaning in the footnotes. A quick overview on the following words in the list shows that the words like乃 (*nai*, be),即 (*ji*, namely),系 (*xi*, namely),亦 (ji, also) – containing confirmatory meanings, are also very numerous in the footnotes. It is interesting to note that the modern Chinese word for the confirmation "是" (*shi*, be) appears much more often in the text than in the footnotes (10502 vs. 48). Considering that "为" (*wei*,be) and乃 (*nai*, be) are the

traditional Chinese words to describe "be", it reveals that for the confirmation, Fu Lei adopted the modern Chinese words in the translation text, while he chose to use traditional Chinese in the footnotes. We think that Fu Lei did it in order to avoid too many words in the footnotes, since traditional Chinese allowed a concise style.

It comes as no surprise that the footnote markers themselves also obtain high scores in the list: As they appear only in the note side, it is natural to obtain the high specificity.

Moreover, the high specificity of the Chinese punctuation marks "《》" between the footnote and the text displays clearly that there are many citations of book and article titles in the footnotes. Contrary to the French "chevron" quotes "« »", the Chinese punctuation " 《》 " are reserved for the names of books, articles, pictures, songs ... This is a clear indication that the footnotes in Fu Lei's translation provide rich cultural information.

Further down the list, another punctuation at the 15th rank of the table attracts our attention: "^". This symbol is in fact a correction of the original "•" which is the separator between the Chinese phonetic transcription of foreigner's family names and first names. Given that this punctuation is only found in Chinese, we have changed it to "^" during our pretreatment of the corpus in order to make Chinese and French corpus more comparable. We can conclude that the footnotes contain a lot of information about the foreign persons. But, the main persons of the novel occur only rarely in the footnote. For example, "Christophe " (克利斯朵夫) appears only 6 times in the footnotes, making it even appear in the anti-specific table. Besides, the personal pronouns[15] - indicating the relationship between people, "她" (*ta*, she), "他" (*ta*, he), "他们" (*tamen*, they), "自己" (*ziji*, self), "你"(*ni*, you), "我"(*wo*, I) are also used only rarely in the

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[15] About the employment of the personal pronouns in the parallel corpus *Jean-Christophe*, see Jun Miao's article: *Fu Lei en chiffre : Les pronoms personnels dans la traduction de Jean-Christophe* at http://www.miaojun.net

footnotes. This can be explained by the fact that footnotes are self-contained texts that cannot use many pronouns referring to some previously defined entity, and footnotes deliver knowledge which is not centered around the text's story.

Moreover, we find another list of words in the highly specific list: Names of countries like "法国" (*faguo*, France), "德国" (*deguo*, Germany), and "希腊" (*xila*, Greece), are listed in the table with the respective frequencies of 106, 54, and 23. These nouns are also used in combination with the genitive particle "的" (de/ 's) to form the corresponding adjectives French, German, and Greek etc. As the novel takes place in France and in Germany, we believe that Fu Lei added information about these Western countries - a world far away and strange for Chinese readers. Why Greece? Maybe Fu Lei explains a lot of things about Greek culture.

Let's briefly mention some other interesting words in this table: The words "世纪" (*shiji*, century), "时" (*shi*, time, period) and "近代" (*jindai*, contemporary) remind us that history is an important element in the footnotes. With 51 occurrences, "歌剧" (*geju*, opera) is doubtlessly a topic discussed extensively and "耶稣" (*yesu*, Jesus) and "神话"(*shenhua*, myth, fairy tale) show Fu Lei's effort to introduce religion and Western mythology to China.

From this analysis, we can draw some conclusions: Thanks to the textometrical methods, we saw that the footnotes in Fu Lei's translation are characterized by a strong supply of information on the cultures, foreign personages, customs, and history. In this way, the social contexts of Western countries - a world where the novel takes place - unfolds to the Chinese readers. However, this is just our deduction from the observations of statistical results which we will have to confirm by providing concrete examples later.

3.2 Contextualization of footnotes

Here, we use the tool *Alignoscope* which displays simultaneously the source and target texts, in order to scrutinize the contents of footnotes in their context. In the *Figure 4* above, we saw that *Lexico3* can quickly find the words annotated in the text and the content of footnotes, but now we would like to accede directly to the references of the original context.

By paying attention to the importance of "re-contextualization" of each note in the target text, Varney (Varney 2005: 49-50) proposed to identify the elements of macro-structure of each note and assess their rhetoric strategy since "a comparative analysis of the target text segment signaled by the note and the corresponding segment in the source text will enable us to identify the problematic issue."

Following this idea, we are launching an experiment on all footnotes ①, ②, ③, ④ using *Alignoscope*.

Figure 5 : Simultaneous visualization of footnotes in source - target texts of Jean-Christophe (extract)

According to the information bar in the middle of *Figure 5*, we can see there are a total of 7058 blocks throughout the parallel corpus. Since the complete parallel (with the prefaces) is inserted in the online program *Alignoscope,* the result about the footnote is slightly influenced: there are 4 footnotes of ① in the prefaces. But we will not deal with them in this present article. So, there

are 295-4=291 blocks who correspond to our quest for footnotes. We should bear in mind that the square in *Figure 5* represents the paragraph unit of segmentation. And these paragraphs of the original and the translation are semi-automatically lined out and marked by a marker (e.g. #). This treatment is realized by the software *Alignator*.

Thus, we know that Fu Lei inserted footnotes in 291 paragraphs. As some paragraph blocks contain several footnotes at the same time, the number here is different from the result in *Figure 1*. In the following discussion, we will show how the simultaneous visualization can help us to achieve the "re-contextualization" for the footnote.

Hovering over the dark green square displays a popup (No.111)[16] with the two corresponding paragraphs, on the left is the original text, and at its right side is its Chinese corresponding translation. It is easy to see that Fu Lei wrote a footnote ① for "道奴斯山脉 (*daonusi shanmai*). By referring to the source context at the left, we know that the footnote is annotating the Taunus Mountains. We equally see the footnote itself: "道奴斯山脉为德国北部 的山脉" (the Taunus Mountains are a mountain range in northern Germany). Although this footnote is simple, with only 7 Chinese words (segmented by the ICTCALS program), it provides a brief geographic information for Chinese readers.

In fact, by a simple glance at the original context, we can see Romain Rolland described the poor state of the road Christophe took: he used a comparison between the relief of a rut and geography. In order to strengthen the effect of the description for the relief, Rolland wrote " à peu près du même ordre que le massif Taunus" (roughly of the same kind as the Taunus mountain range.) Because France and Germany share a common frontier, a lot of French readers

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[16]   This is the number of the aligned paragraph in the complete parallel corpus.

know the Taunus range. But this geographical knowledge is not obvious to Chinese readers who live far from Europe. Adding this footnote translates that Fu Lei wants to transfer the geographical information to his Chinese readers with the hope that they can understand the original better[17].

In order to detail our examination for the footnotes, we give another example of the footnote ② in *Alignoscope*.

Figure 6 : Simultaneous visualization of footnotes ② *in source - target texts of Jean-Christophe*

We see that 69 paragraphs in the translation of Fu Lei have the footnote marker ②. Look first on the Chinese side, Fu Lei put a footnote ② after "封面上,美丽的莪特字体写着:" (On the cover, there was written in nice Gothic script): ②莪特字体俗称为花体字,产生于十三世纪,早期印刷书写多用此体,德文字体迄今称为莪特体. (The Gothic script, with a popular name of floral script created during the 13th century. The ancient press work adopted largely this kind of script. Until now, the German script is called also Gothic script.) Then, we return to the original

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[17] Unfortunately, the information Fu Lei provides is not entirely right. Indeed, the Taunus is a mountain range in Hessen, and it is bounded by the river valleys of Rhine, Main and Lahn, which are near the cities of Frankfurt and Wiesbaden. Hence, the Taunus is not a mountain chain in northern Germany, but rather in the south-west of the country.

context, where we find the Chinese footnote is added to the "Gothic" in the phrase "sur le couverture était écrit, en gothique admirable" (on the cover was written in admirable Gothic script).

Significantly different from script in Chinese characters, the Latin script is based upon alphabets. As for Gothic script, it is a kind of script mainly reserved used for printing. Aware that this information would be left unnoticed or not understood by most of Chinese readers, Fu Lei added this footnote to fill this cultural gap.

At the level of translation technique, there is a double interest in analyzing these footnotes in their context. First, it is about a translation technique: how to translate the term "Gothic script" into Chinese? In fact, the Gothic style in the architecture is often translated into "莪特式" (*geteshi*, Gothic style). According to the translation text, Fu Lei kept the phonetic transcription "莪特" [18](*gete*, Gothic) in Chinese, then added "字体" (*ziti*, writing) or "体"(*ti*, script) to strengthen that it is an act of writing. Secondly, it concerns the choice of the words. In the footnote, Fu Lei wrote that Gothic script has another popular name "花体字" (huatizi, translated word by word: floral script). In fact, the Gothic script is also called "black letter" [19] in English. In Chinese language, "花体字" (*huaziti*, floral script) and "黑体字" (*heiziti*, black letter) are both used for the Gothic script. But Fu Lei chose to use the first instead of the second term. We do not know if it is Fu Lei who translated for the first time the Gothic script into Chinese "花体字", but from this small example, we can assume that Fu Lei thought "花体字" (floral script) could highlight the ornamental feature of this writing.

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[18]   Now we use "哥特" （*gete*) for "Gotic".

[19]   See the website : http://fr.wikipedia.org/wiki/%C3%89criture_gothique

A little further on, we meet once again a description about the Gothic script in the original (paragraph 325), but this time the author did not directly use the word "gothique" (Gothic script): "c'est le cahier était écrit à la main, de la grosse écriture du vieux, qui s'était spécialement appliqué. les en-têtes étaient ornés de boucles et de paraphes" (This music score was handwritten, in the gross script of the old man, who had specially applied himself. The title was decorated with loops and ornaments.) At this time, Fu Lei translated it as "乐谱是手写的,还是老人用他肥大的笔迹特别用心写的. 题目都用的花体字." (The music score was written by hand; it was the old man who wrote it with special application in his big script. The titles all use the floral script). A simple comparison shows that Fu Lei did not translate word by word "loops and ornaments" in Chinese, but a free translation with "floral script" – the ample information is located at the footnote of paragraph No. 326.

Of course, if we scrutinize the content of this footnote, we will find that in one point, the footnote is not very exact. The Gothic script became popular rather than arise in 13th century Europe. Surely, this mistake does not have a serious impact on the general meaning of the footnote's content. In any case, this example illustrates that the footnotes provide external knowledge to facilitate the Chinese reading of the original text, and at the same time, the information in the footnote became a part of the text of translation.

So, with the examination in detail of the footnote in the context, we can evaluate the quality of the footnote. Furthermore, in the examples cited above, we noticed that the word "为" (*wei*, be/mean/consider) has appeared three times, and "德国" (*deguo*, Germany) once. This confirms that the information obtained in the *table 3* about the specific vocabularies of the footnote is correct.

The software *Alignoscope* can also export the search results of all footnotes – a useful feature for doing an intensive review of all the footnotes in their context.

Figure 7 : The importation of footnotes research results in Jean-Christophe corpus (extract)

All of the above show that the textometrical software greatly facilitates translation studies: On the one hand, it allows us to penetrate the paragraph where Fu Lei gave the footnote, thus, we study carefully the contents of the footnote in its context; and on the other hand, the simultaneous visualization makes it possible to find the original word annotated, and by scrutinizing source-target-texts, we can analyze the translator's motivation.

3.3 The types of footnotes

From the observation of footnotes in Fu Lei's translation, we attempt a summary on footnotes' content in order to better examine the issue of adding footnotes. We should remind here that our synthesis is made by the analysis of the annotated words and by the simultaneous visualization. There are about seven types of footnotes.

Subjects of footnotes		Examples
Places	1. The geography of a place; 2. The geography in religion (The Bibe); 3. The characteristic of a place; 4. The style of construction of one place or a building; 5. The name of a place.	Bloc 2978 克利斯朵夫 被《圣经》中 那 股 肃 杀 之 气 鼓舞 起 来 了 : 西乃 山上 的 ①，无垠 的 荒漠 中 的，汪洋大海 中 的 狂风，把 乌烟瘴气 一 扫 而 空. ① 西乃 为 阿拉伯半岛 地名，又 为 山脉 名，圣经 载，上帝 于 西 乃 山上 授律 于 摩西. (The Sinai is an Arabic Peninsula, and it is also the name of the mountain. According to the Bible, the Sinai is the place where Moses received God's command.)
Persons	1.The name, status and profession of somebody; 2.The story or anecdote of somebody; 3. Somebody's ideas, or the ideas of one school.	bloc 4438 于是 他 姊姊 不 倦 的 叙述 出征 非洲 的 经过. 伟大 的 事迹，可以 和 比查尔 跟 高丹士 的 故事 媲美 ①. ① 比查尔 与 高丹士 均 十六 世纪 时 西班牙 冒险家 : 前者 征服 秘 鲁，后者 征服 墨西哥. (Pizarre and Cortes were two Spanish explorers of the 16th century, the first one conquered Peru, and the second Mexico)
Translation techniques and linguistic knowledge	1. Explain the difficulty of translation and the method of translation; 2. Add the source of words, phrases and quotations; 3.Inform the figurative meaning and the original meaning; 4. Explain the characteristic of source language; 5. Inform the content of the original text;	Bloc 484 人家 越 想 要 他 驯服，做 个 循规蹈矩 的 德国 小 布尔乔 亚 ①，他 越 觉得 需要 摆脱 羁绊. ① 布尔乔亚 是 法语 bourgeois（资产阶级）之 译音，在 本 书 中，多半 系 指 中产阶级 或 市民 阶层. (布尔乔亚 is the Chinese phonetic translation of the French word *bourgeois* (capitalist class), in this book, this word refers rather to the middle class and the citizen class.)
Social customs	1. The social customs (in terms of religion, law, publishing, social phenomenon, education system, military system, clothing, daily life ...) 2. The explanations for nations and peoples; 3. The cultural context; 4. The associations in the society;	Bloc 2293 华特霍斯 可是 对 他 一 脸 瞧 不 起 的 样子，拿 出 尊严 沉 着 的 气派，竭力 在 喧闹 声 中 表示 不 答应 人家 对 他 用 这种 口 气，教 克利斯朵夫 等 他 的 消息；一 边 把 名片 递给 他 ①. 克利 斯朵夫 拿 来 扔 在 他 脸上， ① 西 俗 : 两 人 吵架 时 一 造 把 名片 递给 对 造 是 表示 愿意 决 斗. (Western custom : during a quarrel, giving a visiting card to another one means to launch a duel.)
works of art	*I. music* The musical instruments; The terms of music; The posts and the title in the field of music; The names of a piece of work, its content, its author, its styles (characteristics); The rules or custom in the field of music; *II. Painting* Explain the name of painting, its author, its date, and its characteristics; *III. Play* Explain the play (or opera), its content, its characters, the date of the staging, and its director; The types of plays; *IV. Status artistic* The status of the author of some works and his style; *V. Mythical stories* The mythical stories and characters, explain their significance; *VI. Religious stories* Stories and religious figures in the Bible; *VII. Literary works* The content of the work, its author, its style, and its social affects, etc.	Bloc 3138 下 一 天，克利斯朵夫 发 见 所谓 钢琴 是 件 旧货 店 里 买 来 的 破烂 东西，声音 象 吉他 ①； ① 吉他 形似 中提琴 而 略 大，共有 六弦，舞蹈 音乐 及 民间 音乐 多用 之. (Under the form of viola, but a little larger, the guitar has six strings, and is often used for dance music and popular music.)
Translator's comments	1. On the content of the original; 2. On the citation;	Bloc 3559 在 家里 他 有 二十 一 个 孩子，十三 个 都 比 他 死 得 早 ③，其中 一 个 是 白痴；其余 都 是 优秀 的 音乐家，替 他 来 些 小

	3. On the historical context in the original; 4. On the author or the others personages; 5. On the works of art.	小的家庭音乐会,... ③按所有罢哈的传记均称罢哈子女共二十人 (前妻生七个 , 后妻生十三个) , 罢哈故世时 (1750 年) 尚生存者共有子女九人 . 作者言其子女共二十一人 , 有十三个比罢哈早故 , 不知何所据 . (According to all biographical books of Bach, Bach had twenty children (including 7 of his first wife, and 13 of his second wife). When he died (1750), there were 9 children alive. The author said that Bach had 21 children, and 13 died before him. We don't know on which information the author based his statement.)
Historical elements	1. Reminder of historical events; 2. The historical contexts of the work;	Bloc 2516 " 那我们在中国已经实行过了 ① . " ① 指一九○○年 八国联军 入侵中国 . (It refers to Eight-Power Allied Forces who invaded China in 1900.)

Such classification is not exhaustive, and as a lot of contents in the footnotes concern many fields, it is very difficult to make an exact distinction. Then, we can not cite all the typical examples in the translation. But it should be observed that the footnotes in Fu Lei's translation touch a lot of social, cultural, historical, and linguistic domains. However, the most remarkable type of the footnote is the commentary from Fu Lei. This is because Fu Lei provided not only the correlative information but also his personal opinions on the content of the text, the author, and on the historical events. Even in the informative footnotes about the place, the works of art, Fu Lei now and then added his personal interpretations.

Hereby, through the footnote, we can see that as a literature translator, Fu Lei did not blindly follow the author but he did his best so that his readers would get a better understanding of the essence of the original, and he used his personal aesthetic to comment all: the oeuvre, the author, and the social affairs, etc. In brief, Fu Lei acts like a thinker who scans the esprit of the original through the surface of the words.

B. Analysis from the aspect of translation studies

If there are no notes in the text, the translation would seem purer and more "transparent", at least

at the appearance. Because the footnote addition notes produce a visual effect to the translation: The extension of the page and its layout of the printed page changes. Our results above show that the footnotes add 10214 words to the resulting translation.

Henry (Henry 2000: 235) points that adding notes is in fact a translational notion which is linked with the space "already said and unsaid" in the text, precisely, it lies within the choice of the implicit and, most importantly, the explicit or not. But the issue is coming from the incompleteness of knowledge (Lederer, 1984), due to the unequal possession of knowledge between individuals, or in other words, there is the lack of "lexiculture" in some readers (Antoine, 1998). In the present corpus, most of the Fu Lei's footnotes are informative and explanatory. They provide the knowledge of Western culture and of Western music in particular: A world almost completely unknown to the Chinese. Besides, many footnotes tell the stories of myths and religions, which creates a course on culture for Chinese readers, and this information can increase enormously the understanding of the readers for the meaning of citations in the original texts and its underlying cultural concepts. Consequently, these footnotes compensate for the cultural loss.

However, our research shows that the addition of footnotes in Fu Lei's translation of *Jean-Christophe* is not limited to the introduction of the Western world knowledge; it moreover offers a way for the translator to accomplish his ambition to introduce new and good ideas to the readers. This manifests Fu Lei 's responsibility – a responsibility not only from a translator and but also as a thinker.

In one of Fu Lei's letters (the 5 February, 1961) to his son Fou Ts'ong (傅聪) [20], Fu writes:

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[20] Fou Ts'ong is an international famous pianist. He studied the piano in many foreign contraries. During 1954 -1966, Fu Lei and Fou Ts'ong exchanged a lot of letters, and these private letters are collected and published in *Fu Lei's Home Letters (傅雷家书)*, by the San Lian Press (三联书店), the fist version was in 1981.

"As you mention often the Hellenism in the art, I transcribed especially the fourth chapter "La scupture en Grèce" of H. Taine's *Philosophie de l'art*, and translated it into Chinese with more than 60,000 words, then stapled the translation together into a book. Although the original book has its English version, there are few notes on the myths, the historic evens, and the anecdotes, which are in fact numerous in the original book. I don't think you can read it completely. So, I put many notes besides my translation, hoping they will be useful for you."[21] Without explanation, it is obvious to note from this extract, that Fu Lei added the notes in order to facilitate the understanding of his son for the original. Of course, in this case, Fu Lei did the translation of "La sculpture en Grèce" with the primary intention to help his son in his studies on Occidental art. But from this example, we can trace that Fu Lei did his translation in favor of his readers' understanding for the original text, and his son was the fist reader of his translation.

In the term of legality or limit of using the translator's notes, Henry (Henry 2000: 239) thinks that it is a problem of the boundary between scholarship and failure, and it raises the problem of "moral contract" between the translator and author. Because the abuse of the notes and the note badly used reveal the inability of the translator. But contrary to Henry's worry (Henry 2000: 238) that adding notes will cut the linearity of reading, we prefer the opinion of G. Genette (Genette 1987: 297) : "[...] the optional reading (of the notes) therefore involves only some readers: those who are interested in any additional or digressive consideration. It is precisely the secondary importance of those considerations that justifies their rejection into a footnote."[22]. Placed at the margin of the text, the note in the category of paratext does not hinder

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[21] Fu Min (ed.) 2008. *Fu Lei's Home Letters (version of selection and* annotation*)*, Tianjin: Academy of Social and Sciences Press (天津社会科学院出版社) . "因你屡屡提及艺术方面的希腊精神（Hellenism)，特意抄出丹纳《艺术哲学》中第四篇 "希腊的雕塑" 译稿六万余字，订成一本。原书虽有英译本，但对其中的神话、史迹、掌故太多，尚无详注，你读来不免一知半解；我译稿均另加笺注，对你方便不少。"(p. 158)

[22] Genette, G. (1987) *Seuils.* Paris: éditions du Seuil. « […] de lecture facultative elles ne s'adressent par conséquent qu'à certains lecteurs : ceux qu'intéressera telle ou telle considération complémentaire ou digressive dont le caractère accessoire justifie précisément le rejet en note » (p.297)

the normal reading, as it is the reader who has the choice to read or not to read those notes (Bahier-Porte 2005). We are in agreement with the fact that too many footnotes destroy the "clean face" of the original text, and they could eventually bore the reader. But keeping in mind that each footnote contains about 28 words and Fu Lei uses the traditional Chinese characters, we see that Fu Lei has the goal to simplify as much as possible his footnotes.

Moreover, we think that the addition of footnotes is just for the purpose of ensuring the linearity of the content of the original text. Because the other ways (see Henry 2000: 235-236), i.e. the addition of the equivalence in an interpolated clause, between commas or parentheses, are more likely to affect the fluidity or "qi" (气, spirit) - borrowing the Chinese term - of the original text. Anyway, we think we should examine the note problem with the translator's intention in the social context.

In fact, when Fu Lei returned to China in 1931, after four years of studies in France, China was suffering from terrible wars. Realizing that "lack of moral strength, the Chinese today are living day by day as if asleep, or they have little to do, as if they were in an amorphous state"[23], he decided to translate three works of Romain Rolland: *Life of Tolstoi, Life of Michelangelo,* and *Life of Beethoven*. The goal he set with his translation was to encourage people like him in the middle of the war suffering of the time.

When Fu Lei translated *Jean-Christophe*, he exposed directly his admiration for this work at the preface of the translation[24]: "*Jean-Christophe* is not a novel, - we should say: it is not just a novel, it is a glorious human epic. [...] I hope that the readers can open this treasure with the

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[23] Fu Lei. (2006) *Collection of Fu Lei's works · Volume of Letters.* Beijing: Contemporary Wold Press, "顾精神平衡由足失却，非溺于精神而懵懵懂懂，即陷于麻痹而无所作为。"(p.462)

[24] Fu Lei. (1998) *Collection of Fu Lei's translations.* Hefei: Anhui Literature Publishing House, "《约翰·克利斯朵夫》不是一部小说，－应当说：不止是一部小说，二十人类一部伟大的史诗﹝...] 愿读者以虔敬的心情来打开这部宝典罢！"（p.5）

devotional mood".

In the beginning, Fu Lei loved Romain Rolland's works just by his personal preference: He felt encouraged by the main characters of the novel. But from the moment he decided to translate Rolland's works, we might be tempted to say that it was rather a sense of social responsibility which pushed him to achieve the translation. Unsatisfied with his personal development, Fu Lei wanted his fellow Chinese citizens to wake up and to improve. It is under the circumstances of the time that Fu Lei has chosen the works of Romain Rolland to translate.

Anthony Pym noted the importance of the responsibility of the translator. He claimed, in his book *Pour une éthique du traducteur*[25]; that the sense of responsibility is the basic ethical question. In the paragraphs above, it's very clear that in the case of Fu Lei, because of this responsibility, Fu Lei wrote a lot of footnotes to facilitate the communication between the original (via his translation) and his readers. This reflects Fu Lei's attitude toward the triangle of the author, the reader and the translator.

Furthermore, we should mention some anecdotes about Fu Lei in order to investigate his intention to add the notes into his translation. The first job that Fu Lei got after his studies in France was as a teacher of History of Art and of French in the Institute of the Fine Arts in Shanghai. He edited with the director of the institute Liu Haisu (刘海粟) – also his friend, the *Album of the international famous painting* (《世界名画集》), and the Album was published by Zhonghua Book Campany (中华书局) in 1931. For his class needs, he translated also Paul Gsell's *Propos de Rodin sur l'art et les artistes* for his students. Besides, there is another interesting thing: on the back of Fu Lei's visiting card was written in French "critique d'art" (art

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[25] Anthony, P. (1997) *Pour une éthique du traducteur*. Arra: Artois Presses Université, Presses de l'Université d'Ottawa.

critic). Such things of Fu Lei were many, and these things made us think that there is surely some relation between Fu Lei's comment notes in the translation and his professional insight. From the art critic's angle, Fu Lei put his personal aesthetic interpretation on the content of the original text, but at the bottom of the page – where his intervention does not destroy the integrality of the original text.

In a word, there are two big reasons for Fu Lei to make footnotes: The first one is to reduce the cultural loss sometimes engendered during the process of translation. The second reason was to create a platform where he could communicate with his readers.

C. Conclusion

We have shown how the textometrical method can be used in translation studies. And this technique allows us to highlight the inherent characteristics of the text. The most important aspect of the method may be its productivity, since we can apply the exact same methodology to others texts. Of course, the application of this methodology and (in particular) the interpretation of the results require more reflection and verification in future research.

From our examination we learned that Fu Lei shared his knowledge and personal opinions with his readers in the footnotes he added. He was not a translator who followed behind the original author word by word, but he was someone who transferd, as much as possible, the content and the spirit of the text in the light of a literary critic. Thus, at the level of the technique, his translation seems very free but in fact it is very close to the essence of the original. This seems likely to be one of the characteristics of his translation style. Indeed, the question on what is Fu Lei's style is a too big question to answer here and it certainly needs further studies of many

years, but this question can serve as the indicator which leads us to ponder on the phenomena of translation in a whole in order to find useful ideas for the practice of translation.

These days, as the exchange between countries is developing rapidly (transport, Internet, media,...), the understanding of other cultures will be easier and easier. Maybe, the translator's informative note will be employed less and less, but it is still too early to say that in the future there will be less notes in the translation, because, with the independent consciousness of the translator, commentary notes may also increase. It is just our hypothesis, which awaits its confirmation from systematic lexicometrical examinations of translations in the future.

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