

Testing simplification in translated and creative writing texts: The case of Robert van Gulik's Judge Dee detective stories

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ABSTRACT

Translational language has been reported to have unique characteristics, or translation universals, as compared to native non-translational production. One of the most widely studied features is simplification, i.e., translated texts tend to be less complex than non-translational texts. This study tested this hypothesis by comparing the translated and creative writing texts produced by a single author, Robert van Gulik, on the same topic (Judge Dee's detective adventures). Our well-controlled comparisons showed that the translated text was lexically less diverse, but syntactically more complex and generally less readable. The cognitive load of translation and the source text constrained the amount of vocabulary used in the translation compared with free writings. On the other hand, longer and more complex sentences reflected the translator's efforts to state the information in a more explicit form when conveying the ancient Chinese detective stories to the Western world. Our research, thus, offers some insights into the investigation of the simplification hypothesis and the relation between translation and writing.

KEYWORDS

translation universals, lexical diversity, entropy, syntactic complexity, readability

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1. INTRODUCTION

The search for unique linguistic features that set translational language apart from native non-translational language, also known as the translation universals (or TUs, Baker, 1993, 1995; Chesterman, 2004), has always been an interesting but unresolved issue. Despite criticisms of the TU hypotheses in its strong form, it has been found via corpus-based comparisons that there exist some tendencies or patterns in translational language (Hu, Xiao, & Hardie, 2019; Liu, Liu, & Lei, 2022). Despite their careful control of genres in these analyses, there are author-related and topic-related variances that could confound the results in one direction or another. To minimise these variances, the present study approached this issue by comparing translated and creative writing texts in a series of detective stories by a single author, Robert Van Gulik.

Robert Van Gulik was a Dutch novelist and sinologist. His *Judge Dee* detective stories (17 books in total) were released between 1949 and 1968. The first book of the series, i.e., *Celebrated Cases of Judge Dee*, was translated from a Chinese book, *Dee Goong An*. *Dee Goong* or *Judge Dee* was a real detective and statesman in history named *Di Renjie*, who lived between 630 and 700 A.D. during the Tang dynasty (618–907 A.D.). The translation work aroused the translator's interest in Chinese detective stories, and he developed the character of Judge Dee for his own detective stories (the other 16 books).

In his own preface to the translation, the author claimed that he kept all the Chinese elements as they were in the original text and denounced faked “Chinese” stories which involved too much re-writing and distorted the reality of Chinese culture and history. In contrast, in creative writing, the author acknowledged in *Judge Dee at work* (book 15) that although he borrowed some elements from old Chinese criminal literature in creating later stories, the stories themselves were entirely fictional, i.e., not translations.

Previous studies on the Judge Dee series have focused on qualitative analysis of Van Gulik's rendering, adaptative and cultural strategies (Hao, 2016; Tang, 2017). For example, Hao (2016) argued that Van Gulik strategically hybridised Chinese and Western detective story traditions by adopting a retrospective narrative structure to engage the reader's attention. However, these studies did not compare the linguistic characteristics of the translated text with those of his creative writing texts, which could serve as a unique and valuable means to test the TU hypotheses.

1.1. Translation universals

Characterising translational language is a central theme in translation studies. Translated texts can be studied with reference to source texts on the one hand, and non-translations in the target language on the other hand. Early translation studies focused on the differences between translational language and non-translational target language from a prescriptive perspective and considered the “unnatural deviations” of translation as “translationese”, which were attributed to either the translator's incompetence (Newmark, 1991) or interference from the source language (Toury, 1979).

Recent developments in translation studies take a descriptive approach in studying the features of translational language. In this context, translation universals can be seen as a set of descriptive hypotheses that seek to linguistically characterise translational language (Baker, 1993, 1995; Chesterman, 2004; Tirkkonen-Condit, 2002). These linguistic characteristics or



universals should either describe the similarities/differences of translational language from the source language (S-universals) or distinguish it from the target language (T-universals). For example, explicitation, resulting in a higher level of explicitness in translated texts relative to source texts, is a potential S-universal, whereas simplification of translated texts relative to non-translations is a potential T-universal.

Given that translation universals are descriptive hypotheses, they usually do not come with explanations of their causes. There exist several theories that account for these characteristics of translation either from a cognitive or a socio-cultural perspective, such as the gravitational pull hypothesis (Halverson, 2003, 2017) and the constrained language theory (Lanstyák & Heltai, 2012).

The gravitational pull hypothesis accounts for the characteristics of translation by the interplay among three forces. When translating a text, the translator needs to search for a target language item in his/her mind and thus is inclined to be drawn to a target language item with high salience/frequency. This effect, or the magnetism effect, would bias the translator to target-language oriented features in his/her translations. Halverson's theory could explain the normalization hypothesis, that is, the tendency of translators to conform to patterns and practices typical of the target language (Baker, 1996). On the other hand, highly salient elements in the source language will also affect the translator's linguistic choices, i.e., exert a gravitational pull effect, and will lead to language traits typical of the source language in the translated text. In addition, source and target language items that occur frequently as translation equivalents to each other can impact on the translational language via the connectivity effect. Translational language, therefore, is the result of interactions among these three forces (Halverson, 2003, 2017).

Constrained language theory, on the other hand, considers translational language as a variety of constrained language, and explains translation-related features as a result of constraints induced by internal cognitive factors or external social cultural contexts. Internally, the translation process involves continuous code-switching between the source and target language. This increases cognitive load and reduces working memory capacity, motivating translators towards strategies that would reduce cognitive demands, such as simplification (Kruger & van Rooy, 2016). In addition, the activated source language may produce some cross-linguistic priming effects that will shift translators from using conventional to less conventional constructions in the target language (Kruger & van Rooy, 2016), which is similar to the gravitational pull effect.

In addition, translators need to take care of social and cultural differences across the source and target languages to make their translation understandable to target readers. To achieve this, translators may adopt some risk-reducing strategies such as explicitation, i.e., spelling out implicit information in the source text.

The present study focused on comparing a translated text with non-translated creative writings, and we selected the most widely studied T-universal, i.e., simplification, as the subject of our analysis. Other TUs either require careful comparisons between the source and the translated text, such as explicitation, or are difficult to be operationalized in a quantitative way, such as normalisation, and thus were not considered here. In light of the gravitational pull hypothesis, simplification could be the result of the source language gravitational pull effect if the source language is simpler in linguistic structures than the target language in general. Alternatively, according to the constrained language theory, the cognitive processes of



translation and the source text content would constrain the translator, leading to less complex vocabulary and/or sentences in the translated text than in creative writings.

1.2. Simplification studies

Previous studies on the simplification hypothesis examined the issue at both lexical and syntactical levels. At the lexical level, translated texts have been found to be lexically less diverse, i.e., with a smaller range of vocabulary and higher repetitions, as compared with translated texts (Kajzer-Wietrzny, 2015; Kajzer-Wietrzny & Ivaska, 2020; Laviosa, 1998). However, Liu et al. (2022) argued that traditional lexical diversity measures, such as type-token-ratio, only considered the number of distinct words and ignored the frequency and distribution of a word in relation to other words. Thus, they proposed the use of lexical entropy, from an information-theoretical perspective, as an alternative way for examining lexical simplification. In their study, they found support for simplification of translated Chinese relative to its non-translated counterparts in terms of lexical entropy.

The simplification hypothesis has been found to be more controversial at the syntactic than at the lexical level. Some studies found supporting evidence for sentence-level simplification. Liu and Afzaal (2021), for example, compared the syntactic complexity of translated and non-translated texts in different genres. The measures were generated by the L2 Syntactic Complexity Analyser (henceforth L2SCA) (Lu, 2011, 2017) designed to investigate the scope of syntactic knowledge and the ability to use such knowledge in written or oral production. They found that translated texts were generally less complex than non-translated texts, as indicated by the amount of subordination and overall sentence complexity, which were considered as a support for the simplification hypothesis (Liu & Afzaal, 2021). However, there were variations among different genres in the study. The translated and native news texts were comparable whereas translated prose and academic writings were less complex relative to their non-translated counterparts. Interestingly, translated fiction proved to be more complex than non-translated fiction. This is similar to some other studies that found sentences in translated texts to be more complex than nontranslated texts in terms of sentence length (Laviosa, 1998) or part-of-speech entropy (Liu et al., 2022).

Apart from these purely linguistic properties, given that translation is a social communicative process, some previous studies analysed text readability to include a reader perspective. Readability measures are based on lexical and sentential information but usually do not consider the ordering of words or their syntactic relations. Basic measures, such as Average Word Length (AWL), i.e., the number of syllables or characters within a word, or Average Sentence Length (ASL), i.e., the number of words within a sentence (Klare, 1963), are weighted in terms of their contributions to the ease of comprehension based on native reader experiments. The underlying assumption of most readability measures is that texts are generally easier to understand with shorter words and/or sentences. Dye (1971) used the Flesch Reading Ease score to compare French non-translated texts with their English translations and found that the English translations were easier to read than the French source texts, supporting the simplification hypothesis. In addition, the source language may affect the readability of the target language (Ciobanu, Dinu, & Pepelea, 2015). Translated political texts in English from 21 source languages were compared in terms of the Flesch-Kincaid measure (Kincaid, Fishburne, Rogers, & Chissom, 1975). It was found that source texts from Germanic languages had better readability than those



from Slavic languages, which in turn were better than texts translated from Romance languages except for French (Ciobanu et al., 2015). Texts translated from French were clustered closer to those translated from Germanic languages.

Given the complexity of the simplification issue in translational language as revealed by previous studies, it is essential to examine translational language via a set of lexical, syntactic and readability measures, preferably with control of author-related and topic-related stylistic variations. Translated and creative writing texts of the Judge Dee series provide an interesting and ideal test case. In the present study, we used lexical syntactic and readability measures to compare translated and non-translated texts and tested the following predictions based on the simplification hypothesis:

1. The translated text should be lexically less diverse than the creative writing texts in terms of lexical diversity measures and lexical entropy.
2. The translated text should be syntactically less complex than the creative writing texts in terms of syntactic complexity measures.
3. The translated text should be easier to read than the creative writing texts in terms of readability measures.

2. CORPUS

Texts from 17 published books (see Table 1) of the Judge Dee series were digitalised by the authors. Analysis was conducted using only the main body sections of the books. Preface, postscripts and other texts before and after main parts were removed. The IDs of each text file indicate the chronological order of publication.

Although previous simplification studies based on comparable corpora worked with text samples of standardised length selected out of larger texts, we kept each book as a unit aiming to maximally retain the structures of these stories, and we also carefully selected measures or algorithms to minimise the effect of text size. In addition, we treated all the creative writing books as a group and modelled their variations for all measures statistically when comparing them with the translated text.

The 17 books were then loaded into the *R* environment (R Core Team, 2018) and converted into a corpus by the *corpus* function in the *quanteda* Package (Benoit et al., 2018). After that, the corpus file was transformed into a document-feature matrix. During this process, words were first tokenized and converted into lower case. Numbers, punctuations, and symbols were removed.

3. LEXICAL DIVERSITY ANALYSIS

We used the *textstat_lexdiv* function in the *quanteda.textstats* package to calculate the lexical diversity measures. The type–token ratio (TTR), i.e., the ratio of different word types divided by the total number of tokens in a text, is a traditional measure of lexical diversity. However, TTR is known to be sensitive to text length. Thus, other measures were sought to reduce the effect of text length either by applying transformation on TTR, e.g., log transformation in Herdan's C



Table 1. Number of types, tokens, and sentences in each book in the Judge Dee series

ID	Titles	Year of publication	Types	Tokens	Sentences
1	Celebrated-Cases	1949	6,010	79,276	3,686
2	The-Chinese-Bell-Murders	1958	7,858	89,611	4,696
3	The Chinese Gold Murders	1959	6,317	69,485	4,317
4	The-Chinese-Lake-Murders	1960	7,302	87,472	5,554
5	The-Chinese-Nail-Murders	1961	5,679	66,259	4,040
6	The-Haunted-Monastery	1961	5,139	52,447	3,453
7	The Red Pavilion	1961	5,957	63,355	3,961
8	The-Chinese-Maze-Murders	1962	7,327	96,055	6,159
9	The-Lacquer-Screen	1962	5,768	60,435	3,916
10	The Emperor’s Pearl	1963	5,885	58,858	3,542
11	The-Monkey-and-the-Tiger	1965	5,269	48,608	3,052
12	The Phantom of the Temple	1965	6,238	65,316	4,303
13	The Willow Pattern	1965	6,040	60,491	3,999
14	Murder in Canton	1966	6,931	76,877	4,845
15	Judge Dee at Work	1967	6,776	76,363	4,790
16	Necklace-and-Calabash	1967	5,990	55,362	3,543
17	Poets-and-Murder	1968	6,354	61,310	3,921

(Herdan, 1964, also referred to as LogTTR) or root transformation in Guiraud’s R (Root TTR) (Guiraud, 1960). In addition, we also calculated the moving average type–token ratio (MATTR) with a window size of 500 words as suggested (Covington & McFall, 2010). For the TTR, C, R and MATTR measures, larger values represent greater lexical diversity.

We also calculated lexical entropy as in a previous study (Liu et al., 2022) using the *textstat_entropy* function in the *quanteda.textstats* package. High lexical entropy indicates high text complexity at the lexical level. Such a text contains more information and requires more effort and time for readers to process (see Table 2).

To compare lexical diversity between translated and creative writing texts, we did one-sample *t*-tests for all selected measures (see Table 3). All the lexical diversity measures (TTR, C, R and MATTR) were consistently smaller for the translated text, than for the creative writing texts, indicating lower lexical diversity. The lexical entropy measure was also smaller for the translated text than for the creative writing texts, indicating lower complexity.

4. SYNTACTIC COMPLEXITY ANALYSIS

For measuring syntactic complexity, we used a well-established tool, i.e., the L2SCA (Lu, 2010), which outputs 14 indices covering five dimensions, i.e., length of production unit, amount of



Table 2. Lexical diversity measures for each book. TTR = type–token ratio; Herdan’s C (Log TTR) (Herdan, 1964); Guiraud’s R (Root TTR) (Guiraud, 1960); MATTR = moving average type–token ratio (window size: 500 words, Covington & McFall, 2010)

ID	Titles	TTR	C	R	MATTR	Entropy
1	Celebrated-Cases	0.08	0.77	20.51	0.5	9.18
2	The-Chinese-Bell-Murders	0.09	0.79	25.42	0.52	9.45
3	The Chinese Gold Murders	0.1	0.79	23.61	0.52	9.3
4	The-Chinese-Lake-Murders	0.09	0.78	24.4	0.52	9.39
5	The-Chinese-Nail-Murders	0.09	0.78	21.65	0.51	9.18
6	The-Haunted-Monastery	0.11	0.79	22.49	0.52	9.18
7	The Red Pavilion	0.1	0.79	23.79	0.53	9.28
8	The-Chinese-Maze-Murders	0.08	0.78	23.1	0.51	9.36
9	The-Lacquer-Screen	0.1	0.79	23.63	0.52	9.26
10	The Emperor’s Pearl	0.11	0.79	24.2	0.53	9.28
11	The-Monkey-and-the-Tiger	0.12	0.8	23.78	0.52	9.21
12	The Phantom of the Temple	0.1	0.79	24.48	0.53	9.31
13	The Willow Pattern	0.11	0.8	24.61	0.53	9.33
14	Murder in Canton	0.1	0.79	25.11	0.53	9.41
15	Judge Dee at Work	0.1	0.79	24.44	0.52	9.37
16	Necklace-and-Calabash	0.12	0.8	25.18	0.53	9.28
17	Poets-and-Murder	0.11	0.8	25.45	0.54	9.4

Table 3. Statistical comparisons of the translated text and creative writing texts in terms of different lexical diversity measures. 95% confidence intervals were included with mean values of the creative writing texts for each measure

Measures	Translated text	Creative writing texts			t-test statistics		
		M	95% UL	95% LL	t	df	p
TTR	0.07	0.10	0.10	0.11	9.18	15	<0.001
C	0.77	0.79	0.79	0.79	12.69	15	<0.001
R	20.51	24.08	23.50	24.60	13.56	15	<0.001
MATTR	0.50	0.52	0.52	0.53	14.54	15	<0.001
entropy	9.18	9.31	9.27	9.36	6.78	15	<0.001



subordination, amount of coordination, degree of phrasal sophistication and overall sentence complexity (see Table 4).

L2SCA relies on the Stanford parser (Klein & Manning, 2003) to first analyse the syntactic structure of each sentence in the text, and then queries the parsed text with a set of rules and patterns as defined in Lu (2010). L2SCA has been applied widely in second language writing or translation research (Liu & Afzaal, 2021; Lu, 2011, 2017; Yin, Gao, & Lu, 2021). We computed all the measures for each book (see Table 5).

As in our previous analyses, we ran a group of one-sample *t*-tests to compare the translated text and the creative writing texts for each measure. The results showed that the translated text had higher scores in all the syntactic complexity measures than the creative writing texts (see Table 6), suggesting that the translated text had longer production units, more subordination and coordination, exhibited a higher degree of phrasal sophistication and was overall syntactically more complex than creative writing texts.

Table 4. Syntactic complexity measures in the L2 Syntactic Complexity Analyzer (Lu, 2010)

Measures	Abbreviations	Formulae
Length of production unit		
Mean length of sentence	MLS	$N_{\text{word}}/N_{\text{clause}}$
Mean length of clause	MLC	$N_{\text{word}}/N_{\text{sentence}}$
Mean length of T-unit	MLT	$N_{\text{word}}/N_{\text{T-unit}}$
Amount of subordination		
Clause per T-unit	C/T	$N_{\text{clause}}/N_{\text{T-unit}}$
Complex T-units per T-unit	CT/T	$N_{\text{complex_T-unit}} / N_{\text{T-unit}}$
Dependent clauses per clause	DC/C	$N_{\text{dependent_clause}} / N_{\text{clause}}$
Dependent clauses per T-unit	DC/T	$N_{\text{dependent_clause}} / N_{\text{T-unit}}$
Amount of coordination		
coordinate phrases per clause	CP/C	$N_{\text{coordinate_phrase}}/N_{\text{clause}}$
coordinate phrases per T-unit	CP/T	$N_{\text{coordinate_phrase}}/N_{\text{T-unit}}$
T-units per sentence	T/S	$N_{\text{T-unit}} / N_{\text{sentence}}$
Degree of phrasal sophistication		
complex nominals per clause	CN/C	$N_{\text{complex_nominal}} / N_{\text{clause}}$
complex nominals per T-unit	CN/T	$N_{\text{complex_nominal}} / N_{\text{T-unit}}$
verb phrases per T-unit	VP/T	$N_{\text{verb_phrase}} / N_{\text{T-unit}}$
Overall sentence complexity		
clauses per sentence	C/S	$N_{\text{clause}}/N_{\text{sentence}}$



Table 5. Syntactic complexity measures calculated by the L2SCA (Lu, 2010)

ID	Titles	MLS	MLT	MLC	C/S	VP/T	C/T	DC/C	DC/T	T/S	CT/T	CP/T	CP/C	CN/T	CN/C
1	Celebrated-Cases	18.85	15.71	9.51	1.98	2.22	1.65	0.35	0.58	1.20	0.44	0.33	0.20	1.54	0.93
2	The-Chinese-Bell-Murders	16.86	15.23	9.56	1.76	2.04	1.59	0.32	0.51	1.11	0.39	0.30	0.19	1.62	1.02
3	The Chinese Gold Murders	13.99	12.41	8.28	1.69	1.84	1.50	0.27	0.41	1.13	0.33	0.21	0.14	1.15	0.77
4	The-Chinese-Lake-Murders	13.84	12.06	8.53	1.62	1.74	1.41	0.27	0.38	1.15	0.31	0.22	0.16	1.15	0.81
5	The-Chinese-Nail-Murders	14.13	12.41	8.13	1.74	1.88	1.53	0.27	0.42	1.14	0.35	0.19	0.13	1.13	0.74
6	The-Haunted-Monastery	13.10	11.53	8.01	1.63	1.75	1.44	0.26	0.38	1.14	0.30	0.18	0.13	1.10	0.76
7	The Red Pavilion	13.94	12.58	8.24	1.69	1.88	1.53	0.28	0.43	1.11	0.33	0.21	0.14	1.20	0.79
8	The-Chinese-Maze-Murders	13.62	12.62	8.65	1.57	1.78	1.46	0.27	0.40	1.08	0.31	0.23	0.16	1.26	0.86
9	The-Lacquer-Screen	13.22	11.77	8.10	1.63	1.82	1.45	0.27	0.39	1.12	0.31	0.21	0.14	1.07	0.74
10	The Emperor's Pearl	14.48	13.10	8.70	1.66	1.90	1.51	0.28	0.43	1.11	0.33	0.23	0.15	1.29	0.86
11	The-Monkey-and-the-Tiger	13.64	12.34	8.63	1.58	1.79	1.43	0.27	0.39	1.11	0.31	0.20	0.14	1.22	0.85
12	The Phantom of the Temple	13.13	12.10	8.64	1.52	1.73	1.40	0.27	0.37	1.09	0.29	0.18	0.13	1.25	0.89
13	The Willow Pattern	12.95	11.88	8.51	1.52	1.75	1.40	0.24	0.34	1.09	0.27	0.19	0.14	1.19	0.85
14	Murder in Canton	13.76	12.40	8.57	1.61	1.81	1.45	0.27	0.39	1.11	0.32	0.21	0.14	1.24	0.86
15	Judge Dee at Work	13.92	12.31	8.48	1.64	1.82	1.45	0.26	0.38	1.13	0.30	0.22	0.15	1.15	0.79
16	Necklace-and-Calabash	13.74	12.50	8.97	1.53	1.77	1.39	0.26	0.37	1.10	0.29	0.20	0.14	1.26	0.90
17	Poets-and-Murder	13.74	12.66	8.93	1.54	1.80	1.42	0.27	0.39	1.09	0.31	0.19	0.13	1.37	0.96



Table 6. Statistical comparisons of the translated text and creative writing texts in terms of different syntactic complexity measures. 95% confidence intervals were included with mean values of the creative writing texts for each measure

Measures	Translated text	Creative writing texts			t-test statistics		
		M	95% UL	95% LL	t	df	p
MLS	18.85	13.88	13.40	14.40	−22.25	15	<0.001
MLC	9.51	8.56	8.35	8.76	−9.89	15	<0.001
MLT	15.71	12.49	12.10	12.90	−15.64	15	<0.001
C/T	1.65	1.46	1.43	1.49	−13.68	15	<0.001
CT/T	0.44	0.32	0.30	0.33	−18.57	15	<0.001
DC/C	0.35	0.27	0.26	0.28	−19.75	15	<0.001
DC/T	0.58	0.40	0.38	0.42	−19.15	15	<0.001
CP/C	0.20	0.14	0.14	0.15	−13.64	15	<0.001
CP/T	0.33	0.21	0.20	0.23	−15.96	15	<0.001
T/S	1.2	1.11	1.10	1.12	−17.09	15	<0.001
CN/C	0.93	0.84	0.80	0.88	−4.77	15	<0.001
CN/T	1.54	1.23	1.16	1.30	−9.83	15	<0.001
VP/T	2.22	1.82	1.78	1.86	−19.90	15	<0.001
C/S	1.98	1.62	1.58	1.66	−19.15	15	<0.001

5. READABILITY ANALYSIS

In addition to the above lexical and syntactic analyses we also compared the readability of the translated and the creative writing texts. For the readability analysis, we used the *textstat_readability* function in the *quanteda.textstats* package to calculate relevant readability measures (Table 7). Traditional readability measures are based on easy-to-compute basic components, such as Average Word Length (AWL) and Average Sentence Length (ASL). Automated Readability Index (or ARI, Smith & Senter, 1967), for example, is calculated directly based on AWL and ASL. Given that larger AWL and ALS values indicate longer words or sentences, a *higher* ARI should lead to *lower* readability and potentially more difficulties in reading the text. The Flesch Reading Ease Score (Flesch, 1948) and the Coleman-Liau score (Coleman & Liau, 1975) are also calculated based on simple word-and-sentence-length-related measures. Note that *lower* Flesch Reading Ease scores and *higher* Coleman-Liau scores indicate *lower* readability.

Some formulae also take into account words of a specified syllable length, such as the Fog Index (Gunning, 1952), which considers words with no less than three syllables. *Higher* Fog scores mean *lower* readability. Some readability indices are based on external pre-defined word lists. For example, the Dale-Chall index calculates difficult words that do not match the Dale-Chall “familiar” word list (Chall & Dale, 1995). The Spache’s Readability Measure counts unique



Table 7. Readability formulae. N_{sy} = number of syllables; N_w = number of words; N_{st} = number of sentences; N_{wsy} = word syllable number. N_{wd} = number of “difficult” words not matching the Dale-Chall list of “familiar” words. $N_{wnotspache}$ = number of unique words not in the Spache word list. AWL = Average Word Length, ASL = Average Sentence Length

Names	Sources	Formulae
Automated Readability Index	Senter and Smith (1967)	$0.5 \text{ ASL} + 4.71 \text{ AWL} - 21.34$
Flesch Reading Ease Score	Flesch (1948)	$206.835 - (1.015 \times \text{ASL}) - (84.6 \times \frac{N_{sy}}{N_w})$
Fog Index	Gunning (1952)	$0.4 \times (\text{ASL} + 100 \times \frac{N_{wsy} \geq 3}{N_w})$
Coleman-Liau.Score	Coleman and Liau (1975)	$5.88 \times \text{AWL} + 29.6 \times \frac{N_{st}}{N_w} - 15.8$
Dale-Chall	Chall and Dale (1995)	$64 - (0.95 \times 100 \times \frac{N_{wd}}{N_w}) - (0.69 \times \text{ASL})$
Spache	Spache (1952)	$0.121 \times \text{ASL} + 0.082 \times \frac{N_{wnotspache}}{N_w} + 0.839$

words that are not in the Spache word list (Spache, 1952). Thus, *lower* values on the Dale-Chall index and *higher* values on Spache’s Readability measure indicate *lower* readability.

To provide a comprehensive evaluation of readability, six measures representing different approaches to readability were included in the analysis (see Table 8).

Table 8. Readability measures for each book

ID	Titles	ARI	Flesch	FOG	Coleman-Liau	Dale-Chall	Spache
1	Celebrated-Cases	8.35	71.94	10.71	8.02	34.89	5.17
2	The-Chinese-Bell-Murders	7.87	71.74	10.39	8.50	33.56	5.24
3	The Chinese Gold Murders	5.50	79.55	8.34	7.13	38.73	4.57
4	The-Chinese-Lake-Murders	5.67	78.07	8.48	7.38	38.22	4.60
5	The-Chinese-Nail-Murders	5.52	79.23	8.22	7.07	39.62	4.51
6	The-Haunted-Monastery	4.93	80.69	7.79	6.74	40.33	4.30
7	The Red Pavilion	5.29	79.25	8.29	6.91	39.78	4.45
8	The-Chinese-Maze-Murders	5.89	77.40	8.67	7.66	37.47	4.67
9	The-Lacquer-Screen	5.13	80.18	8.06	6.92	40.14	4.39
10	The Emperor’s Pearl	5.76	78.19	8.61	7.19	38.78	4.59
11	The-Monkey-and-the-Tiger	5.09	81.08	7.95	6.62	41.36	4.32
12	The Phantom of the Temple	5.00	81.10	7.74	6.83	40.23	4.43
13	The Willow Pattern	4.74	81.18	7.71	6.62	40.11	4.38
14	Murder in Canton	5.51	77.98	8.38	7.24	38.52	4.52
15	Judge Dee at Work	5.21	80.54	8.00	6.83	39.52	4.53
16	Necklace-and-Calabash	5.57	78.78	8.15	7.31	40.46	4.40
17	Poets-and-Murder	5.72	76.35	8.59	7.58	38.58	4.57



Table 9. Statistical comparisons of the translated texts and creative writing texts in terms of different readability measures. 95% confidence intervals were included with mean values of the creative writing texts for each measure

Measures	Translated text	Creative writing texts			t-test statistics		
		M	95% UL	95% LL	t	df	p
ARI	8.35	5.53	5.15	5.90	−15.99	15	<0.001
Flesch	71.94	78.83	77.60	80.10	11.58	15	<0.001
FOG	10.70	8.34	8.00	8.67	−15.10	15	<0.001
Coleman-Liau	8.02	7.16	6.90	7.41	−7.21	15	<0.001
Dale.Chall	34.89	39.09	38.10	40.00	9.41	15	<0.001
Spache	5.17	4.53	4.41	4.65	−11.80	15	<0.001

As in the previous analyses, one-sample *t*-tests were ran on all the selected readability indices, comparing the translated text with the creative writing texts. The ARI, FOG, Coleman-Liau and Spache scores of the translated text were higher than those of the creative writing texts, suggesting lower readability and potential reading difficulties. Both the zje Flesch Reading Ease and Dale-Chall scores of the translated text were lower than those of the creative writing texts, suggesting lower readability. In other words, all readability indices consistently showed that the translated text had lower readability than the creative writing texts (see Table 9).

6. DISCUSSION

In the present study, we compared a translated text with creative writing texts by the same author via a series of quantitative text measures. The results indicated that the translated text in the Judge Dee detective series was *lexically* less diverse and complex but *syntactically* more complex than the creative writing texts. This discrepancy between the two linguistic levels has also been observed in previous simplification studies (Laviosa, 1998; Liu et al., 2022) based on large comparable corpora.

According to the constrained language theory, the complex cognitive processes in translation, such as activation of both language systems and continuous code-switching, imposed additional cognitive load and reduced the working memory capacity of Robert van Gulik as a translator, motivating him to use strategies such as simplification. In addition, the source text could also constrain the lexical resources available to him during translation. In contrast, as a writer Robert van Gulik was able to fully tap into his linguistic repertoire, and consequently produced texts with more lexical diversity. However, the syntactic structures of the translated text were more sophisticated than those of the creative writings, as indicated by all the syntactic complexity scores. This cannot be attributed to the internal constraints of the translation process, because a translator has to face greater cognitive demands and would be expected to use strategies that reduce cognitive load, resulting in shorter or simpler sentences. A previous



study on translated Chinese from English also found this pattern, and the authors attributed it to the influence of the source language (Liu et al., 2022). Non-translational Chinese tends to rely on meaning rather than function words or structures to connect clauses and sentences, whereas Western languages are abundant in syntactic devices and rely heavily on them to maintain coherence and cohesion. Thus, translational Chinese, affected by the source language, displayed more complex syntactic structures relative to non-translational Chinese.

In the present study the direction of translation was from classical Chinese to English and thus it is unlikely that the linguistic structure of the source text is reflected in the overall more complex target text sentences. Discarding that explanation, we argue that Robert van Gulik as a translator was particularly aware of his role as a mediator and of his responsibility to make ancient Chinese detective stories accessible to the Western world. To achieve this, he used syntactic devices in his translation that were in keeping with Western styles, and may have overused them. One might also conjecture that the more complex sentences in the translated text can be linked to the explication effect. That is, the translator carefully spelt out the information contained in the original ancient Chinese stories, which take place in a country that is geographically and culturally distant from his readers.

As indicated by all our selected readability measures, the translated text was potentially more difficult to read than the creative writing texts. This suggests that the translated text had either longer sentences and/or more difficult words than the creative writings. Given that lexical diversity was lower in the translated text, we infer that syntactic complexity played a larger role in the relatively low readability. As we argued, the more complex sentences in the translation may be indicative of the translator's effort to convey the information in the source text, and the resulting loss in readability was unintentional. Although Robert van Gulik as both a translator and fiction writer kept the target readers in his mind, it seems that as a translator he was constrained by the source text and to some extent sacrificed readability when conveying the ancient Chinese detective stories across languages and cultures. Translators and readers may have to pay a price when translating/reading stories from a different culture and from a very ancient time.

In conclusion, the current study offers a valuable, if not unique, comparison between translated and creative writing texts produced by a single person on a similar topic. Our analyses revealed important characteristics of translational language as constrained by internal and external factors. The translated text was lexically less diverse, but syntactically more complex and less readable. The process of translation moved the translator towards reducing lexical diversity, whereas his responsibility as a social-cultural mediator motivated him to precisely render all the information contained in the source text, resulting in long and difficult words and more complex sentence structures than he would use when he was writing freely. Our research has implications for translation theories, especially on the translation universal hypotheses. This study and other simplification studies (Laviosa, 1998; Liu et al., 2022) suggest that simplification does exist, at least in literary translation, and can operate at the lexical and/or syntactic levels separately and differently. Translation universals, in general, may be a misnomer if they are taken to be valid for translations of all kinds and at all times and places. A more realistic view is to treat them as general tendencies varying as a function of the (source-target) language pair, the specific period, type/genre of translation, and translators' styles. Further research could predict these variations through theoretical models like the constrained language theory and test their predictions with linguistic evidence.



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