

English Translation of Traditional Chinese Medical Classic *Huang Di
Nei Jing Su Wen*: A Corpus-based Pragmatic Study

by

Yaru CHEN

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Department of Modern Languages
School of Languages, Cultures,
Art History and Music
College of Arts and Law
University of Birmingham
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ABSTRACT

Huang Di Nei Jing Su Wen, the earliest existing traditional Chinese medical classic in China, has led the development of traditional Chinese medicine (TCM) for thousands of years. In the long course of transmission from generation to generation, it has been claimed to have undergone some small or large-scaled revisions and compilations (Bertschinger, 2015). As a result, some of its 81 chapters are considered to have undergone more substantial revisions (i.e. compiled chapters) than others which are considered to be the original ones (Unschuld & Tessenow, 2011).

This thesis attempts to conduct a corpus-based comparative study, from the perspective of pragmatics, to explore the use of message relationship discourse markers (DMs) in the original chapters and compiled chapters in the ST of *Su Wen* and its two English translations by Li (2005) and Unschuld & Tessenow (2011) and to evaluate the similarities and differences between the two translations as well as their pragmatic effects on the intended TL readers. This involves collecting the authentic data of *Su Wen* and its two well-received English translations, carrying out POS tagging, DM annotation and translation relation markup, and conducting an integrated analysis of qualitative and quantitative analysis of DMs based on Fraser's (1993) classification.

With one Chinese DM list and two English DM lists extracted from the Chinese-English parallel corpus, the findings suggest that DMs are used with different forms and functions in original and compiled chapters in the ST, and that these differences are also largely observed

in the two translations. They also suggest differences in terms of how DMs have been treated in the two English translations and different translation strategies being preferred with Li's (2005) version relying more on amplification and omission and less on correspondence, while Unschuld & Tessenow's (2011) version favouring correspondence and amplification, but less omission. Finally, the results indicate that a better pragmatic effect can be achieved in Unschuld & Tessenow's (2011) version.

In spite of the difficulties in the evaluation of translation effects in the previous literature, it is hoped that this research can build up a feasible paradigm for the measurement of the pragmatic effects of any translated texts, and comparison of two comparable TTs from the same ST.

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CHAPTER ONE: INTRODUCTION

1.1 Research background

As the earliest extant medical classic in China, and one which remains a valuable medical source to the present day, *Huang Di Nei Jing* (pinyin transliteration; literal translation as *The Yellow Emperor's Classic of Internal Medicine*)¹ has not only recorded the achievements of Chinese medicine made by Chinese ancestors in ancient times, but also led to the development of traditional Chinese medicine (hereinafter as TCM) for thousands of years. Li (2005, p.23) claims that various schools of thought in Chinese medicine all originated from the basic theory elucidated in this medical classic. It consists of two volumes: *Su Wen* (*Basic Questions*)² and *Ling Shu* (*The Spiritual Crux*) – both covering medical theory and practice of the day, but they have their different foci. Comparatively, the former comprehensively discusses the theoretical underpinning of TCM, while the latter mostly focuses on the theory of meridians and collaterals³ and acupuncture⁴ techniques. So, *Su Wen* plays a more important

¹ For consistence in reference, the pinyin translation “*Huang Di Nei Jing*” will be used hereinafter though the title of the traditional Chinese medical classic has various English translations in different literature either by Wade-Giles Romanization like “Huang Ti Nei Ching”, or by pinyin transliteration like “Huangdi Neijing”, “Huang Di Nei Jing” or by literal translation like “Yellow Emperor's Canon of Medicine”, “The Medical Classic of the Yellow Emperor” or by the combination of the above three such as “Huang Di's Inner Classic”.

² The word “su” (素) literally means “simple” or “plain”, so Li (2005) renders “*Su Wen*” as “Plain Conversation”; Unschuld (2003:18) mentions Quan Yuanqi's (全元起, 6th century A.D.) understanding of the gloss “su” (素) in classical Chinese as “ben” (本) with the meaning of “basic” and translates *Su Wen* as “Basic Questions”, which is followed by Unschuld & Tessenow (2011).

³ The meridian and collateral theory is a systematic TCM theory used for diagnosis and treatment of disease. “Meridians” are used by ancient Chinese physicians to indicate the vertical lines that run longitudinally through the inner body of human beings in TCM. As branches of meridians, “collaterals” are considered to play the role of connecting different meridians. Based on this meridian and collateral theory, the ancient Chinese people have found out the exact acupuncture points for the treatment.

role than its sister volume *Ling Shu*; Leo (2011, p.22) remarks that doctors and authors of TCM still consider *Su Wen* as the historical root of their crafts and the root of TCM. For this very reason, this present research only focuses on *Su Wen* and its various English translations. *Huang Di Nei Jing Su Wen* (hereinafter *Su Wen*) has made an enormous contribution for thousands of years in directing the theoretical study and clinical practice of TCM, saving millions of lives in history. A case in point is the invention of the antimalarial drug artemisinin based on ancient Chinese therapies through years and on complicated synthetic experiments by Prof. Tu Youyou, a Nobel Laureate for Physiology or Medicine in 2015, whose research has saved millions of people in Africa and China in the last decades and reduced the death rate by 20% and a total of 100,000 lives are saved annually in Africa alone (Li, 2015). Regarding epidemics, Liu & Wang (2003, p.43) mentions that 321 epidemics have occurred in China since the Western Han Dynasty (202 B.C. - 8 A.D.), but these have never reached the level of severity and spread of diseases like smallpox, measles, plague, syphilis, and Spanish flu in the western world. It is argued that this is at least partly thanks to the effective prevention and treatment based on TCM that the spread of the epidemic has been effectively controlled.

TCM with *Su Wen* as the directing medical theory and principles is a medical practice that has multiple benefits and is still (perhaps more than ever) relevant and can inform medical practice. Comparable to the Hippocratic writings in ancient Europe, *Su Wen*, as the major root of TCM and an integral aspect of Chinese civilization, provides a good starting point for “well-informed discussions on the differences and parallels between Chinese and European

⁴ Acupuncture is an advanced and complicated technique of TCM, in which a number of very fine metal needles are inserted into the skin at 361 specially designated points. For thousands of years acupuncture has been used, together with herbal medicine, for pain relief and treatment of various ailments.

approaches to such existential threats as illness and the risk of early death” (Unschuld & Tessenow, 2011, p.x).

In contrast to the disease-targeted approach adopted by Western medicine where there is a standard treatment protocol clearly defined for each disease, TCM takes a holistic approach in treating the individual with customized treatment based on the concept of “syndrome differentiation” which is derived from the ancient Chinese philosophy of yin and yang and Five Elements, and its fundamental concepts such as *zang-fu* (viscera), *qi* (vital energy), and *jing-luo* (meridians and collaterals), so most of them can only be transliterated in *pinyin* and have yet to be mapped by English equivalents or clearly elucidated in scientific terms of the Western medicine.

In the long course of transmission, *Su Wen* has undergone some small or large-scaled revisions and compilations so that it is considered as “a compilation of compilations” (Bertschinger, 2015, p.16). The compilations in history have resulted in different versions. The early version manuscripts of *Su Wen* excavated in 1973 in Mawangdui (马王堆) Tomb 3 is good evidence that the excavated manuscripts had ever existed before the burial date of 200 B.C. and earlier editions of the texts written on them had circulated in the third century B.C. (Harper, 2009, p.4). Although the precise start-date of the compilation process is a matter of some debate, there exist at least three major schools of thought. Despite some differences, the three schools all agree that major revisions were completed by a medical scholar Quan Yuanqi (全元起) in the sixth century A.D. and some famous imperial physicians in different dynasties, including Wang Bing (王冰) during 750-762 A. D., Lin Yi (林亿) during 1068-1077 A.D. and Gu Dingfang (顾定芳) during 1368-1644 A.D. The received version by Lin Yi

(林亿) entitled *Chong Guang Bu Zhu Huang Di Nei Jing Su Wen* (重广补注黄帝内经素问) came into being. Then Gu Dingfang (顾定芳) revised the version and made a familial version of *Chong Guang Bu Zhu Huang Di Nei Jing Su Wen*, specially designed for the use among family members. Gu Congde (顾从德), who was Gu Dingfang's son and an expert specialising in seals collection, sponsored the publication of the familial version in 1550, with his name and seal stamped on the end of the book. This version of *Su Wen* has been widely received as the authoritative one.

As *Su Wen* was written in classical Chinese, a genre completely different from modern Chinese, it adopts an archaic style and philological characteristics. Most importantly, it is characterised by major linguistic features: tabular and rhymed structures, mono-syllabicity of lexis, the fluidity of form class, and pronominal case grammar, semantic variation, multi-functionalism, as well as parataxis in discourse relations. Tabular and rhymed structures are characterised by four-character or more-character expressions with no conjunctions signalling the relation between them but with end rhymes. They are convenient for memorization when they are chanted in the oral transmission as they have end rhymes and strong rhythms. Since Classical Chinese is predominantly monosyllabic, the fluidity of form class (Li, 2016, p.411) and pronominal case grammar allow the same sentence for different interpretation, with some grammatical words in particular, resulting in multi-functionalism. This can account for the reason why some conjunctions and adverbs have different functions, and positions in the sentences, even different forms according to the requirement of the rhythms in the sentence. For instance, the monosyllabic “然” (*pinyin*: ran; but), “而” (*pinyin*: er; but) and disyllabic “然而” (*pinyin*: raner; but) can perform the same function of signalling contrast, the selection

of which word depends on the rhyme or rhythmic requirements of the specific context (Yip & Rimmington, 2016, p.377). The pronominal case grammar of classical Chinese refers to the pronominal item functions as the verbal predicate in the sentence (Wang, 1999, p.343). Parataxis in discourse relations is quite common in Classical Chinese so that the arrangement of the sentential components showcases no connectives to indicate the internal relations between them, hence, different sentential elements are often juxtaposed. As such, its archaic style and linguistic characteristics pose great challenge to Chinese young people in modern times, not to mention to the non-native speakers of Chinese who are keen on but have inadequate knowledge of classical Chinese and TCM.

From 1925 to 2011, there have been 11 different versions of English translations of *Su Wen*. Most of them are abridged translations or partial translations, only a few are considered complete translations. In this case, a detailed study of the English translation of *Su Wen* and the selection of the most semantically and pragmatically equivalent translation for the transmission, as English has become a *lingua franca*, will efficiently benefit the people in the other parts of the world in the context of huge global demand to improve people's life quality by more natural and complementary therapies like TCM.

1.2 Research objectives

Discourse markers (hereinafter DMs) in this research refer to a group of words, particles, small words, or lexicalised clauses composed of conjunctions, adverbs, prepositional phrases, or parentheticals which are located initially, medially or finally, in the sentence or utterance (Fraser, 1996:170), serving the functions of marking the speakers' attitudes towards the

proposition being expressed, preserving the organisation and structure of discourse, as well as facilitating processes of pragmatic inferences.

In general, this present research aims to select two representative English translations of *Su Wen* to explore the features of discourse markers used in the ST of *Su Wen* and its two translations, and evaluate the pragmatic effects of the two translations from the perspective of pragmatics (Sequeiros, 2005; House, 2015) and based on “statistical equivalence” (Krzyszowski, 1990). In other words, this thesis aims to investigate whether the forms and functions of discourse markers in the source texts of *Su Wen* have been adequately conveyed in the English translated text, and whether the same or similar pragmatic effects in the translated texts will be produced on the intended TL readers with inadequate knowledge of TCM as those of the source text do on Chinese native readers.

It is important to note that this thesis will focus only on the use of discourse markers rather than pragmatic markers. Pragmatic markers encompass a broad range of linguistic features, of which discourse markers are a representative example. According to Fraser (1993), pragmatic markers (hereinafter PM), in the wider sense of discourse markers, include discourse topic markers, discourse activity markers, in addition to the narrow sense of message relationship discourse markers (parallel, contrastive, elaborative and inferential). However, due to time and space constraints, this present research only focuses on the message relationship discourse markers.

Discourse markers have some basic functions: they can signal the organization or structuring of the discourse, mark the authors’ opinions or attitudes towards the propositions, and facilitate process of pragmatic inferences (Furkó, 2020, p.10). Focusing on message

relationship discourse markers can help achieve the aim of this present thesis, that is, to investigate, measure, and compare the pragmatic effects of translations.

The thesis has the following six objectives: The first is to build a Chinese-English parallel corpus by collecting the 81-chapter received source text of *Su Wen* and their two representative English translations, digitalizing the texts with careful proofreading, POS-tagging the texts with automatic POS tagging software, and aligning them at paragraph level and sentence level. This series of procedures involves a lot of technological challenges especially in the processing of classical Chinese since it requires word segmentation before POS tagging. Since there is no boundary between Chinese words, different segmentations of classical Chinese might result in different interpretation, thus different English translations.

The second objective is to understand whether *Su Wen* has been significantly affected by the compilations in its long history, so the primary task is to divide the whole text into two categories: the original and compiled chapters based on information provided by Unschuld & Tessenow (2011).

The third objective is to perform batch manual annotation of Chinese and English DMs based on POS tagging. The rationale is to establish a mapping between the POS tagging and the DM tags of four types of categories (parallelism, contrast, elaboration and inferences), based on Fraser's (1993) DM taxonomy and Rühlemann's (2011) conception of pragmatic annotation. The thesis will explore whether it is possible to carry out semi-automatic batch manual annotation of DMs for efficiency and consistency.

The fourth objective is to extract the DMs and produce a classical Chinese DM list of *Su Wen* and 2 English DM lists for TT1 and TT2 for comparative studies of the forms, types, and

functions of the DMs. After POS and DM annotation with the DM tags and DM identifiers, it is possible to retrieve the DMs from the corpus using specialised corpus analysis software such as AntConc3.5.8.

The fifth objective is one of the main focal points of this thesis, which is to compare and evaluate the pragmatic effects of the DM use and translation studies by applying the theories of “statistical equivalence” (Krzyszowski, 1990) and pragmatic translation (Sequeiros, 2005; House, 2015). It will be fulfilled by the calculation of the normalised frequencies of DM use between the ST and TTs so that it is easy to compare and analyse the translation techniques used in the DM translation for effect size test.

The final objective is to mark up the translation relation of the DMs between the ST and TTs and to examine what translation techniques have been commonly employed in the English translation of discourse markers in the two representative translations. Ultimately, this thesis aims to generalize the regularities in the English translation of the discourse markers in the two translations and offer pragmatic insights into translation studies by combining translation studies with pragmatics and establish a paradigm for big data translation studies from the perspective of pragmatics.

1.3 Significance of the study

As mentioned above, *Su Wen*, as a medical classic, has been regarded as one of the most important works representing the crowning achievement that have been inherited from the ancient Chinese people and the monumental civilization that have been well preserved so that no other Chinese source of wisdom can be parallel to *Su Wen* (Ni, 2011, p.1-2). The study of

the English translation of *Su Wen* from the perspective of pragmatics is of theoretical significance and great practical value.

Firstly, this research has some linguistic implications. It is the *first* corpus-based comparative pragmatic study of the discourse markers in *Su Wen* and its two representative English translations by Li (2005) and Unschuld & Tessenow (2011) from the perspective of pragmatics. In this *pioneering* work, the authentic data are collected and processed by POS tagging, discourse marker annotation and translation relation mark-up, the Chinese DM list and two English DM lists have been extracted so that the forms and functions of the DMs in *Su Wen* and its two translations can be easily assessed and compared. The highlight of this research lies in the original measure of establishing the mapping of the of sub-categories of message relationship DMs in Fraser's (1993) taxonomy of message relationship discourse markers with those connectives in classical Chinese grammar as well as the correspondence between the POS tags and DM tags in in the ST and TTs. By doing so, the method of semi-automatic batch manual annotation of DMs in Chinese and English based on Rühlemann's (2011) conception of pragmatic annotation is adopted to extract the DMs. After the potential DMs are annotated in terms of four categories according to their functions, a Chinese DM list from the ST and two English DM lists from TT1 and TT2 are retrieved based on the Chinese-English parallel corpus. Interestingly, among those Chinese DMs, some DMs can be assumed to be unique in the ST of *Su Wen* as they have not been accounted for in the previous literature. This approach can be applied to the DM analysis and comparison of the other Chinese and English texts.

Secondly, this research will build a paradigm for translation studies which will bring about some pragmatic insights in translation studies. The exploration of the pragmatic and semantic

interface in translation, by means of corpus, will be an extension of House's (2015) adequate translation theory for translation assessment. In addition to the generalization of the translation techniques employed in the English translation of discourse markers in *Su Wen*, the way of assessing the forms and functions of discourse markers used in this research can be utilized as a paradigm to evaluate and compare the pragmatic effects of any two English translations from the same source text, thus offering some insights for the English translation of other classics which have not been translated yet or need to be re-translated. This approach can be used to investigate whether the forms and functions of discourse markers have been adequately conveyed and whether the same or similar pragmatic effects will be produced on the intended TL readers with inadequate Chinese cultural background as those of the source text do on Chinese native readers based on the theories of "statistical equivalence" (Krzyszowski, 1990) and pragmatic translation (Sequeiros, 2005; House, 2015).

Lastly, this research will stimulate a large-scale of English translation of TCM classics and selecting the optimal English version of translations with the best pragmatic effects for TCM out-bound transmission. In the modern era, the transmission of this well-established ancient wisdom of the East can offer the West a philosophy of balance and harmony which is indispensable for the survival of human civilization, since its content is not confined to TCM, it also discusses many facets of human life that closely relate to birth, ageing, illness, and death. Moreover, it can offer much practical advice to those who want to maintain physical and mental balance for health and longevity by revealing the inner workings of the universal law⁵. Therefore, the integration of modern science and technology with the principles

⁵ The universal law here is similar to the Way in Taoism, which has been influenced by *Huang Di Nei Jing Su Wen*, with *I Ching* and *Tao Te Ching* as its sacred texts. What Taoists are keen on recurrently practising include rituals and exercises aiming at aligning oneself spiritually with cosmic forces, at undertaking ecstatic spiritual journeys, or at improving one's

involved in TCM will result in a more healthy, balanced, and harmonious existence for all the human beings in the future. This ultimate goal and direct benefit can be obtained from the study of *Su Wen*.

1.4 Organization of the thesis

As a systematic study of the English translation of the discourse markers in *Su Wen*, this thesis consists of nine chapters: namely, 1) introduction; 2) *Su Wen* and its English translations; 3) discourse marker research; 4) research methodology; 5) data analysis of Chinese DMs in the ST; 6) data analysis of English DMs in TT1 and comparison with ST; 7) data analysis of English DMs in TT2 and comparison with ST; 8) comparative analysis of translation techniques and pragmatic effects in TT1 and TT2; and 9) conclusion. In this section, the major contents of those nine chapters will be broadly explained.

Chapter One is the introduction part, which includes the background of the research, research objectives, significance of the research, as well as the organization of this present thesis. In particular, the theoretical significance lies in the classification and manual annotation of the discourse markers based on the unique features formulated in the previous research like Fraser's (1993) taxonomy of discourse markers and Rühlemann's (2011) conception of discourse marker annotation, re-modelling of the discourse markers, and also the systemic evaluation of the differences of discourse markers between Li's (2005) and Unschuld & Tessenow's (2011) English translations and the source text, and that between the two translations. The major practical values of this research include bringing the pragmatic insights into translation studies and offering a paradigm for translation studies and pragmatics

physical health and thereby extending one's life for longevity, ideally to immortality.

for the selection of optimal English translation of TCM classics for out-bound transmission of TCM classics.

Chapter Two consists of four sections. Section 1 fully introduces the history and development of different versions of the Chinese medical classic *Su Wen*. Based on different schools of thoughts, it explains the history of the earlier version evidenced by the medical manuscripts of *Su Wen* excavated in 1973 in Mawangdui (马王堆) Tomb 3 to show that they had circulated in the third century B.C. Then the classic has been compiled by some famous imperial physicians in different dynasties until the received version *Chong Guang Bu Zhu Hung Di Nei Jing Su Wen* (重广补注黄帝内经素问) came into being. Later, this version was revised as a familial version specialized for the use within family members and published in 1550. Section 2 addresses the linguistic features of *Su Wen*. Those major linguistic features include tabular and rhymed structures, monosyllabicity, multi-functionalism of lexis, the fluidity of form class, and pronominal case grammar, semantic variation, and parataxis in discourse relations, which might pose challenges to the English translation of *Su Wen*. After that, 11 English translation of *Su Wen* are presented. This part also remarks the translation difficulties which might be involved during the English translation as a foundation for later translation analysis.

Chapter Three reviews the previous studies relevant to DM research. Section 1 explains the reason why this thesis focuses on DMs, and more specifically conjunctions. Section 2 reviews the terminological maze on the term DMs to allow for a better understanding of the concept of DMs. Section 3 differentiates the distinction between DMs and PMs in terms of contents and functions. Section 4 reviews the previous related research of DMs in Classical Chinese and produces a list of potential DMs from the related research on classical Chinese conjunctions

mapped onto the categories taken from Fraser's (1993) taxonomy. Section 5 summarises the previous research of DMs in English, including three different approaches: discourse approach, relevance approach and pragmatic approach. In Section 6, the reasons for adopting Fraser's approach as the theoretical basis of this thesis are explained. The last section offers a mapping of sub-categories of message relationship DMs in Fraser (1993)'s taxonomy with those in classical Chinese grammar and their examples, which will be used to extract Classical Chinese DMs from the sub-corpus of the ST.

The main focus of Chapter Four is the research methodology, which involves 5 aspects: research questions; research data; corpus data presentation; instruments employed in the research; and methodological procedures involved in the three phases. Section 1 proposes three research questions related to the ST research, TT1 and TT2 research and comparative analysis with ST, as well as comparative analysis of translation techniques and pragmatic effects in ST, TT1 and TT2. Section 2, following Unschuld & Tessenow's (2011) claim of the distinction in original and compiled chapters and symbols annotated, classifies the ST into two types: 11 original chapters and 68 compiled chapters. Then, it selects two translations as the TTs. Section 3 discusses some of the technical issues related to processing the Chinese and English data and reports the finalised data for the parallel corpus. Section 4 introduces the instruments employed in the research including ICTCLAS1.0, CALWS7, MLCT, ParaConc, AntConc3.5.8, histograms, boxplots, Phi coefficient calculator. Section 5 addresses the methodological procedures involved in each phase of analysis: examination of Chinese ST, examination of the TTs, and analysis of translation techniques and pragmatic effects. These three phases involve Chinese word segmentation, POS tagging, annotation of sentential

boundary and sequential numbers, DM annotation, DM extraction, data normalisation and visualisation, as well as the evaluation of translation techniques and pragmatic effects.

Chapter Five discusses the analysis of the Chinese DMs in the ST, which includes six sections. Section 1 is an overview of Classical Chinese DMs found in the ST; Sections 2 to 5 present the comparison of the DM data of the two types of chapters (original chapters and compiled chapters) in the four categories (parallelism, contrast, elaboration and inferences). Section 6 serves as the summary of comparison between original chapters and compiled chapters. The highlight of this chapter is the production of the Chinese DM list and the DMs unique in the ST of *Su Wen*.

Chapters Six and Seven present the discussion of the data analysis of English DMs in TTs and comparison with ST. Sections 1 and 2 include an overview of English DMs found in TTs and an overview of the comparison between TTs and ST; Sections 3 to 6 focus on the four categories of DMs use between TTs and ST together with the comparison between the original chapters and compiled chapters. Section 7 summarises the comparison between original chapters and compiled chapters between TTs and ST including data visualisation for the comparison of DM use as well as the comparison of the forms and functions of the DMs between original and compiled chapters in TTs. The highlight of these two chapters is the production of the two English DM lists extracted from the TT1 and TT2 of *Su Wen*.

As one of the central parts of the thesis, Chapter Eight is a comparative analysis of translation techniques and pragmatic effects in TT1 and TT2. It includes eight sections which concern some important issues. Sections 1 and 2 offer an overview of the translation techniques used in TT1 and TT2 and the pragmatic effects between TT1 and TT2. Section 3 provides

definitions of the four translation techniques used in the DM translation (correspondence, amplification, omission, and shifts) and addresses their nature of pragmatic enrichment and pragmatic impoverishment. Sections 4 and 5 analyse the statistics of the translation techniques used in TT1 and TT2. Section 6 compares the statistics of the translation techniques between TT1 and TT2. Section 7 explores the underlying reasons for the translation techniques used in TTs including personal background of the translator(s), DM positions and presentational format, as well as personal stylistic preferences. Section 8 evaluates the pragmatic effects of the TTs on TL readers in terms of translation relation.

Finally, the concluding chapter includes the main findings, contribution of the research, implications of the research, and limitations of the research and further study. In the main findings section, I will detail the main findings which correspond to the three research questions proposed in Chapter 4 one by one. In the contribution part, I will address the pioneering work in four aspects: the classification of original chapters and compiled chapters based on Unschuld & Tessenow (2011) and testification of the differences; the production of the DM lists of the ST, TT1 and TT2 of *Su Wen*; the summarization of the methodology as a paradigm for translation studies and pragmatics; and the evaluation of the pragmatic effects of TT1 and TT2 of *Su Wen*. This part boasts the pioneering production of a Chinese DM list from the ST of *Su Wen* and 2 English DM lists from the two English translations. In the implications part, it sketches three implications of the research: corpus approach to English translation studies of TCM classics, pragmatic insights into translation studies, and out-bound transmission of English translation of TCM classics. Particularly, it addresses the implications for translation practice and translator training. The final part states the limitations of the research and thus offers some suggestions for the future research.

CHAPTER TWO: *SU WEN* AND ITS ENGLISH TRANSLATIONS

2.1 Development of different versions of *Su Wen*

As mentioned above, *Su Wen*, is also rendered as *Basic Questions* or *Plain Conversation*. As the name suggests, it mainly features questions and answers between Huang Di ([黄帝] the great Yellow Emperor) and his three ministerial physicians (Qi Bo [岐伯], Gui Yuqu [鬼臾区] and Lei Gong [雷公]). As a figure who allegedly reigned the land of ancient China during the middle of the third millennium B.C., Huang Di is widely regarded as one of the two main ancestors of the Chinese people. In order to highlight the authenticity of the doctrine and theories mentioned in the text, the authorship of *Su Wen* has been attributed to Huang Di, who has been the symbol of the vital spirit of Chinese civilization (Ni, 2011, p.2).

The 81-chapter *Su Wen* is composed of two parts: the first part includes 72 chapters discussing the basic contents of *Su Wen*; the second part contains nine chapters dealing with the theory of the circulation of *qi*⁶. In addition to the documentation of the basic TCM theories and principles, *Su Wen* has also recorded the knowledge of many other fields in ancient times such as astrology, meteorology, and phenology, preserving important historical data of these sciences in ancient times (Li, 2005, p.26).

Although it has undergone many revisions in the long course of its transmission and has been passed on from generation to generation, this medical classic has retained certain distinctive discourse features. Those discourse features of the text are categorized as “simple in

⁶*Qi* is literally translated as “breath”, “air”, or “gas”, and figuratively as “life force”, or “energy flow”. In TCM, *qi* is believed to be an active principle forming part of any living thing. TCM asserts that the body has natural patterns of *qi* that circulate in channels called meridians, and that symptoms of various illnesses are believed to be the result of disrupted, blocked, or unbalanced *qi* movement through the body’s meridians, as well as deficiencies or imbalances of *qi* in the Zang-Fu viscera. Therefore, TCM often seeks to relieve these imbalances by adjusting the circulation of *qi* using a variety of techniques.

description, profound in meaning, and mysterious in theory” with its major contents of “describ[ing] the difference between the heaven and the earth, the order of yin and yang, the causes of changes and the signs of life and death” [translated by Li (2005, p.23)] by Wang Bing (王冰), an imperial physician and a Minister of Transportation in Tang Dynasty (618-907 A.D.).

Early versions of this medical classic were at first passed on by oral transmission, and later written texts revised by some different medical schools were transmitted and distributed over larger geographical distances (Unschuld & Tessenow, 2011, p.11). This view can be evidenced by the medical manuscripts of *Su Wen* excavated in 1973 in Mawangdui (马王堆) Tomb 3, situated in the northeastern part of the city of Changsha, Hunan (Harper, 2009, p.4), about 1,000 kilometers away from the then capital Xianyang of the Qin Dynasty⁷ (now Xi’an), also indicating that the excavated manuscripts (including the physical relics as well as their scripts) had ever existed before the burial date as “[m]ost of the medical manuscripts are thought to have been copied nearer to 200 B.C. than to the date of burial. Earlier editions of the texts written on them must have circulated in the third century B.C.” (ibid.). That is, the excavated relics of the manuscripts of *Su Wen* can witness the authenticity of the TCM classic at least in third century B.C.

In the long course of transmission from generation to generation, it has undergone some small or large-scaled revisions and compilations to the extent that Bertschinger (2015, p.16) asserts that it is “a compilation of compilations” over a period of time as long as a century and that, it was then brought together in the time as early as the first century B.C. or the early first

⁷ “Qin” is said to be the very origin of the English country name of “China”. It is widely accepted that the first Chinese dynasty (221-207 B.C.), the Qin (pronounced “Chin” in Wade-Giles Romanization system) is the reason for China’s name as “[t]he phonetic similarity between Qin and China is currently regarded as the probable origin of the word “China” (Yum, 2017).

century A.D.. The precise start-date of the compilation process is a matter of some debate. There exist at least three major schools of thought, as shown in Figure 2-1. The first school holds that the first compilation of *Su Wen* could have started off after the First Emperor of the Qin Dynasty ordered the burning of non-orthodox literary works and the burial alive of Confucian scholars, for the purpose of “unification” in 213 B.C.; and the second large-scale compilation of *Su Wen* might result from the first collection and revision of medical literature sponsored by the imperial court in the year of 26 B.C. when Han Emperor Cheng (32-7 B.C.) decided to organize “a group of medical officials headed by the court physician Li Zhuguo (李柱国) to collate and revise the imperial collection of medical books preserved at the national library” (See Leo, 2011, p.30). The second school argues that the earliest documented compilation of the text could not have taken place before 100 B.C., possibly dating back to the Warring States (475 B.C.-221 B.C.). The reason, Leo (2011, p.32) argues, is that no versions of the text are mentioned in the *Shi Ji* (史记/Records of the Historian) of 104 B.C., not even in the biographies of “famous physicians” (Ch. 105). The third school enjoys the most supporters. They point to the definite historic record that in the sixth century A.D., Quan Yuanqi (全元起), a medical scholar and official in Nan Dynasty (420 A.D. – 589 A.D.), compiled a first commentated edition, which has been accepted by Chinese physicians for many years. During 750-762 A. D. the celebrated imperial physician Wang Bing re-arranged the text, added commentaries using the smaller-sized red lettering, and amended it with the larger black lettering of characters by referring to another long text of seven comprehensive discourses on the doctrine of the five periods and six *qi*. Then, during 1068-1077 A.D., an imperial editorial office led by Lin Yi (林亿), an imperial physician and fifth rank high

official, published a typographic printed version⁸ rather than the block printing of *Su Wen*, with further corrections and added commentary, entitled *Chong Guang Bu Zhu Huang Di Nei Jing Su Wen* (重广补注黄帝内经素问) (Unschuld & Tessenow 2011, p.11).

Of course, in the long transmission of continuous written and printed versions, there were some mistakes and errors introduced by the confusion of different colours and fonts. Some of the revisions or editions are made for correcting those errors. A typical example is the fact that Quan Yuanqi's (420 A.D. – 589 A.D.) comments, which were entered into the main text due to the later copyists' carelessness, were moved back into the commentary again to "preserve a distinction between historical layers of the text". Unschuld (2003, p.25) gives an example that "*Su Wen* 47 had a fifteen-character passage [...] this passage was a comment by Quan Yuanqi later inserted into the main text. Hence, they moved this passage back into the commentary". That's why this TCM classic has undergone many times of revisions and compilations as mentioned above.

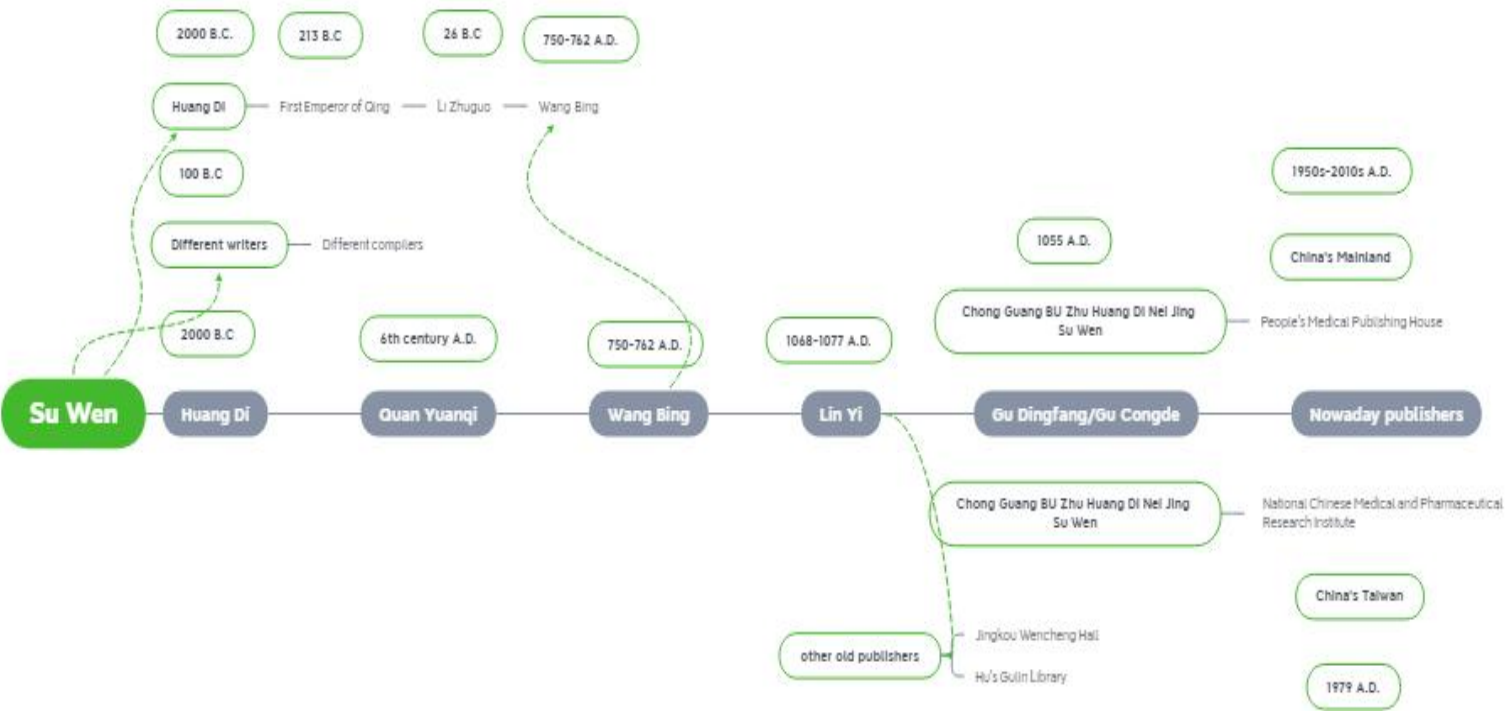
Those mistakes and errors were incurred mainly due to the hand carving and hand copy. But there was a drastic change on account of the application of movable type printing developed from block printing in Song Dynasty, which improved the accuracy and efficiency of batch printing of books.

The mistakes are judged by the end rhymes of the sentences. This verification was carried out and described in detail in Unschuld & Tessenow (2011). For instance, Quan Yuanqi's (420 A.D. – 589 A.D.) version of *Su Wen* Chapter 1 includes “和于术数，饮食有常节，起居有常度，不妄不作，...故能与神俱...度百岁乃去” (BT: They compiled with arts and

⁸ Movable type printing, as part of the Four Great Inventions of ancient China, was invented in the Song Dynasty (960-1279 A.D.).

calculations. In food and drinking they observed moderation. In rising and resting they observed regularity. Neither did they behave recklessly, nor did they commit any deceptive activities, ...So they could keep both physical appearance and spirit ... Their life span exceeded 100 years before they died.), in which the ending characters “数” (*pinyin*: shu) and “度” (*pinyin*: du) in the preceding sentences rhymed with the ending characters “俱” (*pinyin*: ju) and “去” (*pinyin*: qu) in the succeeding sentences. In later years, when Wang Bing in Tang Dynasty changed the structure from five-character expressions “饮食有常节，起居有常度” to four-character expressions “饮食有节，起居有常”，“the sentence structure no longer juxtaposed true and false” (Unschuld & Tessenow, 2011, p.31). In addition, when Wang Bing changed the meaning of “不妄不作” to “不妄作劳”，he misread “作” as the “作为” (to work) rather than “to pretend/deceive” as “诈” (which is identical with “作”), which was read like “胙” (*pinyin*: zu) in antiquity. By linking “作” with “劳”，“Wang Bing completely distorted the meaning of the classic!” (See Unschuld & Tessenow, 2011, p.31).

Figure 2-1 Development of Different Versions of *Su Wen*



Gu Dingfang (顾定芳), as a senior and experienced imperial physician in the Ming Dynasty (1368-1644 A.D.), revised the familial version of *Chong Guang Bu Zhu Huang Di Nei Jing Su Wen* printed in the Song Dynasty (1056-1063), specializing for the use within family members. In 1550 Gu Congde (顾从德), who was Gu Dingfang's son and an expert specializing in seals collection at that time, sponsored the publication of a revised version with his name and seal stamped on the book, presumably for the purposes of authentication of the version or the protection of the copyright. This is one of the most well-known versions today (Figure 2-2), but other revised versions also remained in print, such as the one printed by Jingkou Wencheng Hall (京口文成堂) based on a Song Dynasty version and the one printed by Hu's Gulin Library (胡氏古林书堂) based on a Yuan Dynasty version (1271-1368 A.D.).

Figure 2-2 Photos of the Gu Congde's version with Gu Congde's and Gu Dingfang's names and Gu Congde's personal stamp



Nowadays there exist various versions of *Su Wen*. The most popular version of this Chinese classic is still Gu Congde's version. His version annotated with his name and stamped with his personal seal has been considered as the *textus receptus* for hundreds of years, thus many publishers regard this version as the blueprint. In China's mainland, his authenticated version has been published by the People's Medical Publishing House in 1963, 1979 and 1983. This is the source text that Li (2005) translated *Su Wen* from Chinese to English. In Taiwan, Gu Congde's authenticated version has been published in 1979 by the National Chinese Medical and Pharmaceutical Research Institute, Taiwan as the received version, on which Unschuld & Tessenow (2011) carried out the English translation as the source text (Unschuld 2003, p.495). Unschuld & Tessenow (2011, p.22) comment on the similarities of the two versions that "The currently available Chinese edition closest to our reference text is the *Huang Di Nei Jing Su*

Wen published by the People's Medical Publishing House in Beijing in 1963, 5th printing, 1983". It suggests that Li (2005) and Unschuld & Tessenow (2011) share the same version of *Su Wen* as their source text for the English translation.

2.2 Linguistic features of *Su Wen*

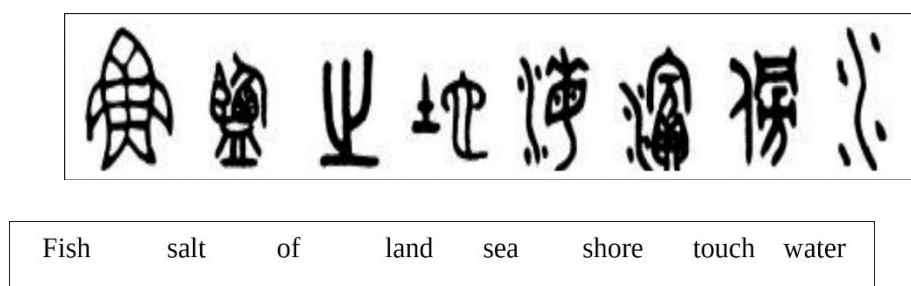
In order to fully understand traditional Chinese medicine, the first step is to delve into the classical Chinese language. Bertschinger (2015, p.38) claims that Chinese language differs completely from Indo-European languages like English as the Chinese pictorial characters (not alphabetical letters) were first and foremost drawn from life, not recorded sounds; and that a written shape was a direct visual representation or picture of a situation, so "a page of classical Chinese characters (which have no tense, no person, no number) demands involvement of a greater part of the brain" while English language has a Latin alphabet based on phonemes. That is why American sinologist H. G. Creel concludes that the reading of literary Chinese is a creative, not a passive task (C.f. Bertschinger, 2015, p.40). Things are the same with the TCM classic *Su Wen* as a piece of literary works. Overall, *Su Wen* has the following major linguistic features.

2.2.1 Tabular and rhymed structures

Between the two Chinese parallel sentences of two tabular four-character structures, there is no conjunction signalling the relation between them, which is acceptable in classical Chinese.

For example, in *Su Wen* Chapter 12, there is a sentence “鱼盐之地，海滨傍水”⁹ (WWT: fish salt of land, sea shore touch water), if rendered into English by literal translation, it would be translated as “[This is] the land of fish and salt[;] [and] beaches border on the water.” as shown in Figure 2-3. If it is converted back into oracle bone scripts which is regarded as the earliest known form of Chinese writing invented in Shang Dynasty (c. 1600 B.C.-1046 B.C.), the pictorial characters will vividly represent the meaning of the sentence by the visual presentation.

Figure 2-3 The sentences of oracle bone scripts of the Chinese characters without discourse markers and punctuations¹⁰



Among the eight Chinese characters, the first one “魚” is a pictograph looking like a fish; the second one “鹽” signifies that a person boils the sea water for salt; The third character “之” serves as a pictograph with its basic meaning “go out” and the extended meaning “possessed

⁹ In classical Chinese there was no punctuation until the advent of the basic ones in Ming Dynasty (1368-1644). In 1919, there were 12 kinds of punctuation marks, which were issued by the Ministry of Education at that time. In 1951, an instruction of learning punctuation was issued for the standardization of a unified punctuation use.

¹⁰ The oracle bone scripts of those 8 characters can be converted from the tool at <https://www.qqxiuzi.cn/zh/jiaguwen/> or <http://www.hellofont.cn/activity/jgw/>.

by”. The fourth character “地” is composed of two parts: the left one “土” indicates the earth, while the right one refers to “light Qing Yang”, together they metaphorically mean that “At the beginning of the division, light Qing Yang is the sky, heavy turbidity Yin becomes the earth”; The last pictograph “水(氵)” stands for “water”; both the fifth and sixth characters are phonetic compounds consisting of two parts: the left one is the same radical “氵” for “water”, the right ones “每” (*pinyin*: mei)¹¹ and “賓” (*pinyin*: bin) stand for the pronunciation of the characters; so the fifth and sixth characters mean “a big pool for rivers” and “seaside” respectively; the seventh character “傍” is also a phonetic compound combining a semantic radical “亻” (person) with a phonetic component “旁” (*pinyin*: pang); They are combined to signify “close to”.

In addition, *Su Wen*, as a literary medical classic, abounds with a wealth of rhymed structures. As Keegan (1988) asserts, on the internal evidence of certain chapters, especially those with rhymed and tabular structures, that those chapters of *Su Wen* were put together by physicians to teach students for oral transmission and easy memorization, who received the texts during a formal ceremony of transmission under oath (See Bertschinger, 2015, p.17). Take a rhymed and tabular structure as an example. The sentence “风/n 盛/v (*pinyin*: sheng) 则/d 动/v (*pinyin*: dong), 热/n 盛/v (*pinyin*: sheng) 则/d 肿/v (*pinyin*: zhong)” (literal translation: [When] wind

¹¹ As for the pronunciation of the character “海”, *Shuo Wen Jie Zi* (Chinese: 说文解字), the first Chinese dictionary that systematically analyses the Chinese characters’ form and their etymology, writes: “从水每声。呼改切。” (“海” belongs to the radical “水” part and has the pronunciation of combining the consonant of “/h/” from the character “呼” (*pinyin*: hu) and the vowel “ai” from the character “改” (*pinyin*: gai). But the difference of the pronunciation of the character “海” between the classical Chinese and modern Chinese has left some trace of the chronological change of the Chinese language.

is strong, then [it] moves; [When] the heat is strong, [then] [it] swells.) in *Su Wen* Chapter 5 is characterized by a tabular four-character “n + v + d + v” structure with a repeated sound “/sheng/” echoed in the second characters and an end rhyme of the same sound “/ong/” included in the last characters “动” and “肿” of the two clauses which rhyme with each other without any conjunction to signal the message relationship between the two sentences. As to the reason why the rhymed and tabular structures are used in *Su Wen*, Unschuld & Tessenow (2011, p.22) remark that “Both rhymed and tabular structures were presumably intended to facilitate oral transmission through memorization”, which is especially for young apprentices who are required to recite the informative but profound TCM texts.

Taken together, those rhymed and tabular structures are quite impressive with end rhymes and strong rhythms when they are chanted in the oral transmission thus it's convenient for memorization.

2.2.2 Monosyllabicity of lexis, the fluidity of form class, and pronominal case grammar

Chan (2016, p.xxx) summarizes the salient linguistic features of the classical language, including the monosyllabicity of lexis, the fluidity of form class, and pronominal case grammar, which are closely related to the research object of this research as they involve forms, functions, positions of the message relationship discourse markers in the TCM classic *Su Wen*. Classical Chinese is predominantly monosyllabic, which stands in contrast to the largely disyllabic, trisyllabic and even polysyllabic lexis in modern Chinese. For example, in

Su Wen Chapter 1, “发/n 长/v 齿/n 更/v”¹² (BT: [his] hair grows [and] [the initial] teeth are substituted), the monosyllabic character “发” (hair) would have a disyllabic equivalent “头发” in modern Chinese, and the monosyllabic “齿” (tooth) a disyllabic “牙齿”, too. The most important all, there is no conjunction signalling the message relationship between the two clauses originated from a four-character expression, which is acceptable in classical Chinese. The fluidity of form class refers to the situation that classical Chinese “can move freely between one word class and another, exhibiting a fluidity in part-of-speech” (Li, 2016, p.411). For instance, in *Su Wen* Chapter 1, when followed by an object, the adjective “美” (delicious or beautiful) shifts to a verb signifying “consider ... as delicious” in the sentence “故/c 美/v 其/r 食/n , /w 任/v 其/r 服/n , /w 乐/v 其/r 俗/n” (BT: Hence, [they] considered their food delicious, accepted their clothes, [and] enjoyed the customs). As for pronominal case grammar of classical Chinese (Wang, 1999, p.343), the pronominal item “草木” functions as the verbal predicate in the sentence “其/r 味/n 酸/v , /w 其/r 类/n 草木/n” (BT: Its flavor is sour; its class is herbs [and] trees) extracted from *Su Wen* Chapter 4.

2.2.3 Semantic variation

As Veith (1949) points out in her own translation of this text, the first and foremost difficulty at the lexical level lies in the fact that each classical Chinese character and sentence can present variations in meaning due to the lack of any grammatical aids or punctuation (See Ni, 2011, p.5). In other words, due to the lack of boundaries between words in Chinese, different

¹² In the POS tagging system of ICTCLAS, the tags “n”, “v”, “c”, “r”, “d” and “w” below stand for noun, verb, conjunction, pronoun, adverb and punctuation respectively.

word segmentation will result in different meanings. E.g., “反之” (*pinyin*: fanzhi) in “反之/c , /w 则/c 生/v 乱气/n 相/n 淫/a 病/n 焉/y 。 /w” (BT: Otherwise, it will generate disorder of Qi and disease) in Chapter 74 of *Su Wen* should be segmented as one word “反 之 /c”, a conjunction, specifically a message relationship discourse marker to be discussed in later sections signalling contrastive relation. The translation would therefore be “Otherwise, disease will be caused due to disorder of Qi.” Alternatively, if it was mistakenly segmented as two words “反/v 之/n” (BT: to oppose it), functioning as a “V+O” collocation, the sentence will be mistakenly interpreted as “To act contrary to them generates diseases of disorderly Qi encroaching into another (territory).”, in which “To act contrary to them” is completely different from the above-mentioned one “Otherwise”.

Sometimes, different word segmentation may even lead to opposing interpretation as in the case of “非常” (*pinyin*: feichang). “人身非常温也” in *Su Wen* Chapter 34 might be segmented as 1) “人/n 身/n 非/d 常/a 温/n 也/y ” (BT: When a person’s body is not of normal warmth) if “非常” segmented accurately as separate words “非/d” (not) and “常/a” (usually) or 2) “人/n 身/n 非常/d 温/a 也/y” (BT: When a person’s body is quite warm), if “非常” segmented mistakenly as “非常/d” (quite or very) which is an adverb in modern Chinese.

The second aspect in semantic variation results from the diachronic change of lexical meaning from classical Chinese to modern Chinese. For example, in classic Chinese the collocation “所以” (*pinyin*: suoyi) with an inverted order “以 (with/by) + 所 (what)” means “by what” by literal translation. However, due to grammaticalization it has become a fixed *functional word* with the meaning “so/therefore” signalling inferential relation. Therefore, the word “所以” is

a message relationship discourse marker in this case, it cannot be interpreted as the archaic meaning “by what” but “so/therefore”. Thus, the sentence “试/v 言/v 得失/n 之/u 意/n , /w 所以/c 得/v 之/u , /w 所以/c 失/v 之/u 。” (BT: Please say something about the reasons of success and failure [in treating diseases].) in *Su Wen* Chapter 78 cannot be interpreted by literal translation as “Attempt to speak (to me) of the meaning of achieving or missing (success). That by which one achieves it. That by which one misses it.”; Another example is the *content word* “窘” in “窘乎哉问也” (How impressive your question is!) in *Su Wen* Chapter 58: in classical Chinese the adjective “窘” means “impressive” rather than “embarrassing” in modern Chinese, if not, the sentence “窘乎哉问也” would be interpreted mistakenly as “How embarrassing your question is!”.

The third aspect in semantic variation is due to the application of some mono-syllabic phonetic loan characters to substitute homophones with more sophisticated strokes presumably for the convenience of fast writing in the prescription or for easy memorization in the oral transmission from generation to generation, both phonetic loan characters and the homophones have completely different meanings if interpreted based on their surface meanings. Take “支” and “府” as example. “支” (*pinyin*: zhi) is basically a measure word used between a numeral and a certain noun in Chinese as in the case of “一支参” (a ginseng) in which “支”, as a measure word, is used between the numeral “一” (one) and the noun “参” (ginseng). It is used as a phonetic loan character to substitute the homophones “肢” (*pinyin*: zhi; literal meaning: limb) with more sophisticated strokes in “清阳实四支, 浊阴归六府” (The Lucid-Yang fortifies the four limbs while the Turbid-Yin enters the Six Fu-Organs.) in

Su Wen Chapter 5. In the same sentence, the simple mono-syllabic “府” (*pinyin*: fu; literal meaning: government) is used as a phonetic loan to substitute the more sophisticated homophone “腑” (*pinyin*: fu; literal meaning: viscera) used as a human organ. However, there are some exceptions as in the case of loan character “锡” (*pinyin*: xi; literal meaning: tin) used to substitute the non-homophonous but near-morphemous character “赐” (*pinyin*: ci; literal meaning: grant/bestow) in “余/r 锡/v 以/p 方士/n” (BT: I have given [the rules to] the practitioner]). If someone did not have a good command of the basic knowledge in this regard, he will fail to yield the accurate translation.

2.2.4 Multi-functionalism

Multi-functionalism is a common feature of discourse markers in Chinese (Yin, 2012), with classical Chinese in particular, just like the other languages like English (Brinton, 1996). In other words, “some discourse markers may belong to different categories at the same time due to the multi-functionality of discourse markers” (Yin, 2012, p.70-71).

It is important to note that “high frequency of use” of discourse markers is the “backbone of various processes of grammaticalization as well as pragmaticalization” (C.f. e.g., Furkó 2014; Dér 2017; Furkó 2020). The very reason lies in that “the more frequently an item is used, the more likely it is that its formal-functional properties are going to change, and once it has entered the process of grammaticalization, the faster it is going to go through the substages of that process.” (Furkó, 2020, p.13). Therefore, it will result in the multi-functionality of some discourse markers, thus they will appear across the categories.

In the case of *Su Wen*, there are altogether 6 characters (“而”, “则”, “若”, “以”, “即”, and “且”) with multi-functions. That is to say, they can be used to signal parallelism, contrast, elaboration and /or inferences. Among them, “而” (*pinyin*: er) is used across four categories; “则” (*pinyin*: ze) belongs to three categories; while the others like “以” (*pinyin*: yi), “即” (*pinyin*: ji), and “且” (*pinyin*: qie) have two functions, which can be shown in Table 2-1.

Table 2-1 Multi-functional Chinese discourse markers in *Su Wen*

categories	parallelism	contrast	elaboration	inferences
1	而 (and)	而 (while)	而 (moreover)	而 (if)
2	若 (or)	则 (but)	则 (that is)	则 (thus)
3	即 (and)		以 (and)	若 (if)
4	且(moreover)			以 (as)
5				即 (so)
6				且 (if)

Due to space limitation, only the use of the discourse marker “而” (*pinyin*: er) will be exemplified below.

The frequently used “而” (*pinyin*: er) is only one discourse marker across four categories in *Su Wen*, in other words, it can signal four functions between two adjacent clauses or sentences: parallelism, contrast, elaboration and inferences.

Example 1

ST: 若/v 此/r 者/k , /w 皆/d 病/v 已/d 衰/v , /w 而/c 热/n 有/v 所/u 藏/v 。 /w (*Su Wen* 31)

BT: In these cases, all the diseases have already weakened, and there is some heat that remains stored.

In Example 1, Qibo explains to Huang Di the abstract pathological reason why there remains some heat in the human body and the disease cannot be completely cured. In this situation, the multi-functional discourse marker “而” connects the two adjacent sentences signalling parallelism.

Example 2

ST: 阴气/n 少/a 而/c 阳气/n 胜/v , /w 故/c 热/a 而/c 烦/n 满/a 也/y 。 /w (*Su Wen* 34)

BT: The yin qi is diminished but the yang qi dominates. Hence, (the body) is hot, and (the patient experiences) vexation and fullness.

In Example 2, the context of “阴气” (yin qi) and “阳气” (yang qi) and “少” (diminished) and “胜” (dominates) shows sharp contrast as the background, with the multi-functional discourse markers “而” (but) signalling adversative relation.

Example 3

ST: 天/n 不/d 足/v 西北/s , /w 故/c 西北/s 方/f 阴/v 也/y , /w 而/c 人/n 右/f 耳目/n 不如/v 左/f 明/v 也/d 。 /w (*Su Wen* 5)

BT: Heaven is not sufficiently present in the Northwest. Hence the Northwest is yin, that is, the ears and the eyes of man on the right are not as clear as on the left.

Example 3 is an example in which the multi-functional DM “而” (that is) signals elaboration. In the ST, the elaboration occurs on account of the need to elaborate the result “the ears and the eyes of man on the right are not as clear as on the left” by explaining the cause “Heaven is not sufficiently present in the Northwest, hence the Northwest is yin” and the effect of “the Northwest’s being yin”.

Example 4

ST: 形/n 气/n 相/d 感/v 而/c 化/v 生/v 万物/n 矣/y 。 /w (*Su Wen* 66)

BT: Physical appearance and qi affect each other thereby they transform and generate the myriad beings.

In Example 4, the multi-functional DM “而” (thereby) signals inferences “the transformation and generation of the myriad beings” based on the first clause it links “physical appearance and qi affect each other”.

Taken together, the above-mentioned “multi-functional” (Furkó, 2020) Chinese discourse markers co-exist across two or more different categories, with the discourse marker “而” in particular, as it co-exists across the four categories, fulfilling different functions. The “multi-functionality” of those discourse markers would pose some difficulties to the translators, especially to those non-native Chinese translators. If they are misinterpreted, there would result in some improper shifts in the English translation, affecting the pragmatic effects on TL readers. This issue will be discussed in detail in Chapter 8.

2.2.5 Parataxis in discourse relations

At last, due to properties discrepancies of the different language systems, one of the foremost differences between Chinese and English lies in parataxis in Chinese and hypotaxis in English. Parataxis refers to the arrangement of the sentential components (such as phrases, clauses, and sentences) without connectives to indicate the internal relations between them, therefore, different parts of sentences are juxtaposed. Their relation is largely revealed or developed by underlying semantic/logic or even discourse relations rather than formal markers. While hypotaxis in English requires the use of connectives between different sentential components to explicitly show the logic relations (Xiong, 2012, p.118). For example, in *Su Wen* Chapter 8, there is no explicit connective marker “但” (but) between the two clauses to show the contrastive relation as in the two parallel tetrasyllabic structure “消者瞿瞿，孰知其要？” (BT: The erudite works on it assiduously. [But] who knows the miracle?). As such, compared with the English translation, some implied connective relations between sentential components or clauses in the source text need to be discerned, in the light of the context, for the present research. Further attention will be paid to the literature review of discourse marker studies of the previous research in Chapter 3 and the construction of the theoretical framework and the taxonomy of discourse markers both in classical Chinese and English in Chapter 4.

2.3 English Translations of *Su Wen*

In order to promote the transmission of this Chinese medical classic to the Western world,

many scholars and researchers have devoted themselves to the production of English translations. From 1925 to 2011, there have been 11 different versions of English translations of *Su Wen*, shown chronologically in Table 2-2, which gives information concerning the translators, translated titles, years, publishers' names, source texts and brief comments on the translation's features. It is to note that, Chinese given names are placed after surnames. For the convenience of Western readers, the names of Chinese translators are hereinafter transcribed in the way of English names. For example, "Wong Man" is written as "Man Wong".

Table 2-2 English Translations of *Su Wen*

No.	Translator(s)	Titles	Year	Publisher	Comments	Source Text
1	Percy M. Dawson	<i>Su-Wen, the Basis of Chinese Medicine</i>	1925	<i>Annals of Medical History</i>	abridged translation	unstated
2	Ilza Veith	<i>The Yellow Emperor's Classic of Internal Medicine</i>	1949	Williams & Wilkins Publishing Company	partial translation; supplemented with footnotes and annotations	only the first 34 chapters of Song Dynasty version published by Jingkou Wencheng Hall
			1966	University of California Press		
3	Man Wong	<i>Nei Ching, the Chinese Canon of Medicine</i>	1950	<i>Chinese Medical Journal</i>	brief introduction and comments, abridged translation	unstated
4	Henry C. Lü	<i>A Complete Translation of Yellow Emperor's Classic of Internal Medicine (Nei-Jing and Nan-Jing)</i>	1978	The Academy of Oriental Heritage	complete translation, principle of consistency and principle of conformity	unstated
			2004	International College of Traditional Chinese Medicine of Vancouver		
5	Maoshing Ni	<i>The Yellow Emperor's Classic of Medicine: A New Translation of the NEIJING SUWEN with Commentary</i>	1995	Shambhala Publications	complete translation mixed with his own elucidations and interpretation	not clearly stated; twenty different interpretations and commentaries on the <i>Nei Jing</i>
6	Liansheng Wu & Qi Wu	<i>The Yellow Emperor's Canon Internal Medicine</i>	1997	China Science and Technology Press	Chinese-English parallel and complete translation	unstated
7	Chuncaï Zhou & Yazhou Han	<i>The Illustrated Yellow Emperor's Canon of Medicine</i>	1997	Dolphin Press	translation incorporated with pictures, abridged translation	unstated

8	Ming Zhu	<i>The Medical Classic of the Yellow Emperor</i>	2001	Foreign Languages Press	word-for-word translation; re-arranged translation of 31 chapters; partial translation	31 chapters from Gu Congde's <i>Nei Jing</i> published by Hunan Science & Technology Press in 1986
9	Zhaoguo Li	<i>Yellow Emperor's Canon of Medicine · Plain Conversation</i>	2005	World Publishing Company	complete translation parallel with the source text	Gu Congde's <i>Nei Jing</i> published by People's Medical Publishing House in 1963
10	Xiwen Luo	<i>Introductory Study of HUANGDI NEIJING</i>	2009	China Traditional Chinese Medicine Press	partial translation with paraphrase of the first 22 chapters	Gu Congde's <i>Nei Jing</i> published by People's Medical Publishing House in 1963
11	Paul U. Unschuld & Hermann Tessenow	<i>Huang Di Nei Jing Su Wen: An Annotated Translation of Huang Di's Inner Classic-Basic Questions</i>	2011	University of California Press	background information and complete translation	Gu Congde's <i>Nei Jing</i> (1979) published by National Chinese Medical and Pharmaceutical Research Institute

The above-mentioned translations can be classified into three kinds: abridged translation, partial translation, and complete translation according to the translator's coping strategies. An abridged translation extracts the most important content for translation. A partial translation is also a shortened form of translation, but unlike an abridged translation, only a continuous section of the source text is selected for translation. For the rest, the full text of the source text is translated.

Three English translations fall into the category of abridged translations. Dawson (1925) extracted and translated the principal elements of *Su Wen* for publication in an academic journal, examining the text from the perspective of medical history. Wong's (1950) so-called translation is only a sketch, rather than a genuine translation: a brief introduction and commentary on each chapter of both *Su Wen* and *Ling Shu*, was published in two issues of a medical journal. Zhou & Han's (1997) *The Illustrated Yellow Emperor's Canon of Medicine* is also an abridged English translation as it focuses on health maintenance together with

cartoons for easy illustration, featuring with transliteration and annotation placed in brackets (Qiu, 2011, p.134).

Three partial translations are included in Table 2-2. Veith's (1949) *The Yellow Emperor's Classic of Internal Medicine* only covers the first 34 chapters since she misconceives that the source text includes many repetitions with a small number of revisions and the first 34 chapters cover all the basic views (Veith, 1949, p.xiv-xv). This version includes many annotations and footnotes. Zhu (2001) has chosen the textbook of *Lecture Notes of Nei Jing* (5th edition) for Colleges and Universities of Chinese Medicine as the source text, which consists of 33 chapters of *Su Wen* from Gu Congde's version and 31 chapters of *Ling Shu* from Zhao's Jujing Hall (赵府居敬堂), rearranged into eight categories. Luo's (2009) English translation contains a paraphrase of the first 22 chapters of Gu Congde's edition published by the People's Medical Publishing House 1963 (Qiu, 2011, p.140). And Luo (2009, p.1) remarks in the preface that his translation is faithful to the original text with detailed footnotes collected from famous scholars and annotators both historical and current.

The remaining five English translations in Table 2-2 are complete translations covering all the 81 chapters of *Su Wen*. As the title indicates, in the translation of *A Complete Translation of Yellow Emperor's Classic of Internal Medicine (Nei-Jing and Nan-Jing)*, Lü (1978) integrated the translation of *Nei Jing* with that of *Nan Jing*¹³. The text includes many statements inside brackets which serve as translator's notes intended to facilitate the reader's understanding of

¹³*Nan Jing* (or *Nan-ching*) is another ancient Chinese medical classic based on *Su Wen* and *Ling Shu*, which put forward 81 questions for discussion and then combined into a book. It was probably compiled during the first or second century A.D.

the text. Even though longer explanations are also included, under the heading “Translator's Commentary”, the high level of translator visibility in the translation will obviously interrupt the intended readers’ normal reading of the target text. Ni’s (1995) translation is a full-text translation interspersed with the translator’s own interpretation, thus making the target text much longer than the source text¹⁴. The English translation of *The Yellow Emperor's Canon Internal Medicine* rendered by Wu & Wu (1997) is the first Classical Chinese-English parallel complete translation of *Huang Di Nei Jing*, which adopts “foreignization by transliteration and paraphrase based on Veith’s (1949) English translation” (Qiu, 2011, p.134). The two-volume work *Huang Di Nei Jing Su Wen: An Annotated Translation of Huang Di's Inner Classic-Basic Questions* was completed by Unschuld & Tessenow (2011) in collaboration with Zheng Jinsheng, a well-known researcher in China Academy of Chinese Medical Sciences. They use *pinyin* transliteration, footnotes or appendices, and creative translation methods to deal with various difficult problems encountered during English translation (Unschuld & Tessenow, 2011, p.13). Li’s (2005) *Yellow Emperor's Canon of Medicine · Plain Conversation* is a three-volume complete English translation of *Su Wen* parallel with the Classical Chinese source text and a modern Chinese translation, containing many annotations and footnotes.

¹⁴In the part of “A Note on the Translation”, Ni (1995:5) mentions that “I have taken much liberty in my humble attempt to convey the contents of the *Nei Jing*, such as eliminating the footnotes and instead incorporating them into the body of the translation”. He even gives an example that a literal translation of a sentence in Chapter 3 would read: “Heaven gives birth to the five phases[Elements] and the three *qi*” (ibid.). He extends the translation as: “The universal yin and yang transform into the five earthly transformative energies, also known as the five elemental phases, which consist of wood, fire, earth, metal, and water. These five elemental phases also correspond to the three yin and the three yang of the universe. These are the six atmospheric influences that govern the weather patterns that are reflected in changes in our planetary ecology.” (ibid.)

For most of the English translations, the source text is either unstated [Dawson (1925), Wong (1950), Lü (1978), Wu & Wu (1997), Zhou & Han (1997)], or not clearly stated [Ni (1995)]. Veith (1949) chooses the Song Dynasty version published by Jingkou Wencheng Hall. The rest unanimously choose Gu Congde's version as the source text. Zhu (2001) uses an edition published by Hunan Science and Technology Press in 1986. Luo (2009) and Li (2005) both use the 1963 People's Medical Publishing House edition, published in China's mainland. Unschuld & Tessenow (2011) use the Taiwanese received version published by the National Chinese Medical and Pharmaceutical Research Institute in 1979. Unschuld & Tessenow (2011, p.22) remark that their source text is close to the 1983 version of the *Huang Di Nei Jing Su Wen* published by the People's Medical Publishing House in Beijing in 1963. That is, Li (2005) and Unschuld & Tessenow (2011) share the same Gu Congde's version of *Su Wen* as their source text for the English translation.

As regards to the literature review of the translation of *Su Wen*, Yang & Chen (2020) is another study with a different focus which is also presented in the form of table, but it includes its French translation and the translation of *Lin Shu*, the second volume of *Huang Di Nei Jing*. They are also interested in this area, but with a different focus from this present research, which only investigates the English translation of *Su Wen*, the first volume of *Huang Di Nei Jing*.

Regarding translation difficulties, due to the conciseness in syntax and obscurity in the meanings in Classical Chinese, Li (2005) tries to use as few words as possible to translate sentences and expressions for the purpose of maintaining the structural style of the original

text. But meanwhile he has employed amplification to explicate the meanings of words and sentences, or to make the sentences sound more logical and reasonable. His purpose is that English target readers who do not possess sufficient knowledge of TCM and Chinese culture can understand the target text. For example, “浆粥入胃，泄注止，则虚者活” in *Su Wen* Chapter 19 literally means that “The porridge’s going into the person’s stomach stops the discharge, thus the weak survives.” has been translated as “[Those who can] eat porridge will stop frequent discharge [of urine and stool]. [In that case, they] can be cured [even though they are suffering from] Xu (Deficiency)]” in which the words in the brackets represent amplification to make the sentence coherent or to explicate the specification of the TCM knowledge like “泄注 (*pinyin*: xiezhu; literal translation: discharge; free translation: frequent discharge of urine and stool)”.

Unsatisfied with the quality of previous English translations of *Su Wen*, probably including Li’s (2005) translation, Unschuld & Tessenow (2011) complain that so far “no one has ever attempted to prepare a philologically correct English translation of *Su Wen*”, so they decide to conduct a scientific analysis of the literary text and other written records. Eventually they have completed two volumes of annotated English translation of *Su Wen*. They (2011, p.23) claim that their translation has aimed to “offer a quality of translation and annotation that will enable, for the first time, a wide range of readers without command of Classical Chinese to conduct comparative research on ancient Chinese and European medical classics” (ibid., p.12). As such, they clarify the pragmatic effect of their English translation of *Su Wen* and assert that their purpose is to “introduce readers to ideas, and their linguistic expression, developed in the

context of the manipulation of the length and the quality of human life in such a way that it lasted as long as possible with minimal physical and mental suffering” and to “appreciate the basic differences and parallels between the more than two millennia of Western and Chinese medical traditions, access to English translations of the seminal life science texts of Chinese antiquity, unadulterated by modern biomedical concepts” (ibid., p.9-10).

One of the foremost difficulties in the English translation of *Su Wen* lies in the translator’s English translation of the author’s explicit and implicit intentions due to the inherent differences between the two languages and cultures. In other words, the translator needs to adequately transfer the author’s explicit and implicit intentions in English to the intended readers in the target language while in the source text the author might have conveyed those intentions to the readers in Classical Chinese. If not, the target language readers need to take great efforts or even would have great difficulties to reason the real intentions, from the vague or implicit translation, by referring to the relatively unfamiliar social, cultural, and professional contexts. In addition to the English translation of those culture-specific terms, rhymes and tabular structures, the adequate English translation of discourse markers in the source text is particularly important as they are indicative of the author’s intentions or attitudes with respect to the propositional content although they are syntactically dispensable, truth-conditionally irrelevant. In other words, they do not contribute to the propositional contents of the sentence but signal the author’s potential communicative intentions. The notion of House’s (2015) adequate translation requires semantic and pragmatic transference of the meanings of the source text to the target text for the intended readers in the target

language, so it is a must to discern, in the light of the context, especially those implicit discourse relations between sentential components or clauses in the source text due to the inherent differences of parataxis in Chinese and hypotaxis in English. As such, compared with the English translations, some implicit discourse relations between sentential components or clauses in the source text need to be discerned by looking back into and comparing the discourse markers in the target texts with those in the source text (either explicit or implicit) from the parallel Chinese-English corpus for the present research.

This research mainly concerns selecting two representative English translations of *Su Wen* and investigate their pragmatic effects by researching the English translation of discourse markers from the perspective of pragmatics in such condition of daunting difficulties in the translation. Different translations might use different discourse markers explicitly and implicitly presenting the attitudes or intentions of the translators towards the messages conveyed in the translation. Chapters 5, 6, 7 and 8 of this present research will figure out the features of discourse marker use, exploring in detail whether the two English translations have adequately conveyed the intentions of the author of the source text to the target texts, and assessing which translation can produce better pragmatic effects on the intended TL readers.

CHAPTER THREE: DISCOURSE MARKER RESEARCH

3.1 Introduction

The past four decades witnessed an increasing and continuous number of studies of DMs by a number of scholars, representing the diversity and complexity of functions that DMs perform in the discourse and also different perspectives on DM research. After a clarification of the reason for focusing on DMs as an area of research, the definition of DMs, and a distinction between the two terms DMs and PMs, different perspectives on DM research are presented, together with the available DMs taxonomies. This chapter concludes by presenting Fraser's (1993) broad-sense taxonomy of DMs in detail as it forms the theoretical basis selected for this present thesis.

This research aims to conduct a corpus-based study to investigate the English translation of Classical Chinese DMs in the TCM classic *Su Wen* to see 1) whether there are any significant differences in the frequency/types, forms and functions of DMs between the STs and TTs, and between TT1 and TT2; 2) whether the two translations can produce the same or similar communicative effects on the English target readers as Chinese STs do on the Chinese natives; 3) what translation techniques have been adopted in the translation by Li (2005) and Unschuld & Tessenow (2011); and 4) what are the potential underlying reasons for them. The reason for focusing on DMs in this thesis, and more specifically conjunctions, is that the main focus is on how the author structures messages in the text and how message relationship DMs can be used to facilitate the processes of pragmatic inferences for the reader. DMs have been argued

to be a functional class of linguistic items in *spoken discourse* which do not alter the propositional meaning but are, at the same time, essential for “the organization and structuring of discourse”, for “marking the speaker’s attitudes towards the proposition” and for “facilitating processes of pragmatic inferences” (Furkó, 2020, p.1). The same applies to *written discourse* as in the case of writer-reader communication, since on the one hand, DMs can help the writer to present the organization and structure of the discourse, signal his/her attitudes towards the proposition and on the other hand, they can help the reader to interpret the intentions of the discourse and understand the organization of the messages or relationship between messages as well as facilitate the processes of pragmatic inferences. Thus, DMs can be employed as a method to assess and compare the discourse or communicative effects even if they are translated from one language into another one, for example, we can compare and evaluate the pragmatic effects of the English translation of *Su Wen* by means of the DM use between the ST and TTs as well as between the two TTs.

3.2 Terminological maze on the term DMs

Regarding the name and nature of these linguistic elements, there appears to be little consensus between previous scholars conducting research in this area and a number of terms have been proposed through the years to refer to them, such as DMs (Schiffrin, 1987), pragmatic markers (PMs) (Brinton, 1996; Fraser, 1991, 1993), discourse connectives (Blakemore, 1987, 1989, 1992), discourse operators (Redeker, 1990, 1991), cue phrases (Knott, 1993; Knot and Dale, 1994), discourse particles (Abraham, 1991; Kroon, 1995;

Schourup, 1985), pragmatic particles (Östman, 1983; 1995) and pragmatic expressions (Erman, 1987; 1992). Other less frequently used terms include: discourse signalling devices (Polanyi and Scha, 1983), indicating devices, phatic connectives (Bazanella, 1990), pragmatic connectives (van Dijk, 1979; Stubbs, 1983), pragmatic operators (Ariel, 1994), pragmatic formatives (Fraser, 1987), semantic conjuncts (Quirk et al., 1985) and sentence connectives (Halliday & Hasan, 1976), cue phrases (Knott & Dale, 1994), discourse connectives (Blakemore, 1987, 1992). (See Fraser, 1999, p.932; Alami, 2015, p.1)

This terminological maze reflects diverse theoretical perspectives and approaches. So far, there is no widely accepted definition for these expressions (Lenk, 1998, p.37; Brinton, 2008, p.14). Thus, a variety of competing terms are used which partly overlap but do not completely agree in their references (Lutzky, 2012, p.9-10). Among them, two of the most frequently used terms are DMs and PMs, which are further discussed below.

3.3 Differences between DMs and PMs

The distinction between DMs and PMs reflects different perspectives on the contents and functions of the markers and on what to include and exclude from the class.

3.3.1 Contents

There is a consensus that DMs are part of PMs. Overall, the two terms, DMs, and PMs [first proposed in Fraser (1990)], intersect and even overlap in some studies, and the fuzzy boundary between the broad sense of DMs and PMs results from the loose and non-restrictive definition (Degand et al., 2013, p.8). DMs can be classified based on a narrow and broad

meaning of the term. In the **narrow sense**, DMs are defined as “sequentially dependent elements which bracket units of talk” (Schiffrin, 1987) [Cf. also Fraser (1990, 1996, 1999)]. Simply put, DMs signal the relationship between messages in a discourse as coherence. While in the **broad sense**, DMs and PMs have the common feature of detaching the propositional content of the sentence and signalling the speaker/writer’s attitudes towards the proposition. Research into DMs also investigates the *forms* and *positions* of the markers. For instance, research into the typical Chinese DMs includes forms and positions in sentences (Steele & Specia 2014) and sentence-final particles (Shei, 2014; Cheung, 2016). Furthermore, PMs also include some forms of lexical expressions with a wide variety of functions both on the interpersonal and textual levels like basic markers, parallel markers, and commentary markers, marking illocutionary force or serving an interactional function. Concerning the research of Chinese PMs, Feng (2008, 2010, 2011, 2019) follows Fraser (1996, 1999, 2006) and takes DMs as a subset of PMs, but his notion of PMs has a narrower scope than that in Fraser (1996). He classifies PMs into two main categories: *conceptual* (further classified into two sub-types: epistemic and evaluative) and *non-conceptual* (further grouped into contrastive, elaborative, and inferential ones). Conceptual PMs are presented by “adverbs or the most peripheral or syntactically optional elements” and “modal adverbs or adverbs of mood or modal adjuncts”. His taxonomy disagrees with Fraser (1993, 1996) as to the **exclusion** of some DMs like utterance modifiers, domain adverbials, second-person forms and other categories. Other categories include modal verbs “必须” (must), pure connectives [“和” (*he*), “与” (*yu*), “跟” (*gen*), “及” (*ji*) (and)], digressives, “好” (*hao*) (well). In a word, DMs and

PMs are used to signify different things and each has different connotations in the previous literature.

3.3.2 Functions

DMs, either in the narrow sense or in the broad sense, and PMs have different functions. In the **narrow** sense as found in Fraser (1990, 1996, 1998, 1999, 2009), DMs mostly signal the structural organization of discourse, so Lutzky (2012, p.10-11) remarks that “this [more] narrow use of the term has not been generally accepted” (e.g. Schiffrin, 1987; Jucker & Smith, 1998; Jucker & Ziv, 1998; Bazzanella, 2003, 2006; Jucker, 1993, 1997, 2002; Müller, 2005). In the **broad** sense, DMs serve the functions of marking the speaker’s attitudes towards the proposition being expressed, presenting the organization and structure of discourse, as well as facilitating processes of pragmatic inferences (Furkó, 2020, p.1). Therefore, Lutzky (2012, p.11) suggests, in their scope, distribution and functions, DMs should be *broadly* defined, comprising structural and interactional domains. What is more, Andersen (2001, p.40) suggests avoiding this term in the narrow sense, as it is likely to be confused with Fraser’s (1996) and his later narrow-meaning accounts of considering DMs as a sub-type of PMs to signal the relationship of the basic message to the foregoing discourse (Fraser, 1996; Fraser, 1998). Comparatively, PMs cover “forms with a wide variety of functions both on the interpersonal and textual levels” such as marking illocutionary force or serving an interactional function (Aijmer & Simon-Vandenberg, 2011, p.227).

Considering the differences of the contents and functions between DMs and PMs, PMs surely have a broader range of functions, accordingly they involve many parameters. However, due

to the limitation of time and energy, this thesis will choose to focus on DMs, exactly the message relationship DMs, rather than the PMs. In other words, it will only concentrate on the broad sense of DMs for the analysis, thus, this kind of DMs will fulfil the functions by means of the four categories of message relations: parallelism, contrast, elaboration, and inferences proposed by Fraser (1993) as will be discussed in detail in Section 3.4.

3.4 Previous research of DMs in Classical Chinese

Since Chinese has two varieties, i.e., Classical Chinese and modern Chinese, the study of Chinese DMs should also cover two areas, i.e., modern Chinese and Classical Chinese. But most of the research such as Huang et al. (2014), Chan et al. (2000), Liu (2011), Yin (2012), Ran (2000), T'sou et al. (1999), Cheng (2006), Han (2008), Steele & Specia (2014), Shei (2014), and Cheung (2016) are related to only modern Chinese. This can be evidenced by the structures and examples that exist only in modern Chinese as in the example of “令人惊讶的是 (literal translation: making sb. surprised *deshi*: surprisingly)” they have offered. But only a small number of the research partly involves Classical Chinese, that is, either their examples include some monosyllabic conjunctions unique in Classical Chinese, apart from some small number of disyllabic conjunctions or their taxonomy of part of speech include the classification of conjunctions in Classical Chinese. Below is a detailed overview of only those studies possibly involving Classical Chinese DMs.

3.4.1 Research involving DMs in Classical Chinese

The first research of this kind is T'sou et al. (1998). Using a corpus-based approach, they

explore the relationship between topic coherence and the use of Chinese connectives in discourse. The so-called “connectives” can be mapped onto the categories of Chinese DMs. They classify the connectives into two types: primary and secondary. The former is mainly composed of conjunctions, prepositions, adverbs, and verbs for introducing single-layer or multi-layer complex sentences. The latter mainly consists of adverbs, phrases and a small number of nouns and numerals, whose major function is for coherence or topic transfer between sentence groups. The advantage of this research lies in the definition of the word class of Chinese connectives which can shed light on the identification and determination of the Chinese DMs during automatic annotation. The limitation of this research is also the limited analysis of monosyllabic conjunctions such as “或 (or)”, “并 (and)”, “就 (then)”, “则 (so)”, “又 (also)”, “也 (too)”, and “如 (if)” in addition to some disyllabic conjunctions like “如果 (if)” and “即使 (even if)”, which indicates that it touches only lightly on Classical Chinese DMs as the overwhelming majority of the Classical Chinese DMs are monosyllabic. Similar consideration applies to the research conducted by Chan et al. (2000), Liu (2011), Yin (2012), Ran (2000), T’sou et al. (1999), Cheng (2006) and Han (2008).

Another important study is that conducted by Huang et al. (2014). For them, DMs can “express some sorts of relations between two arguments”, and “entail sentiment information” (Huang et al., 2014, p.87). Following Cheng and Tian (1989), Cheng (2006), and Lu (2007), Huang et al. (2014) investigate the associations between the message relationship and the sentiment polarity of Chinese DMs mainly based on a group of Chinese DMs (single words and paired words) extracted from a modern Chinese dictionary, classifying the markers into

three groups of scopes as Single word, Intra-sentential, and Inter-sentential according to their grammatical usages. The Single-word DMs refer to individual words used as DMs, while the Intra-sentential DMs contain “pairs of words that occur inside the same sentence and denote a discourse relation” (ibid., p.88). Finally, Inter-sentential DMs are used between two or more successive sentences or between adjacent utterances by two different speakers. In other words, they include single markers, pair markers, and inter-sentential markers.

The main advantage of Huang et al.’s (2014) study is that they identify different forms and comment on their positions or distribution in sentences. Specifically, Chinese DMs consist of two major kinds: single word and pair words distributed intra-sententially or inter-sententially. However, the “so-called” Chinese DMs that they analyse are mostly modern Chinese ones judging from the examples, even though they do not explicitly state whether they are modern Chinese or Classical Chinese. Only a small number of the examples include monosyllabic single conjunctions like “或 (or)”, “并 (and)”, “就 (then)”, “则 (so)”, “又 (also)”, “也 (too)”, and “如 (if)”, and monosyllabic pair conjunctions like “因...而 (because ... then)”, “凡...可 (Whoever...can)” and “如...则 (if ... then)”, which are in accordance with the features of Classical Chinese.

3.4.2 Research on conjunctions in Classical Chinese

As mentioned above, there has not been much research involving DMs in Classical Chinese except for some limited research about connectives or conjunctions which can be classified as DMs in Classical Chinese. To find some more examples, it is possible to look into the studies focusing specifically on conjunctions. Because these linguistic categories in Classical Chinese

are associated a lot with DMs and in particular those that have to do with message relationships, it is a very good category to study, at least to understand DMs in Classical Chinese in more depth. Specifically, Huang et al. (2014, p.87), remark that “DMs mean **connectives**” and therefore it appears that in Chinese, at least, the two terms “connectives” and “conjunctions” might be interchangeable. The next part will first address the differences between connectives and conjunctions, and then present the lists of DMs from the related research on Classical Chinese conjunctions.

3.4.2.1 Differences between connectives and conjunctions

An examination of previous studies reveals that connectives have a broader sense than conjunctions. For instance, T’sou et al. (1998) claim that connectives include conjunctions, prepositions, adverbs, and verbs. This is similar to how Fraser (1999, p.931) and Ranger (2018, p.5) define DMs in English as including conjunctions, adverbs, prepositional phrases, idioms, parentheticals and other classifiable fixed expressions. Based on their views, conjunctions are one of the primary components of DMs, as can be clearly seen in Table 3-1.

Table 3-1 Related research on connectives or conjunctions

Scholars	Research objects	Components
T'sou et al. (1998)	connectives	conjunctions prepositions adverbs verbs phrases a small number of nouns and numerals
Huang et al. (2014)	DMs	single conjunctions pair conjunctions
Shi (2010); Zhi (1988-1990); Wang (1999)	Classical Chinese grammar	conjunctions
Schiffrin (1987)	DMs	conjunctions interjections adverbs lexicalized phrases
Fraser (1999, p.931)	DMs	conjunctions adverbs prepositional phrases a few idioms like “still and all”, “all things considered”
Ranger (2018, p.5)	DMs	conjunctions adverbs prepositional phrases parentheticals (independent clauses; imperatives; subordinate clauses) other classifiable fixed expressions

Similarly, the research of Shi (2010), Zhi (1988-1990), and Wang (1999) clearly show how connectives are conceptualized in Classical Chinese grammar, and the word class that works as *connectives* in Classical Chinese is predominantly *conjunctions*. What this research focuses on is not the wider category of connectives, but various kinds of *conjunctions*, including coordinating conjunctions, sequential conjunctions, contrastive conjunctions, hypothetical conjunctions, progressive conjunctions, optional conjunctions, causative conjunctions and conceding conjunctions.

3.4.2.2 Lists of DMs from the related research on Classical Chinese conjunctions

The above-mentioned studies are some examples that focus on Chinese DMs and involve some limited examples of conjunctions which can be representative of what might be used in Classical Chinese. There are also others that focus on the taxonomy of Classical Chinese word class including *conjunctions* which can be used for the classification of message relationship DMs in Classical Chinese. To build a theoretical basis for this research, it is fundamental to carry out a systematic classification and extract a long list of conjunctions in Classical Chinese from the previous literature. Related to this, Shi (2010), Zhi (1988-1990) and Wang (1999) analyse the word class of Classical Chinese including the components of Classical Chinese DMs. Shi (2010) focuses on the automatic segmentation and POS tagging of Classical Chinese texts by listing the classification of word classes in Classical Chinese and their examples in each category. Specifically, he classifies the Classical Chinese conjunctions into 8 sub-types, with a total of 78 examples as shown in Table 3-2. The conjunctions listed can be considered as DMs in Classical Chinese.

Table 3-2 Categories of Classical Chinese conjunctions and examples extracted from Shi (2010)

Categories	Classical Chinese examples	Sum
Co-ordinating conjunctions	而 (and); 且 (and); 与 (and); 及 (as well as); 乃 (and); 暨 (and); 又 (and); 终…且 (both...and); 既…且 (both...and); 既 … 终 (and...and); 且 … 且 (and...and)	11
Sequential conjunctions	则 (then); 而 (and); 以 (and); 斯 (then); 乃 (hence); 于是 (consequently); 然后 (then); 然则 (then)	8
Contrastive conjunctions	顾(but); 抑 (yet); 抑亦 (however); 而 (but); 但 (however); 第 (yet); 却 (but); 然 (but); 然而 (while); 虽…然… (although...(but))	10

Hypothetical conjunctions	如 (if); 若 (if); 苟 (if); 倘 (in case); 使 (in the event that); 令 (supposing); 当 (if); 即 (provided that); 则 (in case); 设 (supposing); 自 (unless); 向使 (in case); 借使 (if); 假令 (supposed that); 当使 (in case); 如令 (supposing that); 如使 (if so)	17
Progressive conjunctions	且 (and); 况 (moreover); 又 (and); 尚 (still); 犹…况… (besides)	5
Optional conjunctions	且 (or); 将 (or); 宁 (rather than); 若 (or); 如 (or); 抑 (or); 孰与 (which); 孰若 (which)	8
Causative conjunctions	以 (as); 为 (since); 由 (because); 用 (as); 因 (because); 故 (so); 是以 (therefore); 是故 (so); 以故 (accordingly); 因此 (thus); 所以 (so)	11
Conceding conjunctions	虽 (though); 纵 (even if); 即 (even though); 唯(惟) (only); 自 (unless); 纵使 (even if); 只使 (only if); 正使 (notwithstanding)	8
Total		78

Zhi's (1988-1990) series research published in a TCM journal discusses the classification of part of speech in TCM classic grammar and also lists some *classes of words* which are partly extracted from *Huang Di Nei Jing* with *Su Wen* as the first half of the classic. Among them, conjunctions are grouped into 8 sub-types, the same number as that found in Shi (2010), with a total of 71 conjunctions. As before, these can all be considered as DMs in Classical Chinese.

Table 3-3 Categories of Classical Chinese conjunctions and examples from Zhi (1988-1990)

Categories	Classical Chinese examples	Sum
Co-ordinating conjunctions	而 (and); 及 (as well as); 与 (and); 以 (and); 且 (and)	5
Sequential conjunctions	而 (and); 以 (and); 则 (then); 即 (and); 乃 (hence); 遂 (hence); 于是 (consequently); 然后 (then); 而后 (then); 且夫 (moreover)	10
Contrastive conjunctions	然 (but); 而 (but); 但 (however); 顾 (but); 则 (but); 乃 (but); 然而 (while); 至于 (as to); 至如 (as for); 至若 (as to); 若夫 (as for)	11
Hypothetical conjunctions	如 (if); 若 (if); 而 (if); 苟 (if); 今 (if); 使 (in the event that); 令 (supposing); 设 (supposing); 倘(悦) (if); 自 (unless); 为 (if); 假今 (supposed that)	12
Progressive conjunctions	且 (and); 而 (and); 矧 (what's more); 况 (moreover); 况于 (let alone)	5

Optional conjunctions	若 (or); 或 (or); 抑 (or); 意 (or); 且 (or); 将 (or); 宁 将 (rather than); 将 抑 (rather than); 与其 ... 不若 (孰若)... (better... than); 孰与 (which)	11
Causative conjunctions	以 (as); 为 (since); 故 (so); 惟(唯) (only); 盖 (because); 因 (because); 是以 (therefore); 是故 (so); 以故 (accordingly)	9
Conceding conjunctions	虽 (though); 纵 (even if); 即 (even though); 唯 (惟) (only); 自 (unless); 纵使 (even if); 只使 (only if); 正使 (notwithstanding)	8
Total		71

Wang (1999) only touches on the classification of word class in Classical Chinese in his analysis of the Classical Chinese grammar. Due to his limited number of conjunctions identified and the fact that his taxonomy of conjunctions overlaps and is included in Tables 3-2 and 3-3, his taxonomy and examples are not presented here by an individual table.

3.4.2.3 Merged list of DMs from the related research on Classical Chinese conjunctions

As can be seen, previous research on Classical Chinese is very limited and has captured only one aspect of DMs, each study offering a limited list of examples. It is obvious that a useful starting point in this research is conjunctions because of how they are understood in Classical Chinese as synonymous to DMs. In order to capture as many DMs of Classical Chinese as possible when examining the ST, instead of relying on one of the above studies, it is necessary to combine them by merging Tables 3-2 and 3-3 above.

There is a heightened awareness that these are just some examples, and it is natural that not all of them are captured. Table 3-4 is the merged table with eight sub-categories and a total of 104 conjunctions.

Table 3-4 Categories and potential Classical Chinese conjunctions after merge

Categories	Classical Chinese examples	Sum
Co-ordinating conjunctions	而 (and); 及 (as well as); 既…且 (both...and); 既…终 (and...and); 暨 (and); 乃 (and); 且 (and); 且…且 (and...and); 以 (and); 又 (and); 与 (and); 终…且 (both...and)	12
Sequential conjunctions	而 (and); 而后 (then); 即 (and); 乃 (hence); 且夫 (moreover); 然后 (then); 然则 (then); 斯 (then); 遂 (hence); 以 (and); 于是 (consequently); 则 (then)	12
Contrastive conjunctions	但 (however); 第 (yet); 而 (but); 顾 (but); 乃 (but); 却 (but); 然 (but); 然而 (while); 若夫 (as for); 虽…然… (although...(but)); 抑 (yet); 抑亦 (however); 则 (but); 至如 (as for); 至若 (as to); 至于 (as to)	16
Hypothetical conjunctions	当 (if); 当使 (in case); 而 (if); 苟 (if); 即 (provided that); 假今 (supposed that); 借使 (in the event that); 今 (if); 令 (supposing); 如 (if); 如令 (supposing that); 如使 (if so); 若 (if); 设 (supposing); 使 (in the event that); 倘 (in case); 为 (if); 向使 (in case); 则 (in case); 自 (unless)	20
Progressive conjunctions	而 (and); 况 (moreover); 况于 (let alone); 且 (and); 尚 (still); 矧 (what's more); 犹…况… (besides); 又 (and)	9
Optional conjunctions	若 (or); 或 (or); 将 (or); 将……抑…… (rather than); 宁 (rather than); 宁……将 (rather than); 且 (or); 如 (or); 孰若 (which); 孰与 (which); 抑 (or); 意 (or); 与其…不若(孰若)… (better... than)	12
Causative conjunctions	盖 (because); 故 (so); 是故 (so); 是以 (therefore); 所以 (so); 为 (since); 惟(唯) (only); 以 (as); 以故 (accordingly); 因 (because); 因此 (thus); 用 (because); 由 (because)	14
Conceding conjunctions	虽 (though); 纵 (even if); 即 (even though); 唯(惟) (only); 自 (unless); 纵使 (even if); 只使 (only if); 正使 (notwithstanding)	9
Total		104

The examples in the merged list are the conjunctions which might appear in *Su Wen*. However, it must be noted that this list is not comprehensive and only includes examples of potential DMs. In other words, the identified 104 examples are offered herein to give an idea of what the Classical Chinese DMs could be, rather than all the instances in Classical Chinese since it is not a full list. Furthermore, their classifications only focus on word class, less on actual

pragmatic functions of the items, whereas this thesis focuses on the pragmatic functions of DMs in Chinese-English translation, therefore, a comprehensive framework is needed to classify those conjunctions further into meaningful functional groups. Such a framework can be found in the research into English DMs.

3.5 Previous research of DMs in English

DM research is an area of research which has been studied much more in English compared with Chinese. The major representative scholars in this area include Shiffrin (1987), Fraser (1990, 1993) and Blakemore (1987, 1992). Fraser (1988, 1990, 1991, 1993, 1996, 1999, 2006, 2009) continues to research on this topic for more than 3 decades though the focus of his research has shifted from DMs to PMs and then back to DMs. Fraser (1993) proposes a comprehensive taxonomy of DM categories, focusing on message relationship markers in particular. Apart from Fraser's taxonomy of DMs, other DM taxonomies include Maschler's (1998), Sankoff's (1997), and Romero-Trillo's (2001), each of them approaching DMs from a different perspective. Due to space limitations, these other DM taxonomies will not be herein addressed in detail.

3.5.1 Three different approaches

Taken together, there have been **three different approaches** in the previous research of DMs in English: discourse approach, relevance approach and pragmatic approach.

3.5.1.1 Discourse approach

The first is the **discourse approach**, where the major representative has been Schiffrin (1987).

She proposes a discourse model with five different planes: a participation framework, information state, ideational structure, action structure, exchange structure. Her analysis shows that on the one hand, DMs can work at different levels of discourse to connect utterances on either a single plane or across different planes. For example, “but” mostly serves the function of cohesive device in an action structure on a single plane, but when prefacing the meta-linguistic phrase “*I’m tellin’you*” in a conversation as in the example mentioned by Schiffrin (1987, p.61), it functions simultaneously on several planes of discourse: ideational structure, as a cohesive device in a action structure, and an interactional move. On the other hand, DMs signal various “relationships that are local (between adjacent utterances) and/or global (across wider spans and/or structures of a discourse” (ibid., p.57). Concerning the differences between the local and global, we can examine an example of “but” prefacing a clause offered by Schiffrin (1987, p.52) where it can signal contrast at a local ideational level or locate the contrast at a more global level of discourse. In her theoretical definition of DMs, she specifies the conditions that allow a lexical item to be used as a DM. Almost importantly, she proposes that DMs have both primary functions and multi-functions, helping to “integrate many different simultaneous processes underlying the construction of discourse, and thus helps to create **coherence**” (Schiffrin, 2001, p.58). However, Schiffrin’s (1987) taxonomy is criticized by Redeker (1991, p.1167) for the lack of a clearly-stated definition of the components of discourse coherence (only 11 limited markers are involved in the five planes) and also the absence of a broader framework embracing all connective expressions.

3.5.1.2 Relevance approach

The second approach is **relevance approach**, which has been influenced a lot by Relevance Theory. Based on Sperber and Wilson's (1986) Relevance Theory and treating DMs as a type of Gricean conventional implicature, Blakemore (1987, 1992) focuses on how DMs (in her words "discourse connectives") impose *constraints* on implicatures. She proposes that **DMs** have only a procedural meaning, working together with the conceptual meaning in the representation of utterance (cf. Blakemore, 1987, 1992, 1995) (Fraser, 1999, p.936), and she aims to show how the principle of relevance explains the interaction between two types of messages in the interpretation of utterances. She goes on to argue that in a relevance-based framework an addressee interprets, at minimal processing cost, every utterance "in the smallest and most accessible context that yields adequate contextual effects for no unjustifiable effort" for constraining the interpretation of utterances in accordance with the principle of relevance (Blakemore, 1992, p.137). But this perspective has the inherent **limitation** that the addressee might bring "quite different contextual assumptions to bear and derive quite different contextual implications" (ibid., p.141-142) even from the same context.

3.5.1.3 Pragmatic approach

The last approach is the **pragmatic approach**, which is the focus of this thesis. The major representative is Fraser (1993), who has been selected here for three main reasons. The first one is comparative comprehensiveness, which means that in his DM research of over three decades, his categories cover the most comprehensive components. The second one is pragmatic functions, which indicates that his wide sense of DMs taxonomy is embedded with

pragmatic characteristics. Finally, his taxonomy is applicable across languages, which is evidenced by the fact that his international students applied it to other languages, including Chinese.

3.5.2 Development of DM research

Indeed, in over 30 years, Fraser has been researching DMs and PMs. During this time, Fraser (1988, 1999, 2006) has focused on the *narrow sense* of DMs presenting the message relationship and topic structure of a discourse, and also on the *broad sense* of DMs (Fraser 1993), which is embedded in a larger framework of PMs. He classifies the markers representing content meanings into three sets: basic pragmatic markers (signals of illocutionary force, e.g., *please*), commentary pragmatic markers (encoding of another message that comments on the basic message, e.g., *frankly*), and parallel pragmatic markers (encoding of another message separate from the basic and/or commentary message, e.g., *damn, vocatives*). Meanwhile, he classifies discourse makers into three sub-sets: discourse topic markers, discourse activity markers, and discourse message relationship markers. Figure 3-1 indicates Fraser's focus on DMs research over the years, in which the sub-sets of the DMs in Fraser (1993) are comparatively the most comprehensive. By building upon the sequential function of discourse markers in the initial or middle of Sentence 1 and Sentence 2, he specifies a relationship between two segments of procedural discourse for the facilitation of inferences and interpretation of the messages.

Figure 3-1 Fraser's focus on DM research over the years

Tags	Fraser 1988			Fraser 1993			Fraser 1996		Fraser 1999		Fraser 2006			Fraser 2009	
	Types	Sub-types		Types	Sub-types		Types	Sub-types	Types	Sub-types	Types	Sub-types		Types	Sub-types
BSMK	×			✓			✓	structural basic markers	×		×			✓	
								lexical basic markers							
								pragmatic idioms							
								hybrid basic markers							
CMMK	×			✓			✓	assessment markers	×		×			✓	assessment markers
								evidential markers							manner-of-speaking markers
								hearsay markers							evidential markers
								mitigation markers							hearsay markers
								emphasis markers							(non)deference markers
PRMK	×			✓	alternate markers		✓	vocative markers	×		×			×	
					similar markers			speaker displeasure markers							
					partial markers			solidarity markers							
DSMK	✓	topic markers		✓	discourse topic markers	—	✓	topic change markers	✓		×			✓	
		discourse activity markers			discourse activity markers	clarifying									
					—	conceding									
					—	explaining									
						interrupting									
						repeating									

						sequencing									
						summarizing									
		message relationship markers	parallel		message relationship	parallel									
			contrastive			contrastive		contrastive markers		discourse markers		contrastive discourse	simple contrast		
			elaborative			elaborative		elaborative markers		discourse connectives			alternative contrast		contrastive discourse markers
			inferential			inferential		inferential markers		discourse operators			comparative contrast		elaborative discourse markers
										pragmatic connectives			paired- opposite contrast		inferential discourse markers
										sentence connectives			replacement contrast		
										cue phrases			corrective contrast		
														discourse structure markers	discourse management markers
															topic orientation markers
															attention markers

Notes: The acronyms “BSMK”, “CMMK”, “PRMK” and “DSMK” in Figure 3-1 stand for “basic markers”, “commentary markers”, “pragmatic markers”, and “discourse markers” respectively.

Schiffrin (2001, p.59) comments that Fraser's classifications "end up containing tremendous internal variation" due to the syntactic diversity found in the elements used as markers. Further limitations include the exclusion of certain expressions (such as segment-initial expressions, focus particles, pause markers, vocatives, and interjections) from markers introducing a separate sentence. Fraser (1999, p.940-941) remarks that, shifting from his earlier work on DMs (Fraser, 1990) to DMs across languages (Fraser, 1993), all the expressions concerned should be considered as DMs because of two reasons: 1) He cannot "find any principled basis to distinguish the markers", and 2) "Each of the expressions relates two separate messages" in the adjacent sentences or clauses, and he takes them to be "a *sine quo non* of DMs" (Fraser, 1990, p.941). In fact, the problems are only confined to the basic markers, commentary markers, parallel markers, and part of the discourse markers. In the development of his taxonomy of DMs, what is really stabilizing without any challenges from the other scholars is his message relationship markers. In other words, Fraser's (1993) message relationship markers under discourse markers are relatively comprehensive and embedded with pragmatic characteristics, including four sub-types: parallel, contrastive, elaborative and referential.

3.6 Fraser's (1993) message relationship DMs taxonomy as the theoretical basis

Fraser's (1993) message relationship DMs taxonomy is chosen as the theoretical basis of this research mainly for two reasons. The first one is that it has comparative closedness, thus achieving stronger DMs functions. The so-called "comparative closedness" refers to the fact that, compared with topic markers and activity markers under discourse markers which cannot be exhausted, the message relationship markers are simple enough to include only 4 definite markers as its sub-variants. As the basic function of DMs is to signal the writer's attitudes and

opinions towards the proposition, present the structure and organizations of the discourse, and help the readers to infer the meaning of the propositions, viz. to the coherence and relevance roles of DMs. The goal of this research is to focus on the **message relationship** rather than the other two sub-categories under discourse markers: topic markers and activity markers. And as shown in Table 3-5, the message relationship markers signal the relationship between segments of messages in a discourse (parallel; contrastive; elaborative; and inferential).

Table 3-5 Sub-types of message relationship markers in Fraser’s (1993) taxonomy

No.	Sub-types	Tags	Classical Chinese examples	English meanings
1	parallel	[MRPL]	也	also
2	contrastive	[MRCT]	然	but
3	elaborative	[MREL]	即	in other words
4	inferential	[MRIR]	故	thus

Secondly, Fraser’s (1993) DMs taxonomy can be applied across languages and has actually been applied to Chinese. Using the same taxonomy for both English and Chinese allows for better comparison of the results in this thesis.

3.7 The taxonomy for the present thesis

Fraser (1993) does not explicitly mention what word class of lexical expressions he includes in his message relationship DMs, but in his examples most of them are conjunctions, together with a small number of other word classes: adverbs and prepositional phrases. For instance, those adverbs like “conversely” signalling contrast and “also” signalling parallelism and prepositional phrases like “in contrast” act as conjunctions “between the content of S2 and the content of S1” in the discourse (Fraser, 1999, p.948). Their functions have been included in the four categories as presented in conjunctions. Thus, by considering the small number of adverbs, the following table only presents conjunctions. Based on this, the mapping of the

merged Chinese POS list with Fraser's message relationship DMs is a straightforward task, the results of which can be found in Table 3-6.

Table 3-6 Mapping of sub-categories in the merged Chinese POS list with those of Fraser's message relationship DMs

No	Fraser's (1993) taxonomy	Features of sub-types	Sub-categories in the merged Chinese POS list
1	Parallel markers	coordination	co-ordinating conjunctions
		alternation	optional conjunctions
		similarity	sequential conjunctions
2	Contrastive markers	sharp contrast	contrastive conjunctions
		sharp but unexpected contrast	
		contrast between claims	conceding conjunctions
		contrary to expectation	
3	Elaborative markers	more general sense of elaboration	progressive conjunctions
		more refined characterization	
		additional aspect to the current topic	
		illustration of an earlier point	
4	Inferential markers	consequentiality to some foregoing aspect	hypothetical conjunctions
			causative conjunctions

Huang (2014) mentions that “DMs mean connectives in Chinese”, so the merged Chinese POS lists of conjunctions are used to map the sub-categories of Fraser's (1993) message relationship DMs. To be specific, the sub-categories of conjunctions in the merged Chinese POS lists include the following sub-types: co-ordinating conjunctions, optional conjunctions, sequential conjunctions, contrastive conjunctions, conceding conjunctions, progressive conjunctions, hypothetical conjunctions and causative conjunctions. As mentioned above, Fraser's (1993) message relationship DMs include 4 sub-categories: parallel markers, contrastive markers, elaborative markers, and inferential markers. For the parallel markers, apart from normal coordinate type, he also classifies the alternate and similar types. For the contrastive markers, the groups he classifies include sharp contrast, sharp but unexpected contrast, contrast between claims and something contrary to expectation. In his view,

elaborative markers are used to refer to a more general sense of elaboration, more refined characterization, additional aspects to the current topic, and illustration of an earlier point. Inferential markers are comparatively simple as they signal that “the current utterance conveys a message” which is “consequential to some aspect of foregoing” (Fraser, 1993, p.27). When mapping the merged Chinese POS list with Fraser’s taxonomy of message relationship DMs, it is possible to find correspondence between the two. Specifically, co-ordinating conjunctions and optional conjunctions can be mapped onto potential parallel markers, contrastive conjunctions can be mapped onto potential contrastive markers, progressive conjunctions can be mapped onto potential elaborative markers, while hypothetical conjunctions and causative conjunctions can be mapped with the potential inferential markers. Among the eight types of conjunctions, sequential conjunctions, as a type of weak form of parallel types of DMs, can be mapped onto the potential parallel markers. And conceding conjunctions can be combined with contrastive conjunctions mapped onto the potential contrastive markers. In this way, it is possible to seamlessly combine the merged POS lists with Fraser’s taxonomy of message relationship markers, a detailed version of which can be found in Table 3-7.

Table 3-7 Mapping of sub-categories of message relationship DMs in Fraser’s (1993) taxonomy with those in Classical Chinese grammar and their examples

No.	Sub-categories of MR DMs in Fraser’s (1993) taxonomy	Sub-categories of conjunctions in Classical Chinese grammar	Examples and their English meanings in the merged POS list
1	Parallel markers	co-ordinating conjunctions	而 (and); 及 (as well as); 既 … 且 (both...and); 既 … 终 (and...and); 暨 (and); 乃 (and); 且 (and); 且 … 且 (and...and); 以 (and); 又 (and); 与 (and); 终…且 (both...and)
		optional conjunctions	若 (or); 或 (or); 将 (or); 将 …… 抑 ……(rather than); 宁 (rather than);

			宁 将 (rather than); 且 (or); 如 (or); 孰若 (which); 孰与 (which); 抑 (or); 意 (or); 与其 ... 不若 (孰若)... (better... than)
		sequential conjunctions	而 (and); 而后 (then); 即 (and); 乃 (hence); 且夫 (moreover); 然后 (then); 然则 (then); 斯 (then); 遂 (hence); 以 (and); 于是 (consequently); 则 (then)
2	Contrastive markers	contrastive conjunctions	但 (however); 第 (yet); 而 (but); 顾 (but); 乃 (but); 却 (but); 然 (but); 然而 (while); 若夫 (as for); 虽 ... 然 ... (although...(but)); 抑 (yet); 抑亦 (however); 则 (but); 至如 (as for); 至若 (as to); 至于 (as to)
		conceding conjunctions	虽 (though); 纵 (even if); 即 (even though); 唯 (惟) (only); 自 (unless); 纵使 (even if); 只使 (only if); 正使 (notwithstanding)
3	Elaborative markers	progressive conjunctions	而 (and); 况 (moreover); 况于 (let alone); 且 (and); 尚 (still); 矧 (what's more); 犹...况... (besides); 又 (and)
4	Inferential markers	hypothetical conjunctions	当 (if); 当使 (in case); 而 (if); 苟 (if); 即 (provided that); 假今 (supposed that); 借使 (in the event that); 今 (if); 令 (supposing); 如 (if); 如令 (supposing that); 如使 (if so); 若 (if); 设 (supposing); 使 (in the event that); 倘 (in case); 为 (if); 向使 (in case); 则 (in case); 自 (unless)
		causative conjunctions	盖 (because); 故 (so); 是故 (so); 是以 (therefore); 所以 (so); 为 (since); 惟 (唯) (only); 以 (as); 以故 (accordingly); 因 (because); 因此 (thus); 用 (because); 由 (because)

Two points need to be clarified here. First, since the Classical Chinese STs can be segmented and POS-tagged by means of ICTCLAS, conjunctions are represented by the tag “/c”, but “/c” can belong to more than one category, which requires the researcher to identify where the DM

belongs based on the context. The Classical Chinese examples of various sub-categories in the list in Table 3-7 can offer some references for the correct allocation if they are used as identified conjunctions for yes-no semi-automatic confirmation in the DM annotation after the batch search and substitution, which will be discussed in detailed in Chapter 4 “Research Methodology”. Second, some Classical Chinese words in Tables 3-2, 3-3, 3-4, 3-5 and 3-7 have been rendered as “and” in terms of the commonly-used meaning, which might not be the exact translation, but can serve as a rough equivalent to those Classical Chinese words.

After the creation of this list of DMs, the next step is to explain how it will be used to identify DMs in the ST and its two translations, which will be discussed in detail in the next chapter.

CHAPTER FOUR: RESEARCH METHODOLOGY

This chapter discusses the major issues of research methodology: research questions, research data, corpus data presentation, instruments used in the present research and methodological procedures involved in the three phases: the examination of Chinese ST; the examination of TTs and their comparison with the ST and with each other; as well as the analysis of translation techniques and pragmatic effects.

4.1 Research questions

This thesis involves a comparative study of the Chinese ST and two English TTs to investigate whether and to what extent the TTs can produce the same or similar communicative effects on the target Western readers as that of the ST on the Chinese native readers. The focus is on DMs, and more specifically on message relationship DMs because, as explained in the previous chapter, they can not only signal the attitude or opinion of the writer, present the organization of structure of the discourse, but also the relationship of the message, thus helping readers to make pragmatic inferences. This thesis aims to address the following questions, each corresponding to a separate phase of analysis:

- 1). How are message relationship DMs used in the ST (types, forms, functions)? Are there differences in the DM use between original and compiled chapters?
- 2). To what extent does the DM use in TT1 and TT2 compare or contrast with that in the ST and how similarities or differences can be explained?
- 3) What are the translation techniques used in the English translation of Chinese message relationship DMs as evidenced in TT1 and TT2? And what are the pragmatic effects of TT1

and TT2 by evaluating and comparing the translation techniques of DMs in TT1 and TT2 with those of the ST?

The first research question involves the examination of the frequencies, forms, and functions of DMs as well as the evaluation of the differences in the DM use between original and compiled chapters in the Chinese ST. The Chinese *forms* include the combination of the monosyllabic single or pair DMs and disyllabic single or pair DMs in different positions of the sentences such as sentence-initial, inter-sentence, sentence-medial, sentence-end. While the *functions* of Chinese DMs refer to the functions signalling four basic message relations based on Fraser's (1993) classification of DMs: parallel, contrastive, elaborative, and inferential. As such, the first research question will address the following: 1) The Chinese DM list will be recorded and the DM frequencies of the four categories will be calculated; 2) The numbers and frequencies of the DMs in each category will be normalised for comparison; 3) The evaluation of the DM use between original and compiled chapters will be carried out to testify whether there is any significant difference between them. The answer can be found in Chapter 5.

The second research question relates to the DM use in TT1 and TT2 (types, forms, functions) as well as the evaluation of the similarities and differences in the DM use between TT1 and TT2 and ST. Different from Chinese focusing on orthographical features of Chinese characters, the English forms in TT1 and TT2 cover single markers, pair markers, double markers, phrasal markers, and discourse parentheticals (Brinton, 1996). In addition, the *functions* of the English DMs will also be analysed in terms of the four categories as those in the ST. Finally, the frequencies of categories and positions of those markers between the ST to the TTs will be compared or contrasted to see whether there are any significant differences

in DM use between the English translations in the two TTs and their corresponding Chinese DMs in the ST. Therefore, the second question will be answered in Chapter 6 for TT1 and Chapter 7 for TT2. Chapter 7 will also compare/contrast with Chapter 6.

The third research question will solicit two answers: One is about the translation techniques used in the two English translations of Chinese DMs rendered by Li (2005) and Unschuld & Tessenow (2011), two groups of distinguished TCM translators in the East and the West. The other relates to the pragmatic effects of the English translation of the DMs in TT1 and TT2. The third research question will be answered in Chapter 8.

4.2 Research data

This section will address the classification of original chapters and compiled chapters of the ST and the selection of the two TTs from the 11 various versions as the research objects.

The ST of this research comes from the Chinese ST of Li (2005) as he has offered the parallel texts composed of the English TT and the Chinese ST. The Chinese text originates from Gu Congde's version *Chong Guang Bu Zhu Huang Di Nei Jing Su Wen* (重广补注黄帝内经素问 *Huang Di Nei Jing Su Wen* with some annotations).

4.2.1 Classification of original chapters and compiled chapters of the ST

As mentioned in Chapter 2, *Su Wen* has undergone many revisions in the long course of its transmission so that it is considered as “a compilation of compilations” (Bertschinger, 2015, p.16). However, no one has yet produced a classification which clearly identifies the exact number of chapters which appear not to have been revised, and which chapters have been revised, added or compiled. Based on the extensive work of Unschuld & Tessenow (2011), in

the production of their translation, the 79 chapters of *Su Wen* have been classified into two types: original and compiled. In their preface, Unschuld & Tessenow (2011, p.23-24) introduce the four major kinds of compilation, which they have marked in their translation as follows:

- 1) “Additions introduced by the compilers”, which Unschuld & Tessenow refer to as “intended” changes, marked in their translation with pointed brackets “<...>”. These will be referred to as ‘*intended additions*’.
- 2) Commentaries that originally appeared separately from the main text, “written with smaller characters, in a different color, or between the columns of the main text”. In later editions, these have accidentally been incorporated into the main text. Unschuld & Tessenow refer to these as “unintentional” additions and have marked them in their translation with curly brackets “{ ... }”. They will be referred to as ‘*unintentionally included commentaries*’.
- 3) Secondary or “second-generation” commentaries, added at a later stage, marked in the translation with double curly brackets “{{ ... }}”. These will be referred to as ‘*secondary commentaries*’.
- 4) Shorter or longer phrases unconnected to their contexts marked with reverse pointed brackets “>...<”: which include “copy errors, or unintentional doublings of passages, or they result from an erroneous sequencing of whatever pieces of wood or other materials this portion of the text was originally written on”. They will be referred to as ‘*disconnected fragments*’.

Building upon Unschuld & Tessenow's work, all the different kinds of brackets have been searched for in their translation in order to identify which types of additions are found in which chapter. This process has allowed to identify that there are 68 compiled chapters and 11 original chapters. The results are as follows:

- 1) Intended additions. There are 48 chapters which are marked with such additions (*Su Wen* Chapters 1, 3, 4, 5, 7, 8, 9, 10, 11, 13, 16, 17, 18, 19, 20, 21, 22, 26, 27, 28, 29, 32, 35, 37, 41, 42, 43, 44, 45, 48, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 66, 67, 69, 70, 71, 74, 79, 80). Among them, the compiled chapters with the most intended additions include *Su Wen* Chapters 69, 70, 71, 48, 18, 56, 55, 58, 60, 63, 74 (sorted, in order from the largest to the lowest number of insertions).
- 2) Unintentionally included commentaries. Among those chapters with commentaries more or less unintentionally included in the main text (*Su Wen* Chapters 1, 2, 3, 4, 6, 7, 9, 10, 11, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 52, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70, 71, 74, 75, 77, 79, 80), the following *Su Wen* Chapters 70, 74, 60, 61, 71, 68, 48, 17-19, 4, 6 have been used particularly for citing examples in the footnotes by Unschuld & Tessenow (2011).
- 3) Secondary commentaries. Only one chapter, *Su Wen* Chapter 18, is marked in the Unschuld & Tessenow translation as including inserted secondary commentaries.
- 4) Disconnected fragments. There are 19 chapters marked in the translation with shorter or longer phrases not connected to their contexts (*Su Wen* Chapters 2, 7, 15, 20, 28, 29, 34, 35, 36, 37, 46, 49, 58, 61, 65, 70, 71, 74, 79). The greatest number of those fragments is in *Su Wen* Chapter 46.

Therefore, if classified into two types, the original chapters only include 11 chapters, that is, chapters that do not include any of the above features: *Su Wen* Chapters 12, 14, 24, 25, 30, 31, 51, 57, 76, 78, and 81. The other 68 chapters are included in compiled chapters as *Su Wen* Chapters 72 and 73 have been excluded.

It is worthy noting that the so-called “complete” translation of Unschuld (2003) has presented only 79 chapters of *Su Wen*, leaving out chapters of *Su Wen* 72 and *Su Wen* 73 in the second volume, since they have not translated the two chapters. The reason is that “Wang Bing included in the eighty-one sections two sections, *Su Wen* 72 and *Su Wen* 73, that were already missing in his master copy and for which he did not find any suitable text. Hence, he just gave them a number but added neither text nor title.” (Unschuld, 2003, p.46-47). Unschuld (2003) has not provided the reason for this as he does not know the exact reason “Why the two missing sections are counted in the textus receptus as *Su Wen* 72 and *Su Wen* 73 is unclear.” (Unschuld, 2003, p.47). Hence, in Li’s (2005) TT1 the two corresponding chapters of *Su Wen* 72 and *Su Wen* 73 will be removed to ensure the comparability between TT1 and TT2 for building the comparative parallel corpus.

4.2.2 Selection of two translated texts as the TTs

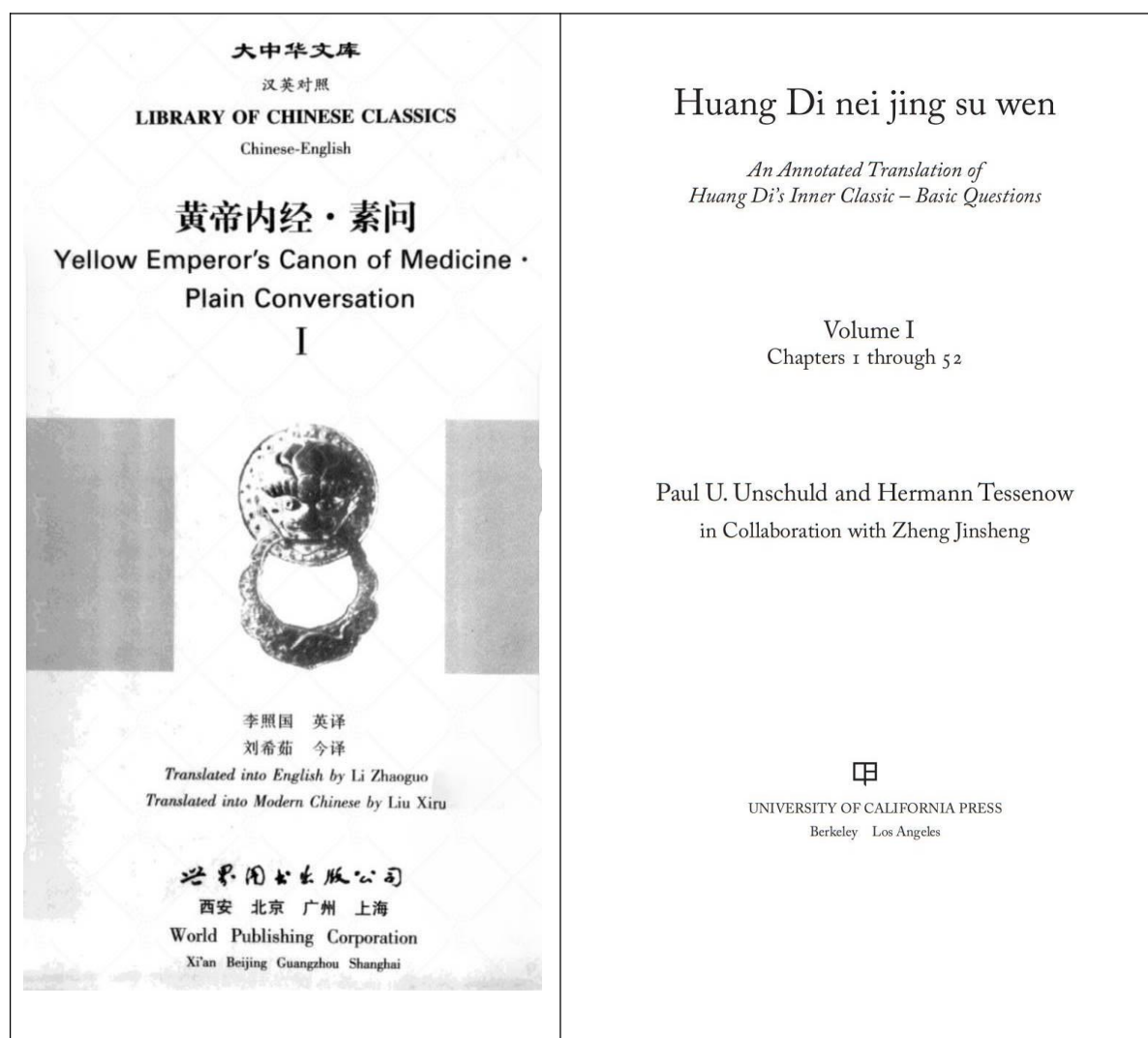
In the selection of the English translations of the ST of *Su Wen* for the comparative study, there should be some criteria to ensure a high comparability between the ST and the TT.

Firstly, priority will be given to the translation of the full text rather than segments of the legacy so that a comparison with the complete translation will allow us to conduct a more thorough examination of all relevant pragmatic features, therefore producing a more comprehensive study of *Su Wen*. Accordingly, all abridged (Nos. 1, 3, and 7) and partial translations (Nos. 2, 8, and 11) will be removed from the corpus. This leaves translations 4, 5,

6, 9 and 10. The second selection criteria will be the ease with which the ST and the TT can be aligned for comparison. Number 4 (Lü, 1978) is an integrated translation of two STs, the *Nei Jing* and the *Nan Jing*, and so will be discounted. Number 5 (Ni, 1995) uses a single ST, but the translation is interspersed with the translator's own interpretation, thus making the TT much longer than the ST. This version too will be discounted. Finally, the ST of Number 6 (Wu & Wu, 1997) is not clearly identifiable as its ST is unstated, though it is the first complete English translation parallel to the Classical Chinese version (Qiu, 2011, p.134), so this version too will be removed from the corpus.

As such, there remain the two complete English translations in Nos. 9 and 10 among those 11 officially published English translations of *Su Wen*. The remaining two translations by Li (2005) (hereinafter TT1) and by Unschuld & Tessenow (2011) (hereinafter TT2) respectively are rendered based on the same ST by Gu Congde's photocopy of *Huang Di Nei Jing Su Wen* in Ming Dynasty (1368-1644 A.D.), guaranteeing a higher comparability. Therefore, they are selected as the two translated texts for comparison.

Figure 4-1 Photos of the title pages in Li's (2005) and Unschuld & Tessenow's (2011) English Translations



It is worthy to note that two scholars Liu Xiru and Zheng Jinsheng seem to be involved in the English translation of *Su Wen* as the cover page of Li's (2005) book clearly shows Liu Xiru's name and Unschuld & Tessenow's (2011) book also shows Zheng Jinsheng's name, but it is not the case. In the former book, Liu Xiru is only responsible for an intralingual translation from Classical Chinese to modern Chinese, and Li (2005) might not necessarily have consulted Liu Xiru's modern Chinese translation. Instead, Li (2005) stresses in the Foreword

that the ST of his English translation is the Classical Chinese book published by People's Medical Publishing House Co. Ltd. in 1986. Similarly, Unschuld & Tessenow's (2011) book also shows Zheng Jinsheng's name, it says that "in collaboration with Zheng Jinsheng" (Unschuld & Tessenow, 2011, p.411). The role of Zheng Jinsheng is not one of the translators, but only a collaborator and consultant, offering some help "in the compilation of the annotated bibliographies and of the survey of the doctrine of the five periods and six qi, published as an appendix", discussing with them "the translation of discourses 66 through 74" and "offer[ing] welcome comments" (Unschuld, 2003, p.xi).

4.3 Corpus data presentation

After the collection of those materials, they are firstly digitalized through scanning, OCR recognition, and transcription into computer-readable e-texts; then they are cleaned by removing information such as captions, footnotes, annotation, page numbers, and background chapters etc. as well as by proofreading to ensure there are not any spelling mistakes or orthographical errors. In particular, some sophisticated Chinese characters or some unusual Chinese archaic characters (See Table 4-1) in the classical Chinese ST cannot be recognized by the OCR software, and therefore they had to be typed manually to replace the original errors.

Table 4-1 Some sophisticated Chinese characters or unusual archaic characters

1	癘	6	膜	11	眇	16	凜	21	跗	26	痲	31	皴	36	噬	41	飡	46	愴
2	眈	7	瘡	12	脬	17	坼	22	霧	27	眚	32	蠲	37	翳	42	蕤	47	龔
3	敕	8	癩	13	煇	18	徵	23	曠	28	璽	33	茱	38	胤	43	瞋	48	膈
4	璽	9	骹	14	髓	19	燠	24	瞋	29	胗	34	晶	39	啐	44	衄	49	膜
5	胸	10	佻	15	脬	20	肘	25	瘰	30	巖	35	牝	40	洩	45	昧	50	鸞

The format of the TTs also posed some problems. Regarding TT1, all the lengthy footnotes are deleted to allow for sentential alignment between the ST and TT1, but all the annotations are kept including *pinyin* spelling and amplified parts for cohesion placed in the brackets. As for TT2, all the verse formats with several indented lines are resumed into paragraphical formats after converting them into computer-readable e-texts for the convenience of sentential alignment with the ST. Finally, all chapters are saved as UTF-8 txt-format in three different files with files names of ST, TT1, and TT2 with each chapter saved is a different file and labelled accordingly, e.g., ST-1, TT1-1, TT2-1, etc.

The whole corpus consists of 411,982 English words and Chinese characters, which is divided into the ST with 112,826 Chinese characters, TT1 with 151,592 English words and TT2 with 147,564 English words. In order to ensure comparability, *Su Wen* Chapters 72 and 73 have been deleted from the ST and TT1 to make it comparable with the other one as Unschuld & Tessnow (2011) have not translated the two chapters. Apart from the mismatching of *Su Wen* Chapters 72 and 73, other areas are also checked and identified to see whether there are other

missing parts or whether there are more paragraphs or fewer paragraphs, which might affect the results of the research. Further, some minor mismatches are deleted in *Su Wen* Chapters 28, 54 and 67 between the ST and the two TTs with a total of 1,970 English words and Chinese characters. Table 4-2 shows the size of the finalized corpus, totalling 389,311 English words and Chinese characters, which is composed of 103,692 Chinese characters in the ST, 138,986 English words in TT1 and 146,633 English words in TT2. Comparatively, the elements that have been deleted in this research are only tiny proportions of the whole texts.

Table 4-2 Composition of the corpus of *Su Wen* ST and its English TTs

Types	Chinese ST	English TT1	English TT2	Total
Original data	112,826	151,592	147,564	411,982
Chapters 72 and 73	8,583	12,118	0	20,701
Mismatch in Chapters 28, 54 and 67	551	488	931	1,970
Final data	103,692	138,986	146,633	389,311

4.4 Instruments employed in the research

Before discussing the methodological procedures in more detail, a simple introduction of the instruments will be given in this section. Those instruments include ICTCLAS1.0 (Institute of Computing Technology, Chinese Lexical Analysis System), CLAWS7, MLCT (Multi-Lingual Corpus Toolkit), ParaConc, AntConc3.5.8, histograms, boxplots, and effect size (Phi coefficient) calculator. Among them, ICTCLAS, and CLAWS7 are used for the Chinese segmentation and POS tagging and English POS tagging respectively. MLCT is a tool used to mark the boundary and sequential numbers of sentences ready for sentential alignment on

ParaConc. Apart from some useful functions such as concordance, search and sorting for in-depth linguistic data processing, comparison, and discourse analysis, AntConc3.5.8 has another useful function to find out whether a group of texts include a long list of search words/terms saved on a text file, thus presenting in the concordance results all the instances of the list of search terms. Both histograms and boxplots are two common ways of visualising data but with different purposes. It is apparent to see the skewedness of the data distribution by using a histogram. While comparing the differences between two or more groups of data, the boxplot is more convenient for the intuitive observation. The effect size (phi coefficient) can be used to measure the association between two binary variables. By comparing the normalised frequencies, we can judge whether the forms and functions of DMs have been adequately conveyed from the ST to the TTs of *Su Wen*, which can be used to infer whether the TTs can produce the same or similar pragmatic effects on the intended TL readers with inadequate TCM knowledge and culture as those of the classical Chinese ST do on the Chinese native readers.

4.5 Methodological procedures

In accordance with the 3 research questions, the methodological procedures are composed of 3 phases: Phase 1: Examination of Chinese ST; Phase 2: Examination of TTs and their comparison with ST and with each other; Phase 3: Examination of translation techniques and pragmatic effects in TT1 and TT2.

4.5.1 Phase 1: Examination of Chinese ST

As mentioned above in Section 4.2, the raw corpus data of the 79-chapter STs have been firstly collected, selected, and digitalized by converting them into computer-readable e-texts.

So, in this phase, attention will be on identifying and annotating the DMs in the Chinese ST which involves four steps: 1) Chinese word segmentation and POS tagging; 2) Chinese sentential boundary and sequential number annotation; 3) Chinese DM annotation; 4) Search of Chinese DMs in the ST.

4.5.1.1 Chinese word segmentation and POS tagging

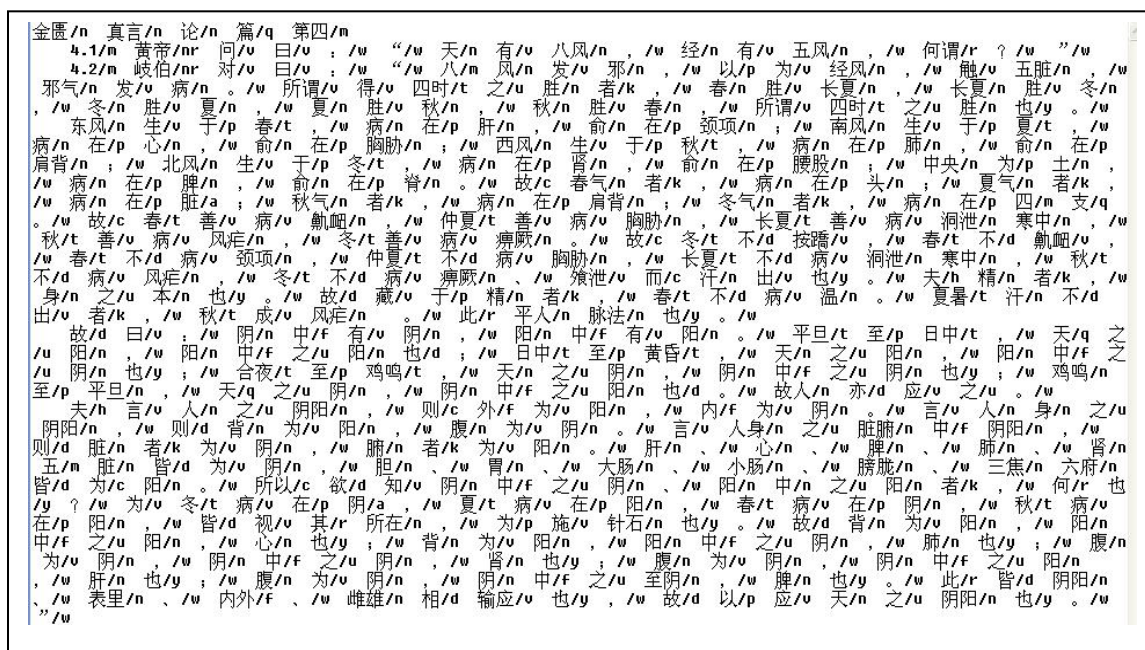
After the 79-chapter STs have been digitalized, they need to be segmented and POS-tagged with a software for automatic processing to save time and energy as “Chinese writing does not mark word boundaries (unlike other languages such as English, where spaces can be treated as word delimiters)” (Huang et al., 2017, p.1) and “segmentation tokenizes linguistic units in a raw corpus and POS tagging attaches linguistically significant labels to such units” (ibid., p.3). Furthermore, automatic POS tagging with a software can ensure consistency as different ways of word segmentation might result in completely different syntactic structures, thus producing different interpretation, sometimes, even reverse interpretation, as in the example of “非常” (*pinyin*: feichang) previously mentioned in Chapter 2 ‘*Huang Di Nei Jing Su Wen* and Its English Translations’. If “非常” is segmented accurately as two separate words “非/d” (not) and “常/a” (usual), then “非/d 常/a” means “[be] not of normal ...”, thus “人身非常温也” (人/n 身/n 非/d 常/a 温/n 也/y) means “When a person's body is not of normal warmth” with a negative connotation since classical Chinese words are monosyllabic in most cases. If “非常” is segmented mistakenly as one disyllabic word “非常/d”, then it means “quite or very” which is a common adverb in modern Chinese, thus “人/n 身/n 非常/d 温/a 也/y” means “When a person's body is quite warm” with a strong affirmative implication. Therefore, even with the same lexical item “非常” in the same context, different segmentation may result in different

syntactic structures “非/d 常/a” and “非 常/a”, resulting in an affirmative connotation shift from the negative one.

In this phase, ICTCLAS 1.0 will be used to carry out automatic Chinese word segmentation and POS tagging as the “/c” tag signifying conjunctions is needed in the automatic POS tagging system to help to identify the Chinese DMs, particularly the message relationship DMs. Comparatively, ICTCLAS 1.0 has a higher precision rate as it can “achieve a precision rate of 97.16% for tagging” (Zhang & Liu, 2002; McEnery & Xiao, 2004, p.1177) compared with other tools like PanGu segmentor, Stanford POS tagger and CorpusWordParser.

Since classical Chinese is noted for the monosyllabic word-formation in most cases and the context-bound multi-functions of Chinese characters, Level 1 POS tagging model with finer granularity and Peking University-format are selected as the output format (which is the most commonly-used format with Chinese characters, among the three different kinds of format offered in this software) in the segmentation and POS tagging. Next, the ST files are uploaded one by one for word segmentation and POS tagging and saved in a separate file. The screenshot of the partial outcome of Chapter 4 of *Su Wen* in ICTCLAS 1.0 is shown in Figure 4-2.

Figure 4-2 Screenshot of POS tagging of Chapter 4 of *Su Wen* by ICTCLAS 1.0



After the word segmentation and POS tagging of the ST, a careful proofreading is conducted to correct any tagging errors. There were some errors with the word segmentation and POS tagging of the STs of *Su Wen*. ICTCLAS is originally designed for the natural language processing of modern Chinese texts on non-specialised subjects, for which it is reported to have the above-mentioned precision rate. However, it performs less well with a classical Chinese medical text. Some polysemous characters in classical Chinese can be an independent word or, as a morpheme, collocated with a preceding or succeeding character to form a different word. They cannot be automatically recognized by the software ICTCLAS and therefore need to be annotated manually.

To facilitate this process, which could possibly be time consuming, only the mistakes related to conjunctions and adverbs are manually revised in the automatic software processing. The mistakes include two major types: word segmentation mistakes and POS tagging mistakes.

Regarding word segmentation, in some cases, a disyllabic word composed of a monosyllabic

function word and monosyllabic content word might be mis-segmented as a disyllabic conjunction. Take “不过” in “男不过尽八八” as an example. This can be segmented into two ways: “不过/c” (only) as a disyllabic conjunction and “不/d 过/v” (not exceed) composed of a monosyllabic adverb and a monosyllabic verb. To facilitate comprehension especially for non-native Chinese readers, a word-for-word translation (henceafter WWT) of the ST sentences is hereby given in the following examples.

Example 1

ST: 男/n 不/d 过/v 尽/v 八八/m 。 /w (*Su Wen 1*)

WWT: male not exceed end eight eight

TT: (Although they have children,) men do not exceed the life span of eight times eight.

“不 过 /c” has been mistakenly tagged by ICTCLAS as a disyllabic conjunction with a meaning “only” in modern Chinese, so “不 过 /c” is revised as “不/d 过/v” composed of an adverb “不 (not)” and a verb “过 (exceed)”, which is the meaning that applies in the classical Chinese ST.

In other cases, a disyllabic conjunction might be mis-segmented as a monosyllabic verb and a monosyllabic preposition. Take “是以” as an example. It can be segmented into two ways: “是以 (hence; thus)” as a disyllabic conjunction and “是/v 以/p” composed of a monosyllabic verb and a monosyllabic preposition.

Example 2

ST: 是以/c 志/n 闲/a 而/c 少/v 欲/n 。 /w (*Su Wen 1*)

WWT: Hence mind relaxed and few desires

TT: Hence, the mind is relaxed and (one) has less desires.

The conjunction “是以” with a meaning of “hence/thus” has been mistakenly tagged by ICTCLAS as “是/v 以/p” (is ... with/by) composed of a monosyllabic verb “是/v” and a monosyllabic preposition “以/p” as in Example 2. In this context, when “是” and “以” appear at the beginning of the clause without a subject in front, it should be understood as the conjunction “是以” which only exists in classical Chinese. Therefore, it has been revised as “是以/c”.

The above-mentioned word segmentation errors also result in POS tagging errors - the two processes are intrinsically linked. Furthermore, a monosyllabic noun is often mis-tagged as a conjunction as in Example 3, or a monosyllabic conjunction as a preposition due to the polysemy of a monosyllabic word as in Example 4.

Example 3

ST: 其/r 故/c 何/r 也/y ? (*Su Wen* 57)

WWT: its reason what modal particle

TT: What is the reason?

The noun “故” with a meaning “reason” has been mistakenly tagged by ICTCLAS as the conjunction “故/c” with a meaning “so/therefore” as in Example 3. So, it has been revised as a noun “故/n” (reason).

Example 4

ST: 气/n 从/v 以/p 顺/a , /w (*Su Wen* 1)

WWT: *qi* follow therefore compliance

TT: The *qi* follows (its appropriate course), so it is smooth.

The conjunction “以” has been mistakenly tagged by ICTCLAS as the preposition “以/p” (with), as in Example 4. As such, it has been revised as the conjunction “以/c” (so; accordingly).

4.5.1.2 Annotation of Chinese sentential boundary and sequential numbers

In this part the sentence/paragraph splitter together with sentential sequence annotation device built in MLCT is used. The first function is to annotate the sentential boundary, while the second to mark up the sentential sequence numbers, which is useful for sentential alignment between the ST and TTs with ParaConc and convenient to locate and identify whether there is any shift of categories of DMs in translation by comparing the DMs in the corresponding sentences between the ST and TTs.

Figure 4-3 Screenshot of sentential boundary and sequential number annotation on MLCT



After paragraph or sentence splitting, the sentences are marked with paragraph boundary <p>...</p> and sentence boundary <s>...</s> as well as the sequential number of the sentences, which are annotated inside the sentence initial bracket like <s n="5">. It is used for sentence alignment and locating the DMs in translation relation markup. Parts of the results can be clearly seen from the two windows in the left and the right after the sentence/paragraph splitting and sentential sequence number annotation.

However, the accuracy of the software on the sentence splitting is affected by the pre-POS tagging of the ST with ICTCLAS, since it uses the punctuation marks such as commas, periods, semi-colons, question marks, exclamatory marks and quotation marks to split the sentence thus attaching the punctuation tag '/w' and the sentence tag '/s' inside the square brackets to the preceding sentence-end and the sentence-initial of the next line. What is more, the rationale of sentence splitting of the software MLCT is based on such punctuation marks as periods, question marks, exclamatory marks, semicolons, and quotation marks. However,

in the classical Chinese ST, it is necessary to split many long running-on sentences connected by semicolons (when a long paragraph is just one single sentence).

Therefore, a careful proofreading is conducted, and the common mistakes are revised. All the mistakes in the sentence splitting are manually revised, then the sequential numbers are renumbered. If a mistake occurs at the initial part of the text, it means that it is necessary to renumber all the following sequential numbers of the entire text.

4.5.1.3 Chinese DM annotation

Chinese DM annotation in this research includes the annotation of Chinese DMs by searching the Chinese conjunctions of each category in the merged list identified as DMs in Table 3-7 of Chapter 3, as well as the semi-automatic annotation of DMs by means of the conjunction tag “/c” or adverb tag “/d” and the tags of the 4 DM categories, namely “[MRPL]”, “[MRCT]”, “[MREL]”, “[MRIR]” for parallel makers, contrastive markers, elaborative markers and inferential markers respectively.

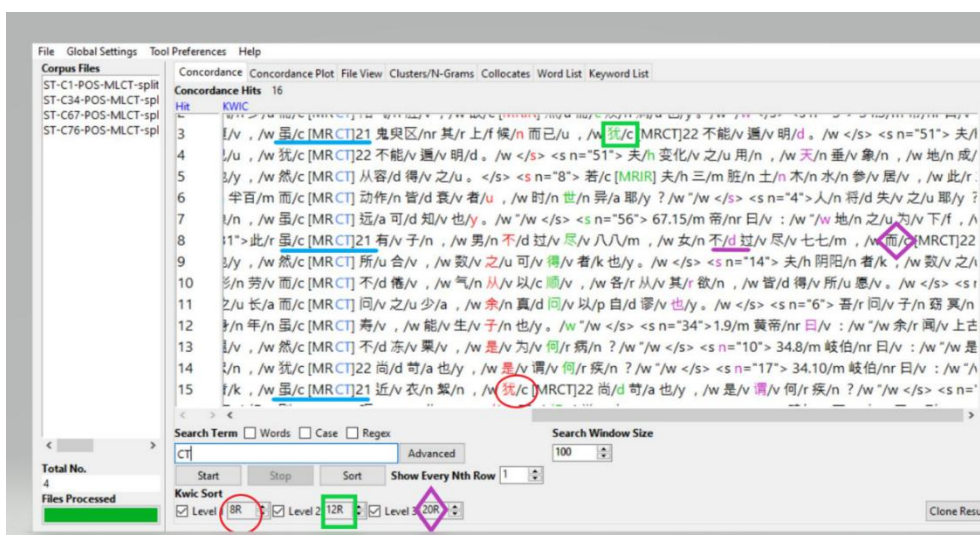
(1) Annotation of DMs by searching the Chinese conjunctions in the merged list

Conjunctions in Table 3-7 that have been identified as DMs are grouped into two major sub-categories: single markers like “若 (if; supposing that)” and pair markers like “既 ... 且 (both ... and)” which is composed of two markers “既 (both)” and “且 (and)” with a span of some words between them since each of the two markers would appear in the initial of a sentence or a clause. The single markers can be directly searched, but the second cannot be directly searched except for the familiar use of regular expressions. Thus, it is necessary to search the first part of the pair markers, and then look into its context to see whether there are

any instances with the co-occurrence of the second part in the initial of the subsequent sentence or clause.

Take “虽...而” as an example. The span between the first marker “虽” and the second marker “而” sometimes may be very big, for example, 29 characters as shown in Sentence 8 in Figure 4-4. However, the maximum searching span between the node and the collocate in AntConc3.5.8 has been fixed at 20 Chinese characters or English words as indicated in Figure 4-4. Therefore, in the search of the first marker “虽”, it is necessary to click the node word in AntConc3.5.8 for a wider view in the right side of the node to see whether there is a second marker “而” in the initial of the subsequent sentence or clause. The reason for this is that if they are both found in the same context, they can be only counted as one marker rather than two.

Figure 4-4 Screenshot of search span adjustment in AntConc3.5.8



Regarding the first type of DM annotation, firstly, all the conjunctions of each category in the Chinese merged list in Table 3-7 are uploaded to AntConc3.5.8 for the batch search (category

by category, for example, first only looking at parallel markers, and then only for contrastive markers and so on) as shown in Figure 4-5.

Figure 4-5 Screenshot of advanced search by loading a text-file of search terms

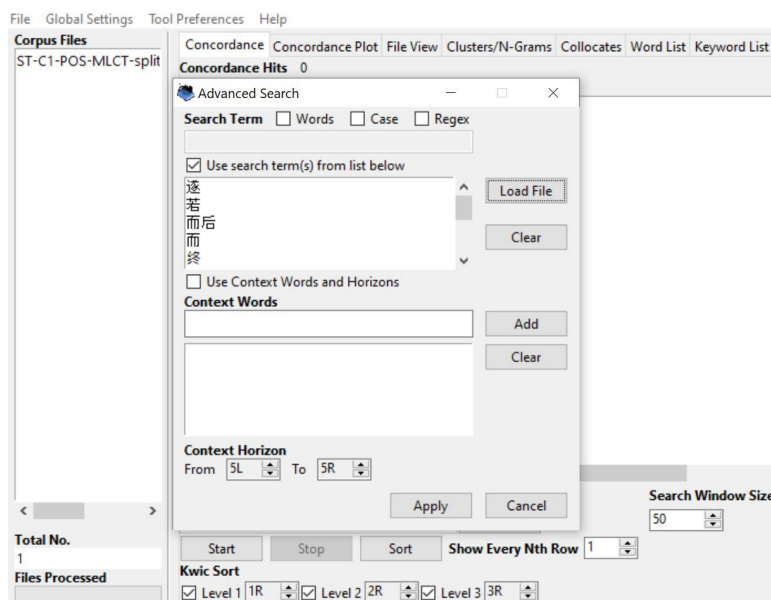
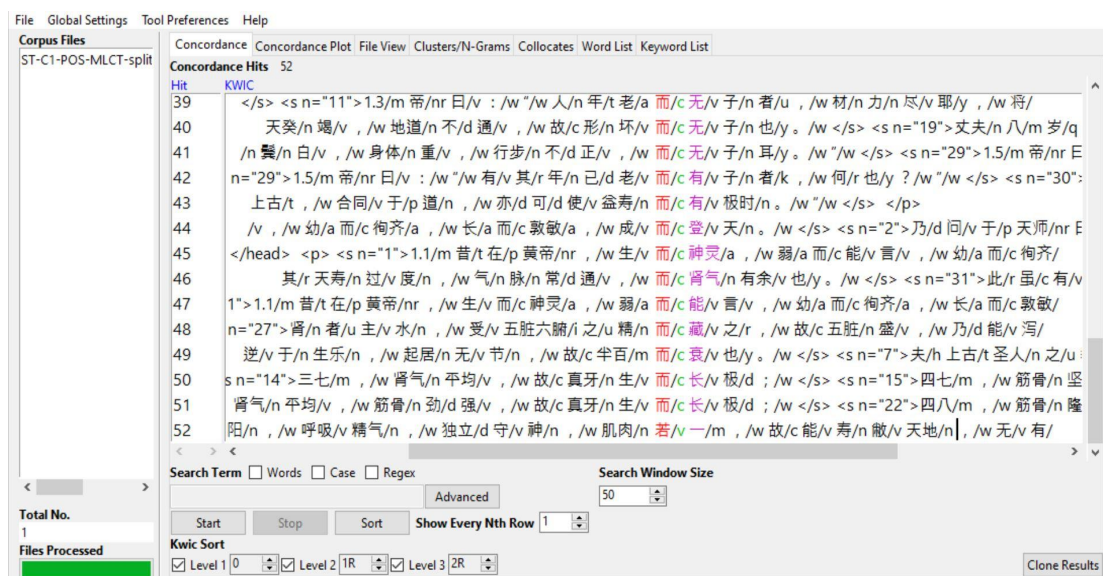


Figure 4-6 Screenshot of the sorted concordance lines of batch search



Then the Right-2 collocates of the node (batch-searched conjunctions) in the concordance is sorted to identify the list of the searched conjunctions of the concordance lines after sorting.

After that, all the concordance lines with the words from the merged list are obtained as search terms appear in the middle of the KWIC interface as indicated in the screenshot of Figure 4-6.

The next step involves three moves. In the first move, those concordance lines with the words that are not conjunctions or adverbs functioning as connectives are deleted. This is because, as mentioned in Chapter 2 ‘*Su Wen* and Its English Translations’ due to the fluidity of word class of classical Chinese, a single word like “若” (*pinyin*: ruo) can be a conjunction or a verb or a pronoun or a noun or an auxiliary depending on the context, which means that some words included in the conjunction merged list can also be other parts of speech in specific contexts. Therefore, those concordance lines containing “若/v”, “若/r”, “若/n”, and “若/u” are deleted and only those concordance lines containing “若/c” are kept. In this way, there remain only the concordance lines containing the search words of conjunctions rather than other parts of speech.

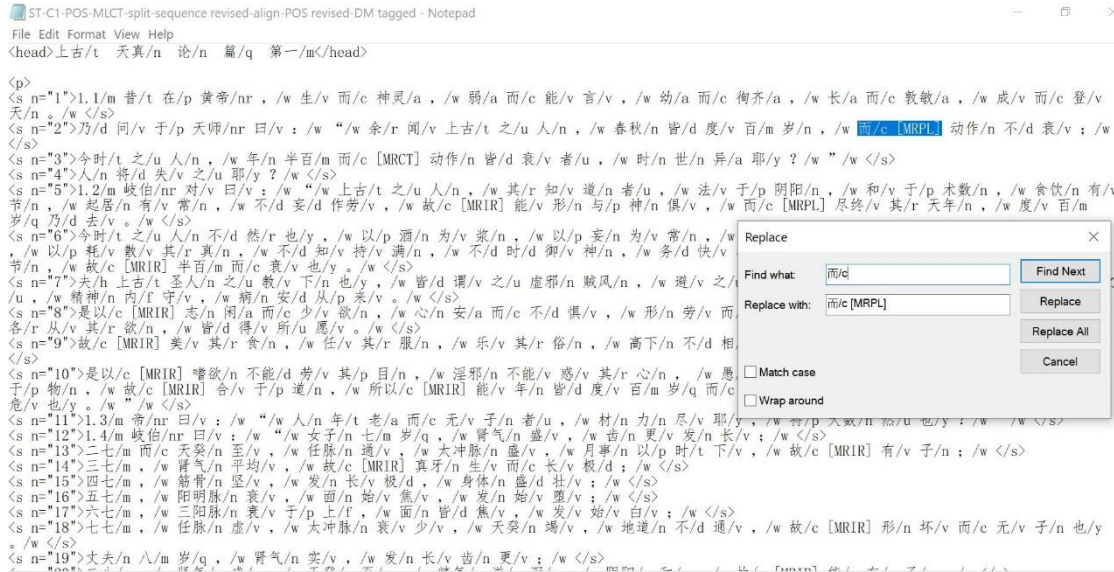
It is important to note that a great deal of manual modification is necessary since not all the words tagged with “/c” are Chinese DMs. Therefore, in the second move, among these concordance lines containing conjunctions, it is necessary to further delete those concordance lines containing ‘pure connectives’ like “与/c (and)” in “足/n 太阳/n 与/c 少阴/n 为/v 表里/n” [Foot major yang (conduits) and (foot) minor yin (conduits) constitute exterior and interior], which is a pure connective rather than a Chinese DM. These ‘pure connectives’ should be excluded from pragmatic markers/DMs as suggested by Feng (2008), since “和”, “与”, “跟”, “及” are the words mostly connecting 2 or more words/phrases without signalling speakers’

opinions or presenting the message relationship between two or more adjacent sentences or clauses.

Finally, there only remain the concordance lines containing conjunctions that are eligible to be DMs. Since some polysemous conjunctions in the merged list belong to several categories at the same time, in the third move, it is necessary to delete those concordance lines containing conjunctions of the other categories (e.g., contrastive, elaborative, inferential) if only “parallel” category is the focus. For example, when looking into the context and recognized ‘/c’ (it signals contrastive relationship in the context), this concordance line is deleted. After that, all the concordance lines with conjunctions of the “parallel” category are obtained. Then based on the sorted outcome saved in a separate file, the searched conjunctions with the tag “/c” is copied into a blank Excel file to keep records and also calculate their frequencies for reference.

With the records at hand, the text file of Chapter 1 is then opened, and finally the annotation of “parallel” DMs can begin. In the text file, the DMs are annotated by adopting “find-replace” method. That is, firstly to find a conjunction and its POS tag “/c” and then to replace them with the combination of the tag “/c” and a certain DM category tag (ditto: with a space between them) like “/c [MRPL]”, thus adding a DM category tag next to the “/c” tag with a space in between. For instance, in the text file the specific Chinese conjunction “而/c” in Sentence 2 is searched and replaced by “而/c [MRPL]”, the combination of the conjunction and its POS tag “/c” as well as the tag of parallel message relationship DM as seen in Figure 4-7.

Figure 4-7 Search and replacement of “而/c” by “而/c [MRPL]”



Regarding the annotation of pair markers, after the search and sorting of the first marker of the pair (such as “虽”) has been completed, the adjustment of the word span by the Level tools is used to look at the context words (e.g., Right 8 for 8 words to the right), to see whether there is a second part of the pair markers “而” in the concordance lines. After the identification of the pair markers, the annotation procedure is similar with method explained earlier, except for manually adding numbers “21” and “22” respectively after the DM tag in the bracket. The purpose is treating them as a single unit. The first of the two digits indicates the number of words in the sequence, and the second digit the position of each word within that sequence. For example, “虽... 而” has been annotated as “虽/c [MRCT]21... 而/c [MRCT]22” as indicated in previous Figure 4-4.

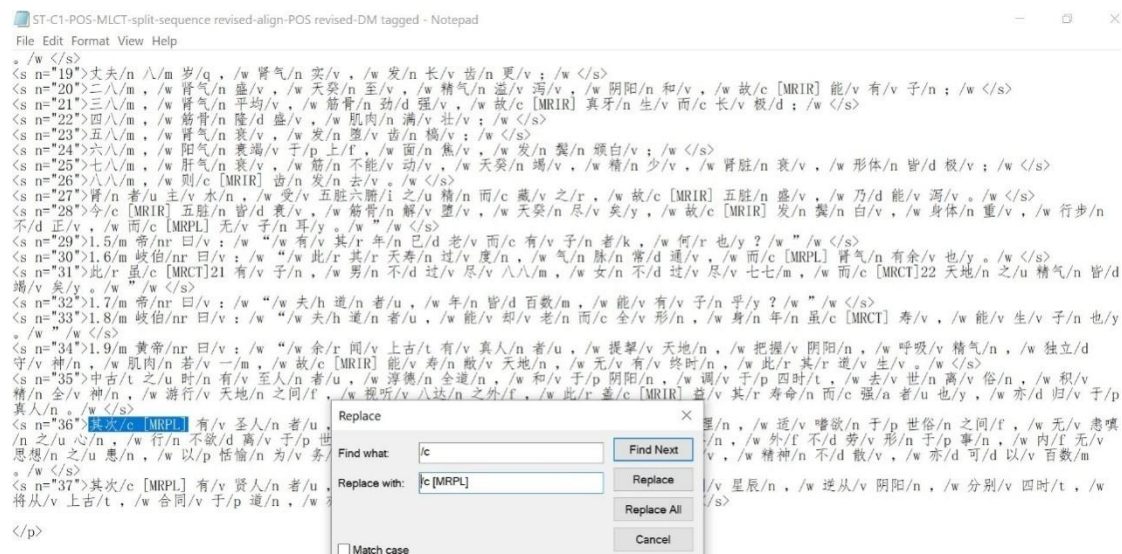
(2) Annotation of DMs by means of the conjunction tag “/c” and the DM tags

The first kind of annotation of Chinese message relationship DMs is carried out with the help of those in the identified list, while the second type of annotation is a remedy for searching for

those DMs that are not already in the list. The difference between the first and second type of annotation of DMs lies in that, in the first case, the identified DMs and its tag “/c” in Table 3-7 is directly replaced with the right word with “/c” plus the corresponding DM tag, say “[MRPL]”, but in the second case, DM annotation is carried out by making full use of the conjunction tag “/c” based on the context since there is no pre-existing list to consult. But the problem is that some conjunctions are polysemous, which means they might be included into two or more categories of DMs. The conjunctions that are not in the original list are displayed in Table 5-2 of Chapter 5.

So, the annotation of DMs is undertaken with the combination of the conjunction tag “/c” and the tag of one type of the 4 categories each time. The “find and replace” function is employed with the combination of the conjunction tag “/c” and the tag of a given marker in the broad bracket “[]”. When a conjunction with polysemous meanings is found in the search, it is necessary to consult the classical Chinese dictionary or encyclopaedia before making a judgment as to which category it should belong to based on the context. Then after the confirmation and replacement, the conjunction is annotated with the POS tag “/c” and the tag “[]” for a certain kind of DM, for example, “/c [MRPL]”, till the next one is found. The screenshot in Figure 4-8 clearly indicates the DM annotation of the parallel marker “其次” in Sentence 36 of *Su Wen* Chapter 1, with the tag “/c” changed as “/c [MRPL]” in the ST.

Figure 4-8 Screenshot of search and annotation of “其次” with POS and DM tags



The same procedure continues with the annotation of the next 3 sub-categories of message relationship DMs until the completion of the annotation of the 4 sub-categories of message relationship DMs in Chapter 1 and the chapters afterwards. By means of batch annotation, it would be much easier to annotate a large corpus manually, saving a lot of time and energy.

(3) Annotation of DMs by means of the adverb tag “/d” and the DM tags

It is worthy noting that some adverbs in classical Chinese can also signal typical message relationship like parallelism, adversity or references as Fraser (1999, p.931, my emphasis) defines DMs as “a class of lexical expressions drawn primarily from syntactical classes of conjunctions, *adverbs*, prepositional phrases”. A range of adverbs with the same POS tag “/d” are used to signal these relations. For example, “亦” (also) and “乃” (so) can be used as a parallel DM and an inferential DM respectively. Like what has been explained above, the Chinese adverbs signalling message relations can be annotated as DMs by employing the “find and replace” technique with the combination of the adverb tag “/d” and the tag of a given marker in the broad bracket “[]”.

The search of Chinese DMs in the ST indicates that there are altogether 7 DMs tagged with the POS tag “/d”, which means that 7 adverbs signal message relations: parallelism [“亦” (also), “先” (first), “且” (and), “次” (then)], contrast [“反” (adversely)], and [“则” (then), “乃” (so)]. Those Chinese DMs deriving from adverbs will be added together with the other conjunctions in Table 5-2, without any further distinction between conjunctions and adverbs.

4) Search of Chinese DMs in the ST

After the three steps of segmentation and POS tagging, sentential boundary, and sequential number annotation, as well as DM annotation have been completed, DMs annotated with a certain DM tag within the DM identifier “[]” are searched for on the platform of AntConc3.5.8. After sorting the concordances, the frequencies of the Chinese message relationship DMs are calculated in the different categories, and finally the instances identified are recorded by saving the outcome of the search results in a text file which is then copied and pasted into an excel file. The Excel file is used to update the Chinese message relationship DM list with detailed frequency for easier calculation. One thing to note is that, while searching for those DMs annotated with a certain DM tag, whenever pair markers are identified, they are counted as a single DM.

5) Data normalisation, visualisation, and comparison

The data normalisation and analysis of the ST is a fundamental task, which involves three kinds of conversion or calculation: data normalisation, visual presentation with histogram and boxplots, as well as effect size test (phi coefficient). The purpose of data normalisation is to standardize the data between the sub-corpora of different sizes for comparison since the frequencies of DMs, the wordcounts of chapters and even the sizes of the sub-corpora of the

two types of chapters (original chapters and compiled chapters) and four categories (parallel, contrastive, elaborative, and inferential) need to be standardised on the base of 100,000. The base of 100, 000 is chosen since the sizes of the three sub-corpora ST, TT1, and TT2 are about 100,000 Chinese characters or English words. The method of data normalisation is that the normalised frequency of the DMs in a certain category is obtained by dividing the wordcount of the chapter from the raw frequency of DMs and multiplying by 100,000.

Next, histogram and boxplots are two typical ways to visualise the data distribution and compare the strength of the relationship between original chapters and compiled chapters in ST, so the purpose of histogram and boxplots visual presentation is to examine whether there are any similarities or differences between them. Regarding the histogram visual presentation, the investigation should focus on the number of bins, height of bins, span width, positive or negative skewedness. While the boxplots visual presentation can be used to measure and compare the data distribution. The focus of boxplots lies in the investigation of box length, min, and max, interquartile range (IQR), upper and lower whiskers length, the distance between the median line and the upper or lower box line to judge the data dispersion and positive or negative skewedness, offering general information about the group of data's symmetry, skewedness, variance, and outliers. The difference between histogram and boxplots is that boxplots are less detailed than histograms and take up less space. The reason why both histograms and boxplots are used in this research lies in that the former is preferred to determine the underlying probability distribution of a data, while the latter is good at comparing between several data sets.

The third measure is the effect size test (phi coefficient) by means of online Phi Coefficient Calculator (<https://www.statology.org/phi-coefficient-calculator/>). The effect size test (phi

coefficient) is used to measure the association of DM normalised frequencies between original chapters and compiled chapters in ST. It takes on values between “-1” and “1” where: “-1” indicates a perfectly negative relationship between the two variables; “0” indicates no association between the two variables; and “1” indicates a perfectly positive relationship between the two variables.

4.5.2 Phase 2 Examination of TTs and their comparison with ST and with each other

This phase involves several important elements: POS tagging of TTs, identifying and annotating the English message relationship DMs, calculating their frequencies of each category, normalising the data, and analysing them to see if there are any significant differences between the variables. In order to examine the distribution of the DMs in the TTs, it is necessary to identify all the DM features in TTs which includes the following six moves explained in detail below. Results from this phase of analysis are reported in Chapters 6 and 7.

4.5.2.1 English POS tagging and sentential boundary annotation

As a well-known suite of computer programs for English grammatical tags with a reported accuracy rate of 95-98%, CLAWS 7 is suitable for the automatic POS tagging of English texts. CLAWS7 can be used to concurrently POS-tag the text and mark up the sentential boundary at one go. In this case, CLAWS7 is used to carry out automatic POS tagging of the TTs and also to mark up the sentence boundary with “<s>...</s>” for the labelling of the sentential sequence number. And based on that, it is much easier to carry out the sentential alignment between the ST and TT; and also, to investigate the translation relations of the Chinese DMs and their corresponding English translations. Furthermore, it can help to identify the “non-

word” DMs with other forms including phrasal DMs and discourse parentheticals in the course of sentential alignment as will be shown in the following section.

4.5.2.2 English DM annotation

Following Rühlemann’s (2011) conception of pragmatic annotation, a batch manual DM annotation and supplement is carried out. Unlike the complicated Chinese DM annotation described in Section 4.5.1, the English DM annotation is comparatively easier. In this step, the potential DMs of the four categories are first identified from the POS-tagged TTs, then a batch manual DM annotation based on the POS tagging is adopted similar to that of the Chinese ST, and finally those multi-word DMs composed of phrases (e.g., “as a result”) or discourse parentheticals (e.g., “that’s why”) rather than single DMs are identified. Such DMs are tagged by CLAWS7 as two successive elements with POS tags and serial numbers (e.g., “for example” as “for_REX21 example_REX22”), through the investigation of their specific context in the sentential alignment between the ST and TTs.

Hence, in order to identify the DMs of the four categories, Fraser’s (1993, p.11-14) taxonomy is used as a starting point, and then the POS tags are looked into for the correspondence between those POS tags and the DM tags of the four categories in the TTs. Their correspondence is specified in Table 4-3 below. The POS tags for conjunctions in CLAWS7 include the following four major kinds: “CC” for coordinating conjunction (e.g., *and*, *or*); “CCB” for adversative coordinating conjunction e.g., *but*); “CS” for subordinating conjunction (e.g., *if*, *so*); and “CSA” for *as* (as causal conjunction). In addition, it is noteworthy that some adverbs in English can also signal typical message relationship like parallelism, adversity, or inferences, so a range of POS tags as shown in the fourth column of

Table 4-3 are used to signal these relations. For example, “besides” and “however” can be used as parallel DM and contrastive DM respectively.

As for the adverbs, some adverbs signalling drawing inferences like “thus”, “therefore” and “accordingly” can be included in inferential DMs. Apart from that, there are another three types of adverbs: appositional adverbs tagged as “REX”, conjunctive adverbs tagged as “RR” and nominal adverbs of time tagged as “RT”. The first type can introduce appositional words or phrases (e.g., “that is”, “namely”), while the second type serves in English as conjunctive adverbs (e.g., “hence”, “so”, “therefore”) or conjunctive adverbial phrases (e.g., “after all”) can also be used as DMs to signal message relationship, mostly inferential and elaborative message relationship. The third type (e.g., then, again) generally functions as the parallel DMs signalling the temporal relationship between the current clause with the prior one. What is more, “RT”, “RR” and “REX” are used to stand for temporal adverbs, general adverbs and adverbs introducing appositional constructions respectively.

Table 4-3 Correspondence between the POS tags and DMs tags in TTs

No.	Fraser's (1993) taxonomy	Features of sub- types	POS tags	Examples	DMs tags	Remarks
1	Parallel markers	coordination	CC	and	[MRPL]	batch annotation
			RT	then, firstly, again		batch annotation
		alternation	CC	or		batch

						annotation
		similarity	RR	besides, too, also		batch annotation
		phrases for coordination	/	in addition, what's more		judgment by the context and sentential alignment
2	Contrastive markers	sharp contrast	CCB	but	[MRCT]	batch annotation
		sharp but unexpected contrast	RR	however, yet, otherwise, instead, never, neither		batch annotation
		contrast between claims	CS	Although, though, while		batch annotation
		phrases for contrast	/	on the contrary, even if, even though, in contrast, in the opposite case,		judgment by the context and sentential alignment
3	Elaborative markers	illustration of an earlier point	REX	namely, that is, for example, for instance	[MREL]	judgment by the context
		refined	CS	in particular; more		batch

		characterization		importantly		annotation
		phrases for elaboration	/	in other words, to be specific, that is to say		judgment by the context
4	Inferential markers	reason for next reasoning	CSA	as	[MRIR]	judgment by the context
		Inference drawing	RR	thus, therefore, once, thereby, consequently, accordingly		batch annotation
		consequentiality for drawing inference	CS	If, so, lest, once, if ...then, when ...then		judgment by the context
		phrases/discourse parentheticals for inference	/	as a result, in this case, in such a case, that's why, this way, in this way, in such a way, this is because, in case		judgment by the context and sentential alignment

In the second step, batch manual DM annotation is carried out for those single words with POS tags as shown in the fourth column of Table 4-3 by employing the find-replace method. In other words, the POS tags of those single words are easily searched and replaced with both POS tags and their corresponding DM tags in the batch manual annotation. For instance, the POS tag “_CC” is searched and replaced with both POS tags and DM tags “[MRPL]” as “_CC [MRPL]”. As for the subordinating conjunctions and the conjunction “as” for reasoning, their DM tagging is more complicated since they include many sub-types, though they have been POS-tagged as “CS” and “CSA”. At first, it is necessary to recognize which category of

message relationship they belong to, then search their POS tags “CS” and “CSA”, and finally a batch automatic DM annotation is undertaken, and they are replaced as “_CS [MREL]” and “_CSA [MRIR]” respectively, since they signal the elaborative and inferential relationship between the successive clauses and sentences.

Apart from the single DMs, there are also a number of pair markers (e.g., “if... then”) or fixed idioms (e.g., “for example”) with two or more successive elements. The POS tagging of pair-word phrases in CLAWS7 is followed and annotated as “if_CS [MRIR]21 ...then_RR [MRIR]22” by tagging a pair of numbers “21” and “22” for two reasons. One is to indicate that they belong to one DM and signify that the tag occurs as part of a sequence of similar tags, representing a sequence of words which for grammatical purposes are treated as a single unit. Among them, the first “2” indicates that the tag is composed of two elements, while the subsequent “1” and “2” indicate the sequence inside the tag. The other reason is to allow for the accurate calculation of the DMs and avoid double counting.

However, compared with those single DMs and fixed idiom DMs with POS tags, it is not easy to carry out the batch manual annotation of those multi-word DMs composed of phrases or discourse parentheticals as shown in the last row of each category in Table 4-3. The main reason is that they are not easily searched and replaced at one go in the batch manual annotation. Therefore, the common way of searching a certain POS tag for the batch manual annotation of a category of DM is certainly not feasible. Therefore, other means have to be identified to fulfil the task of supplementing those irregular DMs composed of phrases or discourse parentheticals.

Those multi-word DMs composed of phrases and discourse parentheticals have their distinctive features: 1) standing independently with a comma as the delimiter between the DM

and the propositional clause; or 2) as a parenthesis inserted in the propositional clause; or 3) in the sentence-initial introducing a clause. Their DM annotation can be manually undertaken based on their distinctive features and by the identification through the context in the course of sentential alignment between the ST and TT.

4.5.2.3 Sequential number annotation of TTs and sentential alignment

The next step is the sequential number annotation of TTs and sentential alignment between the ST and TTs. There are two purposes for sentential alignment in this step: One is to identify those irregular DMs composed of phrases or discourse parentheticals, since during sentential alignment, it is helpful for the investigation and supplement of those irregular DMs in the form of phrases or discourse parentheticals. The other reason is to easily identify the translation relations of DMs between the ST and TTs for the comparison of their pragmatic effects in Step 6.

Since sentential boundary annotation has been automatically completed by CLAWS7 during POS tagging, it is necessary to annotate the sequential number of each sentence by manually inserting the number inside the quotation mark following “n=” in the angle bracket as in ‘<n=”>’.

Then, in the sentential alignment between the ST and TTs, the sentence unit of the ST is regarded as the basic alignment criterion, which is distinctive of such punctuations as periods, question marks, semicolon, and exclamatory marks. In other words, some modification of the sentential numbers is made in the TTs to correspond to those in the ST. In most cases, the sentences in the TTs are merged or split, thus resulting in some lengthy sentences or incomplete sentences in TTs; and in other cases, the sentential numbers in TTs are modified to align them with the ST.

4.5.2.4 Search of English DMs in the TTs

After the DMs in the TTs have been annotated, the TTs are examined with the software AntConc3.5.8. After loading all the files of TTs, each DM tag (e.g., “[MRPL]”) is searched for. Next, the results are sorted and then all the DMs of the same category are obtained, as they are sorted alphabetically. Finally, the frequencies of the DMs in the category are recorded in an Excel table for easy calculation. Until all the data concerning the frequencies of the DM use in the TTs have been extracted, they can be compared with those data obtained from the ST or with each other.

4.5.2.5 Classification of original chapters and compiled chapters in the TTs

Since this 79-chapter Chinese-English parallel comparable corpus of *Su Wen* consists of three sub-corpora (ST, TT1 and TT2), and in the previous section, the Chinese sub-corpus has been classified into original chapters and compiled chapters based on Unschuld & Tessenow (2011), the TTs can also be classified into original chapters and compiled chapters according to the corresponding chapter numbers. Therefore, the original chapters in the TTs also include 11 chapters: *Su Wen* Chapters 12, 14, 24, 25, 30, 31, 51, 57, 76, 78, and 81; The compiled chapters in the TTs also include the other 68 chapters.

4.5.2.6 Data normalisation, visualisation and comparison in the TTs

The data normalisation, visualisation, and analysis of the TTs is the same with that of the ST, which also involves data normalisation, visual presentation with histogram and boxplots, as well as effect size test (phi coefficient). There is only one difference between them. That is, the subjects of the comparison of the ST only include the original chapters and compiled chapters; while the subjects of the comparison of the TTs cover not only the original chapters and compiled chapters, but also TT1, TT2 and ST.

4.5.3 Phase 3 Analysis of translation techniques and pragmatic effects

This step involves three major elements: 1) to mark up the translation relation of the DMs between ST and TTs one by one so as to know what translation techniques have been employed in the translation; 2) to analyse the normalised frequencies of translation techniques used in the translation of the DMs and compare the similarities and differences between the ST, TT1 and TT2 based on “statistical equivalence” (Krzeszowski, 1990); and 3) to investigate whether the pragmatic meanings of the DMs in the ST have been adequately transferred to the TTs, and which translation can produce better pragmatic effects on TL readers. Results from this phase of analysis are presented in Chapter 8.

4.5.3.1 Translation relation markup between the ST and TTs

The purpose of translation relation markup is to examine how each DM of the ST has been translated in the TT, and then generalize the features of DM translation in TTs. Only four cases are examined here: correspondence, amplification, omission, and shifts. There is no need to annotate correspondence as most of the DMs are correspondent to each other between the ST and TTs. If they are amplified, then the symbol “+” are added following the DM tag and its identifier ‘[]’; if they are omitted, then in the corresponding slot in the TTs, the abbreviated form of the DM tag inserted in “[]-” (e.g. [PL]-) will be annotated. Or if they are transferred to the other category as a shift, then after the current category of DM tag they will be annotated as “<[]” with the abbreviated form of the DM tag inserted in the square bracket (e.g. the shift from the category MRPL to MRCT is annotated as “[MRCT]< [PL]”).

4.5.3.2 Analysis of Translation Techniques used in TT1 and TT2

First, since the translation relation of the DMs between ST and TTs has been marked up in the parallel corpus sentence by sentence with “+”, “-” and “<” standing for amplification, omission and shifts respectively, the software AntConc3.5.8 is used to search for the raw frequencies of translation techniques of DM translation in each category. It is easy to identify and calculate how many times each technique has occurred by searching for the combination of the DM tags and DM identifiers together with the translation relation labels. For instance, “[MRPL]” can be used to search the cases of amplification of parallel DMs in a category.

Second, it is necessary to normalise the raw frequencies of translation techniques for the comparison of the values from different types of chapters (original chapters and compiled chapters), different subcorpora (TT1 and TT2) and different categories (MRPL, MRCT, MREL, and MRIR). The formula is that the normalised frequencies of certain translation techniques is divided by the wordcounts of the corpus or subcorpus in question, and multiplied by 100,000, which is consistent with the formula of normalisation of DMs in Chapters 5, 6, and 7.

4.5.3.3 Evaluation of the pragmatic effects of the DM use in TT1 and TT2

This part attempts to evaluate the pragmatic effects of the DM use in the two TTs. The method is to investigate whether there is any significant difference between original chapters and compiled chapters, between TT1 and TT2 by adopting the effect size test (phi coefficient), and then to investigate which DM translation in TT1 and TT2 can produce better pragmatic effects on TL readers by the consideration of the nature of translation techniques used in the English translation. And the common translation techniques in DM translation include four types: correspondence, amplification, omission, and shifts.

Following House's (2015, p.22) *adequate translation* theory, "translation is the replacement of a text in the source language by a semantically and pragmatically equivalent text in the target language", in other words, a TT should be faithful to the ST and can achieve semantic and pragmatic equivalence. In the case of the evaluation of DM use between the ST and TTs as well as that between TT1 and TT2, Krzeszowski's (1990) view of "statistical equivalence" can be employed as the criteria of the measurement.

Regarding general inferences, they can be obtained by general means of pragmatic reasoning starting from the use of DMs. In the absence of the DMs, it is not impossible to achieve the intended inference, and this would require a higher cognitive cost for TL readers. It is in this way that the higher use of DMs can improve the inferential performance in communication, and "achieve[s] better relevance by eliminating the unintended potential interpretations" (Grisot, 2018, p.87). That is, the higher use of DMs can result in more pragmatic effects as they can help minimize the cognitive workload, thus facilitating inference in translation.

However, in the evaluation of the translation techniques used in DM translation, it is worthy to note that different translation techniques may result in different pragmatic effects. Regarding the evaluation of pragmatic effects of translation techniques, in terms of Sequeiros (2005), there are two types of pragmatic effects: interlingual pragmatic enrichment and interlingual pragmatic impoverishment. The former refers to "a process of completion of the logical form (i.e., the semantic representation encoded by the utterance) whose aim is to arrive at the proposition expressed" in the translation (Sequeiros, 2005, p.22). That is, both correspondence and amplification can be considered as two types of interlingual pragmatic enrichment, as they can help remain or even enhance the communicative effects by arriving at the proposition expressed. The latter indicates the less encoding in the translation than that in

the ST (*ibid.*, p.68). In this sense, translation techniques such as omission and shifts in DM translation belong to “pragmatic impoverishment”.

Due to the enrichment of correspondence and amplification as well as impoverishment of omission and shifts, the final result of the four translation techniques in DM translation can be used to evaluate, in some extent, the pragmatic effects of the TTs and the comparison between TT1 and TT2. In other words, after deducting the frequencies of omission and shifts, the higher remaining values a translation has, the more pragmatic effects it would yield.

CHAPTER FIVE: DATA ANALYSIS OF CHINESE DMS IN THE ST

After the discussion of the research methodology in the previous chapter, this chapter turns to focus on the analysis of the Classical Chinese DMs in the ST. Section 5.1 mainly includes 1) the graphical representation of the normalised frequencies of DMs in the 79 chapters of the ST; 2) the overview of the DM distribution across the four categories; and 3) the presentation of the list of Classical Chinese DMs found in the ST and their raw frequencies and normalised frequencies. At the end of this chapter, I will summarize the major similarities and differences of DM use between the two types of chapters to answer the first research question.

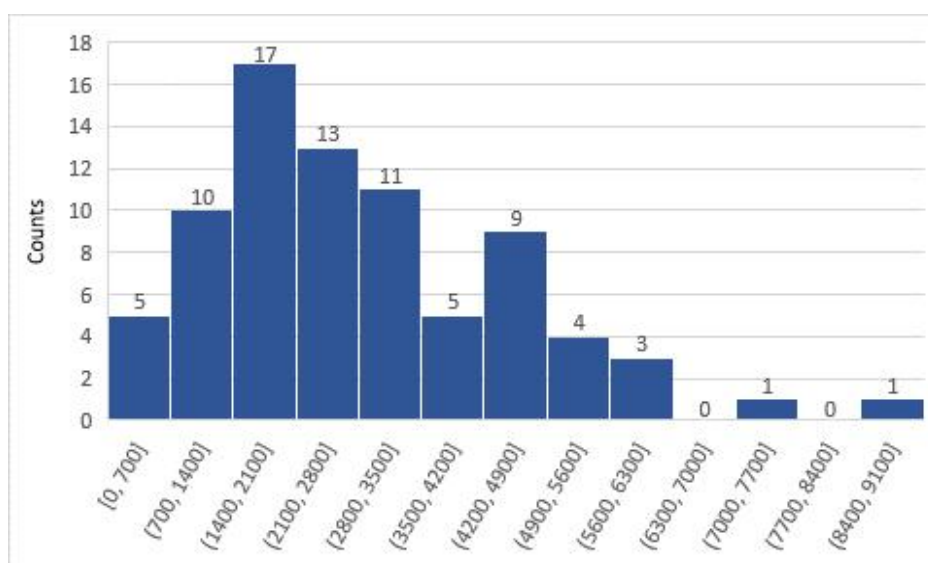
5.1 Overview of Classical Chinese DMs found in the ST

The corpus analysis of the ST reveals that 59 different DMs are used in *Su Wen* totaling 2,690 occurrences [Total (N-f)=2,594 per 100,000 words, hereinafter the same]. Among them, there are 19 parallel accounting for 30% of the total, 13 contrastive DMs (6.1%), 5 elaborative DMs (0.7%), and 22 inferential DMs (63.1%). The normalised frequency of DMs in the 11 original chapters is 2,959, and in the 68 compiled chapters is 2,571. As can be seen from these preliminary results, the majority of the DMs used belong to the inferential category, with also a substantial number of parallel DMs noted. The distribution between original and compiled chapters suggests that there are in fact more DMs in original chapters. These findings will be discussed in more detail in subsequent sections.

To understand better how DMs are distributed in the ST, Figure 5-1 presents the normalised frequencies of DMs in the ST in a histogram. Visualising the data with a histogram is important because it helps to examine the distribution of the data, and thus allows us to create

some hypotheses about DM use in the corpus. With careful design, the proper bin width can make the graph easier to interpret, effectively communicate center, spread, and shape as well as display the data most clearly (LabXchange, 2021). In this case, a bin size of 700 has been selected, which allows for equal division of the data between the minimum (0) and the maximum (9,046), since the upper bound of the last bin 9,100 should be bigger than the max.

Figure 5-1 Histogram of the normalised frequency of Classical Chinese DMs in the ST



The histogram shows that DMs are used differently across *Su Wen* chapters, that is, there are actually more DMs in some chapters but there is no use in the other chapters (i.e. Chapters 52 and 59). The unimodal bell-curve shape in this histogram shows slightly non-normal distribution of the normalised frequencies of DMs in ST, that is, it is positively right-skewed in the sense that there are a few outliers towards the right (especially the two points between 7000 and 7700 and between 8400 and 9100).

PRELIMINARY FINDING ONE: As can be seen in Appendix 2 “Statistics of the DM use in original chapters of ST”, the maximum normalised frequency in the original chapters is

5,405 (Chapter 12), which now drops into the 8th bin in the histogram. This means that the 9th bin onwards contains only the normalised frequencies for five compiled chapters.

HYPOTHESIS ONE-a: Compiled chapters will fall into the onward bins with higher normalised frequencies, as they need a high frequency of DMs to build coherence, to showcase the organization or structure of the discourse, or to present the authors’ attitudes to the propositions. On the other hand, those chapters with fewer DMs or even without any DMs might be original chapters. This hypothesis will be tested in the later sections, where the differences between the original chapters and compiled chapters will be highlighted along with the display and comparison of the DM list and normalised frequencies between the two types of chapters in the ST. **HYPOTHESIS ONE-b:** This corpus study will help us to test this classification of original and compiled chapters.

Next, we will examine the distribution of DMs across the four types of message relationship DMs. The normalised data is presented in Table 5-1. The abbreviations “MRPL”, “MRCT”, “MREL”, and “MRIR” stand for message relationship parallel markers, contrastive markers, elaborative markers, and inferential markers respectively.

Table 5-1 Normalised frequencies of the Chinese message relationship DMs in the ST

No.	Items	MRPL	MRCT	MREL	MRIR
1	TOTAL*	779	159	19	1,637
2	Mean	866	180	22	1,774
3	Min	0	0	0	0
4	Max	3,289	1,303	608	5,757

Notes:

1. The “TOTAL*” of normalised frequency of the DMs in each category has been calculated by the following formula: “normalised frequency of the total DMs = raw frequency of the total DMs ÷ total number of words in the 79 chapters × constant 100,000”. As mentioned in Chapter 4 Research Methodology, I have used the same formula “normalised frequency of the DMs = raw frequency of DMs ÷ wordcount of the chapter × constant 100,000” for the DMs calculation in each of the 79 chapters.

2. While the “Mean”, “Min”, and “Max” have been calculated by the Excel formula “=AVERAGE(...)”, “=MIN(...)” and “=MAX(...)”. The “Mean”, “Min”, and “Max” are also shown on the boxplots in the later sections when comparing the individual DMs between original and compiled chapters. Since boxplots are primarily designed to show the data distribution, no matter whether the data has been normalised or not.

3. Details can be referred to in Appendix 1.

As is shown in Table 5-1, after normalisation in the Chinese sub-corpus, the Chinese DMs of the 4 categories are used with different overall relative frequencies, that is “Total (N-f)”, ranging from the smallest, 19, to the largest, 1,637 per chapter. The minimum for each category is 0 indicating that no DMs of the type have been found in some chapters.

PRELIMINARY FINDING TWO: As is shown in Table 5-2 below, over a third of the DMs are inferential markers (22 DMs used, N-f= 1,637), followed by parallel markers (19 DMs used, N-f= 779) and finally contrastive markers (13 DMs used, N-f= 159), while elaborative markers are used very rarely (5 DMs used, N-f= 19). The frequent use of inferential and parallel DMs in the ST might result from the monumental compilation by Wang Bing (710-804) in Tang Dynasty and other famous royal physicians in other dynasties. However, the low number of elaborative markers is surprising because we assume that there should more elaborative markers as the *Su Wen* ST has undergone compilations throughout its history and so we would expect the addition of more explanations and clarifications.

HYPOTHESIS TWO: Compiled chapters overweigh original chapters in the use of inferential and parallel DMs (and possibly more elaborative DMs), particularly in the numbers of DM cases of varieties, sub-functions, and positions in the sentences, due to larger sample sizes of the compiled chapters.

Table 5-2 below shows the counts for individual DMs classified into the four types of message relationship DM: parallel, contrastive, elaborative, and inferential. The table includes

the raw frequencies (R-f) and the normalised frequencies (N-f). Items marked in bold with a hashtag indicate additional DMs that not been accounted for in Classical Chinese grammar books and therefore have been manually identified in the ST (i.e., not with the use of the search list of DMs presented in Chapter 3, Table 3-7).

Table 5-2 Chinese DMs and their normalised frequencies in the ST of *Su Wen*

No	Parallel	R-f	N-f	Contrastive	R-f	N-f	Elaborative	R-f	N-f	Inferential	R-f	N-f
1	而 (and)	593	572	而 (while)	113	109	而 (moreover)	10	10	则 (thus)	902	870
2	或 (or)	70	68	然 (yet/but)	15	14	#以 (and)	5	5	故 (so/therefore)	489	472
3	#亦 (and)	55	53	虽 (though)	14	14	#则 (that is)	3	3	#乃 (thus)	91	88
4	及 (in addition)	17	16	则 (but)	6	6	尚 (still/yet)	1	1	是以 (therefore)	41	40
5	而后 (henceafter)	16	15	然而 (however)	4	4	#且夫 (moreover)	1	1	以 (as)	33	32
6	且 (moreover)	14	14	#虽...犹 (while)	4	4				是故 (that's why)	27	26
7	#其次 (next)	6	6	#反之 (on the contrary)	2	2				而 (if)	22	21
8	又 (in addition)	6	6	却 (but)	2	2				所以 (so)	21	20
9	#先 (firstly)	5	5	#反 (instead)	1	1				因 (since)	19	18
10	与 (and)	5	5	#虽然 (although)	1	1				当 (if)	13	13
11	然后 (then)	5	5	#虽...而 (but)	1	1				#因而 (thus)	12	12
12	若 (or)	4	4	#不然 (otherwise)	1	1				若 (if)	11	11
13	然则 (and)	2	2	但 (but)	1	1				今 (since)	3	3
14	#又且 (in addition)	2	2							为 (accordingly)	3	3
15	#及于 (and)	2	2							#如此 (thus)	2	2
16	即 (and)	2	2							即 (so)	2	2
17	#犹...又 (besides)	2	2							盖 (since)	1	1
18	#次 (next)	1	1							由 (as)	1	1
19	及与 (and)	1	1							#如是 (therefore)	1	1
20										#从而 (so)	1	1
21										#且 (if)	1	1
22										#斯 (thus)	1	1
	Sum	808	779		165	159		20	19		1697	1637

The reader's attention is drawn to the fact that multifunctional character “而 (*pinyin*: er)”, which can signal all the four functions of the message relationship DMs (parallel, contrastive, elaborative and inferential) is the most frequently used DM in the *Su Wen* list in the parallel, contrastive and elaborative categories. It is ranked as the seventh most common in the inferential category. The relatively less frequently use of “而” in the inferential category

indicates the possibility of the large amount of use of prototypical inferential DMs and their variants for making inferences, drawing a conclusion, and proposing a hypothetical condition during the compilation process of *Su Wen* in the history. This will be further investigated on the inferential markers in Section 5.5.

PRELIMINARY FINDING THREE: It is noteworthy that the merged DM list presented in Chapter 3 captures the majority of the DMs found in the ST which means it is a reliable list. As can be seen from Table 5-2, there are altogether 23 DMs (N-f= 196) which are not accounted for in Classical Chinese grammar books, but which are found in the ST. As before, most of them involve 7 inferential DMs (N-f=102), followed by 7 parallel DMs (N-f=70), with 6 contrastive (N-f=10) and 3 elaborative DMs (N-f=9) very rarely used. These are mainly 15 monosyllabic and 8 disyllabic DMs. It appears that approximately 6% to 10% of DMs in each category comprise of items that are not in the search list, with the notable exception of elaborative markers where the proportion of additional DMs is 45%. This might be result of the generally low number of elaborative DMs used in *Su Wen*, which means that even small additions might have a significant impact on the overall proportion of this category.

HYPOTHESIS THREE: The relatively limited use of these ‘additional’ DMs indicates the possibility that they result from revision or compilation by physicians in later dynasties or that they have simply been overlooked by Classical Chinese grammar books, as the lists provided include examples and are never considered to be comprehensive. The corpus study will allow us to test whether the ‘additional’ DMs appear only in the compiled chapters.

PRELIMINARY FINDING FOUR: It is quite surprising that so many disyllabic markers have been found in the corpus. There are 19 disyllabic markers, of which 7 are parallel, 4 are contrastive, 1 is elaborative and 7 are inferential. This is surprising because as Norman (1988),

Packard (2000) and La Polla (2003) observe, “the overwhelming majority of the Classical Chinese morphemes were mono-syllabic”, 3,500 years ago when *Su Wen* was alleged to have been written, whereas in the last two millennia or so “the coining of new words overwhelmingly yielded forms that are disyllabic” (Sun, 2006, p.49). Therefore, at the time when *Su Wen* was first produced the common practice was that words with monosyllabic Chinese characters [e.g., “而” (and), “或” (or)] were frequently used.

However, the present DM search witnesses the existence of disyllabic DMs [e.g., “是以” (so),] and pair DMs [e.g., “犹...又” (besides)]. The presence of disyllabic DMs is assumed to have resulted from the compilation process to a certain extent. In the original DM search list, compiled from Classical Chinese grammar books, a small number of disyllabic markers has been identified (27 among the 104 conjunctions and adverbs serving the function of a conjunction provided in the original search list), 8 of which have been found in *Su Wen*. Furthermore, 11 additional disyllabic markers have been found in the ST that are not in the original search list.

HYPOTHESIS FOUR: The additional disyllabic DMs might be the outcome of revision or compilation of *Su Wen* in the last two millennia or so. The corpus study will allow us to test whether the additional disyllabic markers are only present in the compiled chapters, which will allow us to investigate this hypothesis.

PRELIMINARY FINDING FIVE: There are numerous occasions of absence of message relationship DMs, which might result from the tendency of parataxis in the Chinese language. Cheung (2016, p.101) stresses that in Chinese, “the presence of clausal conjunctions is optional if it is clear from the context what relations hold between the two clauses, whereas in English, their presence is obligatory”. Therefore, Chinese DMs are often absent and instead

there is an implicit message relation, often parallel or inferential but sometimes contrastive or elaborative, between the adjacent clauses or sentences. Here are two examples for illustration, using a square bracket around the contracted 2-letter DM tag to show the implicit message relation. For clarity, since a Chinese character can be assigned to different parts of speech, the segmentation marks (/) and POS tags have been retained in all examples [as to do otherwise would result in syntactic ambiguity (Zou, Smith & Hoey, 2015, p.5), leading to different interpretations.

For better comparison, Example 1 and its BT are provided below, in which the slot for absence of Chinese DM has been inserted with “[PL]”.

Example 1

ST: 今时/t 之/u 人/n , /w 年/n 半百/m 而/c 动作/n 皆/d 衰/v 者/u , /w 时/n 世/n 异/a 耶
/y ? /w [PL]人/n 将/d 失/v 之/u 耶/y ? /w

BT: But people nowadays become weak in their behaviour at the age of fifty. Is it due to the changes of time? **or**_CC [MRPL] the loss in the way (to preserve health)? (*Su Wen* 1)

In Example 1, it seems that there is no DM between the two interrogative sentences, and the BT indicates that the parallel DM “or” is absent signalling alternation of the two reasons why it is easy for people nowadays to become old too early even at the age of fifty.

Example 2

ST: 天/n 明/v 则/c 日月/n 不/d 明/v , /w[IR]邪/n 害/v 空窍/n ...

BT: (If) the sky is bright, the sun and the moon will become dim. (**As**_CSA **a**_AT1 **result**_NN1 [MRIR]+ ,) the evil harms external orifices ... (*Su Wen* 2)

And in Example 2, the inferential DM “as a result” or the like signalling drawing a conclusion is absent as there exists an implicit inferential relation between the condition of bright sky but

the dim sun and moon and their subsequent consequences. Therefore, if the corresponding DMs is supplemented when they are absent in English translation, it can facilitate the understanding of the intended TL readers.

In this chapter, I will only explore the use of explicit message relationship DMs. It is impossible, given the design of the study, to include absent markers in the scope, because an absence cannot be annotated. However, in the DM annotation of TT1 and TT2, the implicit message relations will be explicitly annotated if there are occasions where an absent DM in the ST is found to have been translated with an explicit DM in the translation. I will return to this subject in later chapters.

In order to conduct an in-depth investigation of the use of Chinese DMs of the 4 categories, in the following sections I will firstly report the normalised statistics of the two major types: original chapters and compiled chapters. Then I will also analyse the features of the DM use of each category, one by one, by comparison and exemplification, as there might be considerable differences between the statistics of the two types of chapters.

For ease of reference, the distribution of Chinese DMs in original and compiled chapters is presented collectively in Tables 5-3 and 5-4 below.

Table 5-3 Chinese DMs and their raw and normalised frequencies in original chapters

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREEL	R-f	N-f	MRIR	R-f	N-f
1	而 (and)	35	563	而 (while)	12	193	而 (moreover)	5	80	则 (thus)	46	740
2	或 (or)	6	96	#反 (instead)	1	16				故 (so/therefore)	42	675
3	#亦 (and)	5	80	然 (yet/but)	1	16				是以 (therefore)	10	161
4	且 (moreover)	1	16							若 (if)	6	96
5	即 (and)	1	16							所以 (so)	5	80
6	又 (in addition)	1	16							#乃 (thus)	1	16
7	#及于 (and)	1	16							以 (as)	1	16
8	然后 (then)	1	16							是故 (that's why)	1	16
9	#犹...又 (besides)	1	16							而 (if)	1	16
	Sum	52	836		14	225		5	80		113	1817

Table 5-4 Chinese DMs and their raw and normalised frequencies in compiled chapters

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	而 (and)	558	572	而 (while)	101	104	而 (moreover)	5	5	则 (thus)	856	878
2	或 (or)	64	66	然 (yet/but)	14	14	#以 (and)	5	5	故 (so/therefore)	447	459
3	#亦 (and)	50	51	虽 (though)	14	14	#则 (that is)	3	3	#乃 (thus)	90	92
4	及 (in addition)	17	17	则 (but)	6	6	尚 (still)	1	1	以 (as)	32	33
5	而后 (hereafter)	16	16	然而 (however)	4	4	#且夫 (moreover)	1	1	是以 (therefore)	31	32
6	且 (moreover)	13	13	#虽...犹 (while)	4	4				是故 (that's why)	26	27
7	#其次 (next)	6	6	#反之 (on the contrary)	2	2				而 (if)	21	22
8	又 (in addition)	5	5	却 (but)	2	2				因 (since)	19	19
9	与 (and)	5	5	#虽然 (although)	1	1				所以 (so)	16	16
10	#先 (firstly)	5	5	#虽...而 (although)	1	1				当 (if)	13	13
11	然后 (then)	4	4	#不然 (otherwise)	1	1				#因而 (thus)	12	12
12	若 (or)	4	4	但 (but)	1	1				若 (if)	5	5
13	然则 (and)	2	2							今 (since)	3	3
14	#又且 (in addition)	2	2							为 (accordingly)	3	3
15	#及于 (and)	1	1							#如此 (thus)	2	2
16	即 (and)	1	1							即 (so)	2	2
17	#犹...又 (besides)	1	1							盖 (since)	1	1
18	#次 (next)	1	1							由 (as)	1	1
19	及与 (and)	1	1							#如是 (therefore)	1	1
20										#从而 (so)	1	1
21										#且 (if)	1	1
22										#斯 (thus)	1	1
	Sum	756	776		151	155		15	15		1584	1625

5.2 Parallel DMs: original chapters vs. compiled chapters

5.2.1 Chinese parallel DM use in original chapters in the ST

Chinese parallel markers are ranked the second among the four categories in the original chapters. As can be seen from Appendix 2, the overall frequency “total” (N-f= 836) of the parallel DMs is only 1/3 of overall frequency “Total” (N-f=2,959) of all DMs in the original chapters of ST.

On closer inspection, I have found that there are 9 different parallel DMs including 6 monosyllabic parallel DMs, 2 disyllabic DMs as well as 1 case of pair marker. The fact that disyllabic DMs are noted in original chapters raises the question of whether some of the assumed original chapters have actually been compiled or alternatively whether disyllabic DMs have been used earlier than what is assumed in the literature. The answer to the question is that the disyllabic parallel DMs might be the outcome of the compilations mainly two millenniums ago.

Table 5-3 indicates that the DM “而” (and) is frequently used in the fixed four-character expressions like “舌干而/c [MRPL] 渴” (dry tongue and excessive thirst) or connecting a four-character expression and a disyllabic word like “身热目疼而/c [MRPL] 鼻干” (BT: fever, pain of the eyes, dryness in the nose).

The min value “0” in Appendix 2 is an indication of absence of DM use in some chapters, which can be due to several reasons, the main three of which are detailed below.

1) Use of “rhymed and tabular couplets”

There are no parallel DMs in *Su Wen* chapter 25 due to the use of “rhymed and tabular

couplets”. This chapter was compiled “in rather schematic repetitions of identically or similarly structured statements” (Unschuld & Tessenow, 2011, p.22) and it was uniquely for pedagogical purpose as “[b]oth rhymed and tabular structures were presumably intended to facilitate oral transmission through memorization of the many rather brief individual texts” (ibid.). Therefore, there is no need to use parallel DMs in *Su Wen* chapter 25 as in this situation, the particular style of couplets does not favour DMs and the message is conveying through the effect of rhyming rather than through explicit message relationships. In fact, the use of this type of structure with so lower use of parallel DMs than expected also applies to *Su Wen* Chapters 12, 30, 76, 78 and 81, most of the 11 original chapters. Please note that in the following examples the “[PL]” with the square bracket stands for the implicit parallel relation, due to the use of “rhymed and tabular couplets” or chained structure.

Example 3

ST: 审/v 其/r 阴阳/n , /w [PL] 以/p 别/v 柔刚/n , /w [PL] 阳病/n 治/v 阴/n , /w [PL] 阴病/n 治/v 阳/n , /w [PL] 定/v 其/r 血气/n , /w [PL] 各/r 守/v 其/r 乡/n 。 /w (*Su Wen* 5)

BT: Investigate their yin and yang, [PL] distinguish between softness and hardness. [PL]

Treat yin with yang diseases, [PL] treat yang with yin diseases. [PL] Regulate their blood and qi, [PL] guard their respective villages.

The formerly indented verse format visual appearance of a verse with an end rhyming scheme, as in Example 3, has been changed into a paragraph comprising several sentences during POS tagging and sentential alignment. Therefore, with the implicit parallel relation between the sentences, there is no use of any parallel DMs between the sentences but only

with a comma between them. This kind of syntactic arrangement is acceptable in Chinese as it is a rhymed format of verse with the end rhyming scheme “aabaca”, in which “阳 [yang]” and “刚 [gang]”, “阴 [yin]” and “阳 [yang]”, “气 [qi]” and “乡 [xiang]” are rhymed intrasententially with the same vowels “/ang/”, “/ang/”, “/in/”, “/ang/”, “/i/” or “/ang/”.

2) Use of chained structures with theme repeating the rheme of the prior sentence

The so-called “chained structure” features the repetition of the rheme of the previous sentence (Sentence 1) as the theme of the subsequent sentence (Sentence 2), and this case may continue for the third and fourth round, if possible, with the use of the “S + V” pivotal syntactic structure “者...也” (WWT: sb./sth.... BE predicative). This applies to *Su Wen* Chapters 31 and 81.

Example 4

ST: S1 水/n 宗/n 者/u , /w 积水/n 也/y , /w [PL] S2 积水/n 者/u , /w 至阴/n 也/y , /w [PL] S3 至阴/n 者/u , /w 肾/n 之/u 精/n 也/y 。 /w (*Su Wen* 81)

BT: S1 Regarding the source of water, that is accumulated water. [PL] S2 Regarding the accumulated water, that is the extreme yin. [PL] S3 Regarding the extreme yin, that is the essence of the kidneys.

The underlying parallel relation between the sentences in Example 4 is only indicated by using a comma between them, in which the sentences are connected by the repetition of the key words in the preceding clause as a rheme in the position of a theme for the following clause. In other words, there is an obvious cohesion of parallelism between S1 and S2 as well as S2 and S3. Therefore, in this case the particular style of chained structures also does not

favour DMs.

3) Use of coordinated structures for antithesis

The third case results from the use of coordinated structures for the antithesis of two symptoms during diagnosis as shown in Example 5.

Example 5

ST: 阳/n 并/v 于/p 上/f , /w 则/c 火/n 独/d 光/v 也/y ; /w [PL] 阴/n 并/v 于/p 下/f 则/c 足/n 寒/a , /w 足/n 寒/a 则/c 胀/a 也/y 。 /w (*Su Wen* 81)

BT: When the yang is combined above, the fire alone has luster. [PL] When the yin is collected below, the feet feel cold. When the feet feel cold, they will swell.

In Example 5, “阳 (yang)” and “阴 (yin)”, “上 (above)” and “下 (below)” shows antithesis, without any need to use parallel DMs for the parallel message relation between the two adjacent sentences in the context.

As can be seen from the discussion above, there is a tendency that in those original chapters of ST with less variety of DM use and lower normalised frequencies of parallel DMs, there are abundant 1) rhymed and tabular couplets, which is fully acceptable in Chinese. This can partly account for the reason that Chinese parallel DMs are not used in those original chapters of ST.

However, this is not always the case. Some few original chapters of ST with higher frequencies of Chinese parallel DMs, also have some 2) chain structures, and 3) coordinated structures of antithesis, in which the use of Chinese parallel DMs is not compulsory.

5.2.2 Chinese parallel DM use in compiled chapters in the ST

Similar to original chapters, Chinese parallel markers are ranked the second among the four categories in the compiled chapters. The normalised frequencies of Chinese parallel DMs in the 68 compiled chapters range from 0 to 3,289 with the overall frequency “Total” (N-f=776) (for more details see Appendix 3). In Table 5-4, there are 19 different parallel DMs, which means that there is a greater variety of parallel markers than in the original chapters, where only 9 different parallel markers have been noted. The forms of those parallel DMs are more varied than in the original chapters (11 monosyllabic DMs, 7 disyllabic DMs, 1 pair DM), and significantly there are more types of disyllabic marker. We can infer that this increase might be the result of some additions in the compilation of *Su Wen* in history. Due to space limitation, I will give one example to illustrate the use of the disyllabic DMs “其次” (next).

Example 6

ST: 故/c 邪风/n 之/u 至/v , /w 疾/d 如/v 风雨/n , /w 故/c 善治/n 者/k 治/v 皮毛/n , /w 其次/c [MRPL] 治/v 肌肤/n , /w 其次/c [MRPL] 治/v 筋脉/n , /w 其次/c [MRPL] 治/v 六腑/n , /w 其次/c [MRPL] 治/v 五脏/n 。 /w (*Su Wen*5)

BT: Hence, the arrival of evil wind is as fast as wind and rain. Hence, those who are proficient in treatment, treat the skin and the body hair. Next (they) treat the muscles and skin. Next (they) treat the sinews and vessels. Next (they) treat the six palaces. Next (they) treat the five depots.

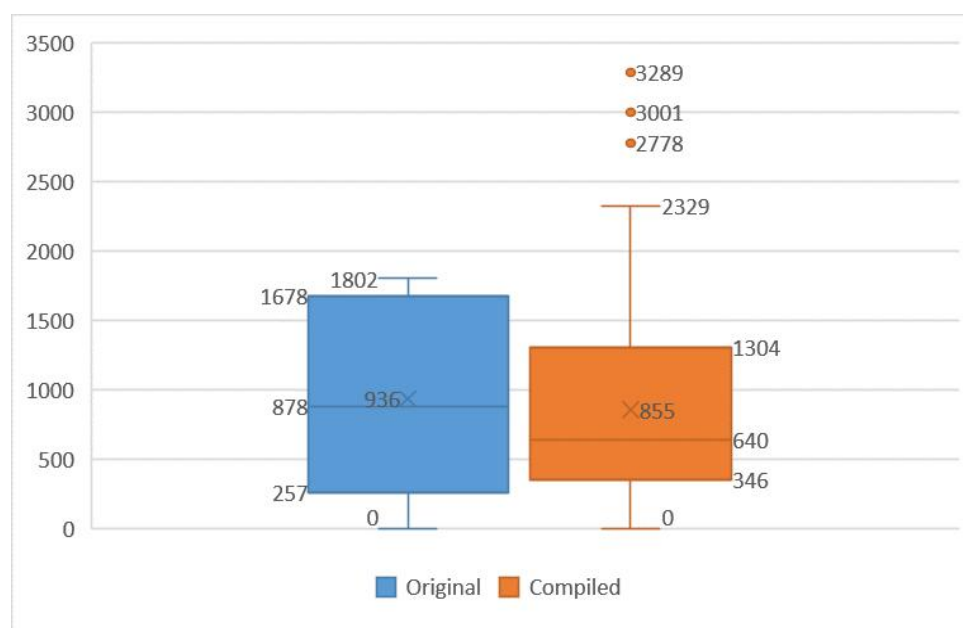
The 4 parallel disyllabic DMs “其次” (next) in Example 6 are used to connect 5 steps of therapies practiced by a good physician in the treatment of the diseases of evil wind going fast like wind and rain. That is, the timing should be correct when treating the disease when it is in

the skin and the body hair, then in the muscles and skin, then in the sinews and vessels, then in the six palaces, at last in the five depots. It might be that those kinds of parallel markers signalling the steps of therapies have been added by later editors to make the sequence of therapy steps clearer for readers, so that it can help them facilitate the understanding of the nature of the successive therapies and treatment.

5.2.3 Comparison of Chinese parallel DM use between original and compiled chapters in the ST

To visually present the data distribution for further comparison, the boxplot in Figure 5-2 shows the use of Chinese parallel DMs in original and compiled chapters of the ST.

Figure 5-2 Boxplot of the normalised frequencies of Chinese parallel DMs of original and compiled chapters in the ST



Despite the slight disparity between the two means, there exist some other differences between the original and compiled chapters. 1) The shorter box for compiled chapters than original ones suggests that the middle 50% of frequencies is more concentrated in compiled

chapters than in original ones; 2) In the original chapters, the DMs are used evenly, as indicated by the slightly equal upper and lower whiskers; while the DMs in the compiled chapters have a scattered distribution, with low use of DMs in most of the chapters, and overuse of DMs in 3 chapters (Chapters 39, 65, 49), an indication of overweighing the value of original chapters which is regarded as the norm. Therefore, it can be proved that the assumed “compiled” chapters have been compiled.

As for the forms of those DMs in the original and compiled chapters, in both categories of chapters we find three major types: monosyllabic DMs, disyllabic DMs and pair DMs. In addition, the compiled chapters use other parallel DMs not found in original chapters: 1) monosyllabic DMs [“与” (and), “先” (firstly), “若” (or), “即” (and) and “次” (next)]; 2) disyllabic DMs [“而后” (hereafter), “其次” (next), “然则” (and), “又且” (in addition), “及与” (and)].

No difference has been found between original and compiled chapters regarding the functions of parallel DMs. In here and in later sections, I will borrow Halliday’s (1994) sub-classification of message relationship DMs when discussing function. In both chapter types, the parallel DMs fall into all three of Halliday’s (1994, p.323-330) sub-groups of conjunctions. Specifically, there are parallel DMs signalling a) addition, which refers to the relation of the enhancement or progression between two successive issues such as “而” (and), “及” (in addition), “与” (and), “即” (and), “然则” (and), “又且” (in addition), “及与” (and); b) time sequence, which refers to the relation of time or temporal sequence between two successive symptoms or treatment therapies, such as “然后” (then), “先” (firstly), “次” (next), “其次”

(next), “而后” (hereafter); and c) alternation, which refers to the alternation or choice of two acts, such as “或” (or), and “若” (or). To summarise, while there is no difference in the function of the parallel DMs used between original and compiled chapters, there is a greater variety of parallel DM use in the compiled chapters, both in the number of different DMs used (19 vs. 9) and in the type (7 disyllabic markers and 1 pair markers observed in the compiled chapters in comparison to 2 disyllabic markers and 1 pair markers in the original chapters).

5.3 Contrastive DMs: original chapters vs. compiled chapters

5.3.1 Chinese contrastive DM use in original chapters in the ST

Chinese contrastive DMs are ranked the third among the four categories in the 11 original chapters. Compared with the normalised frequencies of Chinese parallel DMs in the original chapters, the normalised frequencies of Chinese contrastive DMs in the original chapters present considerably lower figures, which range from 0 to 628 per chapter with the overall relative frequency “Total” (N-f= 225).

For a global picture of the contrastive DMs and their relevant data, Table 5-3 displays those DMs and their raw and normalised frequencies in original chapters of the ST.

The contrastive DMs used in the original chapters include only 3 monosyllabic ones: “而” (while), “反” (instead) and “然” (yet), the two latter ones only appearing once in *Su Wen* chapter 76. The DM “而” (while) tends to be frequently used in inter-sentence to link two clauses expressing two contrastive symptoms or phenomena like “crying” and “no snivel” as in “出而/c [MRCT] 少涕” (no snivel while someone is crying) in *Su Wen* chapter 81 or “old

years” and “childish question” as in “年之长而/c [MRCT] 问之少” (you are old in years while you ask like a child) in *Su Wen* Chapter 76.

The absence or lower use of the contrastive DMs in original chapters lies in the fact that they address abstract themes like the nature and circulation of qi (*Su Wen* 24), health preservation (*Su Wen* 25), Yangming channels (*Su Wen* 30), febrile disease (*Su Wen* 31), acupuncture (*Su Wen* 51), and therapeutic errors (*Su Wen* 78), illustrating explicitly those issues like acupoints with specific numbers, without any need to use more contrastive DMs in those original chapters to show any contrast or transition in the topic shift, if any. It might be that the ancient Chinese people were afraid that the abstract themes could not be better comprehended if the contrastive DMs were used, as it would need more cognitive effort.

5.3.2 Chinese contrastive DM use in compiled chapters in the ST

Chinese contrastive DMs are ranked the third among the four categories in the 68 compiled chapters, same as in original ones. The normalised frequencies of Chinese contrastive DMs in the compiled chapters range from 0 to 1,303 per chapter with the overall frequency “Total” (N-f= 155).

Table 5-4 displays all the contrastive DMs and their normalised frequencies in the 68 compiled chapters in the ST. There are only 12 contrastive DMs consisting of 6 monosyllabic DMs, 4 disyllabic DMs, as well as 2 pair DMs. The monosyllabic DMs “而” (while), “然” (yet/but) and “虽” (though) account for the majority of the frequencies in this category of DMs of the ST.

One distinctive issue is the different position of the Chinese contrastive DMs in the sentences.

Most of the contrastive DMs like “若” (but) and “虽” (though) are located in sentence-medial, following the subject of the sentence or clause. Some of them are positioned in the inter-sentence, while a few of them are in the sentence initial. The arbitrariness in the sentential position of the contrastive DMs shows the position flexibility of some Chinese DMs in classical Chinese without any significant differences in semantic meanings as to whether in the sentence-medial or in sentence-initial.

Example 7

ST: 臣/n 虽/c [MRCT] 不/d 敏/a , /w 往/t 闻/v 其/r 旨/n 。 /w (*Su Wen* 69)

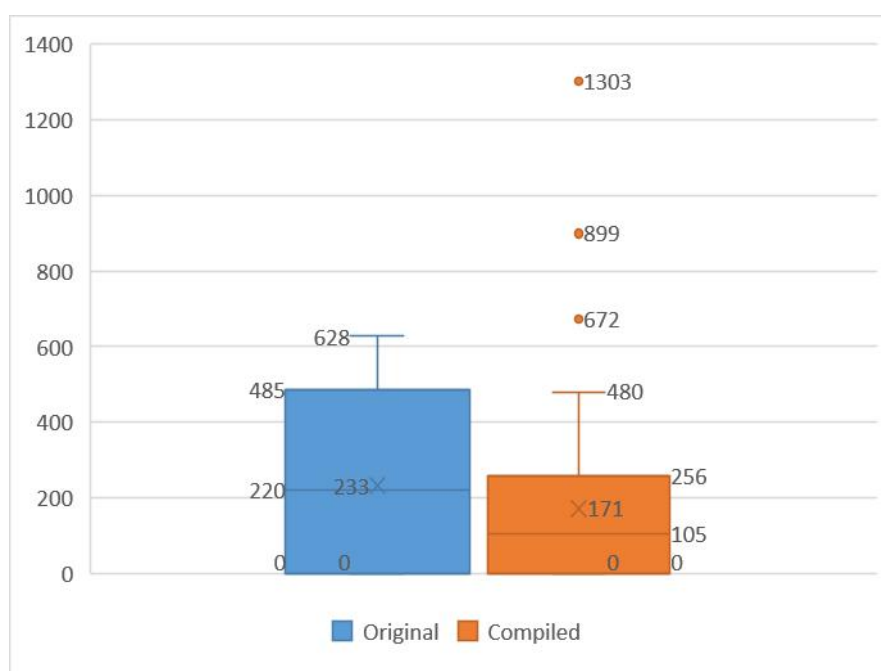
BT: Although I am not smart enough, I have heard of the instructions before.

In Example 7, “虽” (although), as a contrastive DM, is mostly located in sentence-medial, following the subject of the sentence or clause, which shows the freedom of position mobility of some Chinese DMs in classical Chinese. But in modern Chinese, the disyllabic contrastive DM “虽然” (although), the variant of monosyllabic “虽” (although) in classical Chinese, is often used in the sentence-initial. There is not any significant difference in the semantic meaning of the propositions, no matter whether these two DMs are in the sentence-initial or in the sentence-medial.

5.3.3 Comparison of Chinese contrastive DM use between original and compiled chapters in the ST

By comparing the “Total (N-f)” for the original and compiled chapters, a slight difference is found between the two groups of chapters (225 vs. 155), with a higher overall frequency for original chapters.

Figure 5-3 Boxplot of the normalised frequencies of Chinese contrastive DMs of original and compiled chapters in the ST



Visually, the boxplot in Figure 5-3 is used to compare the differences in the normalised frequencies of Chinese contrastive DMs between original and compiled chapters in the ST. It is found that the two boxes differ substantially in the IQR, with majority of the data in the compiled chapters covering only half of the data in the original chapters. In addition, there are some differences in their medians and means. What is more, the upper whisker in the compiled chapters has longer length in addition to three outliers, comparatively, the data in the compiled chapters present more right-skewedness than those of the original chapters.

The above 3 findings can be interpreted as follows: Though in most of the original and compiled chapters contrastive DMs are less frequently used than parallel ones, there is some overuse of contrastive DMs in a small amount of the compiled chapters, as 3 outliers can be observed. Compared with the slight right-skewedness of original chapters as the norm, the extreme right-skewedness of compiled chapters suggests that it might be the consequent

impact of compilation of contrastive DMs in the history with some DM omitted in the compilation.

As for the forms of the DMs in the original and compiled chapters, the original chapters have only one form: monosyllabic contrastive DMs; while in compiled chapters, they have more various forms. In other words, in addition to 6 monosyllabic DMs, they also have 4 disyllabic DMs like “然而” (however), “反之” (on the contrary), and “不然” (otherwise), as well as 2 pair DMs “虽...犹” (while) and “虽...而” (although).

As for the functions of those contrastive DMs, based on Halliday (1994, p.323-330), they can be further categorized into three sub-groups: 1) adversative: it indicates the adversative or oppositive relation which is “contrary to expectation”: E.g., “然而” (however), “却” (but); 2) concessional: it denotes the concessional relation between the main clause and the subordinate clause: E.g., “虽” (though), “虽...犹” (while); 3) conditional: it implies an adversative condition between the main clause and the subordinate clause: E.g., “反之” (on the contrary), “不然” (otherwise). The contrastive DMs in the original chapters fall only into the first sub-group, whereas for the compiled chapters, examples from all three sub-groups can be found. Overall, there are a variety of DMs both in terms of form and function, while there are fewer contrastive DMs in the compiled chapters.

5.4 Elaborative DMs: original chapters vs. compiled chapters

5.4.1 Chinese elaborative DM use in original chapters in the ST

Compared with the statistics of Chinese parallel and contrastive markers, there are even fewer

Chinese elaborative DMs which are ranked the 4th among the four categories in the original chapters. The corpus data shows that there is no use of Chinese elaborative DMs in the 11 original chapters except for *Su Wen* chapter 25 with a modest overall frequency “Total” (N-f=80).

The original chapters in the ST have only one elaborative DM: “而” (and). This is the multifunctional character discussed in Section 5.1, which can signal all four functions of the message relations. It is the most frequently used DM in the parallel and contrastive categories too. It is worthy to note that all instances of “而” (and) as an elaborative marker are found in the four-character construction in one sentence of *Su Wen* chapter 25.

Example 8

ST: 木/n 得/v 金/n 而/c [MREL] 伐/v , /w 火/n 得/v 水/n 而/c [MREL] 灭/v , /w 土/n 得/v 木/n 而/c [MREL] 达/v , /w (*Su Wen* 25)

BT: Wood meets metal, [EL] it is felled. Fire meets water, [EL] it is extinguished. Soil meets wood, [EL] it is penetrated.

As can be seen from the example, “而” (and) is used in four-character constructions [e.g., “得金而/c 伐” (When meeting metal, it is felled.)]. It elaborates the relation between the two adjacent clauses, illustrating the five elements (Fire, Earth, Metal, Water and Wood) and their evolution.

The absence of other elaborative DMs in the original chapters of the ST, lies in the fact *self-commentary devices* are commonly found instead, performing the function of elaboration in Classical Chinese *per se*, thus resulting in the limited need for elaborative DMs in the 11

original chapters. Peng (2007, p.40-46) asserts that there are some commonly used self-commentary devices such as “名曰” (be named) or “谓之” (be called) or “是谓” (so-called) and the “者...也” (WWT: sb./sth...BE predicative) construction, both of which can be used for elaboration. Typical examples from *Su Wen* include “五色俱见者，谓/v 之/u 寒热。” (When all the five colors appear, this is called ‘cold and heat’ (Chapter 57) and “今夫热病者/k，皆伤寒之类也/y” (Currently febrile diseases are all caused by cold attack) (Chapter 31). In sum, Classical Chinese has other means for elaboration. This can account for the underlying reason for the absence of Chinese elaborative DMs in 10 of the 11 original chapters.

5.4.2 Chinese elaborative DM use in compiled chapters in the ST

The normalised frequencies of Chinese elaborative markers in 68 compiled chapters range from 0 to 420 per chapter with a modest overall frequency “Total” (N-f= 15). Appendix 3 indicates that Chinese elaborative DMs are scarcely used in the compiled chapters as the frequencies of the majority of the Chinese elaborative DMs of the compiled chapters are “0”, and they are mostly used in specific chapters *Su Wen* chapters 26 and 4. There is more evidence to suggest that those 2 chapters might have undergone compilation in history as the adoption of the elaborative DMs for the general-specific structure in the compiled chapters can help to make the addressee better understood.

Example 9

ST: 夫/h 言/v 人/n 之/u 阴阳/n , /w 则/c [MREL] 外/f 为/v 阳/n , /w 内/f 为/v 阴/n 。 /w
(*Su Wen* 4)

BT: Speaking of yin and yang on the human body, **that**_REX21 **is**_REX22 [MREL], the back is yang and the abdomen is yin.

In Example 9, the *previous sentence* addresses the yin and yang of the human body, as ‘yin’ and ‘yang’ are abstract terms with flexible meaning in different context, *the subsequent sentence* specifies what they refer to as the positions of a human body, explaining the back and abdomen as yin and yang respectively. In this situation, the elaborative DM “则” (that is) serves the function of elaboration.

In addition, as with the original chapters in Section 5.4.1, the frequent use of self-commentary devices results in the limited need to use more elaborative DMs in the compiled chapters of the ST. That is why a low use of elaborative DMs is noted in most of the compiled chapters of the ST.

5.4.3 Comparison of Chinese elaborative DM use between original and compiled chapters in the ST

Table 5-4 shows that in compiled chapters, elaborative DMs include 4 monosyllabic DMs and 1 disyllabic DM. Though there are 5 cases of elaborative DMs in compiled chapters, there is only 1 case of elaborative DM found in the original chapters. The normalised frequencies indicate a lower use of elaborative DMs in compiled chapters than original ones. The very reason is that they have different sample sizes, that is, the higher dividend, the lower value in the end.

Due to the abundant use of self-commentary devices in Chinese as mentioned in the previous section, elaborative DMs are scarcely used in both original and compiled chapters in the ST.

Due to the limited data, no boxplot can be drawn and so one has not been included here.

In terms of form, in the original chapters only one form is observed (monosyllabic), while in the compiled chapters, they include two types: monosyllabic and disyllabic.

As for the sub-functions of those elaborative DMs, following Halliday (2004, p.540), elaboration relation can be divided into two sub-types: apposition and clarification. The appositional relation includes exposition ('i.e.' relation) and exemplification ('e.g.' relation), while the clarification relation is not "reinstated, summarized, made more precise or in some other way clarified for purposes of the discourse" (ibid., p.541).

It is found that the DM “而 (and)” in the original chapters helps to fulfil the sub-function of signalling expositional relation. The DMs “以 ” (and) signals an appositional relation, explaining the relation of abstract terms or TCM therapy. While the DMs “且夫” (moreover), “尚” (still/yet) and “则” (that is) signal a clarificational relation. Therefore, as can be seen, there are differences between original and compiled chapters in terms of frequencies, forms, and functions of elaborative DMs.

5.5 Inferential DMs: original chapters vs. compiled chapters

5.5.1 Chinese inferential DM use in original chapters in the ST

Among the 4 DM categories, the normalised frequencies of Chinese inferential markers in 11 original chapters are the highest since they range from 0 to 3,723 per chapter with an overall frequency “Total” (N-f= 1,817).

The reasons that more inferential DMs are used in some original chapters lie in the fact that

they are used for hypothesizing, apart from drawing a conclusion or making references. The inferential DM “若” (if) for hypothesizing is shown in Example 10.

Example 10

ST: 汝/r 受/v 术/n 诵/v 书/n 者/k , /w 若/c [MRIR] 能/v 览/v 观/v 杂学/n , /w 及于/c 比/v 类/n , /w 通/v 合/v 道理/n , /w (Su Wen 76)

BT: You are learning skills and reading books. (If CS [MRIR] (you) can read books extensively and use analogy, (you can) master the expertise.

In Example 10, the relation between the clause introduced by the DM “若” (if) and the intended result of mastering the medical theory can be indicated by using the DM signalling hypothesizing.

Table 5-3 shows the inferential DMs and their raw and normalised frequencies in original chapters. In the original chapters of the ST, the forms of inferential DMs include both monosyllabic and disyllabic DMs.

Example 11

ST: 其/r 脉/n 连/v 于/p 风府/n , /w 故/c [MRIR] 为/p 诸/r 阳/n 主/v 气/n 也/y 。 /w (Su Wen 31)

BT: Its vessel connects the wind palace. Hence, it dominates the qi of all the yang.

Example 12

ST: 是故/c [MRIR] 治/n 不/d 能/v 循/v 理/n , /w 弃/v 术/n 于/p 市/n , /w (Su Wen 78)

BT: Hence, the treatment does not follow the rule, and discard the skill in the market.

Regarding the position of inferential DMs in the sentence, some of them like “故”

(so/therefore), “则” (thus), “所以” (so) and “是以” (therefore) are used in inter-sentence to signify the effect caused by the factors in the preceding clause as shown in Example 11; While “是故” (hence) in Example 12 is used in sentence-initial to introduce the cause. The other DMs include “以” (as) and “因” (since).

5.5.2 Chinese inferential DM use in compiled chapters in the ST

Chinese inferential markers are ranked the first among the four categories in the compiled chapters, like original chapters. The normalised Chinese inferential markers in the 68 compiled chapters range from 0 to 5,757 per chapter with an overall frequency “Total” (N-f=1,625). Details about the frequencies of Chinese inferential DMs in the 68 compiled chapters can be referred to the Appendix 3.

As for the forms of those 22 inferential DMs in the compiled chapters, Table 5-4 indicates that they are composed of two kinds: monosyllabic and disyllabic, without any pair DMs. The former includes 15 DMs; the latter covers 7 DMs. Among them, “则” (thus) signalling inferences and “故” (so/therefore) serving for drawing conclusion account for most of the frequencies. In addition, “若” (if) and “而” (if) are used to signal proposing the hypothesis.

The tradition holds that the majority of the classical Chinese morphemes were monosyllabic, and until the last two millennia, disyllabic words were not used in an overwhelming way (Norman, 1988; Packard, 2000; La Polla, 2003; Sun, 2006). It seems that the disyllabic DMs “是以” (so), “所以” (so), “是故” (thus) in the original chapters have been attested in Section 5.1, possibly to be the outcome of ancient use 3500 years ago.

Or there is another possibility: it could be that more chapters have been revised and compiled

than originally thought. Of course, it needs more in-depth research in the future.

Or there is a third possibility: the use of monosyllabic might also be the result of rhythmic requirements of reducing disyllabic DMs to the monosyllabic DMs. Since some of the Chinese DMs have monosyllabic and disyllabic variants, which can perform the same functions by signifying the same message relation. Whether the monosyllabic or disyllabic variants are used depend on the rhythmic requirement (Yip & Rimmington, 2016), while their English counterparts are typically invariant in form (Cheung, 2016, p.98). For example, in Chinese “虽然” (although), “但是” (but), “因为” (because) can be reduced to “虽”, “但”, and “因” respectively, with no change in the message relations. In this case, it is not easy to recognize whether they were disyllabic DMs, or monosyllabic DMs which have been reduced from disyllabic DMs.

As for the functions, the DMs “因” (as) , “是以” (so), “是故” (therefore) signify the cause-effect relation between the preceding and succeeding clauses, while the DM “若” (if) signals a hypothetical condition before drawing a conclusion or making a reference.

Regarding the position of the DMs in the sentence, the above 18 inferential DMs are categorized into two types: inter-sentence or sentence medial, the rest 4 including “因” (as), “是以” (so), “是故” (therefore), and “若” (if) are positioned in the sentence initial.

In the compiled chapters, there is one outlier chapter with a normalised frequency of 5757 inferential DMs, which presents a conversation between Huang Di and Qibo discussing pains (*Su Wen* chapter 39). It is an intermediate length of text of 1216 characters including 70 inferential DMs, in which there are many four-character expressions including the inferential

DM “则” (when...then).

Example 13

ST: 劳/v 则/c [MRIR] 气/n 耗/v , /w 思/v 则/c [MRIR] 气/n 结/v 。 /w

BT: **When**_CS [MRIR]21 one is exhausted, **then**_RR [MRIR]22 the qi is wasted. **When**_CS [MRIR]21 one contemplates, **then**_RR [MRIR]22 the qi lumps.

The DM “则” is repeatedly used in the four-character expressions in the compiled chapters of the ST signalling the inferences in a hypothesis under a given condition. The more use of the four-character expressions, the more frequently use of the inferential DM “则”. It indicates the correlation between the frequent use of the four-character expressions and the higher frequencies of inferential DM “则” in *Su Wen* chapter 39.

5.5.3 Comparison of Chinese inferential DM use between original and compiled chapters in the ST

By comparing the “Total (N-f)” for the original and compiled chapters, a slight difference is found between the two groups of chapters (1,817 vs. 1,625), with a higher overall frequency for original chapters.

Figure 5-4 Boxplot of the normalised frequencies of Chinese inferential DMs of original and compiled chapters in the ST

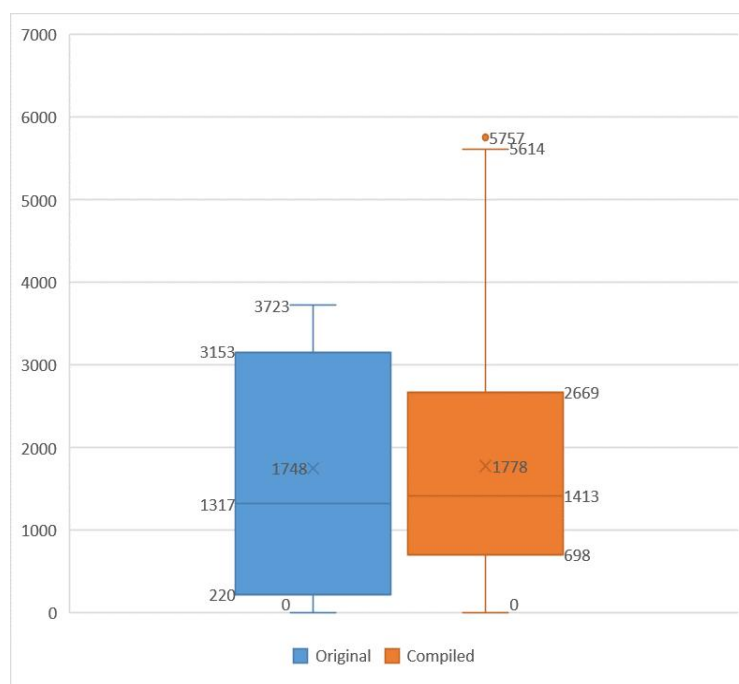


Figure 5-4 indicates that the two boxes share the same min, similar medians and means, but the original chapter box has a larger 50% IQR and shorter whiskers as well as bigger Third quartile (Q3) than the compiled chapter box, suggesting more dispersion of the data. While the compiled chapter box indicates the higher range, smaller Third quartile Q3, one obvious outlier and positively right-skewedness of data, since 25% of the observations fall between 2,669 and 5,757 in the compiled chapters. It can be argued that, compared with the original chapters as the norm, 25% of the compiled chapters with high frequencies and outliers of inferential DMs might be influenced by the compilation in the history.

As has been observed for other types of DM, generally, there are more varied forms and more cases of different inferential DMs in the compiled chapters than in the original chapters. Compared with the original chapters, compiled chapters use a greater variety of inferential

DMs: “当 (if)” (13), “因而 (thus)” (12), “今 (since)” (6), “若 (if)” (4), “为 (accordingly)” (3), “如此 (thus)” (2), “从而 (so)” (1), “即 (so)” (1), “由 (as)” (1), “盖 (since)” (1). They can be formally divided into two types: monosyllabic and disyllabic. Most of them are monosyllabic, but only a few are disyllabic with a limited number of normalised frequencies. Whether they are the outcome resulted from the revision or compilation by later physicians requires further investigation from second-hand resources.

In the previous sections, Halliday’s sub-groupings of DMs have been used when discussing function. However, as Fraser (1993, p.28) observed, “there is no obvious subgrouping” for inferential markers, since there are only “subtle differences” between them, and indeed Halliday establishes no sub-groupings. However, I have attempted to sub-classify the inferential DMs into three sub-types, based on lists of examples in Fraser (2009, p.301) and Halliday’s (2004, p.541) list of causal-conditional conjunctions for making inferences: making inferences, drawing a conclusion, and proposing a hypothetical condition. In the following analysis of the sub-functions of Chinese inferential DMs, I will resort to the sub-classification for the inferential analysis.

Among those 22 inferential DMs in the compiled chapters, the majority of the DMs 1) signal inferences, e.g., “则 (thus)”; and 2) some serve for drawing conclusion, e.g., “故 (so/therefore)”. In addition, “若” (if) and “而” (if) are used to 3) signal proposing the hypothesis.

5.6 Summary of comparison between original chapters and compiled chapters

Hypothesis ONE-a: Compiled chapters will typically have higher normalised frequencies, and original chapters have lower normalised frequencies.

Table 5-5 Comparison of the Total of the normalised frequencies of DM use in original chapters and compiled chapters

Types of Chapters	Total (R-f)	Wordcount	Total (N-f)
Original Chapters	184	6219	2,959
Compiled Chapters	2,506	97,473	2,571

The corpus study has shown that this is, surprisingly, not true. As shown in the Table 5-5, which showcases the comparison of the data differences of the normalised frequencies of Classical Chinese DMs between the original and compile chapters in ST. By observing the total frequency of the original chapters, we can see that there is a slight difference between the two groups of chapters (2,959 vs. 2,571), with a higher overall frequency for original chapters. The online Phi Coefficient Calculator has been used to calculate the phi coefficient (ϕ) as the effect size measure, which quantifies the extent to which the two types of chapters differ in the overall frequency of the DMs that they include. The result can be seen in the screenshot.

As mentioned in Chapter 4 Research Methodology, the phi coefficient (ϕ) is an effect size measure which generally serves the same purpose as a Log-likelihood test (i.e., testing whether the observed difference in proportions is statistically significant). In this study, phi is used without a Log-likelihood (or Chi-squared) test since a statistical test is not needed. A statistical test is used to generalise the findings from the sampled data to a larger population

that the data are drawn from. In the case of this present research, it investigates all the chapters of *Su Wen*, therefore, the effect size test rather than a chi-squared test is used here. Effect sizes can be used independently though they are sometimes provided together with statistical tests.

Figure 5-5 Screenshot of online Phi Coefficient Calculator

<https://www.statology.org/phi-coefficient-calculator/>

Phi Coefficient Calculator

A **Phi Coefficient** is a measure of the association between two binary variables.

To calculate the Phi Coefficient for a 2×2 table of two random variables, simply fill in the cells of the table below and then click "Calculate."

	Group 1	Group 2
Category 1	184	2506
Category 2	6219	9747

CALCULATE

Phi Coefficient (Φ): **0.005562**

The value of the phi coefficient will fall between -1 (indicating a perfectly negative relationship between the two variables) and 1 (indicating a perfectly positive relationship between the two variables) with 0 (indicating no association between the two types of chapters) in the middle (Statology, 2020).

If there is a strong association between the type of chapters (original vs. compiled) and the frequency of occurrence of DMs, it means that there is a systematic relationship between the two, which the proportion of DMs can be predicted to some degree based on the type of chapters.

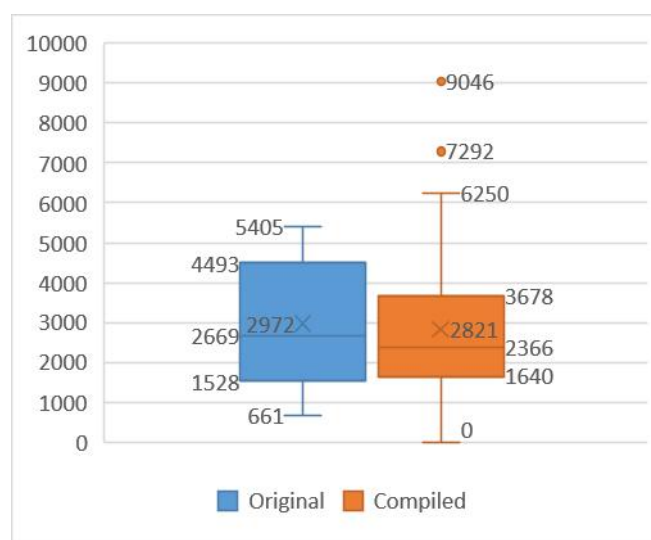
However, in this case, the Phi coefficient (ϕ) is 0.005562, which is negligibly small and can occur due to random variation in the data. Therefore, it should be interpreted as null results. In other words, there is no association between the two kinds of chapters in terms of the frequency of DM use at the statistical level.

Nevertheless, this does not mean that there are not observable differences in terms of the way in which DMs are used in terms of data distribution, types, forms, and functions, as will be shown below.

Hypothesis ONE-b: This corpus-based study will help us to test this classification of original and compiled chapters.

By looking at Figure 5-6, the boxplot confirms the distinction between original and compiled chapters. Apart from the slight difference in the median between the two groups of chapters (2,669 vs. 2,366), with a higher the median for original chapters, the box plot reveals some further differences between original and compiled chapters, which cannot be revealed by the effect size test.

Figure 5-6 Comparison of the frequencies of DM use in original chapters and compiled chapters



Firstly, the box for the original chapters is much bigger than the one for compiled chapters. This indicates that the frequencies of the middle 50% (IQR) of original chapters are more dispersed, more varied, than the middle 50% of the compiled chapters. Secondly, two potential outliers can be observed for the compiled chapters (9,046 and 7,292), suggesting that compiled chapters exhibit more extreme linguistic behaviour.

Overall, based on the discussion of the boxplot, it can be argued that original chapters use, on average, more DMs and use them more consistently across chapters, and that DMs are used much more frequently in 25% (indicated by the upper whisker) of the compiled chapters, presumably due to numerous compilations in the long history of *Su Wen*. Quantitative results from this corpus study therefore have helped reveal differences in the classification of original and compiled chapters.

Hypothesis TWO: Compiled chapters outweigh original chapters in the use of inferential and parallel DMs (and possibly more elaborative DMs), particularly in the numbers of DM cases of varieties, sub-functions and positions in the sentences.

The data show that the answer to this hypothesis is not straightforward. There are actually fewer DMs used in the compiled chapters, as a comparison of the means for each type of DM shows.

The results can be seen in Table 5-6: “O” and “C” stand for “original chapters” and “compiled chapters” respectively. And the symbols “>”, “=”, and “<” respectively refer to “more than”, “equal to” and “less than”.

Table 5-6 Comparison of the normalised frequencies between original and compiled chapters in ST

Items	Total	MRPL	MRCT	MREL	MRIR
Total*	O>C	O>C	O>C	O>C	O>C
Mean	O>C	O>C	O>C	O>C	O<C
Min	O>C	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>
Max	O<C	O<C	O<C	O>C	O<C

As such, it is contradictory to the hypothesis that there would be more DMs in compiled chapters than those in original ones due to the many well-documented revisions, compilations, and even commentaries on commentaries in compiled chapters. However, the numbers of cases of DM varieties are higher for each individual type in the compiled chapters: parallel (9 vs. 19), contrastive (3 vs. 12), elaborative (1 vs. 5), inferential (9 vs. 22) and overall (22 vs.

58). This shows a much greater variety of individual DM cases in the compiled chapters, which could be attributable to the larger sample size of the compiled chapters.

Furthermore, the analysis of the sub-functions for each individual type has also found a greater variety of sub-functions in the compiled chapters: parallel (3 vs. 3), contrastive (1 vs. 3), elaborative (1 vs. 2), inferential (3 vs. 3) and overall (8 vs. 11) , which could also be attributable to the larger sample size of the compiled chapters.

Lastly, the analysis of the positions of DMs shows the freedom of position mobility in the compiled chapters than the original chapters: As for parallel DMs, they mostly appear in sentence-medial, inter-sentence, sentence-initial of original chapters, while they are mostly placed in sentence-medial, inter-sentence, and sentence-initial of compiled chapters. As for contrastive DMs, they are mostly in sentence-medial, inter-sentence of original chapters, while they are mostly placed in sentence-medial, inter-sentence, and sentence-initial of compiled chapters. As for elaborative DMs, they are often in sentence-medial of original chapters, while they are mostly in inter-sentence, sentence-medial, and sentence-initial. As for inferential DMs, they are mostly in sentence-medial, inter-sentence, and sentence-initial of original chapters, while they are mostly in inter-sentence, sentence-medial, and sentence-initial of compiled chapters.

So, this can answer the question as to whether the overall use of DMs in inferential and parallel categories has not been influenced by the compilations in history. By looking at the min, mean, and max, it is found that, contrary to the Hypothesis Two, the values of all the 4

categories and the total of the compiled chapters do not outweigh those of the original chapters as shown in Table 5-6, which suggests that the Chinese DM use in the compiled chapters has not been considerably affected by the compilation of *Su Wen* in the history. However, compiled chapters outweigh original chapters in terms of 1) the numbers of cases of DM varieties; 2) sub-functions for each individual type of DMs; and 3) positions of DMs in the sentences, which could be attributable to the larger sample size of the compiled chapters.

Hypothesis THREE: Those ‘additional’ DMs not appearing in the search list but found in the ST appear only in the compiled chapters.

The hypothesis has been shown not to be true. As has been seen in Sections 5.2-5.4, except for the category of additional elaborative markers, which are only found in the compiled chapters, all the other three categories of additional DMs have been found in both types of chapters. Table 5-7 shows the data.

Table 5-7 Numbers of cases of additional DMs found in original and compiled chapters

Categories	Original	Compiled
MRPL	3	7
MRCT	1	5
MREL	0	3
MRIR	1	7

However, there are more additional DMs in the compiled chapters. It had been assumed that the presence of ‘additional’ DMs indicates either the possibility that they result from revision or compilation by physicians in later dynasties or that they have simply been overlooked by Classical Chinese grammar books, as the lists provided include examples and are never

considered to be comprehensive. The evidence that has been found is insufficient to prove that the additional DMs are only the result of compilation so it may be that some items have not been included in the grammar books.

Hypothesis FOUR: Those ‘additional’ disyllabic markers appear only in the compiled chapters.

As mentioned in Section 5.1, some scholars like Norman (1988), Packard (2000), La Polla (2003) and Sun (2006) hold the view that, although some disyllabic markers existed earlier, most were introduced in the last two millennia or so when new words were coined. Therefore, it was expected that most of the disyllabic markers and particularly the additional ones would be in the compiled chapters.

By looking at the overall numbers of individual cases of disyllabic markers, it shows that except for the contrastive and the elaborative ones, the other two categories appear in both types of chapters, and that there are more found in the compiled chapters: parallel (2 vs. 7), contrastive (0 vs. 4), elaborative (0 vs. 1), inferential (3 vs. 7) and overall (5 vs. 19). Among these disyllabic markers, the ‘additional’ ones mainly appear in the compiled chapters: parallel (1 vs. 3), contrastive (0 vs. 3), elaborative (0 vs. 1), inferential (0 vs. 4) and overall (1 vs. 11).

It is contradictory to the hypothesis that those ‘additional’ disyllabic markers appear only in the compiled chapters.

Conclusion

The above-mentioned analysis of the features of DM use in the original chapters and compiled chapters in the ST can answer the first research question as to how the DMs are used in the ST. At the statistical level, it suggests the slight difference of DM use between the original chapters and compiled chapters in the ST. However, the boxplots for comparison of the overall frequencies of DM use and for each individual categories in original chapters and compiled chapters show some differences between the two, which could be considered as traces of the compilation processes they have undergone through the years. In addition, compiled chapters outweigh original chapters in terms of three aspects: 1) the numbers of cases of DM varieties; 2) sub-functions for each individual type of DMs; and 3) positions of DMs in the sentences, which might result from the larger sample size of the compiled chapters.

It also implies that there should also be some corresponding differences in the English translation of the DM use between the original chapters and compiled chapters in the TT1 and TT2; And based on Krzeszowski's (1990) view of "statistical equivalence", the use of the English DMs in TT1 and TT2 should be statistically the same or similar to that of the ST if the translators attempt to achieve the same or similar communicative effect on the intended TL readers. Therefore, the next two chapters will involve the analysis of the English DMs in the TTs.

CHAPTER SIX: DATA ANALYSIS OF ENGLISH DMS IN TT1 AND COMPARISON WITH ST

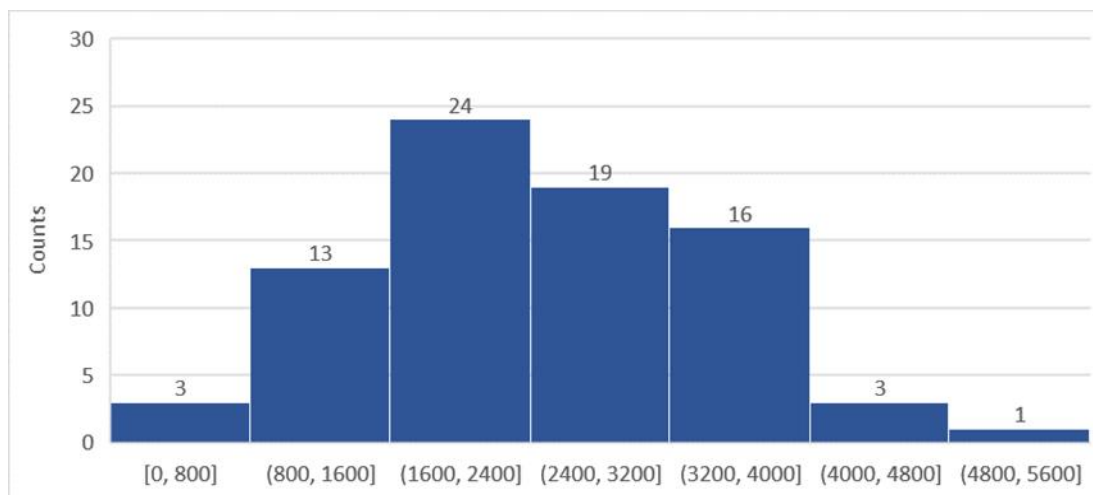
This chapter attempts to answer the second research question, that is, to what extent the DM use in TT1 compares with that in the ST and how similarities or differences can be explained. It aims to do so by conducting an empirical analysis of the English DMs in TT1 translated by Li (2005) and compare them with the Chinese DMs in ST to see whether the Chinese DMs have been *adequately* transferred into English in TT1 (House, 2015). It involves a detailed comparison of the DM use of the four categories between original chapters and compiled chapters in TT1 and ST, with a summary at the end. By comparing DM use in ST and TT1, it is also possible to identify the features of Li's (2005) self-identified overt translation, "preserving the original style, thinking and ideas of this great book" (Li, 2005, p.28) and "translat[ing] the ancient text as what the ancients might read" (ibid., p.27) where the ST appears to be given priority over the TL readers. Therefore, the overall argument of this chapter is that TT1 maps very closely to the ST, when it comes to the use of the message relationship DMs.

6.1 Overview of English DMs found in TT1

The corpus analysis of the ST reveals that 59 different English DMs are used in TT1 totaling 3,326 occurrences (N-f=2,393). Among the normalised frequencies, the category of MRIR has 27 DMs accounting for 54.32% of the total, which is followed by MRPL with 17 DMs with a proportion of 31.52%, while the other two categories have less than 10 DMs,

particularly in MREL covering only 1.17%. The original chapters have slightly higher DM normalized frequencies than compiled chapters (2,639 vs. 2,379).

Figure 6-1 Histogram of the normalised frequencies of English DM use in TT1



PRELIMINARY FINDING ONE: This unimodal bell-curve shape in the histogram of Figure 6-1 of TT1 shows that most normalised frequencies of DMs fall into the bins from the third to the fifth. It suggests that in TT1, the DMs are almost evenly used across the chapters. Comparing the outliers, higher frequencies, and positive right-skewedness in Figure 5-1 of ST, we can infer that the translator might have employed some explicitation or omission in the English translation of DMs.

HYPOTHESIS ONE: As an overt and faithful translation to keep “preserving the original style, thinking and ideas of this great book” (Li, 2005, p.28) and “translat[ing] the ancient text as what the ancients might read” (ibid., p.27), there should also NOT be any significant difference between original and compiled chapters in TT1, since the analysis of the ST reveals

that DMs are not used significantly differently between original and compiled chapters in the ST.

Table 6-1 displays the key statistics pertinent to the four categories of DMs and their normalised frequencies in TT1, including the mean (the average normalised values of DMs use of all the chapters in each category), min and max of the DM use in the four categories. Detailed statistics for each chapter are presented in Appendix 4.

Table 6-1 Normalised frequencies of English DMs of the four categories in TT1

No.	Items	MRPL	MRCT	MREL	MRIR
1	Total*	755	311	28	1,299
2	Mean	691	355	34	1,361
3	Min	0	0	0	0
4	Max	2,315	1,703	221	3,554

PRELIMINARY FINDING TWO: Regarding the distribution of DMs in the four categories of TT1, Table 6-1 shows that the categories of MRIR and MRPL have most of the data, accounting for 54.28% and 31.55% respectively, presenting a similar distribution as in the ST. Despite the absent use of DMs in some chapters of the four categories, the max in each of the four categories indicates the extensive use of DMs in some chapters. However, by comparing each category of DMs in TT1 with ST, the data show higher frequencies in the categories of MRCT and MREL, but lower frequencies in MRIR and MRPL in TT1.

HYPOTHESIS TWO: In some compiled chapters with higher frequencies in the categories of MRIR and MRPL, there might be more explicitation of DMs in the translation due to the

shifts from “parataxis” in Chinese to “hypotaxis” in English (Halliday & Matthiessen, 2014, p.452).

PRELIMINARY FINDING THREE: The English DM use in TT1 presents various word forms and characteristics, as shown in Table 6-2: 1) The word forms of the English DMs in TT1 include single markers, phrasal markers, discourse parentheticals, double markers and pair DMs; 2) The English DMs in the four categories of TT1 demonstrate similar distribution with what has been found in the Chinese ST: with the most frequencies in MRIR and MRPL, and the least in MRCT and MREL; 3) The “multi-functional” English DM “and” co-exists across the four categories, signalling different functions, similar to the “multi-functional” Chinese DM “而” (and /while /if).

HYPOTHESIS THREE: The English DM use in original and compiled chapters of TT1 would present more various word forms and characteristics, different from the Chinese one in the ST due to the linguistic disparities between English and Chinese.

English texts are, as Sun (2006, p.8) notes, “alphabetical and bear a direct relationship to the speech sounds in the given language” while “Chinese texts adopt a logographic system with characters that are partially morphosyllabic” (ibid., p.8). Therefore, the English DM use in TT1 presents varieties of word forms, different from the Chinese one in the ST. A rough look at Table 6-1 can reveal some prominent characteristics of the English DMs in TT1.

Firstly, in terms of forms, whereas Chinese DMs are either monosyllabic, disyllabic or pair markers, English DMs are either single markers, phrasal markers, discourse parentheticals, double markers or pair DMs:

- The majority of the English DMs are single markers [e.g., “and” (701), “but” (140)].
- A small number of the English DMs are phrasal markers, comprising either two words [e.g., “for example” (10)], three words [e.g., “in this case” (32)], or four words [e.g., “that is to say” (4)].
- Some of them are discourse parentheticals, a pattern consisting of several words in sentence-initial and signalling only the elaborative or inferential message relationship between two adjacent sentences [e.g., “this is the case” (1)]. Different scholars use different names for discourse parentheticals: “parentheticals” (Brinton, 1996), “bundles” (Aijmer et al., 2006) or “commentary clauses” (Beeching, 2016), or “pragmatic expressions or bundles” (Sabet & Zhang, 2018).
- The term “double marker”, not defined in any literature related to DMs, has been used in this research to refer to any case where two independent markers are combined as one, with one serving a more minor function than the other. E.g., “and therefore” (14). In fact, the first marker “and” serves as a device loosely linking the previous sentence and the second marker “therefore”; while the second marker “therefore” as the main marker signals drawing a conclusion between the two sentences. The focus of the DM lies in the latter with the former fulfilling a weak connection, so the combination of the two helps to create coherence and make an inference between the prior clause and the successive one. The analysis of this type of special marker in the English translation of *Su Wen* will be presented in detail in the conclusion.

Table 6-2 Raw and normalised frequencies of DMs of the four categories in TT1

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	974	701	but	195	140	for example	14	10	if	921	663
2	also	45	32	while	152	109	And	12	9	that is/was why	242	174
3	besides	8	6	however	39	28	that is to say	6	4	so	186	134
4	or	7	5	though	29	21	this is the case	2	1	since	100	72
5	in addition	2	1	otherwise	8	6	Namely	2	1	because	64	46
6	firstly	2	1	although	4	3	Similarly	2	1	when	54	39
7	while	2	1	on the contrary	3	2	to be specific	1	1	in this case	44	32
8	eighthly	1	1	and	2	1				thus	39	28
9	fifthly	1	1							under such a condition	28	20
10	first	1	1							as a result	23	17
11	fourthly	1	1							and therefore	20	14
12	ninthly	1	1							in this way	15	11
13	secondly	1	1							consequently	11	8
14	seventhly	1	1							hence	8	6
15	sixthly	1	1							if... then	8	6
16	thirdly	1	1							as	7	5
17	at the same time	1	1							therefore	7	5

18									lest	6	4
19									accordingly	5	4
20									then	4	3
21									Once	2	1
22									for this reason	2	1
23									this is because (that)	3	2
24									in such a way	2	1
25									that is the reason why	2	1
26									and	1	1
27									in both cases	1	1
Total	1050	755		432	311		39	28		1805	1299

- The last type is the pair marker “if... then” (6) in the inferential category signalling inferences under certain conditions.

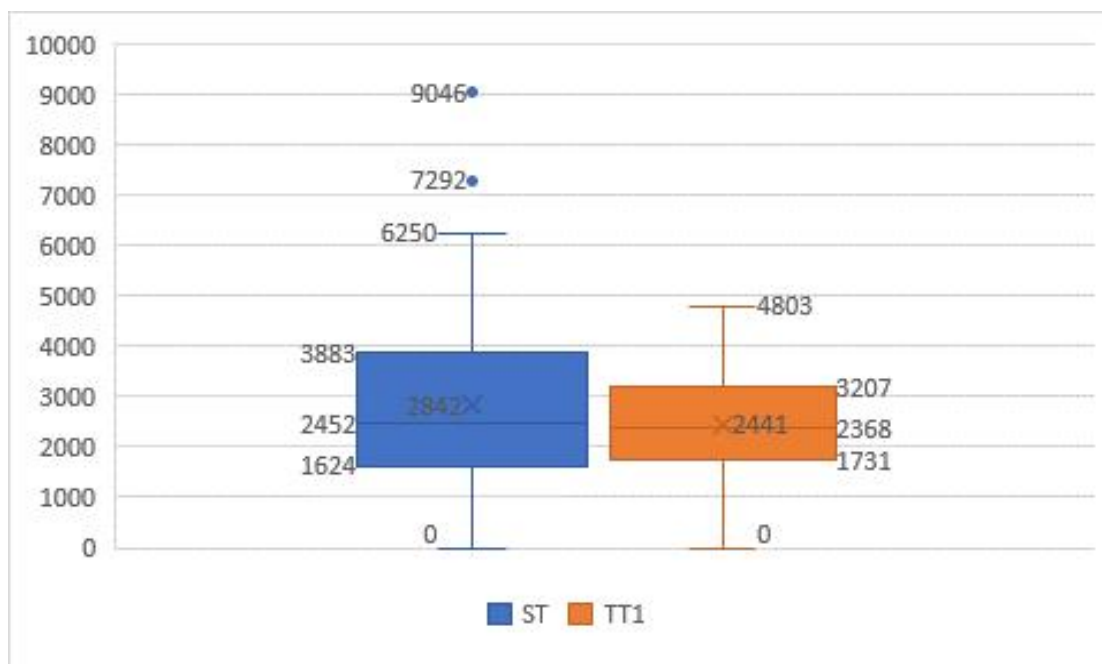
Secondly, in terms of functions, the English DMs in the four categories of TT1 demonstrate the following characteristics. 1) There are 17 DMs in the category of MRPL signifying addition [e.g., “and” (701) and “also” (32)], alternation [e.g., “or” (5)], and time sequence [e.g., “firstly” (1), “ninthly” (1)]. The time sequence DMs go successively from “firstly” to “ninthly”, suggesting the sequence of successive TCM needling in *Su Wen* 54. 2) The greatest number of English DMs fall into the category of MRIR, used to signal making inferences [e.g., “so” (134)], drawing a conclusion [e.g., “as a result” (17)] or hypothesizing [e.g., “if” (663)]. 3) There are fewer English DMs in the categories of MRCT and MREL, including some frequently used DMs signalling contrast [e.g., “but” (140)] or elaboration [e.g., “for example” (10)].

Thirdly, the “multi-functional” (Furkó, 2020) English DM “and” co-exists across the four categories, fulfilling different functions. In other words, the same English DM “and” signals four functions of parallelism [“and” (701)], contrast [“and” (1)], elaboration [“and” (1)], and inferences [“and” (1)] in different contexts, which results in some difficulties in the identification and semi-automatic batch annotation of English DMs for the researcher. The detailed reasons and specific premises concerning the use of the multi-functional DM “and” across the four categories will be discussed in later sections.

6.2 Overview of the comparison between TT1 and ST

By comparison, the DM use in both the TT1 and the ST exhibit similar features as shown in Figure 6-2. Firstly, the two boxes standing for the ST (on the left) and TT1 (on the right) lie in the middle of the boxplot with similar medians (2,452 vs. 2,368). This suggests that the data distribution of DM use in the ST and TT1 is close to a symmetrical presentation. Secondly, in terms of the 50% of the values (IQR), TT1 has all the values included in ST. This suggests that in several chapters the normalised frequencies for the DM use in both ST and TT1 range from 1,731 to 3,207, which implies similarity in the data distribution between ST and TT1. Finally, the min “0” indicates that there are no DMs in some chapters in both the ST and TT1. The only exception to this pattern of similarity is the differences in the outliers (9,046; 7,292) and maxima (6,250 vs. 4,803).

Figure 6-2 Comparison of DM use between TT1 and ST



Therefore, two disparities are quite clear: Firstly, ST has a higher max than TT1 and there are two outliers in ST. Secondly, TT1 has a smaller box and shorter whiskers than that of the ST.

Taken together, we can infer that the data for the DM use in TT1 have been “leveled out” (Baker, 1996; Redelinghuys, 2016) in the English translation, that is, the translator might have adopted some translation techniques like amplification or omission, which collectively have resulted in a complex pattern of either increase or reduction of the normalised frequencies. While in some areas an increase might be observed, this is levelled out by a decrease in others, which results in the current trend rather a ‘balanced’ picture. These initial observations suggest that the English translation of DMs in TT1 endeavors indeed to be faithful to the ST as confirmed by the translator. This is an interesting observation, since DMs are linguistic features that are not typically discussed as evidence of a translation approach. Yet, there is evidence to suggest that they play a role in how a text is approached by the translator.

In the rest of this chapter, a detailed investigation of the use of the 4 categories of English DMs, will be conducted reporting the normalised statistics of the two major types of chapters: original chapters and compiled. Then the features of DM use of each category will be analysed through comparison and exemplification. Each section is organised in a similar way, focusing primarily on the comparison of DM use between original and compiled chapters in TT1 and ST. It will first report on the frequencies, forms/types, and functions of the English DMs and then compare these to those found in the ST in the previous Chapter. For ease of reference, the distribution of English DMs in original and compiled chapters is presented collectively in Tables 6-3 and 6-4 below.

Table 6-3 English DMs and their normalised frequencies in the 11 original chapters of TT1

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	52	686	but	31	409	for example	1	13	if	35	462
2	also	2	26	however	6	79				so	21	277
3	besides	2	26	though	1	13				that is/was why	17	224
4	or	1	13	while	1	13				when	10	132
5										because	5	66
6										since	4	53
7										then	3	40
8										as a result	2	26
9										accordingly	1	13
10										in this case	1	13
11										consequently	1	13
12										thus	1	13
13										in this way	1	13
14										this is because(that)	1	13
	Sum	57	752		39	515		1	13		103	1359

Table 6-4 English DMs and their normalised statistics in compiled chapters of TT1

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	922	702	but	164	125	for example	13	10	if	886	674
2	also	43	33	while	151	115	and	12	9	that is/was why	225	171
3	besides	6	5	however	33	25	that is to say	6	5	so	165	126
4	or	6	5	though	28	21	namely	2	2	since	96	73
5	in addition	2	2	otherwise	8	6	similarly	2	2	because	59	45
6	firstly	2	2	although	4	3	the same is the case	1	1	when	44	33
7	while	2	2	on the contrary	3	2	this is the case	1	1	in this case	43	33
8	first	1	1	and	2	2	to be specific	1	1	thus	38	29
9	fourthly	1	1							under such a condition	28	21
10	ninthly	1	1							as a result	21	16
11	secondly	1	1							and therefore	20	15
12	seventhly	1	1							in this way	14	11
13	sixthly	1	1							consequently	10	8
14	thirdly	1	1							hence	8	6
15	at the same time	1	1							if...then	8	6
16										as	7	5
17										therefore	7	5

18								lest	6	5
19								accordingly	4	3
20								once	2	2
21								for this reason	2	2
22								this is because that	2	2
23								in such a way	2	2
24								this is the reason why	2	2
25								then	1	1
26								and	1	1
27								in both cases	1	1
Total	993	756		393	299		38	29	1702	1295

6.3 Parallel DM use between TT1 and ST

6.3.1 English parallel DM use in original chapters in TT1 and ST

As seen in the column of MRPL of Table 6-3, out of the 23 different English DMs (N=2,639), only four constitute parallel DMs, accounting for 28.5% of the normalised frequencies in original chapters. In terms of their forms, all these 4 different DMs are single markers. In terms of functions of signalling message relations, they can be categorized into two kinds: addition (e.g., “and”, “besides”), and alternation (e.g., “or”).

To signify different degree of normalised frequencies in a certain category, Furkó's (2020) terms “prototypical” (ibid., p.52), “less prototypical” (ibid., p.146) and “atypical” (ibid., p.52) are borrowed as the descriptive labels for the classification of DMs: “the most frequently used”, “the less frequently used”, and “the seldom used”. As fluid terms, the “prototypical” DMs refer to those DMs in the top of the list, while “atypical” DMs stand for those with a quite low normalised frequency at the end of the list; and the “less prototypical” DMs fall between them.

As can be seen from Table 6-3, the prototypical parallel DM in TT1 is “and” (686), while the remaining parallel DMs are much less prototypical. Consequently, the main function that parallel DMs serve in TT1 is that of connecting two clauses with a close relationship, as illustrated in Example 1, while the sub-functions of 1) addition, which is supplementing another proposition with a loose relationship between that proposition and the previous one (Example 2) and that of 2) alteration (Example 3) are rarely observed.

Please note that the examples in this chapter contain many round brackets, which is one of the prominent features in Li's translation, and they are used for two different purposes. Firstly, Li has used them to enclose a literal translation of lexical items directly after its Chinese *pinyin* transliteration, such as "Xie" (Evil). Secondly, some round brackets "()" are converted from square brackets "[]" after POS tagging so they might be confused with the other existing round brackets. Li (2005, p.33) explains that "[i]n order to make the meaning clear or to make the related sentences sound logical, sometimes extra words are added" and that those added words "are put into square bracket "[]" to make it clear what is translation of the original text and what is the explanation made by the translator". These square brackets have been converted into round brackets during the process of POS tagging by CLAWS7 which is one of the limits of the software. Of course, there are also some amplified elements which are not placed in the round brackets. They can be identified by the comparison of TT1 with the ST.

The use of round brackets in the translation for adding cohesive devices results in explicitation. Explicitation in translation refers to "the process of introducing into the target language which is present only implicitly in the source language, but which can be derived from the context or the situation" (Vinay & Darbelnet, 1958, p.8; Klaudy, 2004, p.80).

Example 1

Invasion of Xie (Evil) (into the body) causes fever **and**_CC [MRPL] high fever (makes the patients) dislike fire. (*Su Wen* 30)

In Example 1, the use of parallel DM “and” can help to create coherence between two messages “invasion of evil causing fever” and “the patients’ dislike of fire due to high fever” as it indicates that the fever results from invasion of Xie (Evil) into the body, thus leading to the patients’ dislike of fire.

Example 2

(Rice) absorbs the harmonic (Qi) from the heavens and the earth and grows in the desirable (places) (in terms of) the height (of land). That is why it can be perfect. (**Besides**_RR [MRPL],) it is gathered at the right time, so (its straw) is hard (in texture). (*Su Wen* 14)

Comparatively, the relationship between the third and the first two sentences in Example 2 is not so close as that in Example 1, but after the illustration of the perfect nature of rice, the use of the DM “Besides” with an upper case to initiate another proposition about the hard texture of straw can help to build a parallel relationship between the two or more adjacent sentences. In this case, it can help the TL readers infer their inner relationship, thus minimizing the cognitive workload of the TL readers. The translator clearly marks the addition of this DM by using brackets.

Example 3

Why (there is) no tear **or**_CC [MRPL](there is) tear but no snivel(when someone is) crying?
(*Su Wen* 81)

A little different from “and” in Example 1 and “Besides” in Example 2, the parallel DM “or” is an indication of alternation of the symptoms of no tear or with tear but no snivel while

crying, signalling parallelism between the two adjacent clauses connected by the DM “or” in the conversation between Huang Di and his ministerial physician Leigong.

In sum, in the category of parallel markers, apart from the frequent use of the prototypical “and”, there are the other less prototypical and atypical DMs in the original chapters of TT1.

By comparing Table 5-3 and Table 6-3 regarding the use of parallel DMs in original chapters in ST and TT1, the following differences can be observed: 1) There are more types of Chinese parallel DMs in the ST than English ones in TT1 (9 vs. 4), and it can be assumed that most of the Chinese parallel DMs have been rendered as the prototypical English parallel DM “and”, something that will be further explored in Chapter 8; 2) There are lower normalised frequencies for parallel DMs in TT1 than in ST (752 vs. 836), which implies that some of the multi-functional Chinese DMs might either have been shifted to another category of DM, or omitted in TT1, e.g., the instances of “或” (or) in ST have been considerably reduced in TT1 (96 vs. 13), indicating that it has been omitted or replaced by the other linguistic means. The details about the specific translation techniques will be discussed in Chapter 8.

The following example helps to illustrate how Chinese parallel DMs might be treated by Li (2005) during translation.

Example 4

ST: 或/c [MRPL] 喘/v 而/c 死/v 者/k , /w 或/c [MRPL] 喘/v 而/c 生/v 者/k , /w 何/r 也
/y ? /w (*Su Wen* 30)

BT: or pant and die, or pant and live, why?

TT1: (The reverse flow of Yangming Channel) sometimes causes panting and leads to death, **but**_CCB [MRCT] sometimes just causes panting, but does not lead to death. What is the reason?

In Example 4, there are 2 cases of “或” (or) signalling alternation or exactly two possibilities of “panting and death” and “panting but survival” in ST, but in TT1 the two DMs “或” have not been directly transferred, and in the inter-sentence position there is a contrastive DM “but”. This suggests that the first “或” has been omitted by the rendition as “sometimes”, while the second has been shifted from parallelism in ST to contrast in TT1 as it has been rendered as “but” due to “specification” (Crible et al., 2019; Furkó, 2020, p.144-145). Further discussion of the implications of this approach will be discussed in Chapter 8.

6.3.2 Parallel DM use in compiled chapters of TT1 and ST

Out of 56 different English DMs (2,379) in compiled chapters of TT1, parallel DMs, account for 31.78% of DMs in compiled chapters.

In terms of the forms of the parallel DMs in compiled chapters, they include single markers (e.g., “and”, “also”) and phrasal markers (e.g., “in addition”, “at the same time”).

In terms of the functions of signalling message relations, they can be categorized into three kinds: addition (e.g., “and”, “besides”), alternation (e.g., “or”) and time sequence by a small number of ordinals (e.g., “firstly”, “secondly”).

In terms of the frequencies of DMs, parallel DMs in compiled chapters of TT1 can be grouped into three types: prototypical, less prototypical and atypical. For brevity, some distinctive parallel DMs will be discussed below.

1) Prototypical DM “and”

By far the prototypical parallel DM in compiled chapters is the lower-case “and” and upper-case “And”. Lower-case “and” fulfils the basic function of signalling parallelism between two adjacent clauses with a close relationship. The first case is the same as in Example 1 in the original chapters, so no example of this kind will be given below. In addition, there are also instances where “and” might be used to signal parallelism between two adjacent clauses with a less close relationship, as can be seen in Example 5.

Example 5

Huang Di said, "Qi is either more or less; disease is either serious or light; treatment is either drastic or mild; **and**_CC [MRPL] prescription (formula) is either large or small. I 'd like to know the criteria." (*Su Wen* 74)

In Example 5, the listed four characteristics of qi are coordinated with the use of semicolons as the connectors of the first three sentences, and the parallel DM “and” is used to less closely link the fourth sentence with the first three. Because of the use of the semicolon, “and” can be omitted without affecting the meaning of the proposition.

As for the upper-case “And”, it is important to note the “insensitivity” of the sentence-initial DMs “and”, as Karlson (2010, p.8) calls it. Furkó (2020, p.223) makes a distinction between

two kinds of DMs: 1) the “proper” DMs such as “in addition” to initialize another sentence; and 2) “improper”, “insensitive” DMs such as sentence-initial “And”. For Furkó (2020), the former is acceptable; but when commenting on the sentence-initial “And” in the latter case, which is not expected to be very common in English, he quotes Karlson’s (2010, p.1) comments to support the argument that the use of “And” is only “translation effects” that “get in the way of the argument”. In other words, the use of the sentence-initial “And” is therefore considered the result of the translation process.

Example 6

The dominating (Qi) and the retaliating (Qi) always exist. **And**_CC [MRPL] calamities frequently occur. (*Su Wen* 71)

The sentence-initial parallel DM “And” in Example 6 links the two adjacent sentences. However, the “insensitivity” results from “And” at the sentence-initial position, which is not a default position for it. In this case, if “And” is replaced by another DM such as “in addition” which is more acceptable at the sentence-initial position, there will be a closer relation of connection.

2) Less prototypical DMs

Less prototypical parallel DMs include “also” (33), “besides” (5), and “or” (5).

The column of MRPL of Table 6-4 indicates that the less prototypical DMs in the compiled chapters of TT1 include “also” (33), “besides” (5), “or” (5). Compared with the prototypical ‘and’ (rather than the sentence-initial “And”), the less prototypical “also” and “besides”

present a sense of addition or supplement with a less direct relation between the two successive sentences. While the less prototypical “or” signifies alternation ranging from two or more reasons or possibilities. Due to space limitations, only “also” and “or” are discussed here.

Example 7

Juxu is located in the depression when the foot is lifted. **And**_CC [MRPL] Xialian is **also**_RR [MRPL] located below the depression (when the foot is lifted). (*Su Wen* 54)

The parallel DM “also” is always used in the sentence-medial position and is occasionally used together with the sentence-initial parallel DM “And”, as seen in Example 7. The two clauses are less closely connected in inter-sentential situation as they are two separate sentences with a full stop between them, but the combination of amplified “And” and “also” can help to signal parallelism between the two locations related to acupoints Juxu and Xialian.

The DM “or” signifies alternation ranging from two or more reasons or possibilities, as seen in Example 8.

Example 8

But people nowadays begin to become old at the age of fifty. Is it due to the changes of environment? **or**_CC [MRPL] the violation of the way (to preserve health)? (*Su Wen* 1)

The DM “or” in Example 8 helps to signal the parallelism of the two successive interrogative questions asked by Huang Di to his ministerial physician Qibo to make a choice of the two

reasons why people nowadays begin to become old at the age of fifty. Different from the “or” in Example 3 of the original chapters linking two adjacent interrogative clauses, the DM “or” of this example in compiled chapters connects two separate interrogative sentences.

3) Atypical parallel DMs

The atypical parallel DMs mainly include a small number of ordinals.

In the compiled chapters of TT1, it is interesting to note that a small number of ordinals ranging from “firstly” to “ninthly” serve as parallel DMs, something that has not been observed in original chapters, all of which come from the same chapter.

Example 9

The Nine Needles correspond) **firstly**_RR [MRPL] to the heavens, **secondly**_RR [MRPL] to the earth, **thirdly**_RR [MRPL] to human beings, **fourthly**_RR [MRPL] to the four seasons, **fifthly**_RR [MRPL] to the five scales, **sixthly**_RR [MRPL] to the six pitches, **seventhly**_RR [MRPL] to the seven stars, **eighthly**_RR [MRPL] to the eight kinds of wind and **ninthly**_RR [MRPL] to the nine geographical divisions. (The Nine Needles) also correspond to the human body. (*Su Wen* 54)

In Example 9, Huang Di has previously enquired about the solution of the Nine Needles and how to deal with diseases and ailments. In sum, according to Qibo, one of Huang Di’s ministerial physicians, acupuncture begins with one and ends with nine, which is the combination of heaven and earth and human body, which partially mirrors the Chinese philosophy and TCM culture. The 9 ordinal DMs are used to link the parallel clauses

signalling time sequence.

In conclusion, there are three main characteristics between TT1 and ST regarding how they use parallel DMs: 1) There are fewer varieties of parallel DMs (15 vs.19) in TT1 compared with ST; 2) the normalised frequencies are lower (756 vs. 776) in TT1 than those in ST; and 3) the prototypical DM “and” appears to be preferred in TT1. All these suggest that some parallel DMs might have been omitted due to “underspecification” (Crible et al. 2019; Furkó, 2020, p.144-145) or shifted to other categories, while some might have been rendered as ‘And’, which, especially when it appears at sentence-initial position, might be related to Li’s (2005) personal stylistic preference as a non-native English scholar.

6.3.3 Comparison of parallel DM use between original chapters and compiled chapters in TT1 and ST

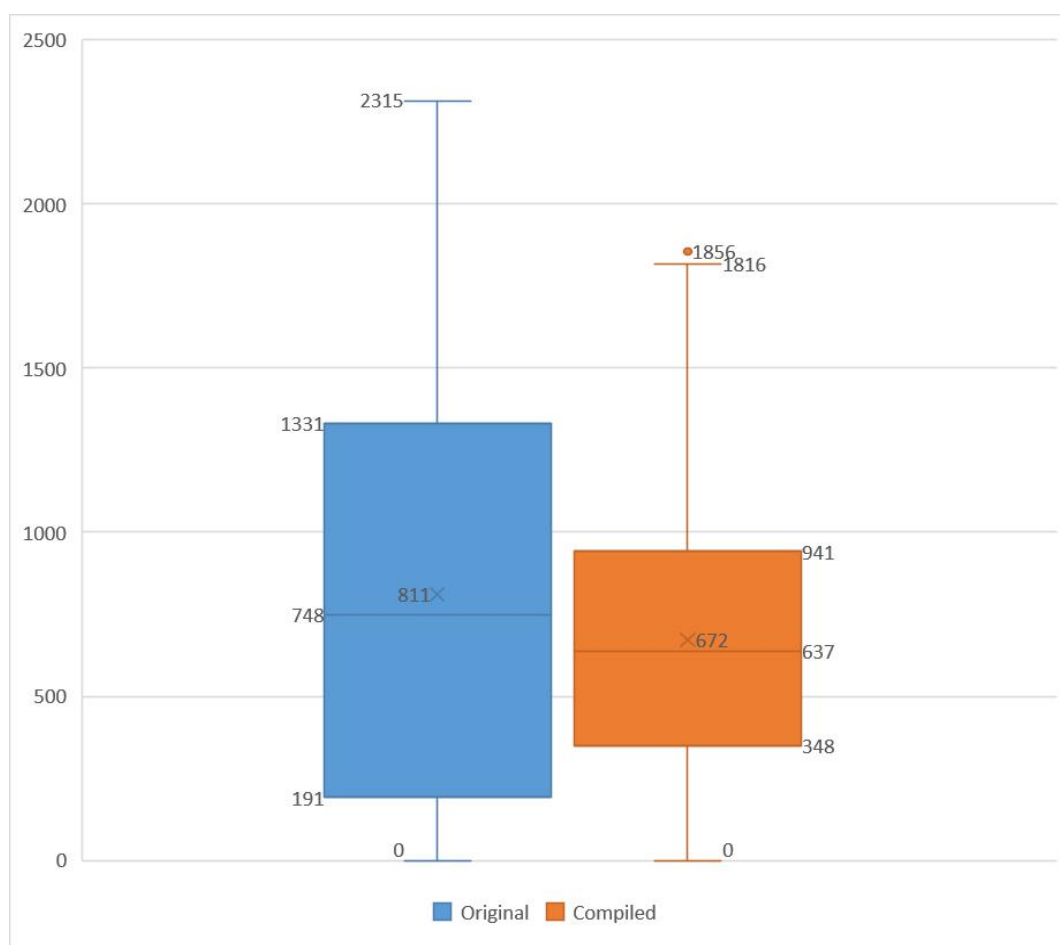
This section conducts a comparison of English parallel DMs between original and compiled chapters in TT1, as well as a comparison of parallel DMs in original and compiled chapters between TT1 and ST.

To compare the English parallel DMs between original chapters and compiled chapters in TT1, the boxplot in Figure 6-3 is used. Apart from the fact that the boxplot of the compiled chapters resembles the one of the original chapters regarding their min values, longer upper compared to lower whiskers and slight right-skewedness, three differences can be observed between them: 1) There are some disparities in the medians (748 vs. 637) and means (811 vs.

672); 2) the original chapters have a longer box; and 3) there is an outlier in the compiled chapters.

From the boxplot, we can observe several characteristics. Firstly, the original chapters have more parallel DMs and more data dispersion than the compiled chapters. Secondly, 50% of the values in the original chapters range from 191 to 1,331 and in the compiled chapters from 348 to 941, with both positioned in the areas of lower normalised frequencies. Thirdly, the outlier in the compiled chapters suggests that the overuse of DMs results from the potential over-specification in one of the chapters. All these indicate some differences in the data distribution between original chapters and compiled chapters. That is, there is a slightly higher use of parallel DMs in most of the original chapters compared with the compiled chapters.

Figure 6-3 Boxplot of the normalised frequencies of English parallel DMs of original and compiled chapters in TT1



However, their forms and frequencies present no big differences between original and compiled chapters in TT1. In terms of their forms, the original chapters contain only single markers, while the compiled chapters have two types: single markers and phrasal markers. In terms of the normalised frequency, they both have three types: prototypical DM “and”, less prototypical DMs like “also” and “besides”, and atypical “or”. Only the compiled chapters have atypical ordinals ranging from “firstly” to “ninthly”, which are however only used very rarely and thus cannot be considered as representative of compiled chapters specifically.

As for the functions of parallel DMs, they can be further categorized into three sub-types: 1) addition: signifying the relation of addition between two successive clauses; 2) alternation: signifying alternation of two acts between the clauses; 3) time sequence: denoting the relation of time or time sequence. The first two are shared by original and compiled chapters of TT1, but the third is unique in compiled chapters of TT1, although, as has already been stated, its use is rare and therefore cannot be considered representative.

The comparison of the boxplots in Figure 5-2 regarding the ST and Figure 6-3 regarding the TT1 reveals three major *similarities*: 1) The shorter and smaller box of the compiled chapters as well as the longer box of the original chapters closer to the bottom line in Figure 6-3 are quite similar to those in Figure 5-2; 2) The boxplot for the more condensed data of the compiled chapters in TT1 can map well with that of the compiled chapters in the ST; 3) The two boxplots in the two figures are both positively right-skewed. All these suggest a faithful and adequate English translation of the Chinese parallel DMs in original and compiled chapters of TT1, which echoes the translator Li's (2005, p.28) self-commentary of "preserv[ing] the original style, thinking and ideas" therefore producing a faithful translation as mentioned earlier in Section 6.1

Meanwhile, some minor *differences* can be observed between the ST and TT1: 1) There are more outliers in Figure 5-2 than Figure 6-3, which means the overuse of DMs in the compiled chapters of ST has been reduced in TT1, presumably due to omission or shifts to other categories in translation, as shown in Example 4 above; 2) In terms of the max and the IQR,

some of the Chinese parallel DMs both in the original and compiled chapters of the ST seem to have been omitted in TT1.

In conclusion, TT1 maps closely to ST in terms of parallel DM use, suggesting the faithful and adequate English translation of the Chinese parallel DMs in original and compiled chapters of TT1. However, some of the Chinese parallel DMs both in the original and compiled chapters of the ST appear to have been omitted in TT1, which might affect the pragmatic effects of the English translation of the Chinese parallel DMs.

6.4 Contrastive DMs use between TT1 and ST

6.4.1 Contrastive DM use in original chapters of TT1 and ST

Contrastive DMs, accounting for 19.51% of the normalised frequencies of DMs in original chapters of TT1, are less frequently used than parallel DMs. The column of MRCT in Table 6-3 shows that, among the 4 different single contrastive DMs (515) in original chapters of TT1, “but” (409) is much more prototypical, followed by “however” (79); “though” (13) and “while” (13) are atypical ones. Their functions can be categorized into 1) adversative and 2) concessional. The first two DMs signal an adversative relation between the messages, but there is a difference between the two: the first one is often used in inter-sentence position to show contrast, while the second one is usually used in sentence-initial position to show contrast and even shift to another topic as shown in Example 11.

Example 11

(Sometimes the fever may be) serious, **but**_CCB [MRCT]it does not lead to death. (**However**_RR [MRCT],) the disease caused by cold attacking both Channels inevitably leads to death. (*Su Wen* 31)

In the case of “However”, it often features in sentence-initial position included in a bracket. As already explained, Li (2005) often uses brackets to mark additions in his translation, an instance of which is the use of “However” in this example. We can infer that the purpose behind this is to explicitly signal the contrastive relation between the adjacent sentences, hoping to facilitate the understanding and minimize the cognitive workload of the TL readers.

Based on the above, we can conclude that: 1) The contrastive relation in the original chapters of TT1 is mostly presented by the DM “but” inter-sentence position and less so by the DM “However” in sentence-initial position, which might be the outcome of the personal preferences of the translator as a non-English native. 2) There are more types of contrastive DMs (4 vs. 3) and higher normalised frequencies (515 vs. 225) in TT1 compared with ST. Some of the implicit contrastive relations in the ST might have been explicit in TT1, which suggests more opportunities for signalling contrast, thus minimizing the cognitive workload of interpreting the message relations for the intended TL readers.

6.4.2 Contrastive DM use in compiled chapters of TT1 and ST

As shown in Table 6-4, there are 8 different contrastive DMs (299) with only two forms: single markers and phrasal markers, accounting for 12.57% of the normalised frequencies in the compiled chapters of TT1, which are less frequently used than parallel DMs. Among them,

the prototypical DMs are “but” (125) and “while” (115), the less prototypical DMs include “however” (25), “though” (21) and “otherwise” (6). In addition, there are 3 atypical DMs “although” (3), “and” (2) and “on the contrary” (2). Their functions can be further grouped into 1) adversative, 2) concessional and 3) conditional relation.

Interestingly, apart from “but” and “while” used in inter-sentence position signalling contrast, almost all the contrastive DMs “However”, “Though” and “Otherwise” are used in sentence-initial position. It is natural that the contrastive DMs “However” and “Otherwise” are used in sentence-initial position to signal contrast or topic shift, but in English grammar for the principle of “end weight”, “it is normal for a longer structure to come at the end of a sentence or clause” (Nelson & Greenbaum, 2016, p.175), so it is seldom the case that the contrastive DM “Though” introducing a long subordinate clause is placed at sentence-initial position, which shows the influence of the Chinese ST on the English translation.

Example 12

(**Though**_RR [MRCT]) Wuse (five colors), Maibian (the changes of pulse), Kuiduo (measurement) and Qiheng (extraordinary) (focus on different things) (they have) one thing in common. (That is the Spirit.) (*Su Wen* 15)

In Example 12, for the balance of sentence structure, the subordinate clause that the contrastive DM “Though” introduces should be placed at the end of the sentence, as it involves several different ancient TCM classics, discussing the Spirit and some essential clinical therapies: Wuse (five colors), Maibian (the changes of pulse), Kuiduo (measurement)

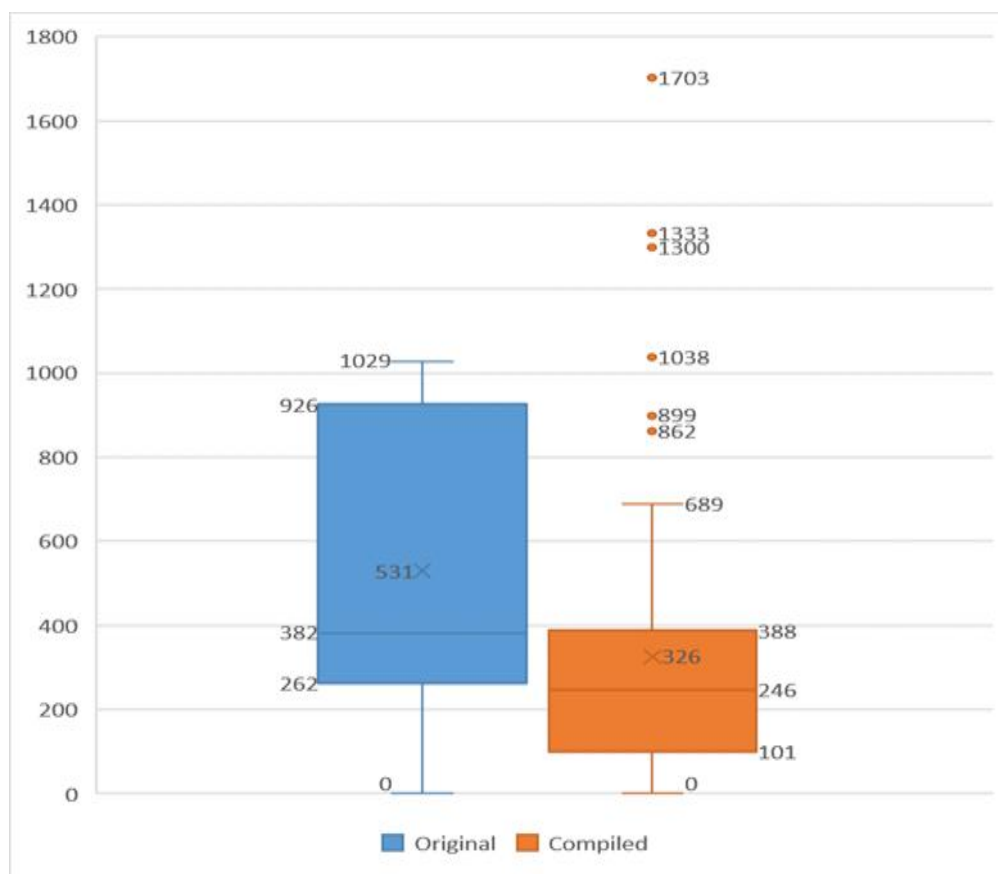
and Qiheng (extraordinary). Furthermore, those 4 technical terms with Chinese *Pinyin* transcription annotated with literal meanings make the subordinate clause so long that it results in the imbalance of the syntactic structure.

In sum, we can find that the compiled chapters of TT1 and ST have the following characteristics: 1) There are less varied contrastive DMs in TT1 than ST (8 vs. 12), and most of the contrastive relations in ST have been expressed by the prototypical DMs “but” (125) and “while” (115), used in the inter-sentence position. This might result from the personal stylistic preferences of the translator as it can be quantified in “the frequency differences between certain common words” and “the consistency of a translator’s style” (Lynch & Vogel, 2018, p.80); 2) There are higher normalised frequencies of the contrastive DMs in TT1 than ST (299 vs. 155), which suggests that some of the implicit contrastive message relations in the ST might have been made explicit in TT1, thus facilitating the understanding for the TL readers.

6.4.3 Comparison of contrastive DM use between original chapters and compiled chapters of TT1 and ST

The boxplot in Figure 6-4 presents the normalised frequencies of English contrastive DMs in the original and compiled chapters in TT1.

Figure 6-4 Boxplot of the normalised frequencies of English contrastive DMs of original and compiled chapters in TT1



Several differences are clearly visible. Firstly, there are some differences in the mean (531 vs. 326) and median (382 vs. 246) of the original and compiled chapters in TT1. In addition, the original chapters have a longer box but a shorter upper whisker than the compiled chapters, dispersed data, and negative left-skewedness in the original chapters but positive right-skewedness in compiled chapters. Furthermore, there are 6 distinctive outliers (1,703; 1,333; 1,300; 1,038; 899; 862) in the compiled chapters, which means abundance of contrastive DMs in six compiled chapters. Taken together, we can conclude that in compiled chapters of TT1, except for the overuse of contrastive DMs in the six chapters, 75% of the compiled chapters

have less dispersion and lower normalised frequencies of contrastive DM use than original chapters.

In addition, their forms and functions also present some differences. Both types of chapters contain single markers, while the compiled chapters have a phrasal marker. The contrastive DMs in both types of chapters signal adversative and concessional functions, while the compiled chapters also uniquely signal conditional function.

Regarding the frequencies of the contrastive DMs in TT1, “but” (409) is the only prototypical DM in the original chapters while the prototypical DMs in the compiled chapters include “but” (125) and “while” (115) mostly used in the inter-sentence, showcasing some varieties in signalling the contrastive relation. The other less prototypical contrastive DMs “However” (25), “Though” (21) and “Otherwise” (6) are used in the sentence-initial position.

By the comparing Figure 6-4 regarding the TT1 and Figure 5-3 regarding the ST, some differences in the use of contrastive DMs between the TT1 and ST can be observed. Firstly, the boxes in the boxplots of contrastive DMs of original and compiled chapters in TT1 have been amplified almost twice compared to those of original and compiled chapters in ST, suggesting the drastic increase of the contrastive DM use in TT1; secondly, both boxplots in ST with right-skewedness and longer upper whiskers have turned into left-skewedness in the original chapters of TT1 and extremely right-skewed with more outliers in the compiled chapters of TT1. This suggests that in some chapters, some of the implicit contrastive message relations might have been made explicit and rendered as the prototypical contrastive

DMs “but” and “while” or less prototypical contrastive DMs “however” and “though”. The existence of outliers in the compiled chapters of ST is an indication of potential overuse of explication in the English translation.

6.5 Elaborative DMs use between TT1 and ST

6.5.1 English elaborative DM use in original chapters of TT1

The column of MREL in Table 6-3 indicates that, in original chapters, TT1 employs only one phrasal elaborative DM “for example” (13) used to signal elaborative relation between the preceding abstract message and the successive clarifying message by means of exemplification, making this the least frequently used DM category among the four categories of DMs.

Example 13

A: Huang Di asked, “(In treating diseases,) doctors use different therapeutic methods to treat the same disease, (but) the curative effect is the same. What is the reason?”

B: Qibo answered, “(This is) due to the geographical differences. **For**_REX21 **example**_REX22 [MREL] , the east is the place where (all the things in) nature start to grow. (The east) is near the sea and is rich in fish and salt. People there prefer fish and salty taste. They live in satisfaction and enjoy rich food. But (excessive) fish (food tends to) accumulate heat in the body and (excessive) salty flavor (is likely to) impair blood. That is why people there look black in skin and are loose in muscular interstices. (They frequently) suffer from

Yong (carbuncle) and Yang (ulcer) that can be cured by stone-needle. In fact, the stone-needle was developed in the east.”

In Example 13, Huang Di asked Qibo the reason for the doctors’ using different therapeutic methods to treat the same disease, but the same curative effect is achieved, which is quite abstract knowledge for the addressee to understand if he is unfamiliar with it. Qibo explained by exemplification that the reason lies in the geographical differences as the eastern people consume excessive salty food, resulting in heat accumulation and impaired blood in the body with a typical symptom of carbuncle and ulcer. In the translation, the elaborative DM “for example” is used to signal the elaboration between the previous and successive propositional utterances.

The scarce use of elaborative DM in the 11 original chapters of TT1 lies in the demand of no more detailed illustration as that in the analysis of the original chapters of the ST. In addition to the self-commentary devices in Classical Chinese mentioned in Section 5.4.1, another two reasons for limited use of DMs in *Su Wen* can be summarized as follows. The first is that, the face-to-face communication in the form of ask-and-answer is carried out in a direct way, without the need to use more elaborative DMs, although those chapters involve the discussion about some challenging clinical issues such as the use of decoction and wine, needling depth, and the right way to diagnose diseases. The second is that some chapters such as *Su Wen* 57 and *Su Wen* 81 are quite short even if they are informative discussing some abstract TCM theories without much elaboration, even no examples given in those short chapters of *Su Wen*

ST. In the same vein, there are not many elaborative DMs in TT1, which implies the faithfulness of the English translation to the ST of those chapters.

In conclusion, there is limited use of elaborative DMs both in ST and in TT1. The self-commentary devices in Classical Chinese, face-to-face communication and short chapters result in the limited use of elaboration in the ST, thus also resulting in limited use of elaborative DMs in the original chapters of TT1.

However, the only elaborative DM “for example” used in original chapters of TT1 comes from explicitation rather than semantic transference from the ST as shown in Example 14.

Example 14

ST: 地势/n 使然/v 也/y 。 故/c [MRIR] 东方/n 之/u 域/n , /w 天地/n 之/u 所/u 始/v 生/v 也 /y , /w 鱼/n 盐/n 之/u 地/n , /w 海滨/s 傍/v 水/n , /w 其/r 民/n 食/v 鱼/n 而/c 嗜/v 咸/n 。
/w (*Su Wen* 12)

BT: The terrain makes it so. Therefore, the eastern land (is) the place where all the things start to grow. The land of fish and salt (is) close to the sea. People there eat fish and love salty food.

TT1: (This is) due to the geographical differences. [IR] **For**_REX21 **example**_REX22 [MREL] , the east is the place where (all the things in) nature start to grow. (The east) is near the sea and is rich in fish and salt. People there prefer fish and salty taste.

In Example 14, the tag and symbol “[IR]” is used to show that the inferential DM “故” (therefore) is omitted for underspecification as the inferential function has been signaled by

the prepositional phases “due to” in the previous sentence, but for coherence, in the slot where “故” (therefore) is located, the elaborative DM “for example” has been explicitated. In other words, “for example” is added for the explicitation in the slot with absent DM, and the reason of omitting the inferential DM lies in the use of other linguistic device “due to” signifying the cause-effect relations between the two successive sentences, thus achieving the inferential function.

6.5.2 Elaborative DM use in compiled chapters of TT1 and ST

Elaborative DMs are used relatively rarely (29) in compiled chapters in TT1, with the 8 types representing in total only 1.22% of all DMs. As shown in Table 6-4, there are three different forms in the category of elaborative DMs: single markers [e.g., “and” (9), “namely” (2)], phrasal markers [e.g., “for example” (10), “that is to say” (5)] and discourse parentheticals [e.g., “the same is the case” (1)]. It is clear that “for example” and “and” are the prototypical elaborative DMs in the compiled chapters of TT1.

It is noteworthy that, the common DM “and” which is generally considered as a parallel DM is used as an elaborative one in this case. This suggests that potentially some Chinese elaborative DMs have been translated into “more poly-functional, less specified one[s]” (Furkó, 2020, p.145) or a generic DM might be used to signal the elaborative relationship.

Example 15

The Five Zang-Organs all get Qi from the stomach **and**_CC [MREL] the stomach is the root of the Five Zang-Organs. (*Su Wen* 19)

In Example 15 the DM “and” signals elaboration between the two adjacent clauses as it can be verified by replacing with another elaborative DM “that is to say” without affecting the meaning of the two propositions “The Five Zang-Organs all get Qi from the stomach” and “the stomach is the root of the Five Zang-Organs”. Here the multi-functional DM “and” serves as an elaborative DM rather than a parallel one, signalling the elaborative relation between the successive clause with the prior one.

Similar to ST, there are not many elaborative DMs in the compiled chapters of TT1, although it is presumably considered to have various ways of substantial elaboration due to the textual nature of “compilation of compilations” for thousands of years (Bertschinger, 2015, p.16). The limited elaborative DMs in the compiled chapters of TT1 might be affected for the two reasons as mentioned in Section 6.5.1.

As for the functions of elaborative DMs, following Halliday (2004), they can be categorized into three major types: 1) exposition: “that is to say”, “namely”; 2) clarification: “similarly”, “the same is the case”, which is used to “signal a more refined characterization of the sense of the foregoing” (Fraser, 1993, p.27); 3) exemplification: “for example”.

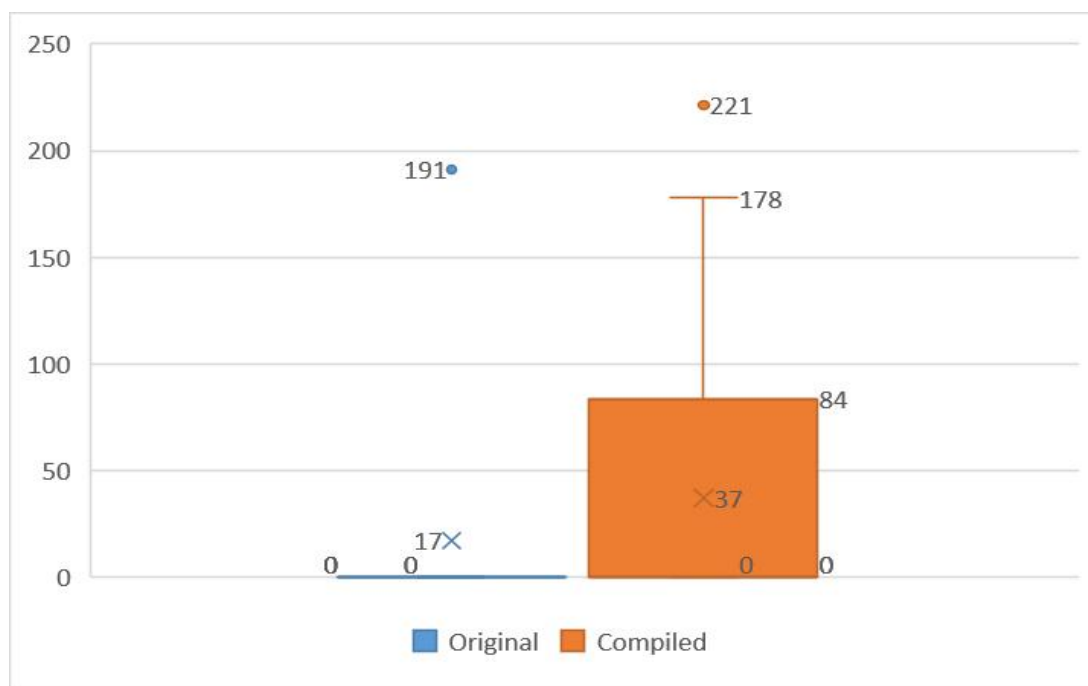
In sum, there are more types (8 vs. 5) and higher normalised frequencies (29 vs. 15) in TT1 than in ST. Regarding the forms of elaborative DMs in TT1, they include single markers, phrasal markers, and discourse parentheticals, but most of the elaborative DMs in ST might have been rendered as the prototypical DMs “for example” (10) and the multi-functional “and” (9). On the other hand, more elaborative DMs are used in compiled chapters in TT1 than ST,

which might have been added or have shifted from the other categories in the English translation of elaborative DMs in compiled chapters of TT1. The details about the specific translation techniques will be discussed in Chapter 8. The elaborative DMs in the compiled chapters fulfil three functions: exposition, clarification, and exemplification.

6.5.3 Comparison of elaborative DM use between original chapters and compiled chapters of TT1 and ST

To visually show the similarities and differences, the boxplot of Figure 6-5 is used for the presentation of the use of English elaborative DMs in the original and compiled chapters of TT1.

Figure 6-5 Boxplot of the normalised frequencies of English elaborative DMs of original and compiled chapters in TT1



As there is only one value in the original chapters, it cannot be formed into a box, not to mention the formation of the median, IQR and whiskers. Regarding the compiled chapters, a box has been formed because of the adequate valid values showcasing the mean and IQR, but the min and the lower quartile Q1 overlap, without a lower whisker. Furthermore, it has an outlier and a long upper whisker.

As such, there is no comparability in the elaborative DM use between the two kinds of chapters since the original chapters have no box. The boxplot for the compiled chapters of TT1 shows that: 1) The longer upper whiskers indicate that the data is scattered with a positively right-skewed distribution; 2) Q1 of the box overlaps with X-axis and suggests that most of the chapters have no DM use or low normalised frequencies; and 3) There is an outlier, suggesting the overuse of DM in a single chapter.

As for their forms, compiled chapters use more forms of elaborative DMs than original chapters in TT1, this is, in addition to phrasal markers, they also include single markers (e.g., “and”, “namely”), and discourse parentheticals (e.g., “the same is the case”, “this is the case”), presenting varieties of elaborative DM use.

As for their functions, in addition to the exemplification in “for example” in original and compiled chapters, other functions in the compiled chapters of TT1 can be noted: 1) exposition: e.g., “and”, “to be specific”; 2) clarification: “similarly”, “this is the case”. It is interesting to note that the multi-functional DM “and” is one of the usual ways to signal elaboration.

In order to visually compare elaborative DM use in original chapters and compiled chapters between TT1 and ST, the boxplots in Figure 6-5 are used. They seem similar in terms of the original chapters but look different regarding the compiled chapters.

On the one hand, the boxes in the original chapters of ST or TT1 have not been formed due to the limited number of normalised frequencies. Please note that, the only value for original chapters both in TT1 and ST cannot be regarded as an outlier, as a box for the original chapters in the ST boxplot has not been formed and no other value can be considered as a reference to make the claim that it is an outlier.

On the other hand, as for the compiled chapters, there are fewer outliers of elaborative DMs in TT1 than ST, suggesting some of the elaborative DMs in the ST might have been omitted or shifted to the other categories in TT1, thus possibly affecting the pragmatic effects of the English translation of elaborative DMs.

6.6 Inferential DMs use between TT1 and ST

6.6.1 Inferential DM use in original chapters between TT1 and ST

As shown in Table 6-3, there are 14 different inferential DMs (1,359) in original chapters, accounting for 51.5% of the normalised frequencies and ranking as the first among the four categories of DMs. The prototypical DMs include “if” (462), “so” (277), “that is/was why” (224), and “when” (132).

Regarding their forms, they can be grouped into three types: single markers (e.g., “if”, “so”), phrasal markers (e.g., “as a result”, “in this case”), and discourse parentheticals (e.g., “that is/was why”, “this is because [that]”).

In terms of their functions, those 14 DMs can be grouped into three major types: 1) hypothesizing: e.g., “if” (462); 2) making inferences: e.g., “so” (277), and “that is/was why” (224); and 3) drawing a conclusion: e.g., “as a result” (26), “thus” (13). The first two types will be analysed as they account for the majority of the frequencies.

Example 16

(**If**_CS [MRIR]) Yin accumulates in the lower (part of the body), the feet (will feel) cold.
Coldness of the feet (will cause) distension. (*Su Wen* 81)

The DM “if” in Example 16 helps to build an inferential message relationship between the two adjacent sentences by proposing a hypothetical condition that if someone accumulates too much Yin in the lower part of the body, then his feet will feel cold, thus gradually causing the distension of the feet. Another issue which needs to be noted is that almost all the occurrences of the DM “if” in the original chapters of TT1, either in upper case or lower case, are placed in the round brackets, which is an indication of explicitation as mentioned above on the notes of translation by Li (2005).

Example 17

People there prefer fish and salty taste. They live in satisfaction and enjoy rich food. But (excessive) fish (food tends to) accumulate heat in the body and (excessive) salty flavor (is

likely to) impair blood. **That_DD1 is_VBZ why_RRQ** [MRIR] people there look black in skin and are loose in muscular interstices. (*Su Wen* 12)

In Example 17, the DM “that is why” is used to make inferences that the people near the sea have black skin color and loose muscular interstices based on the description of the people’s living habits of preferring excessive fish and salty food, thus impairing the blood. This kind of judgment requires relevant professional expertise or life experience. If this kind of DM is omitted in translation, it would increase the cognitive workload of the TL readers.

By comparing Table 5-3 and the column of MRIR of Table 6-3, we can easily find the differences in the quantity and frequency of inferential DMs in original chapters between TT1 and ST. There are more types of inferential DMs (14 vs. 9) but lower normalised frequencies (1,359 vs. 1,817) in original chapters of TT1 than those in ST. It suggests that in the English translation some of the inferential DMs in original chapters of ST might have been omitted or shifted to other categories or signaled by other linguistic devices. For instance, the Chinese “若” (if) in ST and the English “if” in TT1 both are responsible for proposing a hypothetical condition, but there is striking disparity of the normalised frequencies between them (96 vs. 462). This suggests that some of the above-mentioned functions have been shifted from MRIR into the other categories or have been omitted altogether. As to what and how they have been shifted into, the answers will be provided in Chapter 8 concerning the translation techniques and translation effects in the English translation of Chinese DMs in *Su Wen*.

Regarding the forms and functions, there are various forms of inferential DMs in original chapters of ST and TT1. In ST the inferential DM forms include mono-syllabic markers, disyllabic markers, and phrasal markers while in TT1 they include single markers, phrasal markers, and discourse parentheticals. All these different forms signal the same three functions: hypothesizing, making inferences, and drawing a conclusion.

6.6.2 Inferential DM use in compiled chapters of TT1 and ST

There are 27 different inferential DMs (1,295) in the compiled chapters of TT1, accounting for 54.43% of the normalised frequencies and ranking first among the four categories of DMs, with a wide range of forms and functions as shown in the column of MRIR of Table 6-4.

Regarding the forms of inferential DMs, they can be categorized into 5 types: single markers (e.g., “if”, “so”), phrasal markers (e.g., “as a result”, “in this case”), double markers (e.g., “and therefore”), pair markers (e.g., “if ... then”) and discourse parentheticals (e.g., “this is because that”, “this is the reason why”). Among them, the prototypical ones are “if” (674), “that is why” (171), and “so” (126); while “once” (2), “in such a way” (2) and “in both cases” (1) are atypical ones.

Regarding the functions of the generic function of signalling inferences, the inferential DMs in compiled chapters of TT1 can be grouped into three types: 1) hypothesizing: e.g., “if”, “in this case”; 2) drawing inferences: e.g., “that is why”, and “therefore”; 3) drawing a conclusion: e.g., “so”, “since”, “because”.

It is worthy to note that, most of the inferential DMs “If”, “Consequently”, “Hence”, “Since”, “Thus”, and “Then” are placed in sentence-initial position as shown in Example 18.

Example 18

(If_CS [MRIR]) Xinqi (Heart-Qi) is deficient, (the patient will) dream of putting out fire and lightning. (*Su Wen* 80)

In Example 18, the DM “If” is used in sentence-initial position to signal hypothesizing, the inference is made in the successive clause. It also applies to the other above-mentioned inferential DMs “Consequently”, “Hence”, “Since”, “Thus”, and “Then” placed in sentence-initial position. The high normalised frequencies of this type of DM use and “the consistency of a translator’s style” (Lynch & Vogel, 2018, p.80) can be used as criteria to judge whether it is a personal preference of the translator.

In conclusion, we can make the following four observations regarding the use of inferential DMs in compiled chapters in TT1 and ST: 1) There are various forms of inferential DMs in compiled chapters. The Chinese list includes mono-syllabic markers, disyllabic markers, phrasal markers, while the English counterpart comprises single markers, phrasal markers, pair markers (e.g., “if...then”), double markers (e.g., “and therefore”), and discourse parentheticals. 2) Both the Chinese and English inferential DMs in compiled chapters share the same three functions of signalling inferences: hypothesizing, making inferences and drawing a conclusion. 3) But they have different focuses as the prototypical inferential DMs in the ST are “则” (then) and “故” (so/therefore) signalling making inferences or drawing a

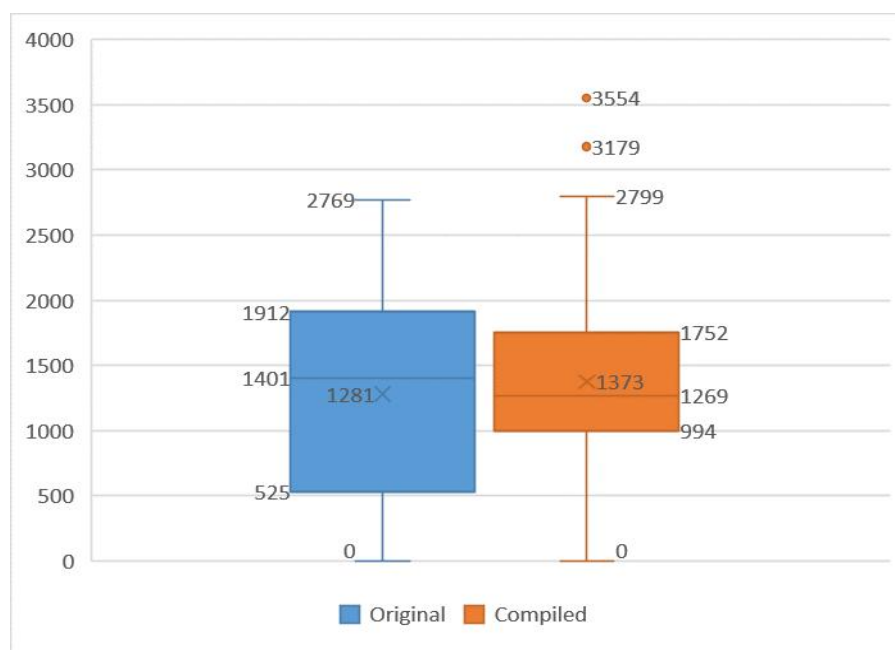
conclusion, while in TT1, the prototypical inferential DMs are “if”, “that is/was why”, and “so” signalling hypothesizing, making inferences, and drawing a conclusion. 4) There are more inferential DMs (27 vs. 22) but lower normalised frequencies (1,295 vs. 1,625) of compiled chapters in TT1 than those in ST.

All these suggest that, TT1 uses various forms of inferential DMs for signalling the same functions presumably for the avoidance of repetition of some of the prototypical inferential DMs in the English translation, and that some of the inferential DMs of compiled chapters in ST might have been omitted or shifted to the other categories in TT1 in the English translation. Both aspects would affect the pragmatic effects of the inferential DMs of compiled chapters in TT1.

6.6.3 Comparison of inferential DM use between original chapters and compiled chapters of TT1 and ST

The boxplot in Figure 6-6 visually presents the use of inferential DMs between original and compiled chapters in TT1.

Figure 6-6 Boxplot of the normalised frequencies of English inferential DMs of original and compiled chapters in TT1



Some distinctive features can be observed from the boxplots: 1) The original chapters have a longer box than the compiled chapters, suggesting more dispersed data in the former; 2) There are some slight differences in the mean (1,281 vs. 1,373) and median (1,401 vs. 1,269) between the two boxes, indicating the normalised frequencies in the original and compiled chapters are almost close to symmetrical data distribution. 3) There are two outliers (3,554 and 3,179) in the boxplot of the compiled chapters, which suggests the overuse of inferential DMs in the two chapters in the English translation.

In sum, we can find that in the compiled chapters of TT1, the prototypical discourse parenthetical “that is/was why” (171) is frequently used only in the compiled chapters, while some less prototypical and atypical inferential DMs are only found in the compiled chapters, which includes the following DM forms: single markers [(e.g., “hence” (6), “therefore” (5)],

phrasal markers [(e.g., “under such a condition” (21),] and discourse parentheticals [(e.g., “this is because that” (2)]. There are presumably more inferential DMs in compiled chapters which would make it logical for more types to be used in these chapters. More DMs suggest that more chances variety can be found.

Regarding their functions, inferential DMs are especially used for the first two of the three functions: 1) hypothesizing a certain condition: e.g., “lest”, “once”, and “under such a condition”; 2) making inferences: e.g., “therefore”, “then”, “hence”, “as”, “for this reason”; and 3) drawing a conclusion: e.g., “thus”, and “as a result”. Nevertheless, the original chapters of TT1 show fewer varieties of functions in the use of inferential DMs.

Furthermore, the disparities of the inferential DMs use between TT1 and ST can be observed from the visual presentation of the boxplot of the normalised frequencies of English inferential DMs in Figure 5-4 and Figure 6-6. The disparities include the following aspects.

Firstly, the boxplots of TT1 have shorter boxes with lower positions than those in ST. This means that 50% of the data for inferential DM use in original chapters and compiled chapters have become less dispersed in the English translation from ST to TT1. In other words, the extent to which the data distribution is stretched or squeezed is not big enough.

Secondly, in the compiled chapters there are more outliers in TT1 than the ST. This suggests the overuse of inferential DMs in some certain compiled chapters in the English translation.

Thirdly, the normalised frequencies of inferential DMs in original chapters and compiled chapters in TT1 have been comparatively reduced than those in ST in terms of the values of

IQR, mean, median and max. This suggests that in the English translation, apart from those chapters with outliers, some of the inferential DMs in compiled chapters have been omitted by resorting to other linguistic means or shifted to other categories. For the details on translation techniques, see Chapter 8.

6.7 Summary of comparison between original chapters and compiled chapters between TT1 and ST

HYPOTHESIS ONE: As an overt and faithful translation to keep “preserving the original style, thinking and ideas of this great book” (Li, 2005, p.28) and “translat[ing] the ancient text as what the ancients might read” (ibid., p.27), there should also NOT be any significant difference between original and compiled chapters in TT1, since the analysis of the ST reveals that DMs are not used significantly differently between original and compiled chapters in the ST.

In order to examine whether there is a significant difference between the original chapters and compiled chapters in TT1, an effect size phi coefficient (ϕ) test is conducted by using the online calculator (<https://www.staology.org/phi-coefficient-calculator>), which quantifies the extent to which the two types of chapters differ in the overall frequency of the DMs that they include.

Table 6-5 Comparison of the Total of the normalised frequencies of DM use between original chapters and compiled chapters in TT1

Types of Chapters	Total (R-f)	Wordcount	Total (N-f)	Differences (Phi)
Original Chapters	200	7578	2639	0.003728
Compiled Chapters	3126	131408	2379	

The effect size test based on the phi coefficient (ϕ) indicates no association in the DM use between original and compiled chapters in the TT1 as the value of phi coefficient ($\phi=0.003728$) is negligibly small and can occur due to random variation in the data. Therefore, it should be interpreted as null results. In other words, there is no association between the two kinds of chapters in terms of the frequency of DM use at the statistical level.

However, this does not mean that there are not observable differences in terms of the way in which DMs are used in terms of types, forms, and functions, as will be shown below. As the salient feature of an overt translation is that the source text should “remain as intact as possible given the necessary transfer and recoding in another language” (House, 2015, p.55), the specific characteristics will be revealed to see whether there are any significant differences in the DM use.

6.7.1 Data visualisation for the comparison of DM use between original and compiled chapters in TT1

Before the data visualisation by boxplot, the items including the Total, mean, min, and max of TT1 involving the four categories are compared as shown in Table 6-6. In the table, “O” and “C” stand for “original chapters” and “compiled chapters” respectively. After that, the boxplot

will be presented to reveal some further differences between original and compiled chapters, which cannot be revealed by the effect size test.

Table 6-6 Comparison of the normalised frequencies between original and compiled chapters in TT1

Items	Total	MRPL	MRCT	MREL	MRIR
Total*	O>C	O<C	O>C	O<C	O>C
Mean	O>C	O>C	O>C	O<C	O<C
Min	O<C	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>
Max	O<C	O>C	O<C	O<C	O<C

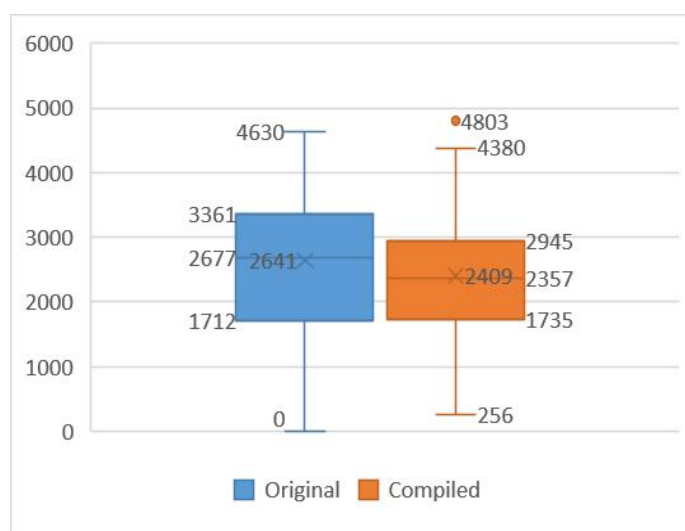
The total of min in compiled chapters is higher than that of the original chapters in the fourth row while the minima in the four categories are all “0”. In Appendixes 5 and 6, where the min in one compiled chapter of a category is “0”, the min of the same chapter in other category may be more than 1, thus the total of min in compiled chapters is higher than that of the original chapters.

HYPOTHESIS TWO: In some compiled chapters with higher frequencies in the categories of MRIR and MRPL, there might be more explication of DMs in the translation due to the shift from “parataxis” in Chinese to “hypotaxis” in English (Halliday & Matthiessen, 2014, p.452).

The result turns out to be that 1) the total of compiled chapters does not outweigh that of the original ones in TT1, except for the categories of MRPL and MREL. Furthermore, it indicates more explication in the English translation of DMs in MRCT and MREL rather than MRIR and MRPL judging by the sum of the normalised frequencies of the four categories in

compiled chapters between TT1 and ST; 2) Most of the maxima in the complied chapters are higher than those of the original ones, with equal minima across the four categories between the two types of chapters. The overuse of DMs in some complied chapters might result from more amplification but less omission in the English translation. In addition, the equal minima are due to the zero use of DMs in some chapters.

Figure 6-7 Boxplot of the normalised frequencies of English DMs of original and complied chapters in TT1



For comparison, the boxplots in Figure 6-7 are used to investigate the differences of the English DMs use between original and complied chapters in TT1. Firstly, the original chapters have a longer box than complied chapters, indicating the more dispersed data in the original chapters. Secondly, the two boxes lie in the middle of the boxplots, indicating the slight symmetry of the data distribution. Thirdly, in addition to the outlier, there are also some differences in the min (0 vs. 256), mean (2,641 vs. 2,409), median (2,677 vs. 2,357) and IQR (1,649 vs. 1,210) between the two types of chapters, suggesting the data in the complied

chapters have been “leveled out” by employing amplification and omission and even shifts to other categories in the English translation of Chinese DMs.

6.7.2 Comparison of the forms and functions of the DMs between original and compiled chapters in TT1

After the detailed analysis of the forms and functions of the DMs in the four individual categories of TT1 as in Sections 6.3.3, 6.4.3, 6.5.3, 6.6.3, their similarities and differences will be summarized in the sequence of the four categories, with the analysis of forms and functions between the two types of chapters integrated.

HYPOTHESIS THREE: The English DM use in the original and compiled chapters of TT1 would present more various word forms and functions, different from the Chinese one in the ST due to the linguistic disparities between English and Chinese.

In the category of MRPL, the number of the parallel DMs in the compiled chapters outweighs that of the original chapters, and both of the two types of chapters have single markers (e.g., “and”, “besides”), and phrasal markers (e.g., “in addition”, “at the same time”). Those parallel DMs in the original and compiled chapters fulfil the following two functions: addition and alternation. In addition, compiled chapters also have some ordinal DMs signalling time sequence between two adjacent clauses.

In the category of MRCT, there are more contrastive DMs but lower normalised frequencies in compiled chapters than in the original chapters. The two types of chapters include single markers (e.g., “but”, “however”). Moreover, the compiled chapters also contain phrasal

markers (e.g., “on the contrary”) and the multi-functional “and”, which means that the compiled chapters use more DM variants to signal the contrastive relation between the clauses. Among those contrastive DMs, “but” and “while” are used in the inter-sentence, while almost all the other DMs “however”, “though” and “otherwise” are used in the sentence-initial with an uppercase. Most of them are used for signalling adversity, while “though” and “although” are used for signalling concession.

In the category of MREL, there are more elaborative DMs in compiled chapters than in the original chapters. Only one elaborative DM “for example” is used in the original chapters, while compiled chapters have various forms of DMs: single markers (e.g., “namely”), phrasal markers (e.g., “that is to say”) and discourse parentheticals (e.g., “the same is the case”). In addition, compiled chapters also have the multi-functional “and”. All these might result from more amplification and less omission in the compiled chapters as well as the intention to avoid repetition in the translation. The functions to be fulfilled include: 1) exposition (e.g., “that is to say”); 2) exemplification (e.g., “for example”); 3) clarification (e.g., “the same is the case”).

In the category of MRIR, there are more inferential DMs and higher normalised frequencies in the compiled chapters than in the original chapters, meanwhile, both the two types of chapters include various forms of inferential DMs: single markers (e.g., “so”), phrasal markers (e.g., “as a result”), and discourse parentheticals (e.g., “this is because”). Different from original chapters, compiled chapters present more varieties in the DM use. They fulfil three major functions: hypothesizing (e.g., “once”), making inferences (e.g., “under such a

condition”), or drawing a conclusion (e.g., “therefore”). Among them, most of the inferential DMs “If”, “Consequently”, “Hence”, “Since”, and “Thus”, and “Then” are placed in sentence-initial position.

What’s more, there are also some similarities in the two types of chapters of TT1. Firstly, in the four categories of DMs in TT1, the prototypical DMs are often used in both the original chapters and compiled chapters, with less varieties of DMs performing the same functions. This kind of feature is distinctive in translated texts, which might result from “simplification” in the English translation. That is, they use the “common-level” or “familiar” synonyms for the translation (Laviosa-Braithwaite, 2004, p.288).

Secondly, some DMs like “if” and “since” are often placed in round brackets, which results in the explicitation in the English translation (Li, 2005, p.33). This kind of explicitation is attempted for better coherence to reduce the cognitive workload of the TL readers, thus promoting the pragmatic effects of the translation.

6.7.3 Summary of comparison of DM use between TT1 and ST

By the visual comparison of the boxplots in Figure 6-7 and Figure 5-6, it is found that there are some differences between the original chapters and compiled chapters as well as those between TT1 and ST. The following observations can answer the second research question as to how the DMs are used in TT1 and to what extent the Chinese DMs have been transferred from the ST to TT1.

Basically, in terms of the geometric plane figure, the boxplots of the normalised frequencies of English DMs of original and compiled chapters in TT1 *resemble*, to some extent, those of Chinese DMs of original and compiled chapters in ST, apart from the value differences. This indicates that the English translation of DMs in TT1 endeavors to be faithful to the ST as Li (2005) claims that the translation principle that he follows is to “translate the ancient text as what the ancients might read” of the TCM classic (Li, 2005, p.27). In such a case of translation, it seems that the result can make the intended TL readers feel that the source text “remain[s] as intact as possible” in the translation (House, 2015, p.55), presenting the invisibility of the translator.

In terms of IQR, Q1, maxima and minima, the data distribution of DMs used in the original chapters is considerably different from that in the compiled chapters. That is, except for some overuse of DMs in the chapters with outliers, some of the DMs have achieved reduction in the normalised frequencies in TT1 than ST due to omission by using other linguistic means or shifts to the other categories in the English translation. Overall, the extent of the difference between TT1 and ST indicates the extent of deviation or even distortion of TT1 from the ST in the English translation of DMs.

CHAPTER SEVEN: DATA ANALYSIS OF ENGLISH DMS IN TT2 AND COMPARISON WITH ST

This chapter also attempts to answer the second research question, but it focuses on only to what extent the DM use in TT2 compares with that in the ST and how similarities or differences can be explained. It discusses the English DM use in TT2 by Unschuld & Tessenow (2011) and compares the English DMs in TT2 with the Chinese DMs in ST with the four categories between original chapters and compiled chapters as the major points, to reveal whether the Chinese DMs have been *adequately* transferred into English in TT2 (House, 2015) as “a translation can be adequate even if it is equivalent with ST only in one functional dimension” (Shuttleworth & Cowie, 1997, p.5). At last, a summary of the comparison will be given at the end of the chapter.

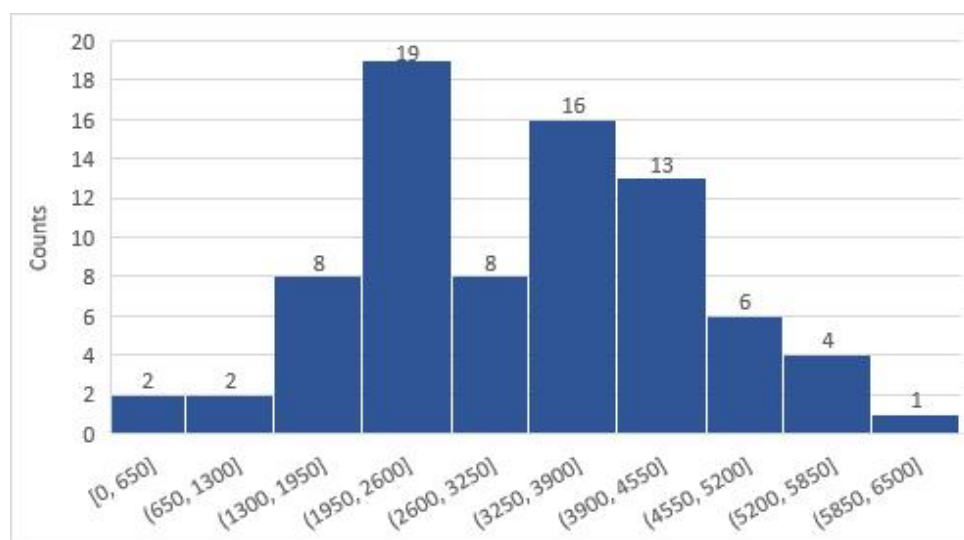
Through the comparison of the DM use between the TT2 and ST, it is also possible to find out the features in Unschuld & Tessenow’s (2011) self-claimed “covert” translation of Chinese DMs as they “strive[s] to reproduce a text in a target language as close to its original format and meaning as possible, without omissions and anachronistic interpretations and additions” with an aim at “*textus receptus*” (Unschuld & Tessenow, 2011, p.13). That is, they want their translation “enjoy the status of an original source text in the target culture” (House, 2006, p.347). One of the most salient features of this covert translation is that it is “not marked pragmatically as a translation of a source text” (ibid.). The nature of a covert translation is to “conceal the translated nature of TT by producing a text which is functionally equivalent to

ST” (Shuttleworth & Cowie, 1997, p.33-34). As such, it is expected to see many cases of correspondence, without amplification, omission or shifts in TT2. Therefore, the overall argument of this chapter is that, if equal communicative effects are to be achieved as ST, TT2 would map closely to the ST, when it comes to the use of the message relationship DMs.

7.1 Overview of English DMs found in TT2

The corpus-based analysis of TT2 reveals that there are 80 different English DMs ($N_f = 2947$) used in TT2. Among the normalised frequencies, the category of MRIR has 33 DMs with the highest normalised frequencies, covering 57.94% of the total, next comes MRPL with 17 DMs and MRCT with 20 DMs, accounting for 32.96% and 5.77% respectively. Finally, MREL has only 10 DMs with the smallest proportion. The original chapters have higher DM normalized frequencies (3,361) than compiled chapters (2,921).

Figure 7-1 Histogram of the normalised frequencies of English DM use in TT2



PRELIMINARY FINDING ONE: The bimodal curved histogram in Figure 7-1 indicates that most of the DM chapters fall into the bins from the fourth to the seventh with intermediate frequencies between 1950 and 5200. Among them, the fourth bin has 19 chapters as the peak. It suggests that the DMs are unevenly used across the chapters. Comparing the outliers, higher frequencies, and positive right-skewedness in Figure 5-1 of ST, we can infer that there might be many cases of explicitation and omission in the English translation of DMs in TT2. The reason for many explicitations is that the histogram has changed from a unimodal bell-curve shape with right-skewedness in ST to a bimodal curved shape in TT2; The reason for many cases of omission lies in the disappearance of the outliers in TT2.

HYPOTHESIS ONE: As a covert translation to keep “the contents and structure of the original text” (Unschuld & Tessenow, 2011, p.13) and to “conceal the translated nature of TT by producing a text which is functionally equivalent to ST” (Shuttleworth & Cowie, 1997, p.33-34), there might be some differences in the DM use between the original and compiled chapters in TT2.

Table 7-1 Normalised frequencies of English DMs of the four categories in TT2

No.	Items	MRPL	MRCT	MREL	MRIR
1	Total*	971	170	98	1707
2	Mean	1024	225	110	1861
3	Min	0	0	0	0
4	Max	2739	2644	2002	4121

PRELIMINARY FINDING TWO: Table 7-1 shows that among the four categories of DMs in TT2, apart from the common minima of 0 and different degree of maxima, MRIR and MRPL have most of the data, covering 90.9% of the total, presenting a similar distribution as in the ST. Furthermore, the data show higher frequencies in all the four categories of DMs in TT2 compared with ST.

HYPOTHESIS TWO: In some compiled chapters with higher frequencies in the categories of MRIR and MRPL, there might be more explicitation of DMs in the translation resulted from the shift from “parataxis” in Chinese to “hypotaxis” in English (Halliday & Matthiessen, 2014, p.452).

PRELIMINARY FINDING THREE: The English DM use in TT2 presents various word forms and sub-functions, as shown in Table 7-2: 1) The word forms of the English DMs in TT2 include single markers, phrasal markers, discourse parentheticals, double markers and pair markers; 2) There are more and varied double markers in TT2 than in TT1, with the category of MRIR in particular; 3) The “multi-functional” English DMs “and” and “while” co-exists across the four categories, signalling different functions.

HYPOTHESIS THREE: Compared to what has been observed in the original and compiled chapters in the ST, the English DM use in compiled chapters of TT2 would also present more various word forms and sub-functions than that of the original chapters.

Table 7-2 reveals the following three prominent characteristics of the English DMs in TT2.

At first, despite linguistic differences, there is also distinction of forms of English DMs in TT2: single markers, phrasal markers, discourse parentheticals, double markers and pair markers.

- The majority of the English DMs are single markers.
- A small number of the English DMs are phrasal markers, comprising either two words, three words, or four words.
- Some of them are discourse parentheticals.
- The last one is the pair marker “still... also” in the category of MREL signalling clarification, and “when/if/once...then” in the category of MRIR signalling inferences under some hypothetical conditions.

Secondly, the English DMs in the four categories of TT2 fulfil the following sub-functions.

- There are 17 DMs in the category of MRPL, they signify addition, alternation, or time sequence. The time sequence DMs go successively from “first” to “next” to “afterwards”, suggesting the relation between the messages about the sequence of successive symptoms or therapies of dealing with the diseases or ailments.
- There are 20 DMs in the categories of MRCT, signalling adversative, concessional, or contrastive conditional relations.
- In the category of MREL, there are only 10 English DMs, 9 of them signal exposition, and 1 is a pair marker “still... also” signalling clarification.

- As the category of MRIR with the most DMs, there are 33 English DMs signalling making inferences, drawing a conclusion, or hypothesizing. In this category, there is a pair marker “when/if/once...then”, which has a few varieties: “when...then”, “if...then”, and “once...then”, signalling drawing references.

Thirdly, two multi-functional English DMs “and” and “while” co-exist in different categories. For instance, “and” signals different functions in the four categories of MRPL, MRCT, MREL and MRIR; and “while” co-occurs only in the categories of MRPL and MRCT. The specific premises for the use of the multi-functional DMs across different categories will be discussed in detail in the later sections.

Table 7-2 Raw and normalised frequencies of DMs of the four categories in TT2

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	1202	820	but	94	64	that is to say	50	34	when/if/once...then	854	582
2	too	70	48	while	60	41	i.e.	40	27	if	612	417
3	or	43	29	nevertheless	19	13	that is	29	20	hence	569	388
4	also	39	27	however	16	11	and	8	5	when	122	83
5	then	21	14	even though	14	10	this is to say	8	5	then	52	35
6	in addition	9	6	even if	10	7	namely	5	3	as a result	45	31
7	while	9	6	and yet	9	6	in this case	1	1	in case	36	25
8	at first	7	5	although	7	5	this is	1	1	therefore	37	25
9	first	6	4	though	7	5	still... also	1	1	in this case	34	23
10	again	5	3	and	3	2	this way	1	1	because	25	17
11	subsequently	5	3	yet	2	1				thereby	20	14
12	next	3	2	in the opposite case	1	1				once	19	13
13	afterwards	1	1	on the contrary	1	1				this is because	18	12
14	either	1	1	in contrast	1	1				this way	18	12
15	further	1	1	instead	1	1				lest	9	6
16	moreover	1	1	otherwise	1	1				and	6	4

17	rather	1	1	regardless	1	1		accordingly	3	2
18				still	1	1		so that	3	2
19				even then	1	1		as	2	1
20				vice versa	1	1		that is because	2	1
21								in such cases	2	1
22								in such a situation	2	1
23								where	2	1
24								this is why	2	1
25								as long as	1	1
26								in such a case	1	1
27								in the present case	1	1
28								in some cases	1	1
29								in these cases	1	1
30								on both sides	1	1
31								since	1	1
32								in that	1	1
33								thus	1	1
Total		1424	971		250	170	144	98	2503	1707

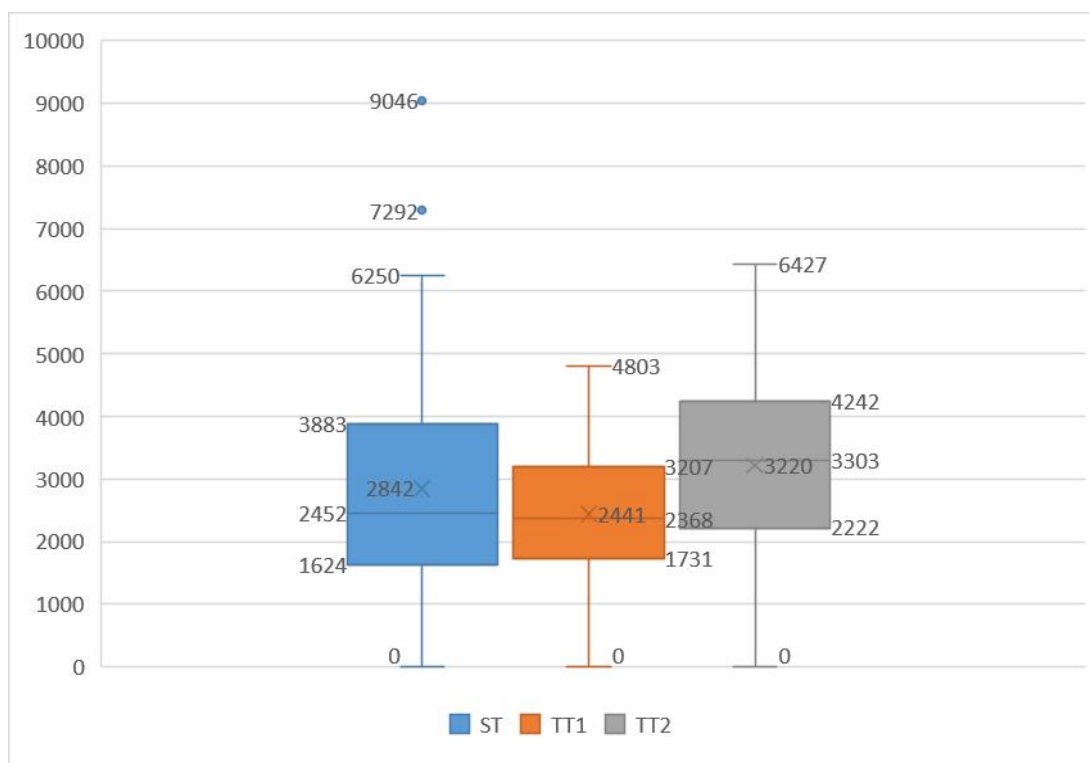
7.2 Overview of the comparison between TT2 and ST

The boxplots in Figure 7-2 present the following visual features of the DM use in TT2, TT1 and ST, with the comparison of the DM use in TT2 and ST as the major point.

Firstly, the two boxes signifying the ST and TT2 occupy almost the same areas, though the latter seems to have been displaced upward to some extent. That is, the values of Q1, Q3, median and mean in TT2 are all higher than those of ST; However, compared with the smaller box of TT1 than ST, the box of TT2 seems to have kept the bigger area as that of ST.

Secondly, in terms of 50% of the values (IQR), TT2 has higher values in Q1 and Q3, but generating smaller value than ST (2,020 vs. 2,259).

Figure 7-2 Comparison of DM use between TT2, TT1 and ST



The boxplots of the English DMs use in TT2 *resemble*, in some extent, those of Chinese DMs use in ST, apart from the value differences. Thus, we can infer that the DM use in TT2 has almost kept the same pragmatic effects as that of the ST, and even better than TT1 since the more use of DMs would help to spell out the message relationship more clearly, which might result from the explicitation in translation.

In the rest of this chapter, a detailed investigation of the use of the 4 categories of English DMs, will be conducted reporting the normalised statistics of the two major types of chapters: original chapters and compiled. Then the features of DM use of each category will be analysed through comparison and exemplification. Each section is organised in a similar way, focusing primarily on the comparison of DM use between original and compiled chapters in TT1 and ST. It will first report on the frequencies, forms/types, and functions of the English DMs and then compare these to those found in the ST in the previous Chapter.

For ease of reference, the distribution of English DMs in original and compiled chapters is presented collectively in Tables 7-3 and 7-4 below.

Table 7-3 English DMs and their normalised frequencies in the 11 original chapters of TT2

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	93	1093	but	12	141	i.e.	1	12	when/if/once ...then	39	458
2	too	6	71	while	6	71	that is	1	12	hence	39	458
3	or	4	47	though	3	35	still	1	12	If	27	317
4	also	2	24	and yet	3	35				When	15	176
5	then	2	24	nevertheless	2	24				therefore	10	118
6	further	1	12	however	1	12				as a result	4	47
7	moreover	1	12	instead	1	12				because	3	35
8										this way	2	24
9										and if	2	24
10										or if	1	12
11										in this case	1	12
12										in cases	1	12
13										under such a situation	1	12
14										thereby	1	12
	Total	109	1281		28	329		3	35		146	1716

Table 7-4 English DMs and their normalised statistics in compiled chapters of TT2

No	MRPL	R-f	N-f	MRCT	R-f	N-f	MREL	R-f	N-f	MRIR	R-f	N-f
1	and	1109	803	but	82	59	that is to say	51	37	if/when/once/in case ... then	815	590
2	too	64	46	while	54	39	i.e.	39	28	if	585	424
3	or	39	28	nevertheless	17	12	that is	28	20	hence	530	384
4	also	33	24	however	15	11	And	8	6	when	107	77
5	then	16	12	even though	14	10	this is to say	5	4	then	52	38
6	in addition	9	7	even if	10	7	Namely	5	4	in case	35	25
7	while	9	7	(and) yet	8	6	that is to say (that)	2	1	as a result	41	30
8	at first	7	5	although	7	5	this is	1	1	in this case	33	24
9	first	6	4	though	4	3	in this case	1	1	therefore	27	20
10	again	5	4	and	3	2	this way	1	1	because	22	16
11	subsequently	5	4	in the opposite case	1	1				once	19	14
12	and also	4	3	on the contrary	1	1				thereby	19	14
13	and then	3	2	in contrast	1	1				this way	16	12
14	next	3	2	otherwise	1	1				this is because	15	11
15	afterwards	1	1	regardless	1	1				lest	9	7
16	either	1	1	still	1	1				and	6	4

17	rather	1	1	even then	1	1		accordingly	3	2
18				and vise versa	1	1		so that	3	2
19								where	2	1
20								as	2	1
21								that is because	2	1
22								in such cases	2	1
23								that is why	2	1
24								as long as	1	1
25								in such a case	1	1
26								in the present case	1	1
27								in some cases	1	1
28								in these cases	1	1
29								on both sides	1	1
30								since	1	1
31								in such situations	1	1
32								in that	1	1
33								thus	1	1
	Total	1315	952		222	161	141	102	2357	1706

7.3 Parallel DMs use between TT2 and ST

7.3.1 English Parallel DM use in original chapters of TT2

The MRPL column of Table 7-3 shows that, there are 7 different DMs (N-f =1281) in TT2, covering 38.11% of all the normalised frequencies in the 11 original chapters of TT2.

As mentioned in Section 6.3 of the previous chapter, to signify different degree of normalised frequencies in a certain category, Furkó's (2020) terms "prototypical" (ibid., p.52), "less prototypical" (ibid., p.146) and "atypical" (ibid., p.52) are borrowed as the descriptive labels for the classification of DMs: "the most frequently used", "the less frequently used", and "the seldom used". Due to the fluid nature, the three terms are used to signify the types of DMs in the top, middle and the tail of the list.

Among them, the prototypical DM is "and", and the less typical DMs include "too", "or", "also" and "then"; while the rest two are atypical ones as they have quite low frequencies.

In terms of the forms of those parallel DMs, they are only one type: single markers. They signal two sub-functions of parallelism: addition and alternation.

It is noteworthy that three double markers "and yet", "and if" and "or if" seem to be in the category of MRPL, but in fact they belong to the categories of MRCT and MRIR respectively. What really matters is the second part of the double markers signalling contrast or inferences, while the first part "and" just serves for linking the adjacent sentences with a weak parallel relation. The analysis of this type of special marker in the English translation of *Su Wen* will be discussed in the later sections.

By comparison of Table 5-3 regarding the ST with the MRPL column of Table 7-3 regarding the TT2, we can find the following characteristics:

- There are more parallel DMs and higher sum of normalised frequency in TT2 than that in ST (1281 vs. 836), which is an indication of explicitation. Those explicitation of the parallel DMs might be the outcome of amplification due to the inherent differences between the parataxis in Chinese and hypotaxis in English.

Just like that in the original chapters of TT1, some cases of the prototypical “and” might also result from explicitation.

Please note that the examples in this chapter contain some round brackets “()” which are converted from square brackets “[]” after POS tagging, so they might be confused with the other existing round brackets. Unschuld & Tessenow (2011, p.24) use those square brackets “[]” to include their additions.

Example 1

TT2: (I have) followed the classics **and**_CC [MRPL] (I have) received (instructions in medical) practice. All these (modes of learning) are said to result in success in all (cases treated) . (*Su Wen* 78)

ST: 循/v 经/n [PL] 受/v 业/n , /w 皆/d 言/v 十全/n , /w

Example 1 shows that there is no parallel DM between the four-character expression “循/v 经/n 受/v 业/n” (I follow the classics (and) I receive instructions) in the ST. While by the

explicitation of the DM “and” in the translation, it is rendered as two clauses “follow the classics” and “receive instructions” rather than a co-ordinated nominal group as in the ST.

- The parallel DMs in the original chapters of TT2 have fewer varieties of forms than those in ST. In ST, they have varied parallel DMs: mono-syllabic markers, disyllabic markers, and pair markers, but in TT2, they have only one type: single markers. It presents a tendency of simplification in translation. That is, they use the “common-level” or “familiar” synonyms for the translation (Laviosa-Braithwaite, 2004, p.288).
- The prototypical parallel DMs both in TT2 and ST signal addition and alternation. That implies that there is no dramatic difference in terms of function in the way parallel DMs are used in original chapters between TT2 and ST.
- There are some cases of notorious “underspecification” (Crible et al. 2019; Furkó, 2020, p.144-145) from the categories of MRCT and MRIR to MRPL due to the inadequate understanding of the functions of the DMs, which might affect the pragmatic effects of those parallel DMs in the TT2.

Example 2

TT2: This is (a situation where) the qi is blocked inside, **and**_CC [MRPL] the physical appearance is altered outside. How is this treated? (*Su Wen* 14)

ST: 是/r 气/n 拒/v 于/p 内/f , /w 面/c [MRCT] 形/n 施/v 于/p 外/f , /w 治/v 之/u 奈何/r ?

/w

BT: This qi is blocked inside, but the physical appearance is changed outside. How to cure it?

Example 2 shows an example of “underspecification”. The multi-functional DM “而” does signal contrast from the *antithesis* between the “内” (inside) and “外” (outside), but the translation “and” in TT2 signals parallelism. The shift from contrast into parallelism is an inaccuracy resulted from the inadequate understanding of the semantic meaning and its related function of the DM “而” presumably the translators are non-native Chinese with an inadequate knowledge of the multi-functional DMs in Classical Chinese.

7.3.2 English parallel DM use in compiled chapters of TT2

In the MRPL column of Table 7-4, there are 17 parallel DMs (N-f = 952), accounting for 32.53% of all the normalised frequencies of the four categories in compiled chapters of TT2. Parallel DMs are less frequently used in compiled chapters than in original chapters.

Among them, there are only three forms of parallel DMs: single markers, double markers, and phrasal markers. The majority of them are single markers.

As for the sub-functions of parallelism, most of them signal addition, alternation, and time sequence. Those sub-functions in TT2 are fulfilled the same as those in TT1. No more examples in this regard will be taken here for economy.

As for the frequency of the parallel DMs, the prototypical one is “and”; The atypical ordinals and sequential DMs comprise “first”, “subsequently”, etc. The rest of them fall into the category of less typical ones. For brevity, some distinctive parallel DMs will be discussed below.

1) Prototypical DM “and”

Among them, the most distinctive is the highly frequent use of prototypical lower-case “and” signalling parallelism by connecting two or more parallel sentences, either of the same structure or of different structures in Examples 3 and 4.

Example 3

At this time, one can press, one can give drugs, **and**_CC [MRPL] one can bathe. (*Su Wen* 19)

In Example 3, the parallel DM “and” links three parallel sentences with the same syntactic structures. That is, the parallel DM “and” can link two or more sentences if they share the same syntactic structure “S + (can) V”.

Example 4

When the flavors (consumed) are excessively acrid, sinews and vessels are worn out and slacken, **and**_CC [MRPL] essence and spirit perish. (*Su Wen* 3)

In Example 4, the parallel DM “and” connects two parallel sentences with different syntactic structures. In other words, the former sentence is featured with a syntactic structure of “S + copular + predicative”, while the latter is characterized by a syntactic structure of “S + V”.

2) Less typical DMs “too”, and “also”

The first case is the parallel DM “too”. There are altogether 64 instances of the parallel DM “too” in the compiled chapters of TT2. Among them, 19 instances are usually used in the sentence-end with a comma inserted between the DM “too” and the previous sentences. The

rest instances of the parallel DM “too” are used in the sentence-medial signalling parallelism as in Example 5.

Example 5

TT2: They receive the turbid qi of the five depots. ... The po-gate, **too**_RR [MRPL], is engaged by the five depots. (*Su Wen* 11)

Different from its normal position of sentence-end, the parallel DM “too” in Example 5 is used in the sentence-medial, linking two adjacent sentences. The reason why it is placed between the subject and the copula “be” of the second sentence lies in that the translators attempt to faithfully keep “the contents and structure of the original text” (Unschuld & Tessenow, 2011, p.13).

The next less typical parallel DM is “also”. There are altogether 37 instances in the compiled chapters in TT2. Among them, with most of them used in the sentence-medial, only 14 instances are used in the sentence-initial as in Example 6 since this kind of usage is inappropriate in some extent.

Example 6

When it comes to revenge, then dust (causes) pressure. **Also**_RR [MRPL], massive rain arrives. (*Su Wen* 69)

The parallel DM “also” is of “insensitivity” or “improperness” in the sentence-initial position (Karlson, 2013, p.8). The corpus-based study can help reveal the “underlying” reason that it might result from the translators’ stylistic preferences in translation.

3) Atypical ordinals and sequential DMs

Atypical parallel DMs mainly involve ordinals like “first”, as well as sequential DMs like “next” and “afterwards”, etc. They are mostly used in the sentence-initial to signal time sequence. For space limitation, only one example will be given below, which includes both “first” and “afterwards”.

Example 7

First_RT [MRPL] one establishes which year it is, to recognize which qi (dominates). (The intervening qi) on the left and on the right can be seen in accordance. **Afterwards**_RT [MRPL] one can make a statement concerning opposition or compliance (resulting) in death or survival. (*Su Wen* 67)

The sequential DMs “first” and “afterwards” are by coincidence included in the same example. Both of the parallel DMs are used to signal time sequence. The position of sentence-initial conforms to the basic requirement of DMs in English with detachment from the proposition.

By comparison of the MRPL column of Table 7-4 with Table 5-4, the following six characteristics of the compiled chapters between TT2 and ST can be observed:

- 1) There are fewer parallel DMs but higher normalised frequencies in TT2 than those in ST (952 vs. 776), which indicates some explicitation of parallel DMs in translation, partly for the use of double markers for emphasis which contain “and” as the first component, or partly due to the shifts from the other categories.
- 2) There are fewer varieties of parallel DMs in compiled chapters of TT2 than that of ST and it appears that most of the Chinese DMs have been rendered as the prototypical DM “and”. That indicates a tendency for simplification in the translation. That is, they use the “common-level” or “familiar” synonyms for the translation (Laviosa-Braithwaite, 2004, p.288).
- 3) Sharp contrast occurs in the normalised frequency of the parallel DM “or” and “或” (or) signalling alternation between TT2 and ST. In other words, many cases of the parallel DM “或” (or) might have been omitted for simplification, or signaled by means of other linguistic devices such as “in the case of”.
- 4) Redundancy of parallel DM use is quite common in the compiled chapters of TT2 as there are many cases of double markers like “and also”, “and then” in which one component of the markers can be omitted without any damage to the linking function of the propositions in question.
- 5) The original positions of the Chinese parallel DMs in ST are mostly preserved in TT2, as the two translators endeavor to keep the original style of the TCM classics, but it seems odd from the perspective of traditional English grammar.

6) Some of the multi-functional Chinese DM “而” have been incorrectly shifted from other categories into the category of MRPL in the translation due to “underspecification” (Crible et al. 2019; Furkó, 2020, p.144-145), because it is challenging to judge its function in Classical Chinese for those two non-native Chinese translators.

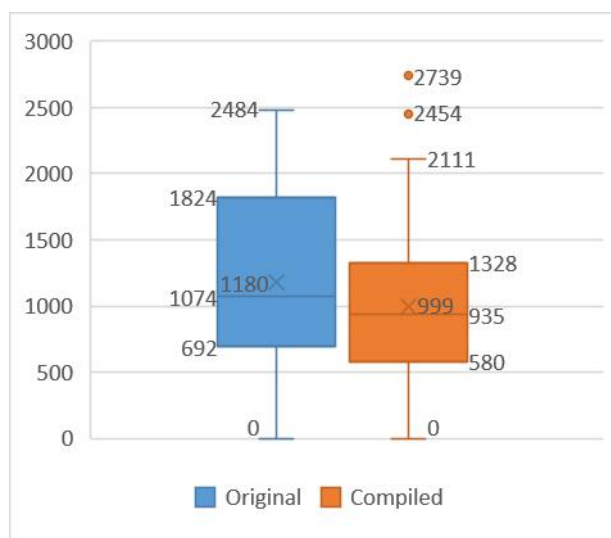
Some of the similar detailed issues including explicitation, improperness, double markers, shifts, and the position of some parallel DMs have been discussed in Chapter 6, so no more examples are provided here.

7.3.3 Comparison of parallel DM use between original chapters and compiled chapters in TT2 and ST

Visually, Figure 7-3 presents the boxplots of the normalised frequencies of English parallel DMs of original and compiled chapters in TT2, the following characteristics can be observed:

- The box of the original chapters is much longer than that of the compiled chapters, which indicates the more dispersed data of the original chapters than that of the compiled chapters.
- The difference between the symmetry in the original chapters and positively right-skewedness in the compiled chapters is found by comparing the length of the upper and lower whiskers.

Figure 7-3 Boxplot of the normalised frequencies of English parallel DMs of original and compiled chapters in TT2



- In addition to the smaller max, min, mean and median, and lower IQR, the compiled chapters also have two outliers (2,454; 2,739).

Taken together, on the one hand, parallel DMs are more frequently used across the original chapters; on the other hand, parallel DMs are unevenly distributed in the compiled chapters, and compared with original chapters, the data of the compiled chapters seem to have been reduced presumably due to the omission of parallel DMs in translation. What's more, the existence of the two outliers might result from the explicitation, shifts from other categories and overuse of parallel double markers, thus possibly leading to some degree of redundancy in the compiled chapters.

Statistically, by the comparison of DM use between the original chapters and compiled chapters, there are far more varied English parallel DMs (7 vs. 17) but lower sum of the

normalised frequencies (1,281 vs. 952) in the compiled chapters of TT2, which is understandable as they have larger sample sizes than the original ones.

In terms of the normalised frequency, the original chapters and compiled chapters both have two types: prototypical DM “and”, and less typical DMs like “too”, “or” and “also”; In addition, the compiled chapters have some atypical ordinal DMs and sequential DMs.

In terms of the forms of those DMs, the original chapters have only one type: single markers; but the compiled chapters have more various types: single markers, double markers and phrasal markers of two words. The reason might be the avoidance of repetitions due to bulk use of DMs in compiled chapters.

In terms of the functions of those DMs, as mentioned in Section 7.1, they can be further categorized into three sub-types: 1) addition; 2) alternation; 2) time sequence. The first two are shared by original and compiled chapters of TT2, but the third is abundant only in compiled chapters of TT2.

By the comparison of the boxplots in Figure 5-2 and Figure 7-3, there are some similarities between the parallel DMs of TT2 and those of ST:

- The box of the original chapters is longer than that of the compiled ones, thus the former has more dispersed data.
- The compiled chapters have a few outliers while the original chapters do not have any.

- Both the original and compiled chapters in ST and TT2 have the same minima “0”, which indicates the absence of DM use in some chapters.

On the other hand, it is also found that there are some differences between TT2 and ST:

- There is a difference in the values between the ST and TT2, especially the original chapters in TT2 have longer upper whiskers than that of the original chapters in the ST, which means that more DMs are used in some original chapters in TT2 which might result from the addition of explications containing parallel DMs.
- In the ST, the compiled chapters have higher max than the original chapters, but in the TT2, the opposite is true. It means that the DM use of the compiled chapters in the TT2 has been reduced presumably due to the omission or shifts to other categories in the translation of parallel DMs.

7.4 Contrastive DMs use between TT2 and ST

7.4.1 English contrastive DM use in original chapters of TT2

The MRCT column of Table 7-3 shows that there are only 7 contrastive DMs ($N-f = 329$) in original chapters of TT2. In terms of the frequencies, among the 7 contrastive DMs in original chapters of TT2, “but” is the prototypical DM, followed by some less typical ones [e.g., “while”, “though”, “and yet”, “nevertheless”]. The rest of them [“however”, “instead”] are atypical DMs.

In terms of the forms of DMs, they can be grouped into two types: single markers and double markers.

In terms of their functions, they can be categorized into two groups: one is the DMs signalling adversative relation [e.g., “but”, “nevertheless”], the other is the DMs signalling concession [e.g., “though”].

In the following analysis, some of the DMs with striking features will be exemplified for illustration.

1) Prototypical DM “but”

As the prototypical contrastive DM, “but” is the most frequently used in the original chapters of TT2, signalling adversative relation as shown in Example 8.

Example 8

The heat may be extreme, **but**_CCB [MRCT] he will not die. (*Su Wen* 31)

In Example 8, the DM “but” is used to link two adjacent clauses signalling contrast, in which the extreme heat in human body in the prior clause implies danger of human life and the subsequent clause explicitly asserts that the patient will not die. The use of the contrastive DM “but” can help to facilitate the forecast of the result of the disease in the situation of extreme heat before the TL readers begin to read the second clause.

2) Less typical DMs “though” and “and yet”

The contrastive DMs “though” and “and yet” both have high normalised frequencies. As for their functions, “though” and “and yet” signal concession and adversative relation respectively. Pragmatically, concession is an indication of roundabout contrast, with a weaker sense of difference from the prior statement.

Example 9

(As far as) the diseases of the physical appearance (are concerned, **though_CS** [MRCT],) no one knows their nature. (*Su Wen* 25)

There are only two cases of “though” in the original chapters in TT2, but they have a common feature: as a parenthesis with a comma separated from the clause as in Example 9.

Presumably, it is one of the translators’ personal stylistic preferences.

Example 10

All residuals (result from a situation where) the heat is extreme **and_CC** [MRPL] **yet_RR** [MRCT] one forces the (patient) to eat. Hence, there are residuals. (*Su Wen* 31)

The other less typical DM “and yet” is a double marker, which consists of two different components “and” and “yet”, signalling a weak sense of contrast. The former “and” links the prior sentence and “yet”-clause, with the latter is the focus of the double marker. If the first component “and” is omitted, it will not affect too much the pragmatic effects of the English translation.

3) Atypical DM “however”

The atypical DM “however” has only one occurrence in the original chapters of TT2. It is often used with an upper case in the sentence-initial to signal a strong sense of adversative relation as in Example 11.

Example 11

TT2: All these (conditions) are often confused by the practitioners. **However**_RR [MRCT], with a natural approach one can grasp them. (*Su Wen* 76)

Example 11 presents a sharp contrast between the physicians’ puzzle about the complexity in the pulse diagnosis of the spleen, lung, kidney, and liver as well as their solution to the differentiation of the abnormal changes by careful examination. But they certainly can make it if they make careful examination. In this sense, a sharp contrast is presented by using “however” between the two sentences.

It is found that contrastive DMs in original chapters of TT2 and ST have the following characteristics:

- There are more varied contrastive DMs in TT2 than ST, and most of the prototypical contrastive DMs “而” in ST have been rendered as the prototypical DMs “but” and “while”, which can reflect the personal preferences of the translators when the multi-functional DM “而” is used in a context signifying obvious contrast.
- There are higher normalised frequencies of the contrastive DMs in TT2 than ST, which means that some of the implicit contrastive message relations in the ST have been specified in TT2 by means of explicitation.

- Some of the contrastive DMs signalling contrast in the ST have been rendered as DMs signalling concession and double marker “and yet” with a weak sense of contrast in TT2, thus achieving higher normalised frequencies in this aspect.

What’s more, it is noteworthy that two striking features of explicitation and shifts of contrastive DMs should be highlighted in this part.

1) Explicitation of contrastive DMs

There are 18 cases of explicitation of contrastive DMs in the original chapters of TT2. For better comparison, Example 12 and its ST are provided below, in which the slot for absence of Chinese DM has been inserted with “[CT]”.

Example 12

TT2: Therefore, the speeches of today's people quickly travel over more than one thousand miles, **while**_CS [MRCT] (in fact) they do not understand the discourses on the foot-long section and on the inch, and in their diagnoses, they do not take the human affairs (of their patients) into account. (*Su Wen* 78)

ST: 是以/c 世人/n 之/u 语/v 者/k , /w 驰/v 千/m 里/n 之/u 外/f , /w [CT] 不/d 明/v 尺寸/n 之/u 论/n , /w 诊/n 无/v 人/n 事/n 。 /w

The explicitation of the contrastive DM “while” between the two successive clauses in TT2 is due to the parataxis in Chinese and hypotaxis in English. The purpose is to facilitate

inferences and minimize the cognitive workload of the TL readers. It also applies to the other 17 cases of explicitation of the contrastive relation between the adjacent sentences.

2) Shifts of contrastive DMs

Though there are only two cases of shifts in the original chapters of TT2, both are shifts from the category of MRPL as in Example 13.

Example 13

TT2: In these cases, it is always such that the disease has already weakened, **but**_CCB [MRCT] there is some heat that remains stored. (*Su Wen* 31)

ST: 若/v 此/r 者/k , /w 皆/d 病/v 已/d 衰/v , /w 而/c [MRPL] 热/n 有/v 所/u 藏/v 。 /w

In Example 13, Qibo explains to Huang Di the abstract pathological reason why there remains some heat in the human body so that the disease cannot be completely cured. It is the multi-functional DM “而” that results in the categorical shift in translation. If it is rendered as a parallel DM “and”, then it means the remaining heat in the human body is a byproduct of the weakened disease; If it is rendered as a contrastive DM “but”, then it implies that the disease should be completely well if there is no lingering heat in the human body. This kind of shift can reflect whether the translator can have an accurate interpretation of the functions of the DMs as they are multi-functional.

7.4.2 English contrastive DM use in compiled chapters of TT2

There are 18 contrastive DMs (N-f =161) in the compiled chapters of TT2, accounting for 5.5% of the total normalised frequencies. In terms of the normalised frequencies, the prototypical contrastive DMs include “but” and “while”. The atypical DMs cover the following: e.g., “in contrast”, “otherwise”. The rest of them are less typical contrastive DMs such as “nevertheless”, and “however”.

In terms of the forms, they can be categorized into three kinds: single markers, double markers, phrasal markers of two words, and of three or more words.

In terms of the sub-functions, they can be divided into two sub-types: one is to signal adversative relation [e.g., “but”, “however”], and the other is to signal concession [e.g., “even if”, “even then”].

Below, only those DMs with striking features concerning the compiled chapters of TT2 will be illustrated.

1) Prototypical contrastive DMs “but” and “while”

The two prototypical contrastive DMs are “but” and “while”, both signalling adversative relations, but there is some subtle difference between them. The former expresses a sharp but expected contrast, while the latter indicates a comparing difference with the prior message.

Example 14

The urine does not flow freely; it resembles a protuberance illness, **but**_CCB [MRCT] it is no protuberance illness. (*Su Wen* 36)

Example 15

When the pain is on the left, **while**_CS [MRCT] the (movement in the) vessels on the right (is marked by) disease, apply a grand piercing. (*Su Wen* 62)

Examples 14 and 15 clearly show the subtle difference between the prototypical contrastive DMs. In Example 14, the DM “but” signals the contrast of “resembling a protuberance illness” and “no protuberance illness” that one can easily expect. The contrast between “on the left” and “on the right” in Example 15 is signaled by using the DM “while”.

2) Less typical contrastive DMs “and yet” and “and”

The DM “and yet” is a double marker, while the second DM “and” is a multi-functional marker, the illustration of those DMs can be conveniently compared with the double markers in the other sections.

Example 16

If in a specific year (the arrangement is such that there should) be no illness, **and**_CC [MRPL] **yet**_RR [MRCT] the qi in the depots does not correspond. (*Su Wen* 70)

The double marker “and yet” signals a sharp contrast in which the focus is the second component “yet”, and the first component “and” serves a connective linking the two successive messages. Apart from “and yet”, there are the other double markers “and vice versa” and “if/however”. They share the same feature: if the first component is omitted, it will not affect the function of the remaining component of the markers.

3) Atypical contrastive DM “and vice versa”

The atypical contrastive DMs in the compiled chapters of TT2 include “and vice versa”, “otherwise”, “in contrast”, and “in the opposite case”, etc. The first two signal a stark but expected contrast which needs no more special note as to the result, while the last two express a sharp but unexpected contrast whose results or consequences might not be expected.

Example 17

‘Slowness and speed, leaving and returning (of qi), where the wind emerges from, as well as any transformation and change,’ the fact is, they result from the changes of (qi from) abundance to weakness (**and**_CC [MRPL] **vice**_RR21 **versa**_RR22 [MRCT]) and nothing else. (*Su Wen* 68)

The first atypical contrastive DM “and vice versa” in Example 17 signals contrast, in which the result can be expected. That’s why the contents are quite short when they signify the result or consequence after the atypical contrastive DMs “and vice versa” as in Example 17.

Example 18

Hence, in spring and summer, an association with yang is life; an association with autumn or winter, this is death. **In**_II **the**_AT **opposite**_JJ (**case**_NN1) [MRCT], an association with autumn or winter is life. (*Su Wen* 80)

However, the contrastive DM “in the opposite case” is different from “and vice versa”, though they also signal contrast, as the result or consequence of the stark contrast following

the DM “in the opposite case” cannot be easily expected. Therefore, there should be longer sentence like “an association with autumn or winter is life” to state the next part of the clause in translation. If not, the TL readers would make more cognitive efforts in deciphering the successive message.

By comparison of the MRCT column of Table 7-4 with Table 5-4, it is found that, there exist the following characteristics between TT2 and ST:

- There are more various contrastive DMs in TT2 than ST, and most of the contrastive relations in ST have been expressed by the prototypical DMs “but” and “while” in TT2, which might result from the personal preferences of the translators.
- Higher normalised frequencies of the contrastive DMs are used in TT2 than ST. There are two reasons for this: One is that some of the implicit contrastive message relations in the ST have been spelled out in TT2 by explicitation; The other is that some of the contrastive DMs come from the shifts from the other categories as they are multi-functional DMs.
- In terms of the forms, the ST has three DM forms: most of them are monosyllabic markers, but there are only a few disyllabic markers and pair markers; while TT2 also has three different DM forms: single marker, double markers, phrasal markers. Among them, a small number of contrastive DMs enjoy the majority of the normalised frequencies.
- Concession, as one of the sub-functions of contrast, has been transferred into TT2 by “specification” (Crible et al. 2019; Furkó, 2020, p.144-145), thus having various

concessional DMs like “even though”, “even if”, “although”, “though”, “regardless”, “still”, and “even then” for the correspondence.

In addition, another three issues should be noted: explicitation, shifts, positions of contrastive DMs in the compiled chapters of TT2.

1) Explicitation of contrastive DMs

In the compiled chapters of TT2, there are altogether 121 explicitations of contrastive DMs, which include “although”, “and”, “but”, “on the contrary”, “however”, “even if”, “nevertheless”, “otherwise”, “regardless”, “though”, “then”, “and vice versa”, “while”, and “and yet”. The contrastive DMs that are most often added in this way are “but” and “while” as seen in Examples 19 and 20.

Example 19

TT2: One (tries to) observe it **but**_CCB [MRCT] it has no physical appearance; one (tries to) taste it **but**_CCB [MRCT] it has no flavor. (*Su Wen* 26)

ST: 视/v 之/u [CT] 无形/a , /w 尝/v 之/u [CT] 无味/a 。 /w

BT: observe it no physical appearance, taste it no flavor.

Example 20

TT2: When the conduits are depleted **while**_CS [MRCT] the network (vessels) are full, how is that ? (*Su Wen* 28)

ST: 经/n 虚/a [CT] 络/n 满/a 何如/r ? /w

BT: conduits depleted, network full, how is that?

Just like those cases of explicitation of contrastive DMs in the original chapters of TT2, the addition of the contrastive DMs in the compiled chapters of TT2 is due to the shift from Chinese parataxis to English hypotaxis, which is clear by the comparison of the TT2 and ST. In this example, in the slots shown by “[CT]” in the ST, there is implicit contrastive message relationship, so there should be explicitation of contrastive DMs in TT2. The purpose is to minimize the cognitive workload of the TL readers.

2) Shifts of contrastive DMs

The shifts of contrastive DMs are unanimously from the category of MRPL to MRCT, involving the following contrastive DMs: “but”, “however”, “nevertheless”, and “while”.

Then, what and why have so many lexical issues been shifted into contrastive DMs?

Example 21

TT2: The yang qi does not yet abound above, **but** CCB [MRCT] the vessels are full. When they are full, then (the patient) coughs. (*Su Wen* 49)

ST: 阳气/n 未/d 盛/v 于/p 上/f 而/c [MRPL] 脉/n 满/v , /w 满/v 则/d 咳/v , /w

BT: Yang qi does not abound above, and vessels are full, full then cough.

By comparing the TT2 and ST, it is found that those contrastive DMs have been shifted from the multi-functional Chinese DM “而”. As seen in Example 21, in the ST, “阳气/n 未/d 盛/v

于/p 上/f” (Yang qi does not abound above) and “脉/n 满/v” (vessels are full) both negatively contribute to the cough of the patient. So, their relation belongs to parallelism instead of contrast. If this type of improper shift of the multi-functional Chinese DM “而” occurs in the English translation, it would bring about negative pragmatic efforts for TL readers.

3) Positions of contrastive DMs

As for the contrastive DMs in compiled chapters of TT2, most of them lie in inter-sentence with some in the sentence-medial. But “however” is the exception, as almost all of them are in the sentence-initial to signal a sharp contrast.

Example 22

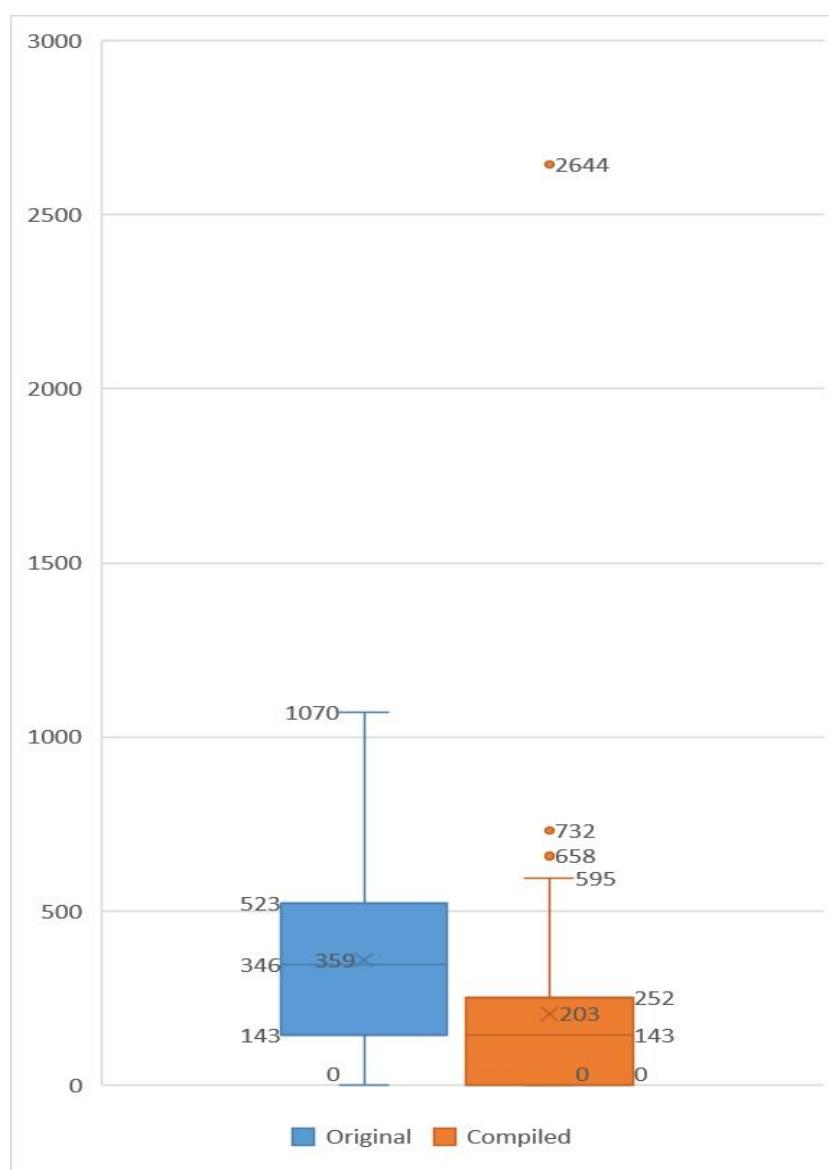
(**However**_RR [MRCT],) at this time, (even) a good practitioner cannot stop (them). He must wait until (the disease) weakens by itself and only then pierce it. (*Su Wen* 35)

From the context, it is known that the contrastive DM “However” with an upper case in the sentence-initial of Example 22 presents the contrast between the serious malaria cold and heat as well as the treatment of the disease: no one can deal with it but to wait the disease weaken by itself before needling.

7.4.3 Comparison of contrastive DM use between original chapters and compiled chapters of TT2 and ST

As for the normalised frequencies of English contrastive DMs of the original and compiled chapters in TT2, the boxplot in Figure 7-3 presents the following characteristics:

Figure 7-4 Boxplot of the normalised frequencies of English contrastive DMs of original and compiled chapters in TT2



Firstly, the box for the original chapters is longer than that of the compiled chapters, which means that 50% of the data in the original chapters are more dispersed than that of the compiled ones; Secondly, the median line of the compiled chapters almost lies outside of the box of the original chapters, thus there is a considerable difference between the two groups; Thirdly, both are positively right-skewed especially the compiled chapters, as the bottom line

of the compiled chapters box overlaps with the X-axis, which means many compiled chapters have no contrastive DM use; Fourthly, the values of the contrastive DMs in compiled chapters present two extremes: most of them are comparatively lower than those of the original chapters; but there are also three outliers in the compiled chapters, which suggest over-use of contrastive DMs presumably due to the explicitation or shifts from other categories in translation..

By the comparison of Figure 7-4 and Figure 5-3, some major characteristics between TT2 and ST can be observed as follows:

- The box of original chapters in TT2 have been reduced to half the size of that of the original chapters in ST. It means that some Chinese DMs in the original chapters of ST have been omitted in English translation.
- Both the boxplots in ST and TT2 are extremely right-skewed, in which the lower bottom lines of the two boxes in ST overlap with the X-axis, but only those of the original chapters have been heightened upwards to varying degree in TT2. That suggests that the contrastive DMs are less used in ST and TT2 except for the original chapters in TT2.
- There are two mild outliers and one extreme outlier for the compiled chapters in ST and TT2. Compared with the ST, the values for the two mild outliers in TT2 have been reduced while the value of the extreme outlier in TT2 is twice higher than that in ST, which means that in some chapters some of the implicit contrastive message relationships have been

explicitated and rendered as the prototypical contrastive DM “while” or other categories of DMs have been shifted to contrastive ones.

7.5 Elaborative DMs use between TT2 and ST

7.5.1 English elaborative DM use in original chapters of TT2

There are only three elaborative DMs (N-f = 35) as shown in the column of MREL of Table 7-3.

Among the three elaborative DMs [“i.e.”, “that is”, and “still”], due to the contracted form “i.e.” originating from the Latin phrase “*id est* (that is)”, there are only two forms: single markers and phrasal markers.

As for the functions of elaborative DMs, following Halliday (2004, p.540-541), they can be categorized into two major types: 1) exposition: “i.e.”, “that is” in Example 23; 2) clarification: “still”, which is used to “signal a more refined characterization of the sense of the foregoing” (Fraser, 1993, p.27) in Example 24.

Example 23

Now, when one knows that from which the yin and yang (conduits) of hands and feet suffer, whenever one treats the disease, one must first remove their blood. **That**_REX21 **is**_REX22 [MREL], remove that from which they suffer and pay attention to what they long for. Then drain what is present in surplus and supplement what is insufficient. (*Su Wen* 24)

Example 23 explains the treatment of suffering of yin and yang (conduits) in the hands and feet of human body. Then TL readers with inadequate TCM knowledge may wonder why there is a need to remove the blood of hands and feet of the patient for relieving the suffering. The use of the elaborative DM “that is” can elaborate that, what follows is about the purpose and procedures.

Example 24

I have recited the upper and the lower chapters of the *Vessel Classic* very many times and I differentiate what is different and I compare the likes. **Still**_RR [MREL], I am not yet able to achieve success in all (cases I treat). Also, how could (my learning) suffice to understand them? (*Su Wen* 76)

Example 24 concerns how to diagnose a disease in a natural approach in a conversation between Huang Di and Leigong, one of Huang Di’s imperial physicians. The elaborative DM “still” in Example 24 is used to signal a more refined characterization of Leigong’s self-evaluated limitation in academic learning. In this sense, the subsequent message serves as the more refined explanation of the previous one.

Similar with the original chapters of TT1 as mentioned in Section 6.6.1, the scarce use of elaborative DMs in compiled chapters of TT2 is due to three reasons: self-commentary devices in Classical Chinese, face-to-face communication, and short passages in the compiled chapters such as *Su Wen* Chapters 57 and 81. Therefore, no more discussion will be taken on in this respect.

However, as there is only one elaborative DM “而” (N-f = 608) with 5 occurrences in original chapters of ST, there is no need to make an individual table to showcase it and its frequencies.

By comparing the column of MREL of Table 7-3 with Table 5-3, some major characteristics between TT2 and ST can be observed as follows:

There are more various elaborative DMs in TT2 than those in ST, but that there is a considerable reduction of the sum of normalised frequency in TT2 than ST, which results from the omission in the English translation. In this example, the symbol “[EL]” stands for the omission of elaborative DM in translation.

Example 25

TT2: When metal meets fire, [EL] it is destroyed. When water meets soil, [EL] it is interrupted (in its flow). These (five processes) apply to the (interactions among) all the myriad beings; their (validity) is never exhausted. (*Su Wen* 25)

ST: 金/n 得/v 火/n 而/c [MREL] 缺/v , /w 水/n 得/v 土/n 而/c [MREL] 绝/v , /w 万物/n 尽/v 然/n , /w 不可/v 胜/v 竭/v 。 /w

Example 25 presents 2 cases of elaborative DM use in one paragraph. It is obvious that in this example the 2 cases of elaborative DMs in the ST have been totally under-specified by omission and the use of “when”-clause. In other words, some of the elaborative DMs have been omitted by using other linguistic means in TT2.

Taken together, the elaborative DM use in the original chapters of TT2 has the following characteristics: 1) There is a limited use of elaborative DMs; 2) Some of the elaborative DMs are the outcome of explicitation in translation, when encountering with abstract TCM knowledge or procedures. 3) Sometimes some of the elaborative DMs have been omitted by the use of the other linguistic means in TT2.

7.5.2 English elaborative DM use in compiled chapters of TT2

There are only 10 elaborative DMs (N-f=102) in compiled chapters of TT2. In terms of the normalised frequencies, the prototypical elaborative DMs in this part include “that is to say”, “i.e.”, and “that is”. The atypical elaborative DMs include those DMs in the list with a normalised frequency of “1”, involving “this is”, “this way”, “in this case”, and “that is to say (that)”. The others belong to less typical ones.

As shown in the MREL column of Table 7-3, they can be divided into three different forms: single markers, phrasal markers, and discourse parentheticals.

As for the functions of those elaborative DMs, they can be roughly grouped into two types: 1) exposition: e.g., “that is to say”, “i.e.”, “that is” and “and” etc. 2) clarification: “in this case”, and “this way”.

Example 26

(Huang) Di: "It happens that someone who is already old in years nevertheless has children, how can that be? "

Qi Bo: "In_II **this**_DD1 **case**_NN1 [MREL] the life span (allotted) by heaven exceeds the norm. The qi passes through the vessels as usual, and the qi of the kidneys has a surplus. (*Su Wen* 1)

Example 26 presents a turn of the conversation between Huang Di and Qibo, in which, the elaborative DM “in this case” is used to explain the reason for the phenomenon “some old men can have children” as “their life span exceeds the average”. Different from the other elaborative DMs within one sentence, “in this case” is used to signal elaboration in a turn, which is a cross-sentential unit.

As shown in Table 5-4 of ST and the MREL column of the Table 7-4 of TT2, some distinctive characteristics can be observed:

- There are far more varieties and higher sum of normalised frequencies in TT2 than in ST, an indication of explicitation, which might result from the translators’ intention of reminding the TL readers that the messages after the elaborative DMs are the elaboration of the previous sentences or clauses.

Example 27

TT2: As for 'penetrate the limitless,' (**this**_DD1 **is**_VBZ **to**_TO **say**_VVI [MREL] :) one can transmit (this knowledge) to later generations. It is therefore in this (respect) that the practitioners differ. (*Su Wen* 26)

ST: 通/v 于/p 无穷/z 者/y , /w [EL] 可以/v 传/v 于/p 后世/n 也/y , /w 是故/c 工/n 之所
以/c 异/v 也/y 。 /w

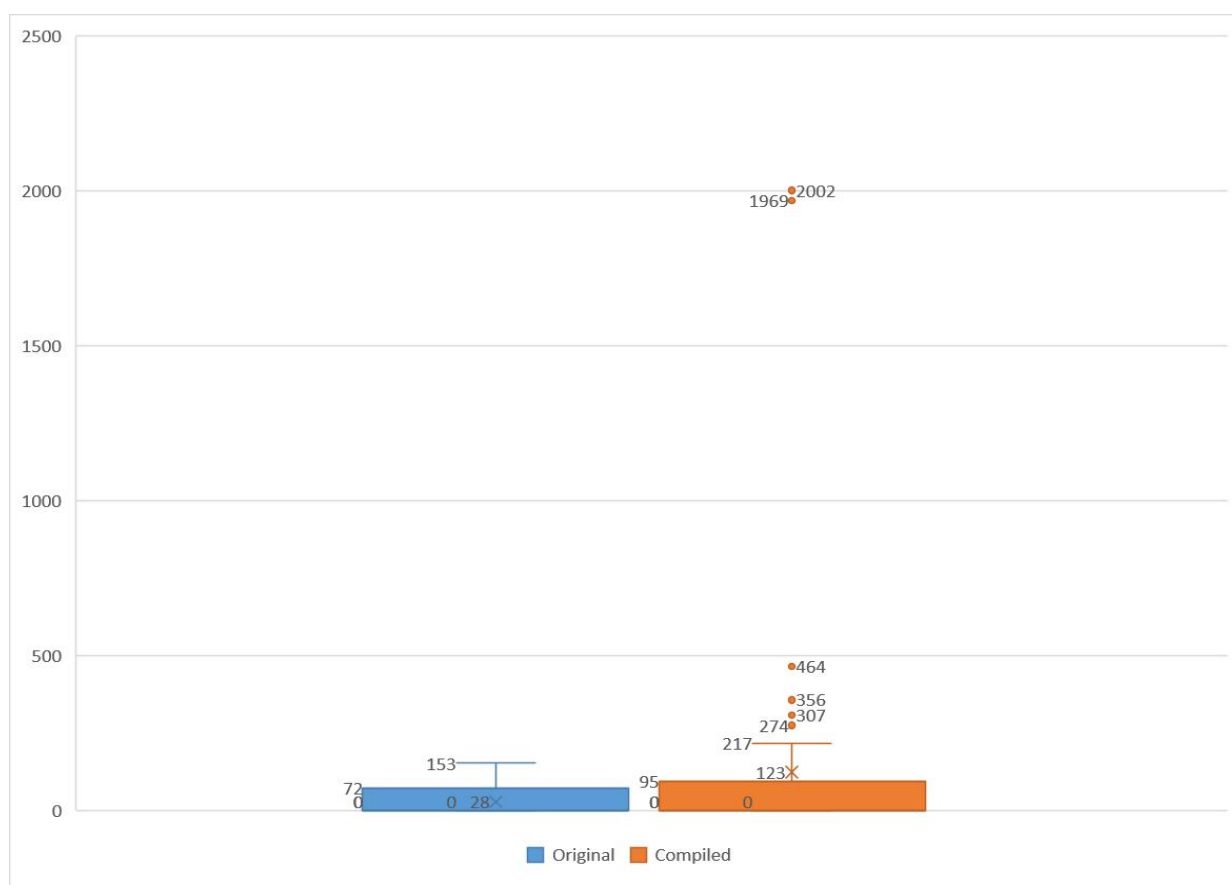
Compared with the ST, the elaborative DMs “this is to say” in Example 27 is explicitated to remind the TL readers that the subsequent message is the elaboration of the previous one. In other words, “penetrate the limitless” means “transmit (this knowledge) to later generations”. In fact, the elaborative DM can be omitted without too much damage to the function of the original sentences.

- The forms of elaborative DMs in TT2 include single markers, phrasal markers and discourse parentheticals, and most of the elaborative DMs in ST have been rendered as the prototypical DMs “that is to say”, “i.e.”, and “that is”.
- Except for two cases, almost all the English translations of the elaborative DMs in the compiled chapters of TT2 are the outcome of explicitation as they are included in the brackets.

7.5.3 Comparison of elaborative DM use between original chapters and compiled chapters of TT2 and ST

The boxplot of Figure 7-5 presents the normalised frequencies of English elaborative DMs in the original and compiled chapters of TT2.

Figure 7-5 Boxplot of the normalised frequencies of English elaborative DMs of original and compiled chapters in TT2



Since there are not many elaborative DMs both in original chapters and compiled chapters, the boxes for the two groups are quite small, presenting two similarities.

- The boxes for original chapters and compiled chapters are quite small with an IQR of less than 100, and the lower bottom lines of the two boxes overlap with the X-axis. It indicates that elaborative DMs are rarely or even not used in most of the chapters.
- The boxplots for the two different chapters are heavily positive skewed with short upper whiskers but without lower whiskers, suggesting the lower frequencies of elaborative DM use.

Meanwhile, there is also a stark difference between them:

- There are two extreme outliers (2,002; 1,969) and four mild outliers (464; 356; 307; 274) in the boxplot of the compiled chapters, constituting the biggest difference between the two groups.

In terms of the frequencies, there is no prototypical elaborative DM in the original chapters, while in the compiled chapters the prototypical elaborative DM include “that is to say” and its variants “i.e.” and “that is”.

In terms of the forms, the compiled chapters use various forms of elaborative DMs: single markers, phrasal markers, and discourse parentheticals. Presumably, the translators might attempt to avoid repetition in the translation as there are many opportunities for the explication of elaborative DMs.

In terms of their functions, the similarity is that “that is” and “i.e.” are both used in original chapters and compiled chapters. However, other elaborative DMs such as multi-functional DM “and” as well as the DMs “in this case” and “this way” are only used in compiled chapters of TT2.

By the visual comparison of Figure 7-5, some characteristics of elaborative DM use between TT2 and ST can be found:

- In the boxplots of the elaborative DMs of ST, the boxes have not been formed both in the original chapters and in the compiled chapters due to quite limited elaborative DMs.

- While in the boxplots of the elaborative DMs of TT2, the two boxes have been formed even if they are quite small with a low IQR and extremely positive skewedness.
- The values of the outliers in TT2 have been heightened to varying degree and even about 5 times higher than ST. That suggests that in TT2 some elaborative DMs have been explicated for better pragmatic effects.

7.6 Inferential DMs use between TT2 and ST

7.6.1 English inferential DM use in original chapters of TT2

As shown in the MRIR column of Table 7-3, there are 14 inferential DMs (N-f =1716), with the most DMs in the four categories. In terms of the frequencies, they are classified into three types: 1) prototypical (e.g., “when/if/once ...then”, “hence”); 2) atypical (e.g., “in cases”, “thereby”); 3) less typical (e.g., “and if”, “or if”).

In terms of their forms, those inferential DMs can be categorized into five types: single markers, double markers, pair markers (e.g., “if...then”, “when...then”, and “once...then”), phrasal markers (e.g., “as a result”, “in this case”), and discourse parentheticals (e.g., “in cases”).

In terms of their sub-functions, they can be divided into three sub-types: 1) signalling making inferences (e.g., “when/if/once ...then”, “thereby”); 2) drawing a conclusion (e.g., “therefore”, “as a result”); and 3) hypothesizing (e.g., “if”, “and if”).

In addition, some important issues will be discussed below as they account for the majority of the frequencies.

1) Prototypical DMs “when/if/once ...then”

The prototypical pair DM “when/if/once ...then” has some varieties: “when...then”, “if ...then”, “once...then”, “when...then; when...then”, and “when...then; if...then”. For the avoidance of repetition, the consecutive form of “when...then; if...then” is alternatively used in the original chapters of TT2.

Example 28

TT2: **When_CS** [MRIR]21 (this) recession with countermovement involves the depots, **then_RR** [MRIR]22 (the patient) will die. **When_CS** [MRIR]21 it involves the conduits, **then_RR** [MRIR]22 he will survive. (*Su Wen* 30)

Example 28 presents making inferences during a diagnosis as to whether the patient will die or survive under different conditions or premises in TCM. In the example, the inferential pair DM “when...then; when...then” is used to depict the consecutive inferences of different results in different conditions.

Example 29

When_CS [MRIR]21 a heat disease has somewhat abated, **and_CC** [MRPL] (**if_CS** [MRIR]21 at this point) one eats meat, **then_RR** [MRIR]22 (the disease) returns. **If_CS**

[MRIR]21 one eats a lot, **then**_RR [MRIR]22 a residual result. These are restrictions that apply here. (*Su Wen* 31)

Sometimes, if the conditions are more complex as seen in Example 29, the form of “when...and if ...then; if...then” is used rather than “when...then; when...then” in order to avoid dullness by the repetitive use of the same structure “when...then”.

2) Less typical double DMs “and if”

As mentioned above in Section 6.1.1, double DMs “and if” and “or if” consist of two components: “and” serving as the parallelism or “or” signalling alternation and “if” signalling hypothesizing. The focus of this kind of double DMs lies in the latter while the former functions as a link between the prior clause and the “if”-clause.

Example 30

When a person weeps and tears do not leave (the eyes), or if they leave (the eyes) in small quantities **and**_CC [MRPL] **if**_CS [MRIR] the snivel does not follow them, why is that? (*Su Wen* 81)

Co-occurrence of the two inferential pair DMs “and if” in one sentence can be seen in Example 30. The two DMs are often used in inter-sentence in which “or” connects the “when”-clause and the “if”-clause, signalling alternation; While the DM “and” links the two “if”-clauses, signalling parallelism.

By the comparison of Table 5-3 and the MRIR column in Table 7-3, the following differences can be found:

1) There are more forms of inferential DMs in original chapters of TT2 than those in ST. In ST, the DM forms include mono-syllabic markers and disyllabic markers while in TT2, they have single markers, double markers, pair markers, phrasal markers, and discourse parentheticals. It suggests that the English translation of inferential DMs presents more varieties, presumably related to the translators' personal stylistic preferences.

2) There are slightly higher normalised frequencies of inferential DMs in original chapters of ST than those in TT2. That means that in the English translation some of the inferential DMs in original chapters of ST have been omitted or signaled by other linguistic devices.

3) TT2 has more varieties of DMs than ST even if they signal the same message relationship. Take making inferences as an example, in the ST, they have only “则” (then) and “乃” (so), but in TT2, they have “when/if/once ...then”, “Hence”, “if”, “when”, “thereby” and “and if”, etc. It might be that, due to bulk use of inferential DMs, the translators have a heightened awareness of using varieties of DMs for the avoidance of repetitive use of the same inferential DMs in TT2.

7.6.2 English inferential DM use in compiled chapters of TT2

The MRIR column of Table 7-4 indicates that there are altogether 33 inferential DMs (N-f = 1706) in the compiled chapters of TT2.

In terms of the frequency of inferential DMs, they can be divided into three types: 1) prototypical DMs (e.g., “if/when/once/in case ... then”, “hence”, and “if”); 2) less typical DMs (e.g., “then”, “therefore”); and 3) atypical DMs (e.g., “in such cases”, “that is why”).

In terms of their forms, they are grouped into five types: 1) single markers; 2) double markers; 3) pair markers (e.g., “if ... then”, “when ... then”); 4) phrasal markers; and 5) discourse parentheticals (e.g., “this is because”, “that is why”).

In terms of their functions, they can be divided into three types: 1) making inferences (e.g., “if/when/once/in case ... then”, “hence”) accounting for most of the normalised frequencies; 2) drawing a conclusion (e.g., “then”, “therefore”); 3) hypothesizing (e.g., “if”, “once”).

Due to the similarity in prototypicality of compiled chapters of TT2 with that of original chapters of TT2, no more examples are given here for saving the space.

By the comparison of Table 5-4 and the MRIR column in Table 7-4, the following four characteristics can be observed:

- There are almost twice as many occurrences of inferential DMs in the compiled chapters of TT2 than that of ST. It means that, in TT2 more DMs and their variants have been explicitated, due to the difference between Chinese parataxis and English hypotaxis or shifted from the other categories.
- More varied forms of inferential DMs can be easily seen in compiled chapters than original ones. Though in original chapters there are only monosyllabic markers and disyllabic markers, in the compiled chapters they have five types: single markers, double markers, pair

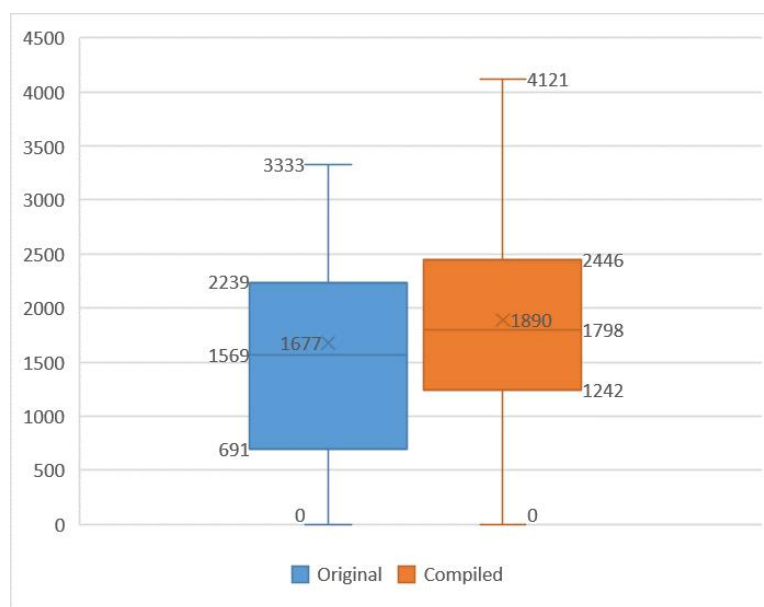
markers, phrasal markers and discourse parentheticals. That indicates that compiled chapters in TTs use more DMs and their variants for the English translation to avoid the repetitive use of the limited inferential DMs.

- In ST, the prototypical inferential DMs of the compiled chapters are “则” (then) and “故” (so/ therefore) signalling making references and drawing a conclusion; While in TT2, the prototypical DMs include various forms like “if/when/once/in case ... then”, “hence” and “if” signalling making inferences and hypothesizing respectively, thus emphasizing the hypothetical conditions.
- Redundancy in inferential double markers in TT2 can be avoided by omitting one of the components. Admittedly, apart from the linking function, the component that can be omitted might have another function of strengthening the existence of the inferential DMs when deciphering the message relationship between the two adjacent sentences.

7.6.3 Comparison of inferential DM use between original chapters and compiled chapters of TT2 and ST

The boxplots in Figure 7-6 visually present the data distribution and differences of the normalised frequencies of English inferential DMs between original and compiled chapters in TT2.

Figure 7-6 Boxplot of the normalised frequencies of English inferential DMs of original and compiled chapters in TT2



The following characteristics can be observed:

- The box for the original chapters is longer than that of the compiled chapters, which indicates the more dispersion of the data in the original chapters.
- In the boxplots of both the original and the compiled chapters, the longer upper whiskers than the lower ones suggest slightly right-skewedness, with more extreme performance in the original chapters.
- The box in compiled chapters has been displaced upward than that of the original chapters, which means that, the data in the compiled chapters have been amplified, resulting from the explication of the inferential DMs or shifts from other categories.

As can be seen from Figure 5-4 and Figure 7-6, the boxplots of the original and compiled chapters in TT2 are slightly different from those in ST as follows:

- The boxes in ST look longer in TT2, which means that the values of DM use in ST have been explicitated to some degree, presumably due to the amplification in translation.
- The boxplots in TT2 are less positively right-skewed than that of ST. It indicates that the values of DM use in TT2 have been increased to varying degrees, which results from the amplification of DMs in translation.
- The boxplots of TT2 resemble those of ST but with higher values, which indicates the translators' endeavor to be faithful in the English translation of the inferential DMs in TT2, trying to remain the original style of the ST, and achieving better pragmatic effects on TL readers by several cases of explicitation.

7.7 Summary of comparison between original chapters and compiled chapters in TT2

HYPOTHESIS ONE: As a covert translation to keep “the contents and structure of the original text” (Unschuld & Tessenow, 2011, p.13) and to “conceal the translated nature of TT by producing a text which is functionally equivalent to ST” (Shuttleworth & Cowie, 1997, p.33-34), there might be some differences in the DM use between the original and compiled chapters in TT2.

With an aim to discern the extent of the difference between the original chapters and compiled chapters in TT2, an effect size phi coefficient (ϕ) test is conducted by using the online calculator.

Table 7-5 Comparison of the Total of the normalised frequencies of DM use between original chapters and compiled chapters in TT2

Types of Chapters	Total (R-f)	Wordcount	Total (N-f)	Differences (Phi)
Original Chapters	286	8510	3361	0.005803
Compiled Chapters	4035	138123	2921	

The effect size test based on the phi coefficient (ϕ) indicates no association in the DM use between original and compiled chapters in the TT2 as the value of phi coefficient ($\phi=0.005803$) is negligibly small and can occur due to random variation in the data. Therefore, it should be interpreted as a null result. In other words, just as in TT1, there is no difference in the DM use between original chapters and compiled chapters in TT2 at the statistical level.

However, this does not mean that there are not observable differences in terms of the way in which DMs are used in terms of types, forms, and functions, as will be shown below.

7.7.1 Data visualisation for the comparison between original chapters and compile chapters in TT2

For convenient comparison, just as in Section 6.7.1, the values including the Total, mean, min and max of TT2 between the original chapters and compiled chapters will be shown in Table 7-6. In the table, “O” and “C” stand for “original chapters” and “compiled chapters” respectively.

Table 7-6 Comparison of the normalised frequencies between original and compiled chapters in TT2

Items	Total	MRPL	MRCT	MREL	MRIR
Total*	O>C	O>C	O>C	O<C	O>C
Mean	O>C	O>C	O>C	O<C	O<C
Min	O<C	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>	<u>O=C</u>
Max	O<C	O<C	O<C	O<C	O<C

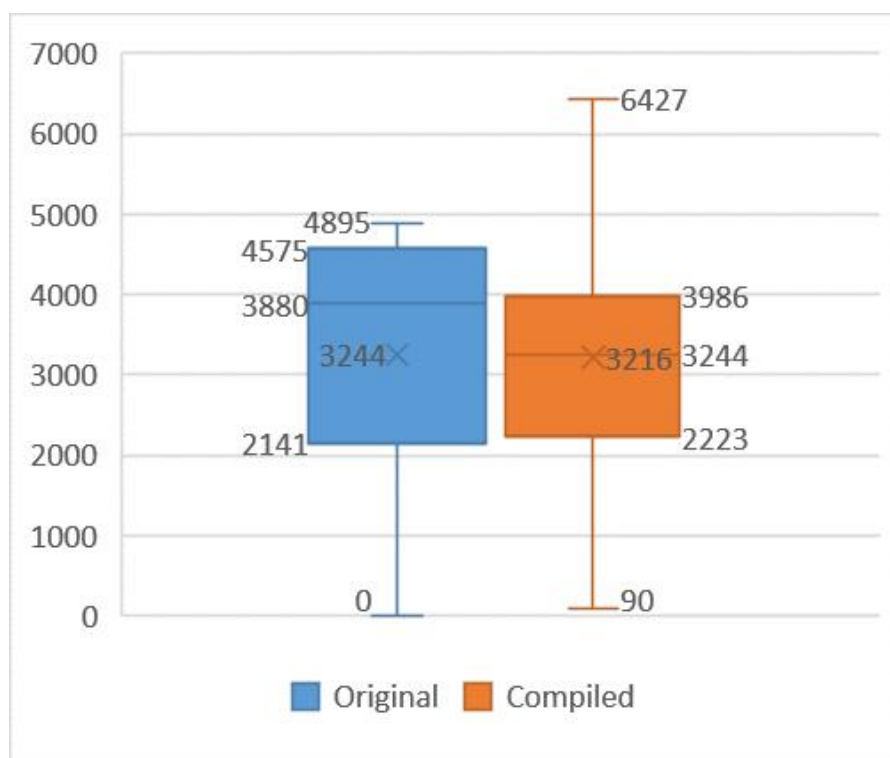
HYPOTHESIS TWO: In some compiled chapters with higher frequencies in the categories of MRIR and MRPL, there might be more explicitation of DMs in the translation due to the shift from “parataxis” in Chinese to “hypotaxis” in English (Halliday & Matthiessen, 2014, p.452).

The results show that:

- In TT2, the values of total and the four categories of the original chapters outweigh those of the compiled chapters, except for MREL. It indicates that there is not much influence on the use of the DMs in the other three categories and on the whole text of TT2.
- The maxima of all the four categories and the total in the compiled chapters are higher than those of the original chapters. It means that there is some explicitation, resulting in the more frequent use of DMs in some compiled chapters.

Next, the boxplots are used to showcase the comparison of the data differences of the normalised frequencies of English DMs between the original and compile chapters in TT2.

Figure 7-7 Boxplot of the normalised frequencies of English DMs of original and compiled chapters in TT2



As shown in Figure 7-7, there are some differences between the two types of chapters of TT2:

- The boxplot for the original chapters has a longer box than compiled chapter, suggesting the data in the original chapters are more dispersed; While in the compiled chapters, most of the data are more evenly distributed as their mean and median are close.
- Judging by the length of the upper whiskers, the data of the original chapters are extremely negative left-skewedness, suggesting higher normalised frequencies in most of the chapters; while the data in the compiled chapters are almost symmetric and evenly distributed in most of the chapters of TT2.

- As has been observed in ST, English DMs in most of the compiled chapters in TT2 are moderately used, presumably due to the “levelling out” of explicitation and omission, in addition to correspondence.

7.7.2 Comparison of the forms and functions of the DMs between original and compiled chapters in TT2

HYPOTHESIS THREE: As what has been tested in the original and compiled chapters of the ST, the English DM use in compiled chapters of TT2 would also present more various word forms and sub-functions than that of the original chapters.

In the category of MRPL, the original chapters have only one form of DMs: single markers (e.g., “and”, “or”), serving the sub-functions of addition and alternation; While the compiled chapters have more forms: single markers (e.g., “and”, “too”), double markers (e.g., “and also”, “and then”) and phrasal markers (e.g., “in addition”). The more varied forms in the compiled chapters partly result from the intention of avoiding unnecessary repetition in translation, partly due to larger sample sizes than the original ones. The compiled chapters signal all the sub-functions including addition, alternation, and time sequence. It is also found that in both original chapters and compiled chapters 1) the majority of parallel DMs are single markers, signalling addition, supplement, alternation and time sequence; and 2) there is some redundancy in the use of the double markers.

In the category of MRCT, the contrastive DMs in the original chapters have two forms: single markers (e.g., “but”, “however”) and double markers (e.g., “and yet”) signalling contrast and concession. While in the compiled chapters, in addition to single markers (e.g., “but”,

“while”), and double markers (e.g., “and yet”, “and vice versa”), they also have phrasal markers (e.g., “even though”, “on the contrary”). Most of the contrastive DMs in compiled chapters signal contrast, with a small number of them indicating concession.

In the category of MREL, the three elaborative DMs in original chapters comprise two kinds of forms: single markers (“i.e.”, “still”) and phrasal markers (“that is”). The DMs “i.e.” and “that is” signal exposition, and the DM “still” signals clarification. The compiled chapters have more forms: single markers (e.g., “and”, “namely”), phrasal markers (e.g., “that is”, “that is to say”), and discourse parentheticals (e.g. “that is to say [that]”). They also have the sub-functions of exposition and clarification.

In the category of MRIR, the original chapters have five forms of DMs: single markers (e.g., “hence”, “therefore”), double markers (“and if”, “or if”), pair markers (e.g., “when/if/once ...then”), phrasal markers (e.g., “as a result”, “in this case”), and discourse parentheticals (e.g., “in cases”). The compiled chapters also have the five forms: single markers (e.g., “if”, “hence”, “because”), double markers (e.g., “and if”, “and because”), pair markers (e.g., “if ... then”, “in case ... then”), phrasal markers (e.g., “as a result”, “in some cases”), and discourse parentheticals (e.g., “this is because”, “that is why”). The inferential DMs in original chapters and compiled chapters signal making inferences and hypothesizing; The most striking issue is the bulk use of pair markers and double markers despite redundancy in the use of the double markers.

7.7.3 Summary of comparison of DM use in original chapters and compiled chapters

between TT2 and ST

The boxplots in Figure 7-7 and Figure 5-6 can visually display the data distribution of the DM use in the original chapters and compiled chapters between TT2 and ST.

It is found that there are some similarities between TT2 and ST: The geometric plane figure for the boxplots in Figure 7-7 resemble that for the boxplots in Figure 5-6, that is to say, the data distribution of the English DMs in the original and compiled chapters of TT2 are similar with that of ST, which indicates faithfulness, to a large extent, in the English translation of the Chinese DMs in the ST.

Meanwhile, there are also some differences between them.

As for the original chapters, the values of Q1, Q3 and the median in Figure 7-7 are higher than those of Figure 5-6, which means that there is more explicitation in the English translation of Chinese DMs. On the other hand, the change of the box from almost symmetric data distribution in Figure 5-6 to the box with extremely negative left-skewedness in Figure 7-7 indicates that, the values of the DM use in the original chapters have been heightened in most of the chapters. Taken together, they will produce better pragmatic effects on the TL readers.

As for the compiled chapters, 1) the two outliers in Figure 5-6 have disappeared in Figure 7-7, suggesting the omission of some English DMs or the use of the other linguistic devices in the two chapters; 2) The values of Q1, Q3 and IQR in Figure 7-7 are also higher than those in Figure 5-6, which indicates that most of the chapters have used more English DMs than

Chinese ones due to the explicitation; 3) There is a boxplot change from positive right-skewedness to the symmetric data distribution in Figure 7-7. That suggests that English DMs turn out to be evenly distributed in most of the compiled chapters, due to explicitation and omission, keeping an adequate pragmatic effect in the English translation.

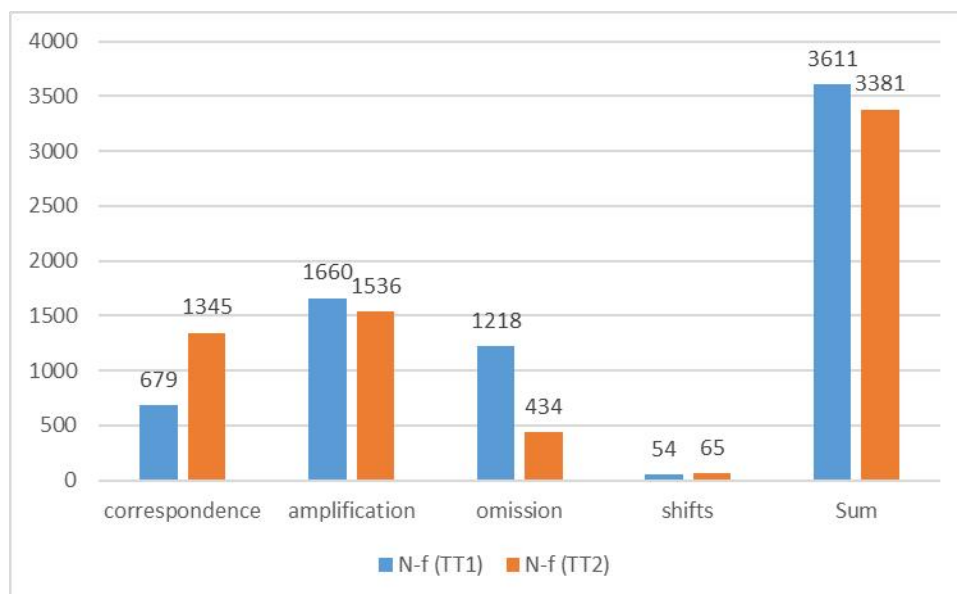
CHAPTER EIGHT: COMPARATIVE ANALYSIS OF TRANSLATION TECHNIQUES AND PRAGMATIC EFFECTS IN TT1 AND TT2

After the comparison of the DM use in TT1 with ST in Chapter 6 and that of the DM use in TT2 with ST in Chapter 7, in this chapter I will conduct 1) a comparative analysis of the translation techniques used in the English translation of the Chinese DMs by the translators, as well as 2) a tentative evaluation of the pragmatic effects of the English translation, from the perspective of pragmatics, of TT1 and TT2 on TL readers. It is hoped that this chapter can answer the third research question put forward in Chapter 4.

8.1 Overview of the translation techniques used in TT1 and TT2

The translation of DMs in this research only focuses on message relations. Regarding how to translate the forms and functions of DMs, Furkó (2020, p.143) remarks that “Nida’s (1964) classical distinction between formal equivalence and dynamic equivalence is especially relevant to the translation of discourse markers” since the DMs in the TT also “focus attention on the message” (Nida, 1964, p.159). In Nida’s view, formal equivalence relates to the structure, while dynamic equivalence takes into account such factors as context and effect (ibid., p.193). However, it is not easy to find one-to-one correspondence of DMs between the ST and TT due to the linguistic disparities, so other translation techniques will also be used.

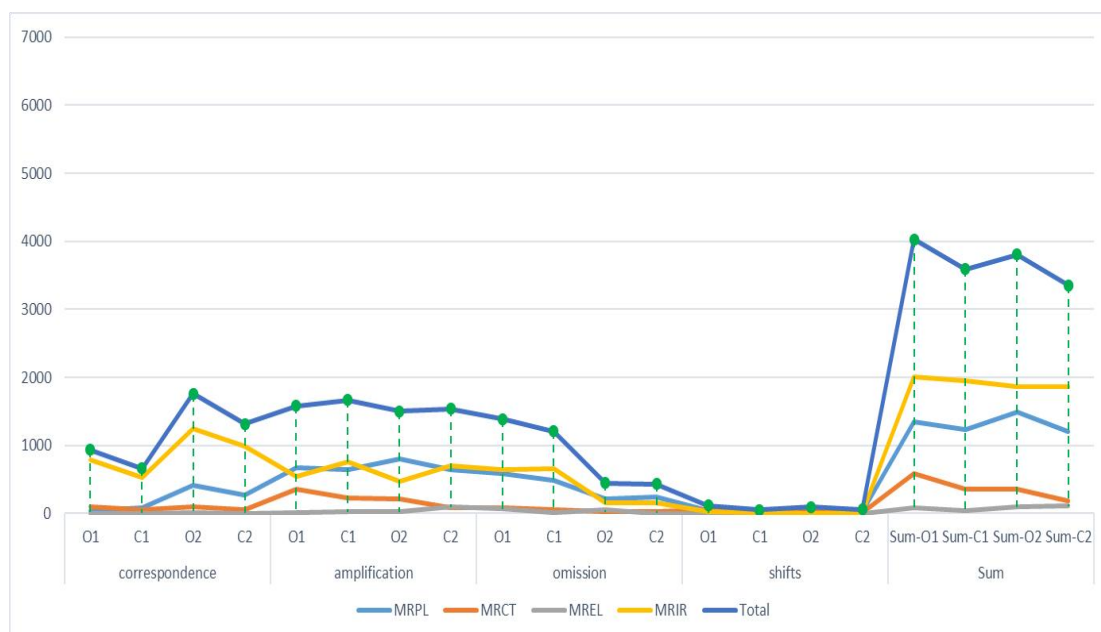
Figure 8-1 Normalised frequencies of translation techniques used in both TT1 and TT2



PRELIMINARY FINDING ONE: Many DMs between ST and TTs do correspond to each other. In addition, the other major translation techniques such as amplification and omission present the central tendency in the English translation of the Chinese DMs in *Su Wen* both in TT1 and TT2 as shown in Figure 8-1. Overall, TT1 has higher normalised frequencies of translation techniques than TT2.

HYPOTHESIS ONE: In addition to correspondence, the other translation techniques such as amplification, omission and shifts would be used in the English translation of Chinese DMs in *Su Wen*. Except for omission, TT2 would have higher normalised frequencies of translation techniques than TT1, as the number of translation techniques includes not only the number of DM use but also the number of omissions.

Figure 8-2 Comparison of the translation techniques used between original and compiled chapters in TT1 and TT2



PRELIMINARY FINDING TWO: Overall, there are more translation techniques observed in both the original and compiled chapters of TT1 than TT2 as shown in Figure 8-2. When looking into the original chapters of TTs, there are more correspondence of DMs used in TT2 than that in TT1. However, the DMs in the original chapters are omitted to a lower degree in TT2 than in TT1; while they have been amplified to a similar degree in the original chapters in both TTs. A similar tendency goes to compiled chapters of TTs.

HYPOTHESIS TWO: The original chapters and compiled chapters in TT2 would also have higher normalised frequencies of translation techniques (except for omission) than that in TT1, since omission which is not counted into the numbers of English DM use, have not been tested in previous chapters regarding the Chinese DM use in ST, as well as the English DM use in TT1 and TT2.

The underlying reasons for the translation techniques used in the TTs might involve the

following factors: personal background of the translator(s), intended purposes of translation for communication, DM positions and presentational format, and personal stylistic preferences. The details will be discussed in Section 8.7.

8.2 Overview of the pragmatic effects between TT1 and TT2

The evaluation of the pragmatic effects in translation inevitably involves the analysis of “interlingual pragmatic enrichment” and “interlingual pragmatic impoverishment” (Sequeiros, 2005). They are two pragmatic ways to deal with the information differences between the ST and TT in translation. Pragmatic enrichment involves correspondence and amplification; while pragmatic impoverishment includes omission and shifts. In the case of DM translation, pragmatic enrichment can make explicit the connections between two clauses or utterances, thus reducing the cognitive efforts of TL readers. On the other hand, omission and shifts would result in implicit message relations or misinterpreting the message relations, accordingly, demanding more efforts for the information processing of TL readers.

Apart from what has been mentioned above, the effect size measurement based on Phi coefficient can also be used to discern the extent of the difference of translation techniques used between the TT2 and TT1.

HYPOTHESIS THREE: In light of Li’s (2005) overt translation and Unschuld & Tessenow’s (2011) covert translation, it is assumed that TT2 would produce better pragmatic effects on TL readers than TT1.

Unschuld & Tessenow’s (2011, p.13) claim to “make the ideas, theories, and practices laid

out in the text fully visible and conceivable gain” with an aim at “*textus receptus*” (ibid.). This kind of covert translation “enjoys the status of an original source text in the target culture” (House, 2006, p.347) as it is “not marked pragmatically as a translation of a source text” (ibid., p.347) and equally concerns for the source and target language readers.

8.3 Definition of correspondence, amplification, omission, and shifts

8.3.1 Correspondence: direct pragmatic transfer

In the translation of the functions of DMs, Aijmer (2008, p.95) observes that there are limited “satisfying correspondences”, thus she argues that DMs “do not translate well”, resulting in “high frequency of omission” in translation (Aijmer & Simon-Vandenberg, 2006, p.4).

To start with, it is necessary to define “correspondence” here. In Nida’s (1964) terms, correspondence represents the relationship “not only between individual SL and TL symbols, but also between the ways such units are arranged within the structures of the two languages” (See Shuttleworth & Cowie, 1997, p.31). “Correspondence” in this research stands for the match of the DMs in a sentence of TT with those of the ST, signalling the same generic function, no matter whether there are some changes in the positions of DMs (sentence-initial, inter-sentence, sentence-medial or sentence-end), or what forms the DMs have (e.g., the formal difference of DMs between Chinese and English include: monosyllabic markers, disyllabic markers, and pair markers vs. single markers, double markers, pair markers, phrasal markers, and parentheticals). Next, the following 5 typical types of DM correspondence have been found according to the positions between ST and TTs.

1) Inter-sentence correspondence

Example 1

ST: 气/n 脉/n 常/d 通/v , /w 而/c [MRPL] 肾气/n 有余/v 也/y 。 /w (*Su Wen* 1)

BT: The qi and blood is always smooth in the vessels and the qi of the kidneys is in excess.

TT2: The qi passes through the vessels as usual **and_CC** [MRPL] the qi of the kidneys has a surplus.

2) Sentence-initial correspondence

Example 2

ST: 虽/c [MRCT] 远/a 可/d 知/v 也/y 。 /w (*Su Wen* 67)

BT: Although (they are) far away, (they) can (be) known.

TT2: **Although_CS** [MRCT] they are far away, they can be recognized.

3) Inter-sentence vs. sentence-initial correspondance

Example 3

ST: 有/v 胜/n 则/c [MRIR] 复/n 。 /w (*Su Wen* 74)

BT: There is domination, then (there is) revenge.

TT2: **Where_CS** [MRIR] there is domination, there will be revenge.

4) Inter-sentence vs. sentence-initial + inter-sentence correspondence;

Example 4

ST: 复/v 则/c [MRIR] 埃郁/v ; /w (*Su Wen* 69)

BT: (If there is) revenge, then (there is) dust pressure;

TT2: **When_CS** [MRIR]²¹ it comes to revenge, **then_RR** [MRIR]²² dust (causes) pressure.

5) Sentence-medial vs. sentence-initial correspondence

Example 5

ST: 大雨/n 且/d [MRPL] 至/v , /w (*Su Wen* 69)

BT: Heavy rain also arrives.

TT2: **Also**_RR [MRPL], massive rain arrives.

In the above examples, the English translation of DMs in TTs all correspond to the DMs in the ST regardless of the positions of the English translation of the DMs, retaining the original functions of the DMs in the ST. In other words, the DM “而” (and) of ST and “and” of TT2 in Example 1 are correspondence in inter-sentence position, signalling the original function of parallelism; the DM “although” of TT2 in Example 2 corresponds to “虽” (although) of ST in sentence-initial, keeping the original function of contrast. Similarly, in Example 3, the DM “则” (then) of ST and “where” of TT2 correspond to each other between inter-sentence of ST and sentence-initial of TT2, signalling the original inferential function. In Example 4, the correspondence belongs to the one between the monosyllabic inter-sentence DM “则” of ST and the sentence-initial + inter-sentence *pair DM* “when ... then” of TT2 marked up with “21” and “22”, signalling the original function of inferences; and the sentence-medial “且” in ST of Example 5 corresponds to the sentence-initial “also” in TT2, maintaining the original function of parallelism.

8.3.2 Amplification: interlingual pragmatic enrichment

Amplification, also called “interlingual pragmatic enrichment” (Sequeiros, 2005), refers to the addition in the TT, of some necessary explicit information that is implicit in ST, in terms of

the relevance theory. The basic condition is that “[i]f the linguistically encoded information is too vague, relevant interpretation, it will be enriched or too incomplete, using immediately to yield an adequately accessible contextual assumptions, to the point where it is relevant enough” (Wilson & Sperber, 1993a, p.293). In the markup of translation relation in this research, amplification of DMs in the TTs has been annotated as the symbol “+” after the DM tag and DM identifier. For comparison in the following example, the corresponding slots in the ST without any DMs have been marked up with the contracted DM tag and the DM identifier .

Example 6

ST: 谨/d 候/v 其/r 时/n , /w [PL] 气/n 可/v 与/p 期/v 。 /w (*Su Wen* 68)

BT: Carefully observe the season, the qi can be predicted.

TT2: Carefully observe this time (of annual set-up). (**Then**_RT [MRIR]+ you) are able to predict the qi (of each year).

In Example 6, there are 2 clauses in the ST without any explicit DMs signalling the message relations, which is acceptable in Classical Chinese. But in the TT2, the symbol “+” clearly shows that the inferential DM “Then” is amplified to signal the inferential relation between the clauses so that it can achieve coherence in English.

8.3.3 Omission: interlingual pragmatic impoverishment

Omission refers to the reduction, in the TT, of certain semantic components in the surface structure present in the deep structure of the ST. Sequeiros (2005) calls it “interlingual impoverishment”. It might be caused by two factors: grammatical considerations and

contextual assumptions. The former is carried out as some grammatical elements necessary in the ST might be redundant in the TT due to the inherent linguistic disparity between the SL and TL. The latter may relate to the assumption that “the translator considers to be sufficiently manifest to addressee to be recoverable pragmatically” (Sequeiros, 2005, p.23).

In the case of DM translation, many scholars agree that DMs are generally difficult to translate (Brinton, 1996; Michailinienė, 2007; Aijmer, 2008; Mattsson, 2009; See Esther, 2020, p.20) for two main reasons. One is that they are usually considered to have little or no propositional meaning (e.g., Brinton, 1996, p.33; Aijmer, 2002, p.2) due to “pragmaticalization”, in which the lexical meaning has been replaced, or partly replaced, by pragmatic meaning (Aijmer, 2007, p.36; Mattsson, 2009, p.10). The other is due to their multi-functionality resulting from context-boundness. The multi-functionality of DMs makes it possible for them to be used across the four categories, possibly resulting in difficulties in the judgement of their functions in the specific context. Therefore, they are often omitted from the translation (Aijmer & Simon-Vandenberg, 2003; Altenberg & Aijmer, 2002; See Zienkowski, 2011, p.236) and rendered by words or constructions from many different word classes. That could explain why some of the DMs disappear in TTs. As mentioned in Chapter 4, in the translation relation markup, omission of DMs has been annotated as the symbol “-” after the contracted DM tag and DM identifier. The second reason will be illustrated in detail in Section 8.3.4 about shifts.

Example 7

ST: 人/n 有/v 卧/n 而/c [MRPL] 有/v 所/u 不安/a 者/k , /w 何/r 也/y ? /w (*Su Wen* 46)

BT: Someone lies down and there is something that makes him feel uneasy, why?

TT1: Why people sometimes can not sleep [PL]- calmly?

TT2: Someone lies down to sleep **and**_CC [MRPL] there is something which does not let him rest. Why is that so?

As a good example for comparison, the DM “而” (and) in Example 7 signalling parallelism has been rendered as “and” in TT2 but omitted in TT1 as the successive clause “有/v 所/u 不安/a” (there is something that makes him feel uneasy) has been simply rendered as an adverb “calmly” rather than a clause.

8.3.4 Shifts: pragmatic transfer of different functions

Catford (1965, p.73) considers shifts in translation as “departures from formal correspondence in the process of going from the SL to the TL”. In most cases, shifts in translation are obligatory and inevitable as its purpose is to pursue adequacy to the ST. That is, if a translator wants to translate adequately, he will “perform only those truly obligatory translational shifts”, thus “producing a TT which possible retains ST features unchanged” (Shuttleworth & Cowie, 1997, p.5).

But sometimes there might be also improper shifts “due to the fact that the translator is unfamiliar with the language or has interpreted an ST structure superficially” (Popovič, 1976, p.16). Popovič regards it as a mistranslation caused by a misunderstanding on the part of the translator.

Regarding the improper shifts in this research, apart from the mismatch in the semantic widening or narrowing of DMs translation (Furkó, 2020, p.145), the corpus data show that

there is even the change of categories of the DMs, thus possibly resulting in the changes in the functions of DMs.

In the translation relation markup of the DMs between ST and TT, the symbol “<” is used between the DM tag and DM identifier signalling the new function in the TT, as well as the contracted DM tag and DM identifier signalling the original function in the ST. For instance, “[MRIR]<[EL]” stands for the shift from the category of MREL to MRIR.

Example 8

ST: 夫/h 言/v 人/n 之/u 阴阳/n , /w 则/c [MREL] 外/f 为/v 阳/n , /w 内/f 为/v 阴/n 。 /w
(*Su Wen* 4)

BT: Well, speaking of the yin and yang of man, that is, the outside is yang, the inside is yin.

TT2: Now, speaking of the yin and yang of man, **then**_RR [MRIR]<[EL] the outside is yang, the inside is yin.

Example 8 presents the DM translation shift from the category of MREL to MRIR. In other words, in the ST, the DM “则” (that is) signals the elaborative relation between the first two messages, while the translation “then” of the DM in TTs signals inferential relation between the two adjacent sentences, thus resulting in a shift in the function of the DM.

Example 9

ST: 胃/n 实/v 而/c [MRPL] 肠/n 虚/v ; /w (*Su Wen* 11)

BT: Stomach is replete and intestines are empty.

TT2: The stomach is replete **and**_CC [MRPL] the intestines are empty.

TT1: The stomach is full, **but**_CCB [MRCT] <[PL] the intestines are empty.

Interestingly, the same DM “而” in the ST of Example 8 has resulted in two different English translations: “and” by means of correspondence in TT2 and “but” by means of shift in TT1. Regarding TT1, the function of the DM “而” in the ST has shifted from the category of MRPL to MRCT.

A close look at the corpus data reveals that most of the DM shifts in the English translation of *Su Wen* result from the multi-functionality of the Chinese DMs in the ST, which has been mentioned earlier in Section 8.3.3 about the second case of omission related to DM translation difficulties. In addition, the translation shifts are carried out based on the translator’s personal understanding, therefore they require the scrupulous analysis of the message relationship of the sentences or clauses before English translation. If not, there will be negative translation shifts.

8.4 Analysis of the statistics of the translation techniques used in TT1

8.4.1 Overall statistics of translation techniques used in TT1

Table 8-1 shows the overall statistics concerning the normalised frequencies of the major translation techniques used in original and compiled chapters of TT1; while their distribution is visually presented in Figure 8-3.

It is important to note that 1) in Chapters 5, 6, and 7 the total data of the DM use do not include the values of omission as omitted DMs cannot be searched and calculated; 2) in this chapter, the “Total” data concerning translation techniques comes from the normalised frequencies by the formula (the overall normalised frequencies of certain translation

techniques in original/ compiled chapters is divided by the corpus size of 7,578 words [original chapters in TT1] or 131,408 words [compiled chapters in TT1], multiplying the constant 100,000). It also applies to “Grand total” and “Sum”, but they should be divided by the whole corpus size of 138,986 words [79 chapters in TT1]. The values are not the accumulated ones by simply direct addition of the values in the same column.

Among the 4 translation techniques, amplification and omission account for 45.97% and 33.73% respectively, while shifts cover only 1.50%. Compared with the compiled chapters, original chapters have a slight predominance on the sum data regarding the translation techniques (4,025 vs. 3,587) except for amplification. All these suggest that the pragmatic effects of TT1 can be guaranteed and that the pragmatic effects of original chapters would be better than those of compiled chapters in TT1.

Figure 8-3 Translation techniques used in original and compiled chapters as well as the four categories of TT1

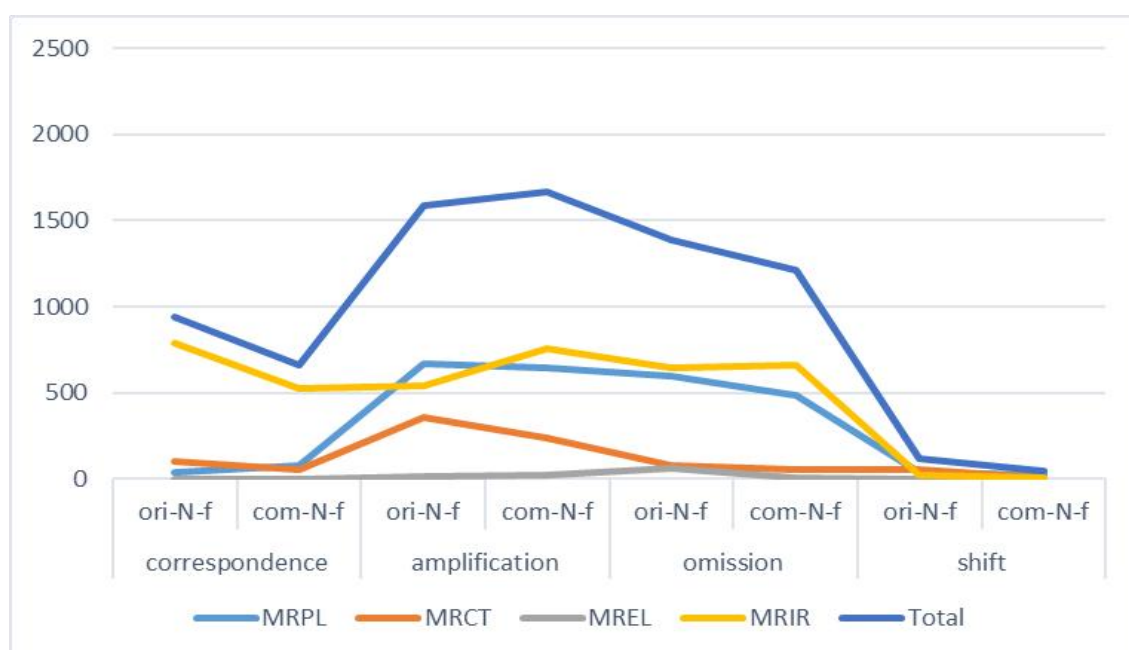


Figure 8-3 provides visual presentation of the techniques used in original and compiled chapters as well as in the four categories of TT1. Among the four categories, the frequencies of MRIR outnumber those of the other three: MRPL, MRCT, and MREL. As for the data distribution, MRIR has much higher frequencies in correspondence, amplification and omission, while amplification and omission have better performance in MRPL. However, correspondence and shifts are used less in MRPL and MRCT. MRCT is only involved in amplification. Shifts are the least frequently used in the four categories.

Those translation regularities extracted from the corpus can be used to interpret the relation between pragmatic effects and translation techniques, which will offer some implications for translation practice and translator training.

Table 8-1 Statistics of translation techniques used in original and compiled chapters of TT1

Items	correspondence		amplification		omission		shifts		Sum	
Categories	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f
MRPL	40	81	673	648	594	484	40	27	1346	1240
MRCT	106	53	356	235	79	56	53	11	594	355
MREL	0	1	13	24	66	9	0	4	79	38
MRIR	792	530	541	756	647	660	26	9	2006	1955
Total	937	664	1584	1664	1386	1208	119	50	4025	3587
Grand total	679		1660		1218		54		3611	

Notes:

- 1: “Total” means the overall normalised frequencies of certain translation techniques in original/ compiled chapters.
- 2: “Grand total” means the overall normalised frequencies of certain translation techniques in all the 79 chapters in TT1.
- 3: “Sum” means the overall normalised frequencies of all translation techniques.
4. “ori-N-f” and “com-N-f” stand for the normalised frequencies of original chapters and those of compiled chapters.

8.4.2 Statistics of the translation techniques used in the original chapters of TT1

As shown in Table 8-1, TT1 uses four translation techniques: correspondence, amplification, omission and shifts in the original chapters. Among the total normalised frequencies (N-f = 4025), correspondence accounts for 23.28% of the translation techniques, while amplification and omission cover 39.35% and 30.26% of the total, and there are also a small amount of shifts (2.96%).

The following characteristics can be observed in the original chapters of TT1:

- Correspondence mostly occurs in the category of MRIR, as the Chinese inferential DMs, mostly in inter-sentence and sentence-initial, require more explicit translation of the functions of making inferences, drawing a conclusion, or hypothesizing. And it is much easier to infer the other message relations such as parallelism and contrast.
- Apart from correspondence, amplification is the most common in the four categories of DMs of TT1, mainly due to the inherent disparities between Chinese parataxis and English hypotaxis. In other words, compared with Chinese, it appears that English shows a preference for spelling out the relation between sentences, so in English translation of Chinese DMs, amplification is frequently used to signal explicit message relationship.
- Omission is seen only in the category of MRPL, partly due to the need to avoid redundancy in the English translation of Chinese DMs, and partly resulting from signalling the same functions by the other linguistic means.

Overall, there are the following six types of omission in the original chapters of TT1.

- 1) Direct omission

“Direct omission” is used to signify the omission of DMs in sentence-initial where there is a less close relation with a full stop between the sentence and the prior one. In fact, DM in this situation is optional, thus resulting in the omission of the DM as seen in Example 10.

Example 10

ST: 且/c [MRPL] 子/r 独/d 不/d 诵/v 不/d 念/v 夫/r 经/n 言/v 乎/r , /w 厥/v 则/c 目/n 无/v 所/u 见/v 。 /w (*Su Wen* 81)

BT: **Moreover**, have you not recited and thought about the words in the classic: “In case of recession, the eyes have nothing to see”?

TT1: [PL]- Have you ever read (the part in the medical) canon? (It says that) adverseness (of Qi makes it) impossible for the eyes to see.

In Example 10, there is no correspondence of the Chinese DM “且” (and) in TT1, where the omitted DM should be “and”, “also”, “moreover” signalling the relation of addition. Considering the position of sentence-initial and the less close relation with the prior sentence, the English counterpart of Chinese DM “且” (and) has been omitted.

2) Omission by simplification sometimes still with “and” or “or”

The second case of omission happens in TT1 due to simplification by combining two clauses into one sentence, though there are still some vestiges of “pure conjunctions” like “and” or “or” (Feng, 2011, p.427) in the original position of ST.

Example 11

ST: 病/n 甚/a 则/c 弃/v 衣/n 而/c 走/v , /w 登高/v 而/c 歌/v , /w 或/c [MRPL] 至/p 不/d 食/v 数日/t , /w 逾/v 垣/n 上/v 屋/n , /w (*Su Wen* 30)

BT: When the disease is severe, then (the patient) throws off his clothes and runs around. He climbs on what is high and sings. **Or** he fails to eat for several days, and he leaps over walls and climbs on houses.

TT1: When seriously ill, the patients throw away their clothes and run about, sing on a high place, **or**_CC [PL]- do not eat for several days and climb onto the top of houses.

In Example 11, the omission of the English translation of the DM “或” can be possible only if the two adjacent clauses have been reduced into one. Still, the trace of omission can be seen, as in this situation, “or” is only a “pure conjunction” linking two acts rather than as a parallel DM signalling alternation.

3) Omission by reducing into prepositional phrases

The third case of omission is carried out by reducing one part of the sentence that a DM links into a prepositional phrase. In this case, there is no need for a DM linking two successive sentences.

Example 12

ST: 刺骨/n 无/v 伤/v 筋/n 者/k , /w 针/n 至/v 筋/n 而/c [MRPL] 去/v , /w 不/d 及/v 骨/n 也/y 。 /w (*Su Wen* 51)

BT: When piercing the bones, do not harm the sinews, the needle reaches the sinews **and**_CC [PL]- is withdrawn; it does not approach the bones.

TT1: Avoidance of impairing the sinews in needling the bones means the needles should be inserted deep [PL]- to the bones, not just to the sinews.

In Example 12, the DM “而” (and) in the ST connects two procedures of needling in the

muscle, while in TT1, their relation is related by the use the prepositional phrase. That is to say, the omission of the DM lies in the use of the prepositional phrase to offset the function that the DM originally assumes.

4) Omission by rendering “而” (and) as “when” or “where”

As stated before, a parallel DM is used to link two adjacent sentences or clauses with equal status signalling addition, alternation, or time sequence. However, when one part of the two parallel sentences has become a subordinate clause introduced by “when” or “where”, the DM signalling parallelism can be omitted in translation.

Example 12

ST: 诸/r 遗/n 者/k , /w 热/n 甚/a 而/c [MRPL] 强/d 食/v 之/u , /w (*Su Wen* 31)

TT1: It is [IR]- due to forced intake of food [PL]- when the fever is still high.

Example 13

ST: 其/r 民/n 陵居/v 而/c [MRPL] 多/a 风/n , /w (*Su Wen* 12)

TT1: People there live by hillsides [PL]- where wind is always blowing.

Examples 12 and 13 indicate the omission of parallel DM “而” (and) in the English translation, where it has been omitted in that the second parts of Example 12 and Example 13 have been reduced into an adverbial clause of time and an adverbial clause of space respectively.

5) Omission by rendering “或” (or) as “sometimes”

The fifth case is the omission of DMs by rendering the Chinese parallel DM “或” (or) as “sometimes”, where it only links the parallel sentences showing the possibility of doing

something rather than alternation it should signal.

Example 14

ST: 或/c [MRPL] 喘/v 而/c 死/v 者/k 。 /w (*Su Wen* 30) n =10

TT1: (The reverse flow of Yangming Channel) [PL]- sometimes causes panting and leads to death.

The English translation of the Chinese parallel DM “或” (or) has been omitted as it has been rendered as “sometimes”. Though the repetitive use of “sometimes” in the sentence-initial position can also link parallel sentences or clauses, it is only an adverb rather than a parallel DM signalling the parallel relation.

6) Miscellaneous

The omission of DMs in TT1 involves a number of different types. Due to the large number of cases and for avoidance of meticulous elaboration, the rest of the omission has been categorized into “miscellaneous”. For economy, only one example is given to illustrate it.

Example 15

ST: 若/v 此/r 者/k , /w 皆/d 病/v 已/d 衰/v , /w 而/c [MRPL] 热/n 有/v 所/u 藏/v , /w (*Su Wen* 31)

BT: If it is so, all diseases have weakened, and the heat has some lingering storage.

TT1: Under such a pathological condition, [PL]- heat lingers when the disease is already alleviated.

Example 15 is also an indication of DM omission. This kind of omission can be acceptable in English as the original parallel sentence structure has been changed into a main clause and a

subordinate clause by reducing the first part into a subordinate clause introduced by “when” and then moving it into the sentence-end position.

- The less common is shifts in translation. The shift in the English translation of DMs means the change of functions that the DMs signal among the 4 categories, which might result from the multi-functionality of some DMs, accordingly, generating shifts of DMs in translation. It seems that different interpretations are valid and correct but sometimes the DMs have been mistranslated due to the shift in translation. This issue will be further discussed in Section 8.8.

Overall, the following shifts can be observed. The shifts include 4 types: shifts from MRIR to MRPL, shifts from MRPL to MRCT, shifts from MRCT to MRIR, and shifts from MRPL to MRIR. The number of shifts is quite small compared with that of other types of translation techniques, so only two examples will be provided below.

1) Shifts from MRIR to MRPL

The first case is the shifts from MRIR to MRPL. For instance, the DM “则” (thus) signalling inferences has been rendered as the DM “and” signalling parallelism.

Example 16

ST: 十日/t 太阴/a 病/n 衰/a , /w 腹/n 减/v 如/v 故/t , /w 则/c [MRIR] 思/v 饮食/n ; /w
(*Su Wen* 31)

BT: In the tenth day, Taiyin disease weakens; abdominal fullness is reduced as before, so they want to eat.

TT1: In the tenth day, Taiyin disease alleviates, abdominal fullness is relieved **and**_CC

[MRPL]<[IR] (the patients) want to eat.

In Example 16, the DM “则” (so) in ST presents a cause-effect relation between the symptoms of alleviation and abdominal distension as well as the desire to eat, but its English translation “and” in TT1 signals parallelism between the two. Thus, it would be better to understand if the DM “则” is specified as “so” instead of “and”, regarding the desire to eat as the effect of the cause “the alleviation of Taiyin disease” and the symptom improvement “the relief of abdominal fullness”. This kind of improper shift would affect the pragmatic effects on TL readers.

2) Shifts from MRCT to MRIR

Example 17

ST: 是以/c 俱/d 悲/a 则/c 神/n 气/n 传/v 于/p 心/n , /w 精/n 上/f 不/d 传/v 于/p 志/n , /w 而/c [MRCT] 志/n 独/d 悲/a , /w 故/c 泣/n 出/v 也/y 。 /w (*Su Wen* 81)

BT: Therefore, when both are sad, then the spirit qi is transmitted to the mind. The essence above is not transmitted to the will, and the will alone is sad. Hence, tears come out.

TT1: Thus (when) both (the heart and the kidney are) sorrowful, Shenqi (Spirit-Qi) is transmitted to the Xinjing (Heart-Essence), but not to the Zhi (will). **So**_RR [MRIR]<[CT] the Zhi (will) is alone (in the state of) sorrow. That is why tears run out (of the eyes).

The second example is the shift from MRCT to MRIR. The multi-functional DM “而” in the ST of Example 17 signals contrast between the Shenqi transmission to the Heart-Essence and the lonely Zhi in sorrow, but it has been misinterpreted into an inferential DM signalling drawing inference. In fact, the inferences can be drawn by the subsequent DM “That is why”

in the next sentence.

Taken together, the shifts in translation of DMs in the original chapters of TT1 result from the multi-functionality of the DMs, mostly the DM “而”, in the ST. If the shifts misinterpreted, the consequence is that it will produce a potentially unsatisfactory communicative effect.

8.4.3 Statistics of the translation techniques used in the compiled chapters of TT1

Figure 8-3 presents the translation techniques used in the compiled chapters of TT1. It is assumed that, to be faithful with the ST, as the translator himself claims his translation is, or to maintain the original pragmatic effects that Chinese DM can assume, there should be frequent use of correspondence and amplification in the English translation of DMs in the compiled chapters of TT1.

Some characteristics in compiled chapters of TT1 can be observed from Table 8-1 and Figure 8-3:

- Among the total normalised frequencies (N-f=3587), correspondence rate is 18.51%, covering only a small part of the total. While the rates of amplification and omission account for 46.39% and 33.68%. There are also minimal shifts in the compiled chapters of TT1.
- Despite the low rate of correspondence, a high number of amplification and less omission in the English translation of DMs in the compiled chapters can ensure a certain level of pragmatic effects. The higher the use of DMs, the less cognitive effort might be involved, thus facilitating better understanding.
- Among the 4 categories of DMs in the compiled chapters, MRIR outweighs the other three

categories in the use of amplification and omission. And there are far fewer cases in MREL.

That is, there is only one case of correspondence but 9 cases of omission. It might affect the pragmatic effects of the compiled chapters.

In the compiled chapters of TT1, those cases of omission can be classified into the following 9 types. As mentioned above in the original chapters and for comparison, this part will articulate the types of omission and hint the reason why there are so many cases of omission while the translator himself claims to “keep the structural style of the original text” (Li, 2005, p.29).

1) Direct omission

The first case is the direct omission of DMs where the sentence-initial DM introduces an interrogative sentence but with a weak relation with a full stop between the DM and the previous sentence, or where a long running-on sentence is chopped into two sentences. In this situation, with the DM omitted, the successive sentence begins.

Example 18

ST: 然则/c [MRPL] 脾/n 善恶/n , /w 可/v 得/u 见/v 之/r 乎/e ? /w (*Su Wen* 19)

BT: However, whether the spleen is in good or bad (condition), can this be seen?

TT1: [PL]- **Can** the normal (states) and abnormal (changes of the pulse of) the spleen be felt?

In Example 18, the English translation of the sentence-initial DM “然则” (however) is omitted as it cannot be used to initiate an interrogative sentence. In addition, the sentence that follows has a weak relation with the prior one.

2) Omission by reducing the original complex sentence into a simple one

The second case is the omission by the reduction of the original complex sentence into a simple one, and in the translation, there is still some trace of DM omission with some words conjunction “and”, “or”, “but” instead of DMs.

Example 19

ST: 病/n 在/p 阳/n , /w 则/c 热/a 而/c [MRPL] 脉/n 躁/a ; /w (*Su Wen* 35)

TT1: (If) the disease is in Yang (Yang-Phase), it is marked by fever **and** CC [PL]- rapid pulse.

In Example 19, the two clauses “there is high fever” and “the pulse is rapid” that the parallel DM “而” (and) links have been reduced into two nominal groups “high fever” and “rapid pulse”. The omission results from the DM “and” in TT1 reduced from a DM to a “pure” conjunction.

3) Omission by using prepositional phrases

The third case is the omission by using prepositional phrases, that is, the original Chinese DM connects two clauses in the ST, but in English translation the subsequent clause is reduced into a prepositional phrase.

Example 20

ST: 余/r 闻/v 上古/t 之/u 人/n , /w 春秋/n 皆/d 度/v 百/m 岁/n , /w 而/c [MRPL] 动作/n 不/d 衰/v ; /w (*Su Wen* 1)

TT1: I am told that people in ancient times all could live for one hundred years [PL]- **without** any signs of senility.

BT: I heard that people in ancient times all could live for one hundred years, and their

behaviour is not weak.

In TT1 of Example 20, the English translation of the Chinese DM “而” (and) is omitted as the second clause that “而” (and) links has been translated into a “without”-phrase.

4) Omission of “则” by nominalization

The fourth case is the numerous omission of the DM “则” by nominalizing the subsequent clauses it introduces through using causative verbs (e.g., “generate”, “make”, “cause”, “indicate”, “ensure”, “govern”), or phrases (e.g., “lead to”, “give rise to”, “result in”), or stative phrases (e.g., “be marked with”, “be characterized by”).

Example 21

ST: 阳/n 胜/v 则/c [MRIR] 身/n 热/v, /w 腠理/n 闭/v, /w 喘粗/n 为/p 之/u 俯仰/v, /w
(*Su Wen* 5)

BT: When Yang predominates, then the body will have fever. If the muscular interstices are closed, rough panting makes one bend down and up.

TT1: The predominance of Yang [IR]- leads to fever, closure of Couli (muscular interstices), asthmatic breath with the movement of the body.

As in Example 21, the inferential DM “则” (then) in the ST connects a disease and a list of subsequent symptoms signalling drawing a conclusion. In TT1, the translation of the DM is omitted as the long sentences have been reduced into simple sentence with a cause-effect relation, in which the two parts is connected by a causative phrase “lead to”.

This kind of omission of DMs mostly involves the English translation of the Chinese inferential DMs, which would make the English translation more concise and understandable

to the TL readers as it casts off the difference of the different syntactic structures between Chinese and English languages by adopting free translation.

5) Omission for avoiding unnecessary repetition

The fifth case is the omission for avoiding unnecessary repetition. There are a multitude of tabular structures with three-word expressions, four-word expressions, sometimes even more than four words expressions, in which a certain character is repetitive for alliteration or end rhymes. If all those mono-syllabic DMs are translated into English, it would be awkward, resulting in unnecessary repetition.

Example 22

ST:亦/d [MRPL] 有/v 天/n , /w 亦/d [MRPL] 有/v 地/n , /w 亦/d [MRPL] 有/v 人/n 。 /w
(*Suwen* 20)

TT1: (The middle region) **also**_RR [MRPL] has the heavens (division), [PL]- the earth (division) and _CC [PL]- the man (division).

The repetitive use of the DM “亦” (also) in the three-word tabular structures for alliteration can be seen in ST of Example 22; while in the TT1, its translation has been omitted for the avoidance of unnecessary repetition. This kind of repetition is common and acceptable in classical Chinese, but it is not typical in English. However, its end rhymes “/ʒ(ə)n/”, “/ʒ(ə)n/”, and “/ʒ(ə)n/” have been created for the compensation as seen in the underlined parts in TT1 although they are not arranged as the verse layout.

6) Omission by rendering “或” (or) as “sometimes”

The sixth case of omission lies in the rendition of parallel DM “或” (or) as “sometimes”.

Example 23

ST: 其/r 痛/a 或/c [MRPL] 卒然/d 而/c 止/v 者/k , /w 或/c [MRPL] 痛/a 甚/d 不/d 休/v 者
/k , /w (*Su Wen* 39)

TT1: The pain [PL]- **sometimes** suddenly tops; [PL]- **sometimes** is sharp and never stops.

Example 23 indicates the omission of English translation of the Chinese DM “或” (or). In the ST, “或” (or) is used to signal alternation, an indication of some symptoms or consequences of a certain disease. In this case, it has been rendered as “sometimes” as an adverbial rather than a DM.

7) Omission due to untranslatability

It is natural to see untranslatability in the English translation of Chinese DMs due to the linguistic and cultural differences between languages and between the humans as untranslatability “threatens the very endeavor of translation”(Hermans, 2019, p.34) so that absolute untranslatability “cannot be bridged by practical means” (Large, 2019, p.56). In this situation, translators would give it up and omit the translation.

Example 24

ST: 次/q 戊辰/n 岁/n , /w 初/f 之/u 气/n , /w 复/d 始/v 于/p 一/m 刻/q , /w 常/d 如/v 是/r
无/v 已/v , /w 周/d 而/c [MRPL] 复/d 始/v 。 /w (*Su Wen* 68)

TT1: (According to such an) order, (the following year is) the year of Wushen that starts again from the first notch (of the clepsydra). (It) always (moves continuously [PL]- in such an sequence).

The Chinese idiom “周/d 而/c 复/d 始/v” (roll on in cycles) in Example 24 is a four-character

expression, in which the semantic meaning of DM “而” (and) has been considerably reduced due to “grammaticalness” and “pragmaticalization”. In this case, the DM “而” (and) is omitted.

8) Topic shift

It is arguable if a DM signalling drawing inferences is rendered as a prepositional phrase as it might not serve for the function as what it is expected. Otherwise, the omission in Example 25 results in a topic shift.

Example 25

ST: 是故/c [MRIR] 百/m 病/n 之/u 起/v , /w 有/v 生/v 于/p 本/n 者/k , /w 有/v 生/v 于/p 标/n 者/k , /w 有/v 生/v 于/p 中气/n 者/k 。 /w (*Su Wen* 74)

BT: Therefore, it is the origin of various diseases; some originate from the root, some from the branch, and some from the middle qi.

TT1: **As**_II21 **to**_II22 the occurrence of all diseases, some stem from Ben (root), some stem from Biao (branch), some stem from Zhongqi (Middle-Qi).

In Example 25, the Chinese inferential DM “是故” (therefore) signalling drawing inferences has been rendered as a prepositional phrase “as to” serving for topic shift. The omission of the inferential DM in this case is likely to affect pragmatic effect.

9) Omission by rendering “而” (and) as “when” or “which”

The last major case is the omission of “而” (and) by the rendition as “when” or “which”.

Example 26

ST: 阳/n 盛/a 而/c [MRPL] 阴气/n 加/v 之/u , /w (*Su Wen* 49)

TT1: Yin appears [PL]- **when** Yang is in predomination.

Example 26 presents the omission of the DM “而” (and) signalling parallelism by rendering it as a relative adverb or pronoun “when” or “which”, which introduces a subordinate clause. It will also affect the pragmatic effects on the TL readers.

Taken together, Li (2005) claims that he endeavors to keep the original structure of the ST, but in the English translation of Chinese DMs, he uses less correspondence but more omission. Considering the omission of DMs in translation, they are mostly negative in nature as they cannot help to facilitate the cognitive inferences, rather, they will let the TL readers take more effort to process the message.

8.5 Analysis of the statistics of the translation techniques used in TT2

8.5.1 Overall statistics of translation techniques used in the 4 categories of TT2

Table 8-2 indicates the overall statistics of translation techniques used in the 4 categories, as well as in original and compiled chapters of TT2; while their distribution is visually presented in Figure 8-4. Among the 4 techniques, correspondence and amplification account for most of the normalised frequencies (39.78% and 45.43% in original and compiled chapters respectively), while omission and shifts cover low rates (12.84%; 1.92%). This means that in the DM translation, Unschuld & Tessenow (2011) mainly adopted amplification and correspondence, with small amount of omission and shifts.

Unschuld & Tessenow (2011, p.13) claim that, they endeavor to keep “the contents and structure of the original text”, which means that they would try hard to adopt more

correspondence in the English translation of Chinese DMs.

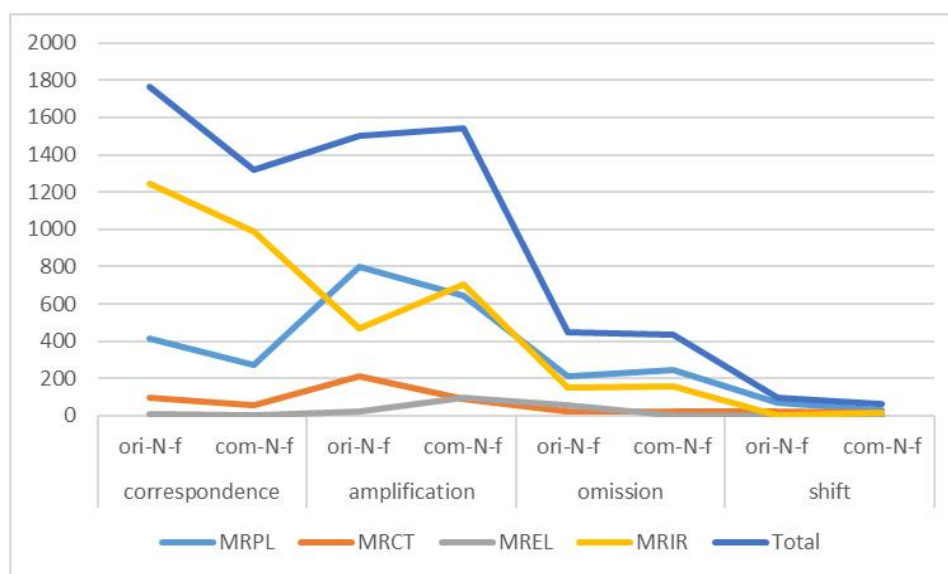
Different translation techniques would result in different pragmatic effects. Firstly, the more correspondence in DM translation, the more original pragmatic effects would be kept in the TT. Secondly, proper amplification in translation is necessary due to the inherent linguistic differences between Chinese parataxis and English hypotaxis. When amplified, the implicit message relationship in the Chinese ST will become explicit in the English TT. Finally, due to untranslatability across languages, or redundancy or signalling by other linguistic devices, some cases of omission and shifts are inevitable. However, overuse of omission and shifts would affect the pragmatic effects of the English DMs on TL readers.

Table 8-2 Statistics of translation techniques used in original and compiled chapters of TT2

Items	correspondence		amplification		omission		shift		Sum	
Categories	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f	ori-N-f	com-N-f
MRPL	411	273	799	647	212	245	71	32	1492	1197
MRCT	94	58	212	88	24	25	24	15	353	186
MREL	12	1	24	100	59	6	0	1	94	108
MRIR	1246	988	470	704	153	157	0	15	1868	1864
Total	1763	1319	1504	1538	447	434	94	64	3807	3355
TOTAL	1345		1536		434		65		3381	

Notes: 1) The calculation methods of “Total” and “TOTAL” in Table 8-2 are the same with those in Table 8-1; 2) “ori-N-f” and “com-N-f” stand for the normalised frequencies of original chapters and those of compiled chapters.

Figure 8-4 Translation techniques used in original and compiled chapters of TT2



Regarding the 4 categories in the use of translation techniques, MRIR and MRPL, with a percentage of 52.12% and 37.57% respectively, overwhelmingly predominate the other two. Among them, the value of compiled chapters outweighs that of original chapters only in the category of MREL due to the overuse of amplification in this category.

8.5.2 Statistics of the translation techniques used in the original chapters of TT2

In TT2, there is a higher normalised frequency ($N-f = 3807$) of translation techniques in the original chapters than compiled chapters. Some characteristics can be found in Table 8-2 and Figure 8-4.

- There is a certain amount of DM use in correspondence and amplification, accounting for 46.31% and 39.51%. The higher rate of correspondence and proper use of amplification adopted in the DM translation can help to maintain the original pragmatic effects and facilitate better understanding, thus minimizing less cognitive efforts.
- A small proportion of omission (11.74%) is found mainly in the categories of MRPL and

MRIR (212; 153). The common sense is that the more omission in the English translation, the less pragmatic effects it would have in the translation, particularly for such an informative text full of profound medical theories and professional expertise.

Omission in the original chapters of TT2 presents the following four characteristics. They are arranged in descending order:

1) Omission by replacing the DMs with prepositional phrases

The first case is the omission of DMs by adopting prepositional phrases. If one of the two clauses that a DM connects has been reduced into a prepositional phrase, the DM will naturally be omitted.

Example 27

ST: 哭/v 泣/v 而/c 泪/n 不/d 出/v 者/u , /w 若/c 出/v 而/c [MRCT] 少/v 涕/n , /w 其/r 故/n 何/r 也/y ? /w (*Su Wen* 81)

BT: If someone cries and no tears comes out, [or] if tears come out but there is little snivel, what is the reason?

TT2: When (a person) weeps and no tears leave (the eyes), or if (tears) leave (the eyes) [CT]-with only a little snivel, what is the reason?

As shown in Example 27, the DM “而” (but) in the ST is used to connect two clauses “出/v” (tears leave the eyes) and “少/v 涕/n” (have only a little snivel). But in the TT2, the English translation of the DM has been omitted as the second clause it originally connects has been reduced into a “with”-phrase, thus, there is no need for the DM.

2) Omission by reducing one of the clauses that the DM connects into a part of the sentence

elements

The second case is by reducing one of the two clauses, that the DM connects, into a part of sentence elements, to be specific, the subject of a sentence, therefore the DM can be omitted.

Example 28

ST: 医/n 之/u 治病/n 也/y , /w 一/m 病/n 而/c [MRCT] 治/v 各/r 不/d 同/v , /w 皆/d 愈/v ,
/w (*Su Wen* 12)

BT: When physicians treat diseases, someone catches the same illness but the treatment is different, all are cured.

TT2: When physicians treat diseases, one identical disease [CT]- may be treated differently in each case and is always healed.

The DM “而” (but) in the ST of Example 28 signals contrast, in which it links two clauses “一/m 病/n” (someone catches the same illness) and “治/v 各/r 不/d 同/v” (the treatment is different in each case). In the English translation, the DM is omitted as the first clause has been reduced into a nominal group “one identical disease” functioning as the subject of the sentence.

3) Direct omission

Direct omission is not often adopted unless there is a special reason, as the omission of a DM would affect the pragmatic effects, resulting in more cognitive workload and processing efforts for TL readers.

Example 29

ST: 故/c [MRIR] 东方/n 之/u 域/n , /w 天地/n 之/u 所/u 始/v 生/v 也/y , /w (*Su Wen*12)

TT2: [IR]- The fact is, the region of the East, this is where heaven and earth give life first.

In Example 29, the DM “故” (therefore) in the sentence-initial position signals drawing inferences based on the evidence presented in the prior sentence. In TT2, the English translation of the DM is omitted as it is interpreted as “The fact is” based on some unknown considerations.

4) Omission by literal translation

According to Barkhudarov (1969, p.10), literal translation is defined as the translation “made on a level lower than is sufficient to convey the content unchanged while observing TL norms” (See Shuttleworth & Cowie, 1997). But here it refers to the translation based on its surface meaning of the disyllabic classical Chinese DMs. In this case, the meaning of the DM might be traced back to the archaic meaning of classical Chinese, which can be referred to in classical Chinese dictionaries.

Example 30

ST: 所以/c [MRIR] 得/v 之/u , /w 所以/c [MRIR] 失/v 之/u 。 (*Su Wen* 78)

TT2: [IR]- That by which one achieves it. [IR]- That by which one misses it.

The Chinese DM “所以” (so/therefore) signalling drawing a conclusion are used twice in Example 30. But in TT2, the English translations of the DMs are omitted as they have been literally rendered as “That by which” according to the archaic meaning in classical Chinese. It can be inferred that when Unschuld & Tessenow (2011) did the translation of the disyllabic DM “所以” in the *original chapters*, they preferred to choose the archaic meaning rather than the fixed meaning developed due to the pragmaticalization. They had a strong awareness of

the distinction of original chapters and compiled chapters and insisted on transferring its archaic surface meaning in the English translation.

- A small amount of shifts only occur in the categories of MRPL and MRCT in that the multi-functional DMs in the category of MREL are more definite in signalling exposition, clarification, and exemplification, so that they are not likely shifted into or from the other categories.

Three major types of shifts are included: shift from MRCT to MRPL, shift from MRIR to MRPL, and shift from MRPL to MRCT. Due to the small number of shifts, only two examples are given below.

1) Shift from MRCT to MRPL

Example 31

ST: 是/r 气/n 拒/v 于/p 内/f , /w 而/c [MRCT] 形/n 施/v 于/p 外/f , /w 治/v 之/u 奈何/r ?

/w (*Su Wen* 14)

TT2: This is (a situation where) the qi is blocked inside, **and**_CC [MRPL]<[CT] the physical appearance is altered outside. How is this treated?

The first case is the shift from MRCT to MRPL as shown in Example 31. In the ST, the multi-functional DM “而” signals a *contrast* between “气/n 拒/v 于/p 内/f” (the qi blocked inside) and “形/n 施/v 于/p 外/f” (the physical appearance altered outside), but it has been rendered as the multi-functional “and” signalling parallelism in TT2. In fact, it needs to be specified, if not, it might increase the difficulty in deciphering the message to TL readers.

2) Shift from MRIR to MRPL

Example 32

ST: 三阴/n 三阳/n , /w 五脏/n 六腑/n 皆/d 受/v 病/n , /w 荣/n 卫/n 不/d 行/v , /w 五脏/n 不/d 通/v 则/c [MRIR] 死/v 矣/y 。 /w (*Su Wen* 31)

TT2: When the three yin and the three yang (conduits), the five depots and the six palaces have all received the disease, then the camp and the guard (qi) no (longer) move, the five depots are no (longer) passable, **and** CC [MRPL]<[IR] death results.

As seen in Example 32, the inferential DM “则” (thus) in the ST has been mistranslated as the parallel DM “and”. They draw the inferences by considering that “the disease in the five depots and the six palaces” results in some subsequent symptoms including death.

The problem in this example lies in regarding the minor premise as one part of the conclusion. In fact, in this logical reasoning, the major premise is the disease in the five depots and the six palaces, the minor premise is the immovability in the camp and the guard (qi) as well as impassability in the five depots, while the conclusion is death.

Taken together, the shifts in the original chapters of TT2 involve mistranslation. It results from the multi-functionality of DMs. If mistranslated, it would cause unfavorable consequences in the communication.

8.5.3 Statistics of the translation techniques used in the compiled chapters of TT2

Table 8-2 indicates the statistics of the translation techniques used in the compiled chapters of TT2. The characteristics can be summarized as follows:

- The total number of translation techniques is 3355. Among the four translation techniques, correspondence and amplification cover most of the cases, with a proportion of 39.31% and

46.59% respectively. As stated before, a higher rate of correspondence and proper use of amplification can keep the original features of DM use and facilitate understanding of the TL readers.

- Among the 4 categories, MRIR and MRPL involve 55.56% and 35.68% of the total normalised frequencies. It suggests the inherent language differences between Chinese parataxis and English hypotaxis.
- In addition to correspondence and amplification, other translation techniques like omission and shifts are also involved. A certain degree of omission and shifts would affect the pragmatic effects of the DM translation.

Omission in the compiled chapters of TT2 can be classified into the following five types. They are arranged in descending order.

1) Necessary omission

Example 33

ST: 诵/v 而/c [MRCT] 颇/d 能/v 解/v , /w 解/v 而/c [MRCT] 未/d 能/v 别/v , /w 别/v 而/c [MRCT] 未/d 能/v 明/v , /w 明/v 而/c [MRCT] 未/d 能/v 彰/v 。 /w (*Su Wen* 75)

TT2: When reciting (the texts, [CT]- I) am not yet able to explain (them). When explaining (them, [CT]- I) am not yet able to differentiate (their contents_NN2). When differentiating their (contents, [CT]- I) am not yet able to understand (them). When understanding (them, [CT]- I) am not yet able to elucidate (them).

Example 33 presents the necessary omission in the English translation of Chinese contrastive DM “而” (yet/but). In the ST, the inter-sentential DM “而” (yet/but) is used for four times to

signal contrast. The repetitive use of the Chinese DMs “而” (yet/but) in the ST sounds a little awkward, as the five-character expressions might have resulted from four-character expressions during compilation in the history, thus resulting in some damage to the original rhythm. The proper omission would make the translation more acceptable in English.

Not only that, necessary omission also applies to the parallel DM “而” (and). For economy, no discussion will be provided in this aspect.

2) Omission due to literal translation

Literal translation is to “identify and assign equivalent meanings to the constituent morphemes of the source language” (Casagrande, 1954, p.337). Similar with the original chapters in TT1, the literal translation of the Chinese DMs involves identifying the archaic semantic meaning of the Chinese characters by resorting to classical Chinese dictionaries.

Example 34

ST: 然/c [MRCT] 天地/n 者/k , /w 万物/n 之/u 上/f 下/f 也/y ; /w (*Su Wen* 66)

TT2: This being so [CT]-, heaven and earth are the above and the below of the myriad beings.

In classical Chinese, apart from signalling contrast, the DM “然” (but) also has a less common archaic meaning of “然”, when it is a demonstrative pronoun, refers to the state that somebody or something is like, or simply can be rendered as “so”. In Example 34, the DM “然” (but) is rendered as “This being so” due to literal translation. By doing so, the DM is omitted.

3) Omission by reducing one of the two clauses that the DM connects into a prepositional phrase

The third case is the omission of DMs in translation by reducing one of the two clauses that the DM connects into a prepositional phrase. Things are the same as that in original chapters, so no more example and illustration will be provided here for space limitation.

4) Omission for keeping the original sentence structures

By the omission of DMs in translation, Unschuld & Tessenow (2011) tried hard to keep the original style of the ST as in end rhymes and line arrangement. In other words, many of the sentences in *Su Wen* are featured with tabular structures and end rhymes for “facilitat[ing] oral transmission through memorization of the many rather brief individual texts” (Unschuld & Tessenow, 2011, p.22), so they “introduced numerous structural indicators leading quite often to very short lines” (ibid.) like a verse. Therefore, they translated the tabular structures into verse pattern with end rhymes by omitting the DMs.

Example 35

ST: 天气/n 正/n , /w 地气/n 扰/v , /w 风/n 乃/c [MRIR] 暴举/v , /w 木/n 偃 v 沙/n 飞/v ,
/w 炎火/n 乃/c [MRIR] 流/v , /w 阴/n 行/v 阳/n 化/v , /w 雨/n 乃/c [MRIR] 时/d 应/v。 /w
(*Su Wen* 71)

TT2:

The qi of heaven is proper;

the qi of the earth_NN is disturbed.

[IR]- Violent winds rise.

Trees are bent down and sand flies.

[IR]- Flaming fire prevails.

Yin carries out yang transformations.

[IR]- Rain corresponds frequently.

As in Example 35, the ST with 3 DMs “乃” (so) appears to be tabular structures with three or four characters, though with no end rhymes. But in the TT2, the English translation of the DM has been omitted by translating the tabular structures into verse pattern with end rhymes for coherence. As in the tabular structures, the ending sounds of the six lines “/pə/” and “/d/”, “/z/” and “/s/”, “/z/” and “/z/” do rhyme with each other. It is meaningful in two ways. On the one hand, “[t]he resulting visual appearance of the printed text permits greater clarity than an unstructured text” (ibid.) by changing the layout of the paragraph pattern into the verse pattern. On the other hand, the omission of the DMs, together with the end rhymes, helps to make the translation concise for keeping the original sentence structures.

5) Omission resulted from mistranslation

The sixth case is the omission of DMs resulting from mistranslation. As to non-native Chinese scholars, it is inevitable to misinterpret the meanings of DMs in classical Chinese since some of the prototypical DMs are multi-functional so that it is not easy to distinguish the subtle nuances in the context.

Example 36

ST: 然/c [MRCT] 夫子/n 数/m 言/v 形/n 与/p 神/n , /w 何谓/v 形/n ? /w (*Su Wen* 26)

TT2: [CT]- Now, Sir, you have spoken several times of the physical appearance and of the spirit. What does that mean: ‘physical appearance’?

TT1: **However**_RR [MRCT], you have mentioned Xing (shape) and Shen (Spirit) several

times. What is Xing (shape)?

In Example 36, the sentence-initial DM “然” (however) in the ST is used for signalling contrast as shown in TT1. But in TT2, its English translation is omitted as it has been mistranslated as “now”, a modal particle used to initiate a topic. For comparison, TT1, the correct English translation of the same sentence by Li (2005), has been hereby quoted. The mistranslation would result in a negative pragmatic effect on the TL readers.

- Shifts in the compiled chapters take on 8 types: shift from MRPL to MRCT, shift from MRCT to MRPL, shift from MRIR to MRPL, shift from MRPL to MRIR, shift from MREL to MRPL, shift from MREL to MRIR, shift from MRIR to MREL, and shift from MRCT to MRIR. Similarly, due to the small number of shifts, only two examples will be provided below.

1) Shift from MRPL to MRCT

Example 37

ST: 阳气/n 未/d 盛/v 于/p 上/f 而/c [MRPL] 脉/n 满/v , /w 满/v 则/d 咳/v , /w 故/c 血/n 见/v 于/p 鼻/n 也/y 。 (*Su Wen* 49)

TT2: The yang qi does not yet abound above, **but**_CCB [MRCT]<[PL] the vessels are full. When they are full, then (the patient) coughs. Hence, blood appears from the nose.

Example 37 shows a shift from MRPL to MRCT, in which the DM “而” (and) signalling parallelism in the ST has been rendered as “but” signalling contrast in TT2. In fact, the coughing and nose bleeding result from the abundance of yang qi and the fullness in the

vessels rather than only the fullness in the vessels. Therefore, this type of shift would produce negative pragmatic effects on TL readers.

2) Shift from MRCT to MRPL

Example 38

ST: 有/v 其/r 在/p 本/n 而/c [MRCT] 求/v 之/u 于/p 标/n 。 /w (*Su Wen* 65)

TT2: In some cases, it is at the root **and**_CC [MRPL]<[CT] it is searched for at the tip.

In Example 38, the two terms “本” (root) and “标” (tip) in the ST are metaphorically used to signify the source and symptom of a disease, indicating the contrast that some unprofessional physicians lay emphasis on the symptom rather than the source of a disease. But TT2 presents a shift from MRCT signalling contrast to MRPL signalling parallelism, misinterpreting the meaning of the ST by rendering the DM “而” as “and”, which would also affect the pragmatic effects.

Taken together, the shifts in translation in the complied chapters of TT2 would result in negative pragmatic effects on TL readers. The reason of those improper shifts lies in the fact that those DMs are all multi-functional so that they are not easy to be handled in translation for non-Chinese native translators.

8.6 Comparison of the statistics of the translation techniques between TT1 and TT2

HYPOTHESIS ONE: TT2 would have higher normalised frequencies of translation techniques than TT1, as the number of translation techniques (except for omission) is

associated, to a larger extent, with the DM use.

8.6.1 Overall statistics of translation techniques between TT1 and TT2

Figure 8-2 presents the comparison of the normalised frequencies of translation techniques used in original chapters and compiled chapters between TT1 and TT2.

Table 8-3 Normalised frequencies of translation techniques used in the original and compiled chapters between TT1and TT2

Items	correspondence				amplification				omission				shifts				Sum			
Categories	O1	C1	O2	C2	O1	C1	O2	C2	O1	C1	O2	C2	O1	C1	O2	C2	Sum-O1	Sum-C1	Sum-O2	Sum-C2
MRPL	40	81	411	273	673	648	799	647	594	484	212	245	40	27	71	32	1346	1240	1492	1197
MRCT	106	53	94	58	356	235	212	88	79	56	24	25	53	11	24	15	594	355	353	186
MREL	0	1	12	1	13	24	24	100	66	9	59	6	0	4	0	1	79	38	94	108
MRIR	792	530	1246	988	541	756	470	704	647	660	153	157	26	9	0	15	2006	1955	1868	1864
Total	937	664	1763	1319	1584	1664	1504	1538	1386	1208	447	434	119	50	94	64	4025	3587	3807	3355
TOTAL	679		1345		1660		1536		1218		434		54		65		3611		3381	

For presentational convenience, some abbreviated forms (O1, C1, O2 and C2) are used to stand for original chapters in TT1, compiled chapters of TT1, original chapters in TT2 and compiled chapters of TT2 respectively.

Table 8-3 shows that there are higher normalised frequencies (3,611 vs. 3.381) in the use of translation techniques in TT1 than those of TT2. That suggests that there are some differences in the adoption of translation techniques between the DMs in the two well-received versions of English translation of *Su Wen*. Different translators show a preference for different techniques to a varying degree resulting in an overall different effect on the reader.

Specifically, TT1 employs less correspondence, but more amplification and omission. It can be inferred that Li (2005) realized the differences between Chinese and English, and as result he did not rely so much on correspondence, but rather made more use of amplification and omission. However, the results contradict what he claimed as the goal of his translation to “maintain the structural style of the original text” (Li, 2005, p.29), at least in the use of DMs. As such, the pragmatic effects of his English translation of the Chinese DMs of *Su Wen* will be affected to some extent.

Different from TT1, TT2 pursues a three times higher rate of correspondence but nearly 1/3 less omission, meanwhile it has adopted amplification on many occasions to enhance the explication and facilitate processing process. In addition, there are some improper shifts in TT2 as those shifts serve as mistranslation and appear to be departure from the original functions what they should fulfil.

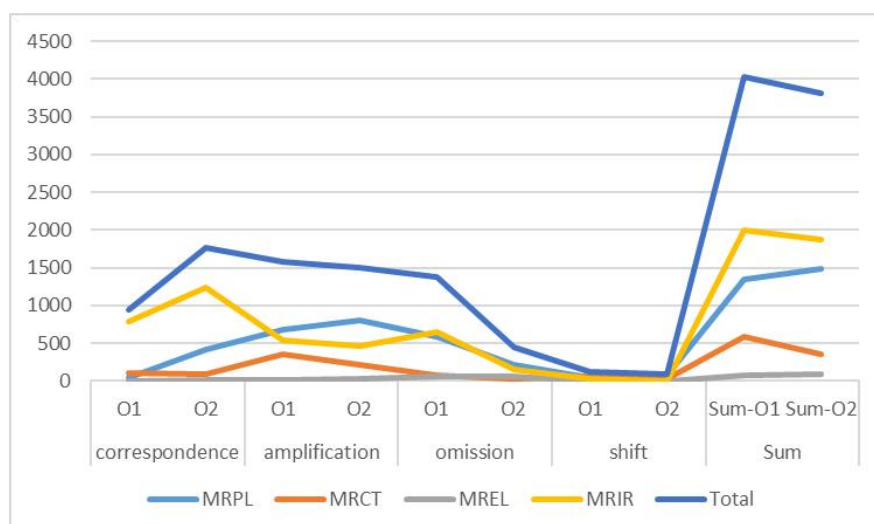
Overall, TT1 would have better pragmatic effects on the TL readers than TT2 as the value of

TT1 is much higher than TT2 by the comparison of the final values of translation techniques between TT1 and TT2 as shown in Table 8-3.

8.6.2 Statistics of the translation techniques of the original chapters between TT1 and TT2

Figure 8-5 presents the comparison of the normalised frequencies of translation techniques used in original chapters between TT1 and TT2.

Figure 8-5 Normalised frequencies of translation techniques used in original chapters between TT1 and TT2



HYPOTHESIS TWO: The original chapters and compiled chapters in TT2 would also have higher normalised frequencies of translation techniques (except for omission) than that in TT1, since omission which is not counted into the numbers of English DM use, have not been tested in previous chapters regarding the Chinese DM use in ST, as well as the English DM use in TT1 and TT2.

Regarding the original chapters in the same ST, TT1 and TT2 showcase the following characteristics:

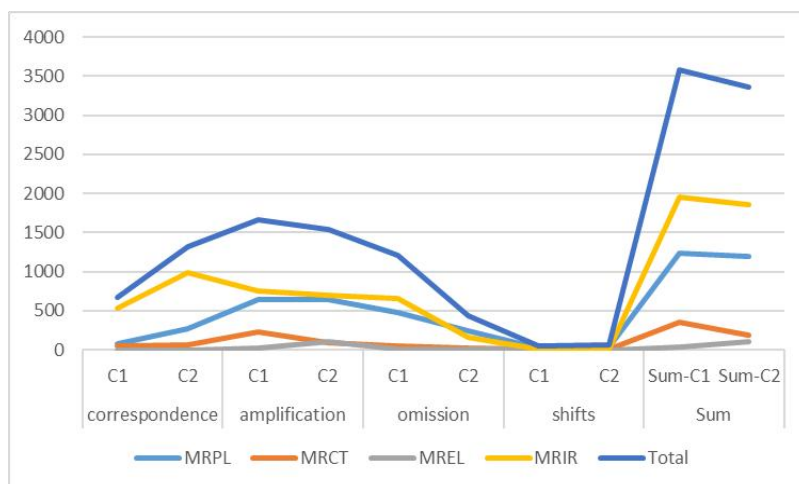
- TT1 and TT2 both present similarly equivalent rate of amplification (1,584 vs. 1,504). It means that TT1 and TT2 attempt to produce more pragmatic effects on the TL readers.
- The two groups of translators adopt different translation techniques except for amplification. In other words, in the original chapters, TT1 pays less attention to correspondence but more on omission; while the priority of TT2 is correspondence and it adopts a small amount of omission.

Of course, there should be some underlying reasons for the huge differences in the adoption of different translation techniques. An in-depth synthetic analysis will be conducted in Section 8.7.

8.6.3 Statistics of the translation techniques of the compiled chapters between TT1 and TT2

Figure 8-6 visually presents the comparison of the normalised frequencies of translation techniques used in the compiled chapters between TT1 and TT2.

Figure 8-6 Normalised frequencies of translation techniques used in compiled chapters between TT1 and TT2



Some characteristics in the compiled chapters between TT1 and TT2 can be observed as follows:

- There are higher total normalised frequencies of translation techniques in TT1 than that of TT2 (3,587 vs. 3,355). It suggests that the compiled chapters of TT2 can produce much better pragmatic effects on TL readers than those of TT1.
- There is more than 2 times of correspondence but more than 3 times lower rate of omission in the compiled chapters of TT2 than that of TT1. It suggests that the translators in TT2 have a strong awareness of maintaining the original styles of the ST by more correspondence and less omission, so that the TL readers can appreciate the original features of the DM use.
- A slightly higher rate of amplification and a small number of shifts in the compiled chapters of TT1 and TT2 indicate the similarity in the translation techniques used between TT1 and TT2. In addition, both attempts to spell out or specificate the implicit message relations, but due to some unknown reasons the shifts they employ might affect the pragmatic effects to a certain degree although the normalised frequencies of the shifts account for a small percentage.

In sum, the pragmatic effects of compiled chapters in TT2 are much better than TT1. In other words, under the condition of employing similar amount of amplification and shifts, TT2 employs more amount of correspondence and less omission, which would ensure better pragmatic effects than TT1.

8.6.4 Summary of the statistics of the translation techniques used in the TT1 and TT2

Overall, TT1 and TT2 both adopt four kinds of translation techniques in the original chapter and compiled chapters. The TOTAL normalised frequencies (3,611 vs. 3,381) indicate some certain difference in the use of translation techniques between TT1 and TT2.

Next, the major disparities between TT1 and TT2 lie in the different focus in the use of specific translation techniques. In other words, though with less correspondence, TT1 uses more amplification and more omission and omitting the DMs from translation by various ways such as reducing the original complex sentence into a simple one, and by using prepositional phrases. In addition, TT1 adopts the other means such as translating the long sentences with tabular structures in ST into short sentences with end rhymes in the layout of a verse, with a purpose to enhance the acceptability of the translation to the TL readers.

On the other hand, despite some improper shifts due to the multi-functionality of the Classical Chinese DMs which are inevitable for non-native Chinese translators, TT2 employs a wealth of amplification, meanwhile it has adopted much higher rate of correspondence but less omission. In some extent, we can conclude that the resulting TT2 is closer to the ST in terms of style than TT1. Its purpose is to improve the facilitation of cognitive processing and keep the original style of DM use in the ST as they remark that they strive “to reproduce a text in a target language as close to its original format and meaning as possible, without omissions and anachronistic interpretations and additions.” (Unschuld & Tessenow, 2011, p.39).

8.7 Inference of the underlying reasons for the translation techniques used in TTs

The underlying reasons for the translation techniques used in the TTs might involve the following factors: personal background of the translator(s), DM positions and presentational format, and personal stylistic preferences.

8.7.1 Personal background of the translator(s)

Prof. Zhaoguo Li, PhD in TCM, is the translator of TT1. As a well-known TCM researcher and translator in Chinese classics and TCM in Shanghai Normal University, his research has exerted a great influence in Chinese and international TCM community. He has published in 2005 the three-volume English translation of the ancient classic *Huang Di Nei Jing Su Wen*. Before that he spent more than 20 years studying and translating TCM classics. Therefore, compared with the non-Chinese native translators, he has more advantage in doing the TCM translation as he has acquired a profound knowledge of Classical Chinese and TCM, in which more omission and fewer mistranslation in shifts is an indication of his strength than the other two non-Chinese translators.

The first translator of TT2, Paul U. Unschuld is Professor and Director of the Horst-Goertz Endowment Institute for the Theory, History, and Ethics of Chinese Life Sciences at Charité-Medical University, Berlin. After he visited Taiwan to collect some data for his PhD thesis from 1969 to 1970, he began to plunge himself into the research of TCM classics. He is the first western scholar to completely translate the ancient Chinese medical classics *Su Wen* into English using strict philological and historical methods. All these indicate that he has some strength in the English translation of TCM texts. The second translator Hermann Tessenow is

a Senior Lecturer at the Institute for the History of Medicine at Munich University. The two translators have collaborated publishing a few books and dictionaries.

However, they have some disadvantages in the understanding of Classical Chinese. When Paul U. Unschuld received the interview by Wu & Liu (2021), two journalists from China Daily, he commented on the English translation of TCM classics, “The biggest challenge is Classical Chinese language. Reading and translating the TCM classics is to express the works of ancient physicians clearly and appropriately in modern English. We must not combine modern knowledge with ancient knowledge. We must understand the meaning of medical terms several centuries ago. (*My translation*)”. Therefore, it is likely that they would prefer correspondence and amplification, and use less omission than Li (2005). Sometimes, they would identify the archaic semantic meaning of a multi-functional DM by consulting the Classical Chinese dictionaries.

In the word diction and syntactic arrangement, Li (2005) would choose the prototypical DMs and have fewer varieties in the syntactic structures, as he might not have so rich vocabulary in diction as Unschuld & Tessenow (2011) do. But his proficiency of Classical Chinese makes him more confident to make full use of amplification and omission instead of only correspondence. There are more and various types of omission, particularly in the compiled chapters in TT1.

Regarding the shifts in translation, the two groups of translators present different characteristics. In TT1, Li (2005) sometimes makes shifts, hoping to specificate the functions of the Chinese DMs in the TT. While in TT2, Unschuld & Tessenow’s (2011) shifts are

mostly negative, mistranslating the functions of the Chinese DMs, presumably affecting the pragmatic effects in some extent.

8.7.2 DM positions and presentational formats

In order to achieve better acceptability and better communicative effects, TT1 and TT2 have adopted different positions and presentational format in the English translation of the Chinese DMs. Generally, the DMs have four different positions: sentence-initial, inter-sentence, sentence-medial and sentence-end.

The translator of TT1 is not concerned too much with the positions and presentational formats as Unschuld & Tessenow (2011) break down the unstructured lines and change the paragraph format into verse format for better visual appearance. Furthermore, he has adopted a higher rate of omission of DMs. Of course, some of the pragmatic effects that the DMs assume might be lost, although some of the functions have been signaled by the other linguistic means such as reducing one of the clauses that the DMs links into subject of the simple sentence or into a prepositional phrase.

TT2 pays much attention to the maintenance of the original styles in the English translation of Chinese DMs. In other words, he tries hard to keep those to the ST by correspondence without too many cases of omission. However, there are more various types of omission, particularly in the compiled chapters. In order to offset them, the translators of TT2 endeavor to arrange the end rhymes and verse format in some sentences with tabular structures and (or even without) end rhymes. On the other hand, in the English translation, the DMs are still kept in the original position, though, sometimes, they might seem odd, “improper” or “insensitive”

(Furkó, 2020, p.223) as in the case of parallel DM “Also” used in the sentence-initial position.

8.7.3 Personal stylistic preferences

The statistics of the DM use can indirectly mirror the translators’ behavior, which can also present the “personal stylistic preferences” of the translators (Popovič, 1976, p.153).

In TT1, when translating the DMs in the *original chapters*, Li (2005) appears to prefer the multi-functional DMs “and”, and prototypical “but”, and “if” in the categories of MRPL, MRCT and MRIR respectively. He also shows a preference towards “but”, “so”, “that is why”, and “if” for achieving correspondence in the categories of MRCT and MRIR. Regarding the use of omission, when he is translating a DM linking two clauses in a complex sentence, he prefers omitting the DM by either reducing one clause into the subject of the sentence or reducing one clause into a prepositional phrase. In TT1, when translating the DMs in the *compiled chapters*, Li (2005) appears to prefer the prototypical DMs “and” in MRPL, the prototypical “while”, “but” in MRCT, and “if”, “since”, “so”, “because”, “in this case”, and “under such condition” in MRIR. Among those prototypical DMs, he refers to use “and”, “while”, “but”, “if” etc. for amplification. Although he uses less correspondence in TT1 than Unschuld & Tessenow (2011) in TT2, he has the habit of employing “and”, and “also” in MRPL, “but” and “though” in MRCT, “if”, “that is why”, “so”, “when”, “thus” and “since” in MRIR for correspondence. As for omission of DMs from translation, when he is translating DMs in MRPL, he tends to omit the DMs by reducing the clause, that a certain DM introduces, into a subordinate clause introduced by “after”, “also”, “and”, “or”, and “then”; When he is translating the sentence-initial DMs in MRCT and MREL, he often directly omits the DMs

from translation, without any other means for the offsetting, while when he is translating the DMs in MRIR, he often omits the DMs by either nominalizing the first clause (that the DM links with the subsequent one) into a nominal group and then connecting the nominal group and the second clause with a causative verb (e.g. “cause”), or causative phrase (e.g., “lead to”, “give rise to”); or by reducing one of the clauses (that the DM links with the subsequent one) into a prepositional phrase.

In TT2, Unschuld & Tessenow (2011) also present personal stylistic preferences in the English translation of Chinese DMs. When translating the DMs in the *original chapters*, they tend to use the prototypical “and” in MRPL, “but” in MRCT, “if”, and “if ... then” in MRIR for amplification; they also often employ prototypical “and” in MRPL, “but” in MRCT, “hence”, “if ... then”, “when ... then”, “therefore”, and “when” in MRIR for correspondence. As for the omission of DMs from translation, they are likely to reduce one clause (that a certain DM connects with the successive one) into nominal groups, or into a prepositional phrase in MRPL and MRCT, or by literally translating the archaic meaning of the DMs through consulting Classical Chinese dictionaries.

In TT2, when in translating the DMs in the *compiled chapters*, they often use the prototypical “and”, “and if”, “or”, “too”, “then”, “also” in MRPL, “but”, and “while” in MRCT, “that is to say”, “i.e.”, “that is” in MREL, and “if”, “if ... then”, “when”, “hence”, “in case”, “in this case” in MRIR for amplification. When they are seeking for correspondence, they have the habit of employing prototypical DMs “and”, “too”, “or”, “also” in MRPL; they also use “but”, “while”, “nevertheless”, “even though” in MRCT; they often employ “when ...then”,

“if/where/when/in case ...then”, “hence”, “when”, “if”, and “then” in MRIR. When they are translating the DMs by omission, they often omit the DMs by 1) literal translation; 2) reducing one clause (that a certain DM connects with the successive one) into prepositional phrases; or 3) keeping the original sentence structures. What is more, most of the improper shifts result from the multi-functionality of the Chinese DMs.

In addition, there is another crucial difference in the DM use between TT1 and TT2. TT1 is characterized by less colloquialism with more written style; while TT2 features verse format with short lines and use of double markers sounding redundancy, both evidence of higher colloquialism. The purpose is compatible with the conversation genre of *Su Wen (Plain Conversation)*; and on the other hand, it attempts to “facilitate oral transmission through memorization” (Unschuld & Tessenow, 2011, p.22) for TL readers.

8.8 Evaluation of the pragmatic effects of the TTs on TL readers in terms of translation relation

8.8.1 Evaluation of the pragmatic effects of TT1 on the TL readers

The evaluation of the pragmatic effects of TT1 on the TL readers involves two steps: one is the evaluation of the difference in the DM use between TT1 and ST; the other is the inferential analysis of the use of translation techniques with respect to the functions of the different techniques to the pragmatic effects of DMs. Based on Krzeszowski’s (1990) “statistical equivalence” theory, the statistics of DM use in TT should be equal to that of ST to ensure the translation effects. Therefore, the online Phi coefficient calculator is used to

calculate the effect size. It is worth noting that only the raw frequencies of the DMs can be used.

Table 8-4 Comparison of the Total of the raw frequencies of DM use between TT1 and ST

Types of texts	Total (R-f)	Wordcount	Total (N-f)	Differences (ϕ)
TT1	3326	138986	2393	-0.006167
ST	2690	103692	2594	

The online Phi coefficient effect size test ($\phi = -0.006167$) indicates that there is no significant difference in the DM use between the ST and TT1 since it is lower than 0, ranging from -1 to 1. It seems that, in terms of the raw frequencies of DMs, the DM use in the 79 chapters of TT1 can fulfil the similar function as those in the ST.

Table 8-5 Normalised frequencies of translation techniques used in TT1

No	Trans-techniques	R-f	N-f
1	correspondence	944	679
2	amplification	2307	1660
3	omission	1693	1218
4	shifts	75	54
5	Sum	5019	3611

Then the pragmatic effects in terms of the translation techniques used in TT1 will be investigated. As for the four kinds of translation techniques, each has its own unique functions. For instance, correspondence in DM translation means the DMs in the TT signal the same or the similar function as their counterparts do in ST; amplification in DM translation, as a kind

of pragmatic enrichment, can help to enhance the ability of signalling the certain type of functions; while omission and shifts in DM translation, as a kind of pragmatic impoverishment, would actually affect the role of signalling the right function, thus affecting pragmatic effects on the TL readers.

As such, correspondence and amplification are pragmatic enrichment as they help to keep and amplificate the implicit message relations for better comprehension ability, omission of DM from translation and improper shifts are pragmatic impoverishment. In other words, more correspondence and amplification would result in more pragmatic effects as they can signal the functions with more chances. In the case of Table 8-5, it shows that the final value of the calculation is positive.

Of course, the omission in TT1, in some cases, is helpful, as Li (2005) omitted the DM from translation by reducing the tabular structures into short sentences with end rhymes, although he did not arrange them into the layout of a verse. But from the evaluation of pragmatic effects, the more omission of DMs in translation would result in more pragmatic impoverishment, thus taking more cognitive efforts of the TL readers.

Taken together, TT1 can achieve a satisfactory pragmatic effect on the TL readers.

8.8.2 Evaluation of the pragmatic effects of TT2 on the TL readers

Similar to Section 8.6.1, the evaluation of the pragmatic effects will involve using the online Phi coefficient calculator to calculate the effect size. Table 8-6 indicates that the online Phi coefficient effect size test ($\phi = 0.010098$) of DM use between the TT2 and ST also presents no significant difference.

Table 8-6 Comparison of the Total of the raw frequencies of DM use between TT2 and ST

Types of texts	Total (R-f)	Wordcount	Total (N-f)	Differences (ϕ)
TT2	4321	146633	2947	0.010098
ST	2690	103692	2594	

Table 8-6 shows that, among the four translation techniques, TT2 uses a much higher rate of correspondence and amplification. Meanwhile it employs a lower rate of omission and shifts.

Table 8-7 Normalised frequencies of translation techniques used in TT2

No	Trans-techniques	R-f	N-f
1	correspondence	1972	1345
2	amplification	2253	1536
3	omission	637	434
4	shifts	96	65
5	Sum	4958	3381

In terms of the pragmatic enrichment of correspondence and amplification as well as the pragmatic impoverishment of omission and improper shifts, the more correspondence and amplification would enhance pragmatic effects, vice versa, more omission and shift would result in less pragmatic effects on TL readers.

But, in the case of the pragmatic impoverishment of omission and shifts in TT2, they should be evaluated separately. In TT2, Unschuld & Tessenow (2011) have omitted the DMs from translation by offering better presentational format like a verse and with end rhymes. Meanwhile they employ a number of double markers. All these can improve the pragmatic

effects, as they can facilitate the processing of information and minimize the cognitive efforts for the TL readers. However, almost all the shifts in TT2 are pragmatic impoverishment as they are resulted from the mistranslation of the multi-functional Chinese DMs. Fortunately, there are only a limited number of shifts in TT2, which would affect the pragmatic effects on a limited basis.

8.8.3 Evaluation of the pragmatic effects of TT1 and TT2

HYPOTHESIS THREE: In the light of Li's (2005) overt translation and Unschuld & Tessenow's (2011) covert translation, it is assumed that TT2 would produce better pragmatic effects on TL readers than TT1.

The evaluation of the pragmatic effects of TT1 and TT2 on the TL readers involves three steps: 1) the evaluation of the difference in the DM use between TT1 and TT2; 2) the evaluation of the difference in the use of translation techniques between TT1 and TT2; 3) the inferential analysis of the use of translation techniques with respect to the functions of the different techniques to the pragmatic effects of DMs.

Firstly, the online Phi coefficient effect size test about the DM use indicates that there is no significant difference ($\phi = -0.016476$) between TT1 and TT2. In other words, in terms of the number of DM used, TT2 can produce similar effect with TT1.

Table 8-8 Comparison of the Total of the raw frequencies of DM use between TT1 and TT2

Types of texts	Total (R-f)	Wordcount	Total (N-f)	Differences (ϕ)
TT1	3326	138986	2393	-0.016476
TT2	4321	146633	2947	

Then, we can adopt another way to evaluate the difference between TT1 and TT2. It is hoped that the comparison of the numbers of translation techniques used in translation can reveal some underlying features between TT1 and TT2.

Table 8-9 Comparison of the Total of the raw frequencies of translation techniques between TT1 and TT2

Types of texts	Total (R-f)	Wordcount	Total (N-f)	Differences (Phi)
TT1	5019	138986	3611	0.005941
TT2	4958	146633	3381	

Table 8-9 shows that there is still no significant difference ($\phi = 0.005941$) between TT1 and TT2 in terms of the number of translation techniques, that is, TT2 can produce a similar effect from TT1.

However, Figure 8-1 shows the difference in the number of cases concerning the use of the four kinds of translation techniques in TT1 and TT2. The similarity is that both TT1 and TT2 employ more cases amplification to spell out the implicit message relationship. But they adopt different translation techniques. In other words, TT1 uses less correspondence but more omission, while TT2 employs more correspondence and less omission.

As mentioned above, in terms of Sequeiros (2005), interlingual enrichment includes amplification and correspondence, while impoverishment comprises omission and shifts. Interlingual enrichment and impoverishment are two common ways to deal with the information differences between the ST and TT during translation. In the case of DM translation, enrichment can make explicit the connections between two clauses or utterances,

thus reducing the cognitive efforts. Considering the small number of shifts in both TT1 and TT2, shifts will be ignored in the comparison below.

Table 8-10 Comparison of normalised frequencies of translation techniques used between TT1 and TT2

Translation techniques	R-f (TT1)	N-f (TT1)	N-f (TT2)	R-f (TT2)
correspondence	944	679	1345	1972
amplification	2307	1660	1536	2253
omission	-1693	-1218	-434	-637
pragmatic results	1558	1121	2447	3588

Admittedly, there might be some occasions of interlingual impoverishment that Sequeiros (2005) argues that “the remaining information about the message relationship is sufficient to identify the message relationship and draw inferences after the impoverishment”. In this case, the TT might “have a greater range of possible interpretations” compared to those of the ST, thus possibly affecting the pragmatic effects of the TT (Sequeiros, 2005, p.68).

In spite of the above-mentioned possible occurrence, the common practice in DM translation is that, the more correspondence and amplification a TT adopts, the more pragmatic enrichment it will have; the less omission a TT employs, the less pragmatic impoverishment they can produce in the TT.

As shown in Table 8-10, TT2 has more pragmatic enrichment and less pragmatic impoverishment than TT1 (3,588 vs. 1,121). Therefore, TT2 can produce better pragmatic effects on TL readers than TT1.

CHAPTER NINE: CONCLUSION

This corpus-based empirical research aims to explore the features of DM use in the ST of *Su Wen* and its two translations, TT1 and TT2, and also compare their similarities and differences, with a purpose to evaluate the pragmatic effects of the two translations from the perspective of pragmatics and statistical equivalence. This involves collecting the authentic data of *Su Wen* and its two well-received English translations, carrying out POS tagging, DM annotation and translation relation markup, and conducting an integrated analysis of qualitative and quantitative analysis. All these objectives have been completely achieved in this research.

9.1 Main findings

There are many findings that have been addressed in detail in the main body of Chapters 5-8 of this PhD thesis. For clear logic and readers-friendliness, this part will not sketch them in the order of their appearance but present the main findings which correspond to the three research questions proposed in Chapter 4.

Finding One-a: How message relationship DMs are used in the ST

Su Wen was written in Classical Chinese, which is an ancient language different from modern Chinese. The DM use in *Su Wen* is an indication of the lexical and textual features of ancient Chinese language.

As to the first research question concerning the message relationship DMs used in the ST about the types, forms and functions, there are altogether 59 different Chinese DMs including 19 parallel markers, 13 contrastive markers, 5 elaborative markers and 22 inferential markers, which are grouped into three forms: monosyllabic markers, disyllabic markers, and pair markers. There are less disyllabic and pair DMs than monosyllabic ones; some of the Chinese DMs have monosyllabic and disyllabic variants, performing the same functions by signifying the same message relationship. Whether the monosyllabic or disyllabic variants are used depend on the rhythmic requirement in the context, while their English counterparts are typically invariant in form.

ST is featured with frequent absence of DMs between the sentences with tabular structures. As in Chinese language, the presence of clausal conjunctions is optional if it is clear, from the context, what relations hold between the two adjacent clauses. Thus, Chinese DMs in *Su Wen* are often absent when there is a need to signal message relationship between the adjacent clauses or sentences with equal or unequal status, particularly in parallel and inferential categories.

As for the functions of DMs in ST, the four categories signal four different functions for the message relations. Under each generic function, they can fulfil some sub-functions. The parallel DMs signal addition, alternation, and time sequence. The contrastive DMs signal adversity, concession, and condition. The elaborative DMs signal exposition, exemplification, and clarification. The inferential DMs signal making inferences, drawing a conclusion, and hypothesizing.

Finding One-b: Differences in the DM use between original and compiled chapters in ST

Following Unschuld & Tessenow (2011), the ST of *Su Wen* is grouped into two types: original chapters and compiled chapters. The differences between the two types of chapters are illustrated as follows.

As for MRPL, the forms of those DMs in the original and compiled chapters, they both are grouped into three major types: monosyllabic DMs, disyllabic DMs, and pair DMs. Furthermore, the compiled chapters have other parallel DMs not found in original chapters, including some mono-syllabic DMs and disyllabic DMs. There is no difference in the function of the parallel DMs used between original and compiled chapters, as they both signal three sub-functions: addition, alternation, and time sequence. But there is a greater variety of parallel DM use in the compiled chapters. As for MRCT, compiled chapters have more various forms than the original chapters as they have only one form: mono-syllabic. As for the sub-functions of being adversative, concessional, and conditional, there is a greater variety of parallel DM use in the compiled chapters. In other words, the original chapters present the first sub-type of function, while the compiled chapters signal all the three sub-functions.

As for MREL, in terms of form, the original chapters have only one form (monosyllabic), while in the compiled chapters, they include two types: monosyllabic and disyllabic. As for the sub-functions of those elaborative DMs, the original chapters signal exposition, and the compiled chapters have two sub-types: exposition and clarification.

As for MRIR, there are more varied forms and more cases of different inferential DMs in the compiled chapters than those in the original chapters. They are of two types: monosyllabic and disyllabic. Most of them are monosyllabic, but only a few are disyllabic. Regarding the sub-functions, both the original and compiled chapters signal three sub-functions: drawing inferences, drawing conclusion, and hypothesizing. And there is another similarity: the most frequently used inferential DMs in the original chapters and the compiled chapters both signal drawing inferences and drawing a conclusion.

Finding Two: To what extent the DM use in TT1 and TT2 compares or contrasts with that in the ST; How similarities or differences can be explained.

Regarding TT1, the English DMs have several different forms: single markers, phrasal markers, discourse parentheticals, double markers, and pair markers. The majority of the English DMs are single markers; In addition, a small number of the English DMs are phrasal markers, comprising either two words, three words, or four words, while some of them are discourse parentheticals signalling only the elaborative or inferential message relations. Compared with ST with monosyllabic markers, disyllabic markers and pair markers, the formal difference between TT1 and ST belongs to the inherent disparities between Chinese and English languages.

Regarding the functions of TT1, in the category of MRPL, they signify parallelism, including a few sub-functions: addition, alternation or time sequence. In the categories of MRCT and MREL, there are far fewer English DMs with some prototypical DMs signalling contrast or

elaboration. In the category of MRIR, there are prototypical English DMs signalling making inferences, drawing a conclusion, or hypothesizing. Compared with ST, both TT1 and ST signal the four generic functions: parallelism, contrast, elaboration, and inferences, but they have different characteristics. That is, the prototypical DMs are often used with less varieties of DMs performing the same functions, showcasing a distinctive simplification in translated texts by non-native translators.

Regarding the frequencies, there are some differences between TT1 and ST. Except for some overuse of DMs in the chapters with outliers due to explicitation, some of the DMs have achieved reduction in the normalised frequencies in TT1 than ST due to omission by using other linguistic means in the English translation.

As for TT2, most of the English DMs are single markers. In addition, a small number of English DMs are phrasal markers, comprising either two words, three words, or four words, while the others include double markers, pair markers and discourse parentheticals. Compared with ST, there are more varied forms in TT2 except for parallel markers. The most impressive is the frequent integrated use of pair markers (e.g., when...once...in case ...then) signalling drawing inferences in complicated condition. It suggests that the translators of TT2 use many amplifications to spell out the implicit message relations in the English translation of DMs apart from correspondence, meanwhile they pay more attention to the varied use of DMs, trying to avoid repetition.

In the four categories of TT2 the English DMs demonstrate some characteristics. In the category of MRPL, they signal parallelism, including addition, alternation, or time sequence. In the categories of MRCT, they signal adversity, concession, or contrastive condition. In the category of MREL, there are the least English DMs with some prototypical DMs signalling elaboration, including exposition and clarification. In the category of MRIR, there are the most frequently used English DMs signalling making inferences, drawing a conclusion, or hypothesizing. The most striking issue is that two multi-functional English DMs “and” and “while” co-exist across the four categories. This research reveals that the two multi-functional English DMs come from the English translation of the Chinese DM “而”.

Compared with ST, the DM use in TT2 presents more varied forms and fulfils the similar functions with that of the ST as more explicitation would help to spell out the message relationship more clearly, which will minimize the cognitive efforts, accordingly, facilitating better understanding of the TL readers.

Finding Three-a: What translation techniques are used in the English translation of Chinese message relationship DMs as evidenced in TT1 and TT2

Both TT1 and TT2 use four types of translation techniques but there are some slight differences between the two. The major difference lies in the different employment of the specific translation techniques. In other words, TT1 uses more amplification and omission, but with less correspondence and a small amount of shifts. While TT2 uses more correspondence and amplification, with less omission and a small number of shifts.

Finding Three-b: What are the pragmatic effects of TT1 and TT2 by evaluating and comparing the translation techniques of DMs in TT1 and TT2 with those of the ST

However, considering the functions related to the four categories and the pragmatic enrichment of correspondence and amplification as well as the pragmatic impoverishment of omission and shifts, the values of the DM use present some differences. In fact, the four categories relate to four different generic functions: parallelism, contrast, elaboration, and inferences. The values of the four categories can showcase the degree of the DM use. On the other hand, correspondence and amplification in translation can assure and enhance the pragmatic effects of the translation on TL readers as the more correspondence and amplification the translator uses, the less cognitive efforts the TL readers would take, accordingly the more efficient the TL readers in processing the message.

By deducting the values of pragmatic impoverishment of translation techniques from those of the pragmatic enrichment in the four categories, it is found that the values of MRPL, MREL and MRIR in TT2 are all higher than those in TT1, with MRIR and MRPL in particular. It indicates that, from the perspective of pragmatics and based on the nature of the translation techniques, TT2 can produce much better pragmatic effects on intended TL readers than TT1.

9.2 Contribution of the research

For a long time, pragmatics was considered a complicated and horny issue in translation that it was often ignored due to its difficulty, so DMs are often omitted in translation (Aijmer, 2002; Aijmer, 2008). This research has approved that pragmatic effects of the English

translation of DMs can be measured and compared and has presented a feasibility to solve this problem. This study is a case in point.

Due to the pioneering work in the corpus-based English translation studies of Chinese DM use in *Su Wen* from the perspective of pragmatics, the major contribution of this thesis includes the following four aspects, viz. the classification of original chapters and compiled chapters based on the symbols annotated by Unschuld & Tessenow (2011) and testification of the differences; the production of the DM lists of the ST, TT1 and TT2 of *Su Wen*; summarization of the methodology as a paradigm for translation studies and pragmatics; as well as the evaluation of the pragmatic effects of TT1 and TT2 of *Su Wen*.

9.2.1 Classification of original and compiled chapters and testification of their differences

The classification of 11 original chapters and 68 compiled chapters of *Su Wen* has been carried out based on the symbols annotated by Unschuld & Tessenow (2011) and then the two types of chapters has been testified by the comparative analysis of normalised frequencies of the DM use and effect size test (phi coefficient) to see whether the compiled chapters have been affected by the well-documented compilations by some famous scholars and imperial physicians in the long history. The results show that there is not any significant difference in the DM use between the two types of chapters. That indicates that the worries can be cast away that the compiled chapters of *Su Wen* might be affected with less pragmatic effects due to the revision in the DM use.

9.2.2 DM lists of the ST, TT1 and TT2 of *Su Wen*

1) Chinese DM list of the ST of *Su Wen*

As stated before, *Su Wen* is the first existing TCM classic which was allegedly written by Huang Di, the earliest well-documented ancestor of Chinese people. Over the years, it has been researched from many different perspectives. But so far, it is the *first time* that a complete Chinese DM list of *Su Wen* has been retrieved from the perspective of pragmatics.

Altogether 59 Chinese DMs have been observed in the corpus of the TCM classics *Su Wen*, including 19 parallel markers, 13 contrastive markers, 5 elaborative markers and 22 inferential markers. It is worthy to note that 23 DMs can be assumed to be unique in the ST of *Su Wen* as those DMs have not been accounted for in the previous literature. The extraction of those most up-to-date list of DMs from the ST has laid a good foundation for the further synchronic and diachronic study of DM use in *Su Wen*. Take the diachronic study of DM as an example, those DMs can be the research objects to explore the reasons and mechanism of grammaticalization and pragmaticalization for later researchers who have interest in those areas.

2) English DM list of the TT1 of *Su Wen*

Altogether 59 English DMs have been retrieved from the sub-corpus TT1 of *Su Wen*, including 17 parallel markers, 8 contrastive markers, 7 elaborative markers and 27 inferential markers. It's the *first time* that a list of such kind has been processed in the English translation of Li (2005) ever since its publication. From this list, the actual DM use including his

personal stylistic preferences and translation techniques in this English translation can be observed as he is a non-English native researcher specializing in TCM translation. In addition, this English DM list can be used to evaluate and compare the pragmatic effects of his English translation with the other versions.

3) English DM list of the TT2 of *Su Wen*

The literature shows that, so far, *no one* has ever done this research of extracting the English DMs from the sub-corpus of TT2. This research reveals that there are altogether 80 English DMs have been found in TT2, including 17 parallel markers, 20 contrastive markers, 10 elaborative markers and 33 inferential markers. This English DM list can also be used to research the translators' behaviour and evaluate and compare the pragmatic effects of their English translation of DMs between Chinese and English languages.

9.2.3 Methodology as a paradigm for translation studies and pragmatics

The third contribution of this thesis lies in the building of a methodology for the evaluation of the translation from the perspective of pragmatics. The highlight of the contribution is the mapping of sub-categories of message relationship DMs in Fraser (1993)'s taxonomy with those connectives in Classical Chinese grammar as well as the correspondence between the POS tags and DM tags in the ST and TTs, which is a monumental milestone for adopting the method of semi-automatic batch manual annotation of DMs in Chinese and English based on Rühlemann's (2011) conception of pragmatic annotation. Then, following the theories of "statistical equivalence" (Krzyszowski, 1990) and pragmatic translation (Sequeiros 2005;

House 2015), it investigates the DM use between the ST and TTs, as well as to investigate the DM use between two comparable TTs to see whether there are any significant differences between them. At last, it carries out the markup of the translation relations of DMs between ST and TTs to know about the translation techniques used in the translation, and evaluates the pragmatic effects of the DM use in the ST, and TTs for comparison. The ultimate goal is to evaluate and compare the pragmatic effects of the TTs on the intended TL readers. This research has brought about some pragmatic insights to translation studies by taking into account of the linguistic features and pragmatic factors such as the forms and functions of DMs, opening up a new path for the previous translation studies.

9.2.4 Evaluation of the pragmatic effects of TT1 and TT2 of *Su Wen*

Regarding the DM use, both TT1 and TT2 have different levels of inter-lingual enrichment and impoverishment. That is, the four translation techniques (correspondence, amplification, omission, and shifts) have been frequently used in the two translated texts but to varying degrees.

As for TT1, the effect size test (phi coefficient) shows no significant difference in the DM use between TT1 and the ST. It seems that, in terms of the number of DMs, the DM use in the 79 chapters of TT1 can fulfil the similar function as those in the ST. Based on the pragmatic enrichment of correspondence and amplification as well as pragmatic impoverishment of omission and shifts, the final value of the calculation is positive, suggesting the positive pragmatic effects of TT1 of *Su Wen*.

As for TT2, similar with TT1, the effect size test also indicates no significant difference in the DM use between TT2 and the ST. The more correspondence and amplification and lower rate of omission and shifts can assure that TT2 can also produce positive pragmatic effects on the TL readers.

Combining the other linguistic means such as end rhymes and reducing the original paragraph structure into the verse format, and basing on the nature of pragmatic enrichment of correspondence and amplification, as well as the pragmatic impoverishment of omission and shifts, on the whole, TT2 can thus produce better pragmatic effects on the TL readers than TT1. This research indicates the feasibility and applicability in the evaluation of pragmatic effect of two TTs from the same ST, tackling horny issues in translation studies.

9.3 Implications of the research

9.3.1 Corpus approach to English translation studies of TCM classics

One of the main features of this research lies in the application of corpus-based approach to the evaluation and comparison, from the perspective of pragmatics, of the two English translations of TCM classic *Su Wen*.

This kind of corpus-based approach offers one of the most effective ways of capturing the distinctive features of English translation of massive TCM classics, as it allows us to study large amounts of the English translation texts of TCM classics and identify underlying patterning which is difficult to capture through manual analyses. The first step is to build a large corpus of translated texts, by collecting the authentic data including the TCM classics

and their translated texts and resorting relevant big data technology; then it is available to identify patterns, terminology, and linguistic features that are specific to TCM classics. By examining those patterns and features extracted from the corpus through corpus tools, we can develop corresponding strategies and guidelines for the accurate English translation of TCM classics. This approach can help ensure the consistency and accuracy of English translations and facilitate the transference of message between Chinese and English languages. At last, this approach can be used to study variations in the output of individual translators, the impact of specific Chinese SL on the patterns of the English TL, the impact of text types on translation strategies and techniques, and various other issues which are of interest to both translation studies scholars and corpus linguists in the global community of TCM translation studies.

9.3.2 Pragmatic insights into translation studies

This research has provided some pragmatic insights into translation studies. Firstly, to examine the pragmatic aspects of translation, we can investigate the translators' personal stylistic features, the intended TL readers, and some cultural norms of both the SL and TL. By doing so, we can gain a deeper understanding of translation which is shaped by the social and cultural context, and how translators select dictions in different situations.

Secondly, pragmatic effects of DM use in translation can be evaluated by using statistical methods. The combination of effect size (phi coefficient) test of the DM use and investigation of the statistics about the use of translation techniques is an original method to deal with the problem based on the measurement of "statistical equivalence" (Krzyszowski, 1990). In the

case of this research, the proper evaluation of the pragmatic effects of two TTs on the TL readers showcases the advantage of tackling horny issues in translation studies for years and also the applicability of this methodology to evaluate the pragmatic effects of DM use based on a parallel corpus.

Thirdly, the judgement of pragmatic effects of DMs does not completely rely on the normalised frequencies of the DMs used in the translation, it also needs to investigate the nature of the translation techniques used. Following Sequeiros (2005), the pragmatic effects in translation can be grouped into two categories: pragmatic enrichment and pragmatic impoverishment. Among the four translation techniques of DM translation, correspondence and amplification belong to pragmatic enrichment as they both help *remain* or even enhance the communicative effects by arriving at the proposition expressed. While the other two translation techniques omission and shifts are regarded as “pragmatic impoverishment” in DM translation as they indicate less encoding in the translation than that in the ST (Sequeiros, 2005, p.68). Therefore, more use of correspondence and amplification will bring more “pragmatic enrichment” to the translation, while less correspondence, more omission and shifts will result in more “pragmatic impoverishment”.

Fourthly, this research can offer some implications and applications for translation practice and translator training, particularly in the English translation of Chinese DMs. 1) Translation practice: In translating TCM classics, different translation techniques can be employed, which depend on different translation purposes: (1) If we want to keep the original patterns and styles, then we can adopt more correspondence, less omission, and less shifts. However, this

translation strategy has some limitations due to the differences between the SL and TL, so we need to employ more amplification, verse format, and end rhymes for compensation. (2) If we want to achieve more acceptability for the intended TL readers, we need to adopt more amplification and less shifts. However, this translation strategy is not perfect *per se* due to the inherent differences between the SL and TL, so we can employ more omission by replacing the DMs with other linguistic means. 2) Translator training: Different translators are encouraged to use different translation techniques to achieve the goals of faithfulness of the ST and intelligibility of the TT. That is, if they want to convey the essence of the original, we can instruct them to adopt more omission and less correspondence, meanwhile we should remind them to enhance the acceptability of the translation by employing more amplification and less shifts; But if they want to keep the original patterns and styles of the DMs, we can teach them to adopt more correspondence, less omission and less shifts; at the same time they can use more amplification to facilitate inferences.

Taken together, it is different from the previous perspective of evaluating translation quality which equally regards all the translation techniques but ignores looking into their nature. This pragmatic insight into the DM translation brings a new criterion into the translation quality assessment on measuring the pragmatic effects by the statistical quantity of DM use as well as the enrichment or impoverishment translation techniques of DMs.

9.3.3 Out-bound transmission of English translation of TCM classics

This research also gives some insights out-bound transmission of the optimal English translation of TCM classics. The English translation of TCM classics allows for the sharing of

ancient TCM therapies, philosophy and practices with a wider international community as English has become an international language. Therefore, before the out-bound transmission, it is imperative to select those English translations of TCM classics with the optimal pragmatic effects, ensuring accuracy, clarity, and cultural relevance in the TL.

Regarding TCM classic *Su Wen*, the only use of Chinese version still limits its out-bound efficient transmission of TCM, only out to some Asian neighbouring countries like Japan and South Korea thanks to their recognition of the Chinese characters and culture. If the optimal translated English version with the most pragmatic effects can be selected through this type of evaluation and comparison, it is believed that TCM classics like *Su Wen* can be further transmitted to and benefit many other countries all over the world. In this sense, it can allow for English-speaking researchers, practitioners and enthusiasts to access the rich heritage of TCM, promoting its recognition in international medical and healthcare communities.

9.4 Limitations of the research and further study

Like any academic research, this research also has some limitations. The main limitations comprise two aspects: limited research scope and limited analysis of sub-functions of the DMs.

The first limitation lies in the limited research scope, that is, solely looking at DMs instead of more generally PMs. PMs encompass a broad range of linguistic features than DMs. In Fraser's (1993) notion, PMs, in the wide sense of DMs, also include discourse topic markers, discourse activity markers, in addition the narrow sense of DMs (parallel, contrastive,

elaborative, and inferential). By solely examining the DMs of message relations in *Su Wen* and its two English translations, we can focus the time and energy to explore this pioneering area for in-depth investigation and analysis. On the other hand, we might miss some important insights into other pragmatic issues, resulting in an incomplete understanding of how language functions in communication in a wider context. For instance, the use of DMs or pragmatic effects of DMs in translated texts can only serve as some specific criteria rather than the general criteria for assessing translation quality. Therefore, it has been left for further study in the future.

Similarly, due to space and time constraints, this research has not further plunged into the classification of correspondence of DM use, in terms of the sub-functions of DMs, in the ST and its two translations. Such detailed analysis demands a lot of time to be invested in the DM translation relation markup between the ST and TTs, retrieval of large amount of data, as well as comparison and evaluation. This is however an area that could be explored in the future.

As mentioned above, as an extension of this PhD research, the PM study in the English translation of *Su Wen* and more detailed analysis of sub-functions of the DMs will be surely conducted as required in my further study.

In addition, acceptability and impact research will also be undertaken in the future. This research involves investigating the pragmatic effects of the two English translations of DMs in *Su Wen* on the intended TL readers. It draws the conclusion by analysing the use of translation techniques in the English translation of the Chinese DMs together with their nature

of pragmatic enrichment and impoverishment. That is not enough, so survey will be administered by means of distributing email questionnaires to the targeted English-speakers, by stratified random sampling, concerning the acceptability and impact of English translation of *Su Wen* in the TCM community and beyond. We can also assess how these translations contribute to the transmission and understanding of TCM knowledge to English-speaking regions and the potential influence on clinical, practice, education, and research.

Furthermore, by further studying the English translation of *Su Wen*, we can contribute to the refinement of TCM translation studies for retranslation, enhance the cross-cultural communication and facilitate the wider transmission of time-honoured and tested TCM therapies and philosophy in an international context.

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Appendix 1 Statistics of all the Chinese DM use in ST

No.	Chapters	All C-DMs	Wordcount	Norm-f	ST-MRPL	Norm-f	ST-MRCT	Norm-f	ST-MREL	Norm-f	ST-MRIR	Norm-f
1	Chapter1	33	1145	2882	9	786	5	437	0	0	19	1659
2	Chapter2	26	771	3372	3	389	0	0	0	0	23	2983
3	Chapter3	59	1113	5301	3	270	2	180	1	90	53	4762
4	Chapter4	24	1100	2182	1	91	0	0	3	273	20	1818
5	Chapter5	86	2481	3466	7	282	3	121	3	121	73	2942
6	Chapter6	8	579	1382	2	345	2	345	0	0	4	691
7	Chapter7	5	807	620	1	124	0	0	0	0	4	496
8	Chapter8	7	431	1624	2	464	0	0	0	0	5	1160
9	Chapter9	26	1501	1732	13	866	0	0	0	0	13	866
10	Chapter10	30	1063	2822	10	941	1	94	0	0	19	1787
11	Chapter11	20	443	4515	8	1806	2	451	0	0	10	2257
12	Chapter12	24	444	5405	8	1802	2	450	0	0	14	3153
13	Chapter13	14	714	1961	5	700	0	0	0	0	9	1261
14	Chapter14	17	637	2669	5	785	4	628	0	0	8	1256
15	Chapter15	4	389	1028	0	0	0	0	0	0	4	1028
16	Chapter16	19	877	2166	12	1368	1	114	0	0	6	684
17	Chapter17	60	2058	2915	4	194	0	0	0	0	56	2721
18	Chapter18	12	1446	830	7	484	1	69	0	0	4	277
19	Chapter19	79	2742	2881	28	1021	3	109	0	0	48	1751

20	Chapter20	33	1476	2236	14	949	3	203	0	0	16	1084
21	Chapter21	9	698	1289	2	287	0	0	0	0	7	1003
22	Chapter22	27	1391	1941	8	575	0	0	0	0	19	1366
23	Chapter23	11	586	1877	0	0	0	0	0	0	11	1877
24	Chapter24	3	454	661	2	441	0	0	0	0	1	220
25	Chapter25	6	822	730	0	0	0	0	5	608	1	122
26	Chapter26	58	1190	4874	17	1429	5	420	5	420	31	2605
27	Chapter27	39	1112	3507	4	360	2	180	0	0	33	2968
28	Chapter28	33	957	3448	4	418	0	0	0	0	29	3030
29	Chapter29	29	636	4560	9	1415	3	472	0	0	17	2673
30	Chapter30	18	383	4700	4	1044	1	261	0	0	13	3394
31	Chapter31	40	894	4474	15	1678	0	0	0	0	25	2796
32	Chapter32	27	858	3147	13	1515	1	117	0	0	13	1515
33	Chapter33	36	964	3734	14	1452	2	207	1	104	19	1971
34	Chapter34	33	744	4435	13	1747	5	672	0	0	15	2016
35	Chapter35	110	2083	5281	29	1392	6	288	0	0	75	3601
36	Chapter36	14	940	1489	6	638	2	213	0	0	6	638
37	Chapter37	8	308	2597	1	325	1	325	0	0	6	1948
38	Chapter38	38	608	6250	7	1151	0	0	0	0	31	5099
39	Chapter39	110	1216	9046	40	3289	0	0	0	0	70	5757
40	Chapter40	29	1003	2891	11	1097	2	199	0	0	16	1595
41	Chapter41	10	934	1071	6	642	0	0	0	0	4	428
42	Chapter42	51	915	5574	21	2295	1	109	0	0	29	3169

43	Chapter43	44	1119	3932	17	1519	1	89	0	0	26	2324
44	Chapter44	48	773	6210	18	2329	0	0	0	0	30	3881
45	Chapter45	49	1021	4799	16	1567	3	294	0	0	30	2938
46	Chapter46	21	831	2527	8	963	2	241	0	0	11	1324
47	Chapter47	26	1052	2471	14	1331	1	95	0	0	11	1046
48	Chapter48	16	828	1932	13	1570	0	0	0	0	3	362
49	Chapter49	84	1152	7292	32	2778	3	260	0	0	49	4253
50	Chapter50	17	285	5965	1	351	0	0	0	0	16	5614
51	Chapter51	4	231	1732	4	1732	0	0	0	0	0	0
52	Chapter52	0	550	0	0	0	0	0	0	0	0	0
53	Chapter53	7	307	2280	3	977	4	1303	0	0	0	0
54	Chapter54	13	691	1881	2	289	2	289	0	0	9	1302
55	Chapter55	7	573	1222	7	1222	0	0	0	0	0	0
56	Chapter56	28	659	4249	2	303	0	0	0	0	26	3945
57	Chapter57	8	206	3883	3	1456	1	485	0	0	4	1942
58	Chapter58	11	1022	1076	8	783	1	98	0	0	2	196
59	Chapter59	0	818	0	0	0	0	0	0	0	0	0
60	Chapter60	10	1164	859	8	687	0	0	0	0	2	172
61	Chapter61	22	971	2266	6	618	0	0	0	0	16	1648
62	Chapter62	85	2636	3225	14	531	1	38	0	0	70	2656
63	Chapter63	23	1848	1245	13	703	0	0	0	0	10	541
64	Chapter64	22	786	2799	1	127	2	254	0	0	19	2417
65	Chapter65	32	833	3842	25	3001	4	480	0	0	3	360

66	Chapter66	24	1421	1689	10	704	1	70	0	0	13	915
67	Chapter67	42	2159	1945	9	417	3	139	0	0	30	1390
68	Chapter68	56	2725	2055	14	514	7	257	0	0	35	1284
69	Chapter69	87	3548	2452	34	958	2	56	0	0	51	1437
70	Chapter70	98	5194	1887	28	539	17	327	0	0	53	1020
71	Chapter71	183	11836	1546	62	524	12	101	1	8	108	912
72	Chapter74	177	9183	1927	48	523	20	218	0	0	109	1187
73	Chapter75	12	556	2158	3	540	5	899	0	0	4	719
74	Chapter76	22	911	2415	8	878	2	220	0	0	12	1317
75	Chapter77	13	865	1503	3	347	4	462	1	116	5	578
76	Chapter78	7	458	1528	1	218	0	0	0	0	6	1310
77	Chapter79	4	925	432	1	108	2	216	0	0	1	108
78	Chapter80	28	863	3244	2	232	1	116	0	0	25	2897
79	Chapter81	35	779	4493	2	257	4	513	0	0	29	3723
	TOTAL*	2690	103692	2594	808	779	165	159	20	19	1697	1637
	Mean	34.05	1313	2842	10.23	866	2.09	180	0.25	22	21.48	1774
	Min	0	206	0	0	0	0	0	0	0	0	0
	Max	183	11836	9046	62	3289	20	1303	5	608	109	5757
	SD	34.74	1685.68	1729.14	11.27	705.75	3.35	230.24	0.92	89.27	23.17	1365.56

Appendix 2 Statistics of Chinese DM use in original chapters of ST

No.	Chapters	C-DMs-ori	Wordcount	Norm-f	ST-MRPL	Norm-f	ST-MRCT	Norm-f	ST-MREL	Norm-f	ST-MRIR	Norm-f
1	Chapter12	24	444	5405	8	1802	2	450	0	0	14	3153
2	Chapter14	17	637	2669	5	785	4	628	0	0	8	1256
3	Chapter24	3	454	661	2	441	0	0	0	0	1	220
4	Chapter25	6	822	730	0	0	0	0	5	608	1	122
5	Chapter30	18	383	4700	4	1044	1	261	0	0	13	3394
6	Chapter31	40	894	4474	15	1678	0	0	0	0	25	2796
7	Chapter51	4	231	1732	4	1732	0	0	0	0	0	0
8	Chapter57	8	206	3883	3	1456	1	485	0	0	4	1942
9	Chapter76	22	911	2415	8	878	2	220	0	0	12	1317
10	Chapter78	7	458	1528	1	218	0	0	0	0	6	1310
11	Chapter81	35	779	4493	2	257	4	513	0	0	29	3723
	TOTAL*	184	6219	2959	52	836	14	225	5	80	113	1817
	Mean	16.73	565	2972	4.73	936	1.27	233	0.45	55	10.27	1748
	Min	3	206	661	0	0	0	0	0	0	0	0
	Max	40	911	5405	15	1802	4	628	5	608	29	3723
	SD	12.04	244.38	1615.29	4.07	628.10	1.48	237.04	1.44	174.87	9.21	1292.46

Appendix 3 Statistics of Chinese DM use in compiled chapters of ST

No.	Chapters	C-DMs-com	Wordcount	Norm-f	ST-MRPL	Norm-f	ST-MRCT	Norm-f	ST-MREL	Norm-f	ST-MRIR	Norm-f
1	Chapter1	33	1145	2882	9	786	5	437	0	0	19	1659
2	Chapter2	26	771	3372	3	389	0	0	0	0	23	2983
3	Chapter3	59	1113	5301	3	270	2	180	1	90	53	4762
4	Chapter4	24	1100	2182	1	91	0	0	3	273	20	1818
5	Chapter5	86	2481	3466	7	282	3	121	3	121	73	2942
6	Chapter6	8	579	1382	2	345	2	345	0	0	4	691
7	Chapter7	5	807	620	1	124	0	0	0	0	4	496
8	Chapter8	7	431	1624	2	464	0	0	0	0	5	1160
9	Chapter9	26	1501	1732	13	866	0	0	0	0	13	866
10	Chapter10	30	1063	2822	10	941	1	94	0	0	19	1787
11	Chapter11	20	443	4515	8	1806	2	451	0	0	10	2257
12	Chapter13	14	714	1961	5	700	0	0	0	0	9	1261
13	Chapter15	4	389	1028	0	0	0	0	0	0	4	1028
14	Chapter16	19	877	2166	12	1368	1	114	0	0	6	684
15	Chapter17	60	2058	2915	4	194	0	0	0	0	56	2721
16	Chapter18	12	1446	830	7	484	1	69	0	0	4	277
17	Chapter19	79	2742	2881	28	1021	3	109	0	0	48	1751
18	Chapter20	33	1476	2236	14	949	3	203	0	0	16	1084
19	Chapter21	9	698	1289	2	287	0	0	0	0	7	1003
20	Chapter22	27	1391	1941	8	575	0	0	0	0	19	1366
21	Chapter23	11	586	1877	0	0	0	0	0	0	11	1877
22	Chapter26	58	1190	4874	17	1429	5	420	5	420	31	2605
23	Chapter27	39	1112	3507	4	360	2	180	0	0	33	2968
24	Chapter28	33	957	3448	4	418	0	0	0	0	29	3030

25	Chapter29	29	636	4560	9	1415	3	472	0	0	17	2673
26	Chapter32	27	858	3147	13	1515	1	117	0	0	13	1515
27	Chapter33	36	964	3734	14	1452	2	207	1	104	19	1971
28	Chapter34	33	744	4435	13	1747	5	672	0	0	15	2016
29	Chapter35	110	2083	5281	29	1392	6	288	0	0	75	3601
30	Chapter36	14	940	1489	6	638	2	213	0	0	6	638
31	Chapter37	8	308	2597	1	325	1	325	0	0	6	1948
32	Chapter38	38	608	6250	7	1151	0	0	0	0	31	5099
33	Chapter39	110	1216	9046	40	3289	0	0	0	0	70	5757
34	Chapter40	29	1003	2891	11	1097	2	199	0	0	16	1595
35	Chapter41	10	934	1071	6	642	0	0	0	0	4	428
36	Chapter42	51	915	5574	21	2295	1	109	0	0	29	3169
37	Chapter43	44	1119	3932	17	1519	1	89	0	0	26	2324
38	Chapter44	48	773	6210	18	2329	0	0	0	0	30	3881
39	Chapter45	49	1021	4799	16	1567	3	294	0	0	30	2938
40	Chapter46	21	831	2527	8	963	2	241	0	0	11	1324
41	Chapter47	26	1052	2471	14	1331	1	95	0	0	11	1046
42	Chapter48	16	828	1932	13	1570	0	0	0	0	3	362
43	Chapter49	84	1152	7292	32	2778	3	260	0	0	49	4253
44	Chapter50	17	285	5965	1	351	0	0	0	0	16	5614
45	Chapter52	0	550	0	0	0	0	0	0	0	0	0
46	Chapter53	7	307	2280	3	977	4	1303	0	0	0	0
47	Chapter54	13	691	1881	2	289	2	289	0	0	9	1302
48	Chapter55	7	573	1222	7	1222	0	0	0	0	0	0
49	Chapter56	28	659	4249	2	303	0	0	0	0	26	3945
50	Chapter58	11	1022	1076	8	783	1	98	0	0	2	196
51	Chapter59	0	818	0	0	0	0	0	0	0	0	0

52	Chapter60	10	1164	859	8	687	0	0	0	0	2	172
53	Chapter61	22	971	2266	6	618	0	0	0	0	16	1648
54	Chapter62	85	2636	3225	14	531	1	38	0	0	70	2656
55	Chapter63	23	1848	1245	13	703	0	0	0	0	10	541
56	Chapter64	22	786	2799	1	127	2	254	0	0	19	2417
57	Chapter65	32	833	3842	25	3001	4	480	0	0	3	360
58	Chapter66	24	1421	1689	10	704	1	70	0	0	13	915
59	Chapter67	42	2159	1945	9	417	3	139	0	0	30	1390
60	Chapter68	56	2725	2055	14	514	7	257	0	0	35	1284
61	Chapter69	87	3548	2452	34	958	2	56	0	0	51	1437
62	Chapter70	98	5194	1887	28	539	17	327	0	0	53	1020
63	Chapter71	183	11836	1546	62	524	12	101	1	8	108	912
64	Chapter74	177	9183	1927	48	523	20	218	0	0	109	1187
65	Chapter75	12	556	2158	3	540	5	899	0	0	4	719
66	Chapter77	13	865	1503	3	347	4	462	1	116	5	578
67	Chapter79	4	925	432	1	108	2	216	0	0	1	108
68	Chapter80	28	863	3244	2	232	1	116	0	0	25	2897
	TOTAL*	2506	97473	2571	756	776	151	155	15	15	1584	1625
	Mean	36.85	1433	2821	11.12	855	2.22	171	0.22	17	23.29	1778
	Min	0	285	0	0	0	0	0	0	0	0	0
	Max	183	11836	9046	62	3289	20	1303	5	420	109	5757
	SD	36.36	1785.10	1745.95	11.80	716.89	3.54	227.97	0.80	64.05	24.22	1376.97

Appendix 4 Statistics of all the English DM use in TT1

No.	Chapters	TT1-All DMs	Word count	N-f	TT1-MRPL	N-f	TT1-MRCT	N-f	TT1-MREL	N-f	TT1-MRIR	N-f
1	1	45	1403	3207	18	1283	5	356	0	0	22	1568
2	2	29	1066	2720	10	938	6	563	0	0	13	1220
3	3	42	1439	2919	7	486	4	278	2	139	29	2015
4	4	39	1370	2847	20	1460	5	365	1	73	13	949
5	5	117	3301	3544	35	1060	44	1333	1	30	37	1121
6	6	19	580	3276	6	1034	5	862	0	0	8	1379
7	7	29	1227	2363	10	815	3	244	2	163	14	1141
8	8	5	561	891	2	357	1	178	0	0	2	357
9	9	46	2085	2206	19	911	6	288	0	0	21	1007
10	10	31	1414	2192	15	1061	1	71	0	0	15	1061
11	11	22	578	3806	4	692	6	1038	0	0	12	2076
12	12	14	523	2677	1	191	2	382	1	191	10	1912
13	13	14	1002	1397	3	299	1	100	0	0	10	998
14	14	24	714	3361	10	1401	4	560	0	0	10	1401
15	15	13	485	2680	9	1856	2	412	0	0	2	412
16	16	33	1117	2954	10	895	1	90	0	0	22	1970
17	17	48	2562	1874	5	195	13	507	2	78	28	1093
18	18	64	1929	3318	6	311	2	104	2	104	54	2799
19	19	83	2974	2791	13	437	11	370	3	101	56	1883
20	20	44	1807	2435	14	775	3	166	4	221	23	1273
21	21	16	909	1760	5	550	1	110	0	0	10	1100
22	22	35	2022	1731	6	297	1	49	1	49	27	1335

23	23	14	889	1575	7	787	2	225	0	0	5	562
24	24	15	676	2219	9	1331	6	888	0	0	0	0
25	25	19	1143	1662	10	875	3	262	0	0	6	525
26	26	40	1546	2587	13	841	6	388	0	0	21	1358
27	27	50	1395	3584	7	502	5	358	0	0	38	2724
28	28	35	1018	3438	3	295	7	688	1	98	24	2358
29	29	25	726	3444	0	0	5	689	1	138	19	2617
30	30	13	401	3242	3	748	4	998	0	0	6	1496
31	31	33	999	3303	10	1001	3	300	0	0	20	2002
32	32	22	1151	1911	4	348	1	87	0	0	17	1477
33	33	24	894	2685	8	895	0	0	0	0	16	1790
34	34	18	760	2368	3	395	4	526	1	132	10	1316
35	35	87	2247	3872	14	623	13	579	4	178	56	2492
36	36	14	1151	1216	4	348	2	174	0	0	8	695
37	37	4	336	1190	0	0	0	0	0	0	4	1190
38	38	15	606	2475	3	495	0	0	0	0	12	1980
39	39	37	1312	2820	9	686	1	76	2	152	25	1905
40	40	22	1042	2111	7	672	3	288	1	96	11	1056
41	41	3	1171	256	2	171	0	0	1	85	0	0
42	42	13	949	1370	0	0	3	316	0	0	10	1054
43	43	23	1181	1948	3	254	0	0	0	0	20	1693
44	44	12	791	1517	1	126	1	126	0	0	10	1264
45	45	16	1109	1443	0	0	4	361	0	0	12	1082
46	46	19	810	2346	3	370	2	247	1	123	13	1605
47	47	18	1008	1786	5	496	3	298	0	0	10	992

48	48	50	1041	4803	12	1153	0	0	1	96	37	3554
49	49	61	1534	3977	17	1108	6	391	1	65	37	2412
50	50	6	351	1709	0	0	0	0	0	0	6	1709
51	51	0	314	0	0	0	0	0	0	0	0	0
52	52	17	651	2611	6	922	1	154	0	0	10	1536
53	53	18	411	4380	5	1217	7	1703	0	0	6	1460
54	54	21	950	2211	16	1684	0	0	0	0	5	526
55	55	14	902	1552	7	776	1	111	0	0	6	665
56	56	31	798	3885	11	1378	2	251	0	0	18	2256
57	57	10	216	4630	5	2315	2	926	0	0	3	1389
58	58	17	1167	1457	11	943	1	86	0	0	5	428
59	59	3	957	313	3	313	0	0	0	0	0	0
60	60	13	1525	852	7	459	0	0	0	0	6	393
61	61	39	1046	3728	19	1816	4	382	0	0	16	1530
62	62	72	3249	2216	22	677	11	339	0	0	39	1200
63	63	49	2807	1746	13	463	4	143	1	36	31	1104
64	64	33	1077	3064	12	1114	14	1300	1	93	6	557
65	65	29	1455	1993	7	481	3	206	0	0	19	1306
66	66	20	1671	1197	7	419	3	180	0	0	10	598
67	67	74	2558	2893	32	1251	23	899	0	0	19	743
68	68	45	3003	1499	20	666	7	233	0	0	18	599
69	69	130	4757	2733	35	736	11	231	0	0	84	1766
70	70	183	7380	2480	81	1098	12	163	0	0	90	1220
71	71	498	22746	2189	238	1046	35	154	0	0	225	989
72	74	279	12595	2215	82	651	41	326	1	8	155	1231

73	75	20	820	2439	1	122	5	610	1	122	13	1585
74	76	28	1069	2619	2	187	11	1029	0	0	15	1403
75	77	32	1361	2351	4	294	9	661	0	0	19	1396
76	78	10	584	1712	2	342	1	171	0	0	7	1199
77	79	29	1289	2250	5	388	5	388	0	0	19	1474
78	80	58	1384	4191	7	506	5	361	2	145	44	3179
79	81	34	939	3621	5	532	3	319	0	0	26	2769
	TOTAL*	3326	138986	2393	1050	755	432	311	39	28	1805	1299
	Mean	42.10	1759	2441	13.29	691	5.47	355	0.49	34	22.85	1361
	Min	0	216	0	0	0	0	0	0	0	0	0
	Max	498	22746	4803	238	2315	44	1703	4	221	225	3554
	SD	65.26	2881.64	985.81	28.86	475.06	8.00	344.19	0.88	57.97	32.18	724.03

Appendix 5 Statistics of English DM use in original chapters of TT1

No.	Chapters	TT1-DMs-ori	Word count	N-f	TT1-MRPL	N-f	TT1-MRCT	N-f	TT1-MREL	N-f	TT1-MRIR	N-f
1	12	14	523	2677	1	191	2	382	1	191	10	1912
2	14	24	714	3361	10	1401	4	560	0	0	10	1401
3	24	15	676	2219	9	1331	6	888	0	0	0	0
4	25	19	1143	1662	10	875	3	262	0	0	6	525
5	30	13	401	3242	3	748	4	998	0	0	6	1496
6	31	33	999	3303	10	1001	3	300	0	0	20	2002
7	51	0	314	0	0	0	0	0	0	0	0	0
8	57	10	216	4630	5	2315	2	926	0	0	3	1389
9	76	28	1069	2619	2	187	11	1029	0	0	15	1403
10	78	10	584	1712	2	342	1	171	0	0	7	1199
11	81	34	939	3621	5	532	3	319	0	0	26	2769
	TOTAL*	200	7578	2639	57	752	39	515	1	13	103	1359
	Mean	18.18	689	2641	5.18	811	3.55	531	0.09	17	9.36	1281
	Min	0	216	0	0	0	0	0	0	0	0	0
	Max	34	1143	4630	10	2315	11	1029	1	191	26	2769
	SD	10.09	300.88	1175.84	3.74	650.33	2.81	350.73	0.29	54.97	7.78	802.24

Appendix 6 Statistics of English DM use in compiled chapters of TT1

No.	Chapters	TT1-DMs-com	Word count	N-f	TT1-MRPL	N-f	TT1-MRCT	N-f	TT1-MREL	N-f	TT1-MRIR	N-f
1	1	45	1403	3207	18	1283	5	356	0	0	22	1568
2	2	29	1066	2720	10	938	6	563	0	0	13	1220
3	3	42	1439	2919	7	486	4	278	2	139	29	2015
4	4	39	1370	2847	20	1460	5	365	1	73	13	949
5	5	117	3301	3544	35	1060	44	1333	1	30	37	1121
6	6	19	580	3276	6	1034	5	862	0	0	8	1379
7	7	29	1227	2363	10	815	3	244	2	163	14	1141
8	8	5	561	891	2	357	1	178	0	0	2	357
9	9	46	2085	2206	19	911	6	288	0	0	21	1007
10	10	31	1414	2192	15	1061	1	71	0	0	15	1061
11	11	22	578	3806	4	692	6	1038	0	0	12	2076
12	13	14	1002	1397	3	299	1	100	0	0	10	998
13	15	13	485	2680	9	1856	2	412	0	0	2	412
14	16	33	1117	2954	10	895	1	90	0	0	22	1970
15	17	48	2562	1874	5	195	13	507	2	78	28	1093
16	18	64	1929	3318	6	311	2	104	2	104	54	2799
17	19	83	2974	2791	13	437	11	370	3	101	56	1883
18	20	44	1807	2435	14	775	3	166	4	221	23	1273
19	21	16	909	1760	5	550	1	110	0	0	10	1100
20	22	35	2022	1731	6	297	1	49	1	49	27	1335
21	23	14	889	1575	7	787	2	225	0	0	5	562
22	26	40	1546	2587	13	841	6	388	0	0	21	1358
23	27	50	1395	3584	7	502	5	358	0	0	38	2724
24	28	35	1018	3438	3	295	7	688	1	98	24	2358

25	29	25	726	3444	0	0	5	689	1	138	19	2617
26	32	22	1151	1911	4	348	1	87	0	0	17	1477
27	33	24	894	2685	8	895	0	0	0	0	16	1790
28	34	18	760	2368	3	395	4	526	1	132	10	1316
29	35	87	2247	3872	14	623	13	579	4	178	56	2492
30	36	14	1151	1216	4	348	2	174	0	0	8	695
31	37	4	336	1190	0	0	0	0	0	0	4	1190
32	38	15	606	2475	3	495	0	0	0	0	12	1980
33	39	37	1312	2820	9	686	1	76	2	152	25	1905
34	40	22	1042	2111	7	672	3	288	1	96	11	1056
35	41	3	1171	256	2	171	0	0	1	85	0	0
36	42	13	949	1370	0	0	3	316	0	0	10	1054
37	43	23	1181	1948	3	254	0	0	0	0	20	1693
38	44	12	791	1517	1	126	1	126	0	0	10	1264
39	45	16	1109	1443	0	0	4	361	0	0	12	1082
40	46	19	810	2346	3	370	2	247	1	123	13	1605
41	47	18	1008	1786	5	496	3	298	0	0	10	992
42	48	50	1041	4803	12	1153	0	0	1	96	37	3554
43	49	61	1534	3977	17	1108	6	391	1	65	37	2412
44	50	6	351	1709	0	0	0	0	0	0	6	1709
45	52	17	651	2611	6	922	1	154	0	0	10	1536
46	53	18	411	4380	5	1217	7	1703	0	0	6	1460
47	54	21	950	2211	16	1684	0	0	0	0	5	526
48	55	14	902	1552	7	776	1	111	0	0	6	665
49	56	31	798	3885	11	1378	2	251	0	0	18	2256
50	58	17	1167	1457	11	943	1	86	0	0	5	428
51	59	3	957	313	3	313	0	0	0	0	0	0

52	60	13	1525	852	7	459	0	0	0	0	6	393
53	61	39	1046	3728	19	1816	4	382	0	0	16	1530
54	62	72	3249	2216	22	677	11	339	0	0	39	1200
55	63	49	2807	1746	13	463	4	143	1	36	31	1104
56	64	33	1077	3064	12	1114	14	1300	1	93	6	557
57	65	29	1455	1993	7	481	3	206	0	0	19	1306
58	66	20	1671	1197	7	419	3	180	0	0	10	598
59	67	74	2558	2893	32	1251	23	899	0	0	19	743
60	68	45	3003	1499	20	666	7	233	0	0	18	599
61	69	130	4757	2733	35	736	11	231	0	0	84	1766
62	70	183	7380	2480	81	1098	12	163	0	0	90	1220
63	71	498	22746	2189	238	1046	35	154	0	0	225	989
64	74	279	12595	2215	82	651	41	326	1	8	155	1231
65	75	20	820	2439	1	122	5	610	1	122	13	1585
66	77	32	1361	2351	4	294	9	661	0	0	19	1396
67	79	29	1289	2250	5	388	5	388	0	0	19	1474
68	80	58	1384	4191	7	506	5	361	2	145	44	3179
TOTAL*		3126	131408	2379	993	756	393	299	38	29	1702	1295
Mean		45.97	1932	2409	14.60	672	5.78	326	0.56	37	25.03	1373
Min		3	336	256	0	0	0	0	0	0	0	0
Max		498	22746	4803	238	1856	44	1703	4	221	225	3554
SD		69.45	3068.74	947.56	30.87	437.12	8.51	334.54	0.93	57.98	34.04	709.74

Appendix 7 Statistics of all the English DM use in TT2

No.	Chapters	TT2-All DMs	Word count	N-f	TT2-MRPL	N-f	TT2-MRCT	N-f	TT2-MREL	N-f	TT2-MRIR	N-f
1	1	73	1643	4443	45	2739	8	487	2	122	18	1096
2	2	45	1077	4178	14	1300	2	186	5	464	24	2228
3	3	85	1670	5090	22	1317	4	240	2	120	57	3413
4	4	31	1344	2307	3	223	0	0	0	0	28	2083
5	5	105	3297	3185	22	667	3	91	0	0	80	2426
6	6	16	711	2250	3	422	2	281	0	0	11	1547
7	7	20	1167	1714	9	771	0	0	0	0	11	943
8	8	12	540	2222	3	556	1	185	0	0	8	1481
9	9	48	2006	2393	15	748	4	199	2	100	27	1346
10	10	54	1460	3699	22	1507	0	0	0	0	32	2192
11	11	24	540	4444	6	1111	4	741	0	0	14	2593
12	12	22	567	3880	8	1411	2	353	0	0	12	2116
13	13	36	1020	3529	16	1569	0	0	0	0	20	1961
14	14	35	765	4575	19	2484	4	523	0	0	12	1569
15	15	11	588	1871	3	510	0	0	0	0	8	1361
16	16	44	1400	3143	14	1000	3	214	0	0	27	1929
17	17	114	3017	3779	34	1127	2	66	0	0	78	2585
18	18	99	2614	3787	23	880	2	77	2	77	72	2754
19	19	147	3799	3869	49	1290	10	263	2	53	86	2264
20	20	69	2183	3161	29	1328	6	275	0	0	34	1557
21	21	22	1042	2111	6	576	0	0	1	96	15	1440

22	22	43	2187	1966	14	640	0	0	6	274	23	1052
23	23	17	887	1917	2	225	0	0	0	0	15	1691
24	24	14	654	2141	3	459	7	1070	1	153	3	459
25	25	22	1158	1900	12	1036	2	173	0	0	8	691
26	26	67	1680	3988	20	1190	10	595	8	476	29	1726
27	27	73	1599	4565	22	1376	3	188	1	63	47	2939
28	28	67	1230	5447	11	894	9	732	4	325	43	3496
29	29	30	842	3563	4	475	3	356	3	356	20	2375
30	30	22	458	4803	5	1092	2	437	0	0	15	3275
31	31	53	1206	4395	22	1824	3	249	1	83	27	2239
32	32	63	1444	4363	28	1939	4	277	0	0	31	2147
33	33	47	1189	3953	15	1262	3	252	0	0	29	2439
34	34	41	912	4496	17	1864	6	658	0	0	18	1974
35	35	125	2787	4485	31	1112	7	251	1	36	86	3086
36	36	27	1350	2000	7	519	1	74	0	0	19	1407
37	37	10	390	2564	2	513	1	256	0	0	7	1795
38	38	29	816	3554	6	735	0	0	0	0	23	2819
39	39	95	1631	5825	23	1410	1	61	5	307	66	4047
40	40	35	1193	2934	8	671	3	251	1	84	23	1928
41	41	45	1424	3160	20	1404	0	0	1	70	24	1685
42	42	45	1268	3549	13	1025	1	79	0	0	31	2445
43	43	60	1508	3979	20	1326	3	199	1	66	36	2387
44	44	56	995	5628	21	2111	1	101	0	0	34	3417
45	45	47	1375	3418	16	1164	1	73	2	145	28	2036

46	46	23	1000	2300	6	600	2	200	0	0	15	1500
47	47	30	1208	2483	14	1159	0	0	1	83	15	1242
48	48	38	1413	2689	14	991	3	212	3	212	18	1274
49	49	111	1727	6427	24	1390	3	174	34	1969	50	2895
50	50	18	414	4348	2	483	0	0	0	0	16	3865
51	51	0	311	0	0	0	0	0	0	0	0	0
52	52	47	922	5098	7	759	0	0	2	217	38	4121
53	53	22	416	5288	7	1683	11	2644	0	0	4	962
54	54	33	999	3303	4	400	0	0	20	2002	9	901
55	55	15	915	1639	9	984	1	109	0	0	5	546
56	56	35	925	3784	5	541	0	0	0	0	30	3243
57	57	7	289	2422	2	692	1	346	0	0	4	1384
58	58	26	1341	1939	18	1342	2	149	0	0	6	447
59	59	1	1109	90	0	0	0	0	1	90	0	0
60	60	20	1798	1112	10	556	0	0	2	111	8	445
61	61	23	1127	2041	9	799	0	0	0	0	14	1242
62	62	148	3363	4401	50	1487	13	387	0	0	85	2528
63	63	58	2934	1977	26	886	4	136	0	0	28	954
64	64	41	1216	3372	4	329	1	82	0	0	36	2961
65	65	49	1304	3758	32	2454	4	307	1	77	12	920
66	66	29	1862	1557	11	591	1	54	1	54	16	859
67	67	56	2738	2045	19	694	6	219	1	37	30	1096
68	68	99	3427	2889	47	1371	3	88	1	29	48	1401
69	69	148	5128	2886	50	975	2	39	3	59	93	1814

70	70	167	7169	2329	50	697	11	153	11	153	95	1325
71	71	269	17925	1501	108	603	10	56	6	33	145	809
72	74	318	12976	2451	103	794	24	185	5	39	186	1433
73	75	18	809	2225	9	1112	0	0	0	0	9	1112
74	76	34	1397	2434	15	1074	2	143	1	72	16	1145
75	77	56	1444	3878	25	1731	5	346	0	0	26	1801
76	78	35	715	4895	15	2098	4	559	0	0	16	2238
77	79	13	1299	1001	7	539	2	154	0	0	4	308
78	80	47	1390	3381	7	504	6	432	0	0	34	2446
79	81	42	990	4242	8	808	1	101	0	0	33	3333
	TOTAL*	4321	146633	2947	1424	971	250	170	144	98	2503	1707
	Mean	54.70	1856	3220	18.03	1024	3.16	225	1.82	110	31.68	1861
	Min	0	289	0	0	0	0	0	0	0	0	0
	Max	318	17925	6427	108	2739	24	2644	34	2002	186	4121
	SD	52.78	2471.27	1296.62	18.81	554.33	3.89	342.60	4.66	319.49	31.63	939.48

Appendix 8 Statistics of English DM use in original chapters of TT2

No.	Chapters	TT2-DMs-ori	Word count	N-f	TT2-MRPL	N-f	TT2-MRCT	N-f	TT2-MREL	N-f	TT2-MRIR	N-f
1	12	22	567	3880	8	1411	2	353	0	0	12	2116
2	14	35	765	4575	19	2484	4	523	0	0	12	1569
3	24	14	654	2141	3	459	7	1070	1	153	3	459
4	25	22	1158	1900	12	1036	2	173	0	0	8	691
5	30	22	458	4803	5	1092	2	437	0	0	15	3275
6	31	53	1206	4395	22	1824	3	249	1	83	27	2239
7	51	0	311	0	0	0	0	0	0	0	0	0
8	57	7	289	2422	2	692	1	346	0	0	4	1384
9	76	34	1397	2434	15	1074	2	143	1	72	16	1145
10	78	35	715	4895	15	2098	4	559	0	0	16	2238
11	81	42	990	4242	8	808	1	101	0	0	33	3333
	TOTAL*	286	8510	3361	109	1281	28	329	3	35	146	1716
	Mean	26.00	774	3244	9.91	1180	2.55	359	0.27	28	13.27	1677
	Min	0	289	0	0	0	0	0	0	0	0	0
	Max	53	1397	4895	22	2484	7	1070	1	153	33	3333
	SD	14.89	354.08	1493.48	6.91	696.70	1.83	280.93	0.45	49.35	9.51	1034.40

Appendix 9 Statistics of English DM use in compiled chapters of TT2

No.	Chapters	TT2-DMs-com	Word count	N-f	TT2-MRPL	N-f	TT2-MRCT	N-f	TT2-MREL	N-f	TT2-MRIR	N-f
1	1	73	1643	4443	45	2739	8	487	2	122	18	1096
2	2	45	1077	4178	14	1300	2	186	5	464	24	2228
3	3	85	1670	5090	22	1317	4	240	2	120	57	3413
4	4	31	1344	2307	3	223	0	0	0	0	28	2083
5	5	105	3297	3185	22	667	3	91	0	0	80	2426
6	6	16	711	2250	3	422	2	281	0	0	11	1547
7	7	20	1167	1714	9	771	0	0	0	0	11	943
8	8	12	540	2222	3	556	1	185	0	0	8	1481
9	9	48	2006	2393	15	748	4	199	2	100	27	1346
10	10	54	1460	3699	22	1507	0	0	0	0	32	2192
11	11	24	540	4444	6	1111	4	741	0	0	14	2593
12	13	36	1020	3529	16	1569	0	0	0	0	20	1961
13	15	11	588	1871	3	510	0	0	0	0	8	1361
14	16	44	1400	3143	14	1000	3	214	0	0	27	1929
15	17	114	3017	3779	34	1127	2	66	0	0	78	2585
16	18	99	2614	3787	23	880	2	77	2	77	72	2754
17	19	147	3799	3869	49	1290	10	263	2	53	86	2264
18	20	69	2183	3161	29	1328	6	275	0	0	34	1557
19	21	22	1042	2111	6	576	0	0	1	96	15	1440
20	22	43	2187	1966	14	640	0	0	6	274	23	1052
21	23	17	887	1917	2	225	0	0	0	0	15	1691
22	26	67	1680	3988	20	1190	10	595	8	476	29	1726
23	27	73	1599	4565	22	1376	3	188	1	63	47	2939
24	28	67	1230	5447	11	894	9	732	4	325	43	3496

25	29	30	842	3563	4	475	3	356	3	356	20	2375
26	32	63	1444	4363	28	1939	4	277	0	0	31	2147
27	33	47	1189	3953	15	1262	3	252	0	0	29	2439
28	34	41	912	4496	17	1864	6	658	0	0	18	1974
29	35	125	2787	4485	31	1112	7	251	1	36	86	3086
30	36	27	1350	2000	7	519	1	74	0	0	19	1407
31	37	10	390	2564	2	513	1	256	0	0	7	1795
32	38	29	816	3554	6	735	0	0	0	0	23	2819
33	39	95	1631	5825	23	1410	1	61	5	307	66	4047
34	40	35	1193	2934	8	671	3	251	1	84	23	1928
35	41	45	1424	3160	20	1404	0	0	1	70	24	1685
36	42	45	1268	3549	13	1025	1	79	0	0	31	2445
37	43	60	1508	3979	20	1326	3	199	1	66	36	2387
38	44	56	995	5628	21	2111	1	101	0	0	34	3417
39	45	47	1375	3418	16	1164	1	73	2	145	28	2036
40	46	23	1000	2300	6	600	2	200	0	0	15	1500
41	47	30	1208	2483	14	1159	0	0	1	83	15	1242
42	48	38	1413	2689	14	991	3	212	3	212	18	1274
43	49	111	1727	6427	24	1390	3	174	34	1969	50	2895
44	50	18	414	4348	2	483	0	0	0	0	16	3865
45	52	47	922	5098	7	759	0	0	2	217	38	4121
46	53	22	416	5288	7	1683	11	2644	0	0	4	962
47	54	33	999	3303	4	400	0	0	20	2002	9	901
48	55	15	915	1639	9	984	1	109	0	0	5	546
49	56	35	925	3784	5	541	0	0	0	0	30	3243
50	58	26	1341	1939	18	1342	2	149	0	0	6	447
51	59	1	1109	90	0	0	0	0	1	90	0	0

52	60	20	1798	1112	10	556	0	0	2	111	8	445
53	61	23	1127	2041	9	799	0	0	0	0	14	1242
54	62	148	3363	4401	50	1487	13	387	0	0	85	2528
55	63	58	2934	1977	26	886	4	136	0	0	28	954
56	64	41	1216	3372	4	329	1	82	0	0	36	2961
57	65	49	1304	3758	32	2454	4	307	1	77	12	920
58	66	29	1862	1557	11	591	1	54	1	54	16	859
59	67	56	2738	2045	19	694	6	219	1	37	30	1096
60	68	99	3427	2889	47	1371	3	88	1	29	48	1401
61	69	148	5128	2886	50	975	2	39	3	59	93	1814
62	70	167	7169	2329	50	697	11	153	11	153	95	1325
63	71	269	17925	1501	108	603	10	56	6	33	145	809
64	74	318	12976	2451	103	794	24	185	5	39	186	1433
65	75	18	809	2225	9	1112	0	0	0	0	9	1112
66	77	56	1444	3878	25	1731	5	346	0	0	26	1801
67	79	13	1299	1001	7	539	2	154	0	0	4	308
68	80	47	1390	3381	7	504	6	432	0	0	34	2446
TOTAL*		4035	138123	2921	1315	952	222	161	141	102	2357	1706
Mean		59.34	2031	3216	19.34	999	3.26	203	2.07	123	34.66	1890
Min		1	390	90	0	0	0	0	0	0	0	0
Max		318	17925	6427	108	2739	24	2644	34	2002	186	4121
SD		55.18	2618.13	1261.85	19.77	523.39	4.12	346.71	4.97	341.94	32.93	919.78

Appendix 10 Translation relation annotation scheme

No	translation techniques	tags	specification		meanings	TT examples
1	correspondence	/			faithful transference	and_CC [MRPL]
2	amplification	[]+			addition of DM	if_CS [MRIR]+
3	omission	[]-			omission of DM	"[CT]-" signifies the omission of [MRCT]
4	shift	[]<	4.1	[]<[PL]	ST:[MRPL]-TT:[MRCT]	but_CCB [MRCT]<[PL]
					ST:[MRPL]-TT:[MREL]	but_CCB [MREL]<[PL]
					ST:[MRPL]-TT:[MRIR]	but_CCB [MRIR]<[PL]
			4.2	[]<[CT]	ST:[MRCT]-TT:[MRPL]	and_CC [MRPL]<[CT]
					ST:[MRCT]-TT:[MREL]	and_CC [MREL]<[CT]
					ST:[MRCT]-TT:[MRIR]	and_CC [MRIR]<[CT]
			4.3	[]<[EL]	ST:[MREL]-TT:[MRPL]	and_CC [MRPL]<[EL]
					ST:[MREL]-TT:[MRCT]	and_CC [MRCT]<[EL]

					ST:[MREL]-TT:[MRIR]	and_CC [MRIR]<[EL]
			4.4	[]<[IR]	ST:[MRIR]-TT:[MRPL]	and_CC [MRPL]<[IR]
					ST:[MRIR]-TT:[MRCT]	and_CC [MRCT]<[IR]
					ST:[MRIR]-TT:[MREL]	and_CC [MREL]<[IR]
5	double marker	[]21... []22				if_CS [MRIR]21 ... then_RR [MRIR]22

Notes:

1. "/" signifies "null", which means no tag is annotated if a DM in the ST has been faithfully transferred to the TT, thus constituting the basic requirement of equivalence theory.
2. In order to avoid double counting, "if...then" is tagged as "if [MRIR]21 ... then [MRIR]22" to differentiate from "if" alone which is tagged as "if [MRIR]".
3. The scheme is also applied to double markers. If there is a single DM in ST and double markers in TT, it is considered to be correspondence between ST and TT, or vice versa; The annotation of translation relation is only focused on the second element of the double marker. For example, the amplification of "if [MRIR]21 ... then [MRIR]22" is annotated as "if [MRIR]21 ... then [MRIR]22+".
4. In the translation relation annotation scheme, the "+" and "-" indicate amplification and omission while the sharp bracket marker "<" between the square marker "[]" and the acronyms is the identifier for the shift. Among the 4 shift patterns, the acronyms "[PL]", "[CT]", "[EL]", and "[IR]" stand for parallel marker, contrastive marker, elaborative marker and referential marker respectively. For example, "[MRCT]<[PL]" indicates the shift from parallel marker to contrastive marker in the translation.

Appendix 11 Four types of additions in compilations of *Su Wen*

No.	Chapters	original or compiled	Norm-f (all C-DMs)	verse format	non-dialogue format	tabular structure	disyllabic	U&T 1(intended additions)	U&T 2(unintentionally included commentaries)	U&T 3(secondary commentaries)	U&T 4(disconnected fragments)
1	Chapter1	comp	2882	√		√	√	√	√		
2	Chapter2	comp	3372	√	non	√	√		√		√
3	Chapter3	comp	5301		non	√	√	√	√		
4	Chapter4	comp	2182			√	√	√	√		
5	Chapter5	comp	3466	√		√	√	√			
6	Chapter6	comp	1382			√	√		√		
7	Chapter7	comp	620			√	√	√	√		√
8	Chapter8	comp	1624			√		√			
9	Chapter9	comp	1732			√	√	√	√		
10	Chapter10	comp	2822		non		√	√	√		
11	Chapter11	comp	4515				√	√	√		
12	Chapter12	orig	5405	√		√	√				
13	Chapter13	comp	1961			√	√	√			
14	Chapter14	orig	2669			√					
15	Chapter15	comp	1028			√					√
16	Chapter16	comp	2166				√	√	√		
17	Chapter17	comp	2915	√		√	√	√	√		

18	Chapter18	comp	830					✓		✓		✓	
19	Chapter19	comp	2881	✓		✓	✓	✓		✓			
20	Chapter20	comp	2236			✓	✓	✓		✓			✓
21	Chapter21	comp	1289				✓	✓		✓			
22	Chapter22	comp	1941			✓		✓		✓			
23	Chapter23	comp	1877		non	✓				✓			
24	Chapter24	orig	661		non	✓	✓						
25	Chapter25	orig	730	✓		✓							
26	Chapter26	comp	4874			✓	✓	✓		✓			
27	Chapter27	comp	3507			✓	✓	✓		✓			
28	Chapter28	comp	3448			✓		✓		✓			✓
29	Chapter29	comp	4560			✓		✓					✓
30	Chapter30	orig	4700										
31	Chapter31	orig	4474										
32	Chapter32	comp	3147		non			✓		✓			
33	Chapter33	comp	3734				✓			✓			
34	Chapter34	comp	4435				✓			✓			✓
35	Chapter35	comp	5281				✓	✓		✓			✓
36	Chapter36	comp	1489		non					✓			✓
37	Chapter37	comp	2597					✓		✓			✓
38	Chapter38	comp	6250				✓			✓			
39	Chapter39	comp	9046			✓	✓			✓			
40	Chapter40	comp	2891				✓			✓			

41	Chapter41	comp	1071	non			✓	✓	
42	Chapter42	comp	5574				✓	✓	
43	Chapter43	comp	3932				✓	✓	
44	Chapter44	comp	6210		✓		✓	✓	
45	Chapter45	comp	4799				✓	✓	
46	Chapter46	comp	2527			✓		✓	✓
47	Chapter47	comp	2471		✓	✓		✓	
48	Chapter48	comp	1932	non	✓	✓	✓	✓	
49	Chapter49	comp	7292	non	✓			✓	✓
50	Chapter50	comp	5965		✓	✓		✓	
51	Chapter51	orig	1732		✓				
52	Chapter52	comp	0		✓			✓	
53	Chapter53	comp	2280		✓		✓		
54	Chapter54	comp	1881		✓		✓	✓	
55	Chapter55	comp	1222	non			✓	✓	
56	Chapter56	comp	4249		✓	✓	✓	✓	
57	Chapter57	orig	3883						
58	Chapter58	comp	1076	✓	✓	✓	✓	✓	✓
59	Chapter59	comp	0	non			✓	✓	
60	Chapter60	comp	859				✓	✓	
61	Chapter61	comp	2266		✓		✓	✓	✓
62	Chapter62	comp	3225		✓	✓	✓	✓	
63	Chapter63	comp	1245				✓	✓	

64	Chapter64	comp	2799			✓		✓	
65	Chapter65	comp	3842		✓	✓		✓	✓
66	Chapter66	comp	1689	✓	✓	✓	✓	✓	
67	Chapter67	comp	1945	✓	✓	✓	✓	✓	
68	Chapter68	comp	2055	✓	✓	✓		✓	
69	Chapter69	comp	2452		✓	✓	✓		
70	Chapter70	comp	1887	✓	✓	✓	✓	✓	✓
71	Chapter71	comp	1546		✓		✓	✓	✓
72	Chapter74	comp	1927	✓	✓	✓	✓	✓	
73	Chapter75	comp	2158		✓			✓	
74	Chapter76	orig	2415	✓	✓	✓			
75	Chapter77	comp	1503		✓			✓	
76	Chapter78	orig	1528	✓		✓			
77	Chapter79	comp	432		✓		✓	✓	✓
78	Chapter80	comp	3244		✓	✓	✓	✓	
79	Chapter81	orig	4493	✓		✓			