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Metaphorical conceptualizations of cancer treatment in English and Chinese languages

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Cross-cultural variation in the metaphors that are employed by healthcare researchers and professionals when discussing cancer care is a potential impediment to the sharing of expertise. By identifying patterns in the metaphorical language used in these contexts, we can reveal differences in how healthcare practitioners understand cancer and its treatments, thus enabling more effective intercultural communication in the field of oncology. To this end, the use of metaphor in collocations of the word ‘treatment’ in nursing journals published in British English, mainland Chinese, and Taiwanese Chinese is compared. Our analysis reveals differences regarding the agency given to the cancer, its treatment, and the patient; the interrelatedness of different bodily functions and organs; and the emphasis that is placed on the course of treatment as a whole as opposed to its individual stages.

Keywords: cross-cultural variation, intra-cultural variation, metaphor, cultural keywords, conceptualization of medical phenomena

1. Introduction

Cancer is a disease that kills 9.6 million people worldwide every year and the death rate is projected to rise to 13 million by 2030.¹ This notwithstanding, many cancers have a high chance of being

1. <https://www.who.int/cancer/resources/keyfacts/en/>

cured if detected and treated adequately. In order to identify treatments for cancer, and develop best practice in cancer care, a collaborative approach is required in which healthcare researchers and professionals from across the world to share their expertise, insights and research findings. However, a possible impediment to the successful sharing of ideas is the fact that cancer-care experts work in different languages and cultures, which often encode different ways of conceptualizing knowledge and subsequently influence the ways in which the disease is treated and patients are cared for (Smolowitz et al., 2010).

This is not a new phenomenon. Researchers who have conducted historical overviews of approaches to medicine also point out the different influences that traditional Chinese and Western cultures have had on medical theories about health, disease, and treatment. Derived from the Chinese Taoist concepts of *yin* (陰) and *yang* (陽), bodily organs are categorized into *yin* (陰) and *yang* (陽) viscera. Chinese physicians stress the importance of the proper flow of *qi* (氣, ‘vital energy’ or literally ‘gas’) and the need for the functions of bodily organs to be balanced in order to maintain well-being (Ma et al., 2021). On the other hand, although ancient Western medical theory also historically emphasized the importance of balance, under the influence of Hippocratic teaching, the focus was on the four humours (i.e., blood, black bile, yellow bile, and phlegm) rather than on organs. A balance between these four fluids was considered important in order to prevent the contraction of diseases (Conti, 2018; Dubois, 1959; Silvano, 2021). Unlike the prolonged influence of traditional Chinese culture in contemporary Chinese medicine, the impact of the four humours diminished when contemporary Western medical theory began to align more closely with scientific advancement, resulting in scientific developments in medicine, anatomy, pathology, autopsy that treat organs as separate parts of the body, thus influencing the ways in which treatment and patient care are provided (Porter, 1997, 2006).

A more contemporary example illustrating the ways in which culture affects the conceptualization of health, disease, and treatment can be seen in the influence of Confucian teaching and Chinese familialism. In contemporary Chinese society, health is closely related to social standing and the collective self as it relates to the family, which influences the attitudes of doctors, patients, and their families towards disease and treatment. For instance, while coping with chronic or terminal diseases such as epilepsy, patients in China may choose to endure it together with their family members in private, and doctors will firstly consider Chinese familialism before determining whether to disclose the illnesses suffered by the patients to their family members so they do not feel like they are ‘losing face’ – *diūliǎn* 丢脸. (Hui, 1999; Kleinman, 1995, pp.122-172; Nie, 2011).

The above examples indicate that cross-cultural differences, in particular traditional Chinese and Western cultures, affect the ways in which health, disease, and treatment are viewed in different cultures. This phenomenon can be explored by investigating the ways in which healthcare researchers and professionals from these two cultures utilize their habitual languages (that is, English and Chinese²), to communicate their expertise. Furthermore, it has been shown that academic ideas (including those relating to medicine) are often expressed through the use of metaphor (Boyd, 1993; Deignan et al., 2013; Goatly, 2007). Therefore, exploring the ways in which healthcare researchers and professionals utilize metaphor in Chinese and English to communicate their expertise regarding the treatment of cancers may help to facilitate cross-cultural understanding of knowledge in this area. Information resulting from such an exploration has the

2. This paper focuses on metaphorical conceptualizations of cancer treatment in mainland Chinese, Taiwanese Chinese and British English. Starting from this section, these different languages are referred to as English and Chinese languages for conciseness.

potential to provide researchers and professionals with an opportunity to integrate their medical knowledge across cultural divides, bringing possible advances in cancer treatment and care.

In this paper, we present the findings from a study investigating the ways in which metaphors are used to talk about cancer care in English and Chinese medical journals. We begin by explaining the relationship between cross-linguistic and cultural variations in the metaphorical conceptualization of medical knowledge. We then provide details of the research questions, the data, and the methodology employed in this study, followed by a discussion of the findings. The paper ends with a conclusion which summarizes the major findings of the study.

2. The metaphorical conceptualization of medical knowledge

Metaphor plays an integral role both in the development and communication of scientific ideas (Brown, 2003; Palma, 2018). It is therefore unsurprising that metaphors are prevalent within medical discourses, shaping the ways in which illnesses are described and understood. Indeed, we can see evidence of this in the current discourses surrounding COVID 19, which are replete with metaphors (e.g., Gök & Kara, 2022; Olza et al., 2021; Panzeri et al., 2021; Pérez-Sobrino et al., 2022; Semino, 2021; Stanley et al., 2021; Taylor & Kidgell, 2021; Wicke & Bolognesi, 2020). A significant study that has examined the use of metaphors in health-related contexts is the ‘Metaphor in End of Life Care’ (MELC) project that was conducted at Lancaster University in the UK (Semino et al., 2018). Studies conducted as part of this project have shown that metaphors serve various important functions in this context, from enabling professionals to conceptualize different sorts of death (Demjén et al., 2016) to providing a humorous outlet through which patients can share their experiences (Semino & Demjén, 2017). Studies in the MELC project also found that, while WAR-, CONFLICT- and JOURNEY-related metaphors, as in “retreat from this weary

battle”, “my *fight* against terminal cancer” and “*going through* such a tough time” provide the primary framings through which the disease is interpreted in the UK, the specific implications of these framings depend on the individual ways in which they are developed and contextualized (Semino et al., 2018). They found that WAR-related metaphors were sometimes found to be strongly associated with negative emotions and a sense of disempowerment (Demjén et al., 2018, pp.98-156), which aligns with previous work showing that people who conceptualize their struggle with cancer as a ‘battle’ tend to experience more depression and anxiety during treatments (Degner et al., 2003). However, they also found that WAR metaphors could sometimes provide an outlet through which patients could express positive feelings such as pride and determination (Semino et al., 2018).

This last finding reveals the pragmatic nature of metaphors, in that they can shape behaviour and mental states. Metaphors are able to shape theory and practice within academic and professional disciplines (Bleakley, 2017). In the context of healthcare, for instance, the ‘conceptual’ metaphor THE HUMAN BODY IS A MACHINE (see Lakoff & Johnson, ([1980] 2003), shapes medical practice in that body parts or organs which are malfunctioning are often seen as needing to be ‘replaced’, just as one would replace broken parts in a machine. This de-emphasizes the integral nature of the human body (Bleakley, 2017; Sontag, 1979, 1989).

2.1 Cross-linguistic variation in the use of metaphor to conceptualize medical knowledge

As previously explained, medical phenomena are conceptualized and shaped through metaphors to some extent. Furthermore, different languages and cultures have been shown to conceptualize ideas related to medical phenomena through the use of different metaphors. These differences are the result of different cultures and ideologies (Goatly, 2007) and social contexts (Ross, 1994) as

well as the aggregation of individual experiences (Becker, 1999; Lang, 2020). A substantial body of work has focused on the ways in which Chinese and English differ in terms of how they conceptualize medical knowledge through metaphors (Lang, 2020; Yu, 1995, 1998). A leading researcher in this field, Yu (1995, 1998) finds significant differences between English and Chinese in terms of the ways in which they use metaphors to conceptualize emotions, time, and events. For instance, in English, happiness is often conceptualized as upward movement (as in ‘this has lifted my mood’) while in Chinese, references to nature are more common (as in ‘the flower in the heart is in full bloom’ (*xīnhuā-nùfàng* 心花怒放, translated as ‘over the moon’). In the field of medicine, English and Chinese have been found to employ different metaphors to conceptualize nausea. In English, nausea ‘comes in waves’ (Hanne, 2015, p. 36), whereas in Chinese, the stomach ‘capsizes’ (*fǎnwèi/fānwèi* 反胃/翻胃). These different metaphorical conceptualizations may have a different impact on the patient or on the health care services that are provided. For instance, the idea that nausea ‘comes in waves’ presents the nausea as an external invader, and may lead to the prescription of anti-nausea medicine, whereas the idea that the stomach ‘capsizes’ may draw our attention to the need to strengthen the stomach.

Some of the differences in how cultures conceptualize medical phenomena through metaphor may be explained by different historical beliefs. For instance, derived from the Taoist *yin-yang* concepts in Ancient Chinese folk belief referred to briefly above, the malfunction of human organs in traditional Chinese medicine is understood in terms of balance, leading to excessive ‘heating’ (*rèqì* 热气) or ‘cooling’ (*hán liáng* 寒凉) (Veith & Barnes, 2016). These two terms are not directly associated with body temperature, unlike ‘heat stroke’ or ‘low body temperature’ (‘hypothermia’) in British English. Despite having originated in traditional Chinese medicine, metaphorical ideas such as these are still in use in modern Chinese medicine. In contrast, the more dominant impact

of scientific advancement and technology on modern Western medical theory, as discussed earlier, shapes the THE HUMAN BODY IS A MACHINE metaphor. For instance, blood circulation is described in terms of ‘blood *pressure*’ and as ‘the heart *pumping* blood to different part of our body’.

In addition, in many cultures, metaphorical ‘cultural keywords’ emerge, reflecting the lifestyles and belief systems that characterize these cultures (Wierzbicka, 1997). For instance, the cultural keyword *ciężki* (‘heavy’) in Polish describes difficulties in terms of life and (periodic) time as ‘heavy life’ and ‘heavy time’ respectively, which contrasts with the ideas of leading a ‘hard life’ and having a ‘hard time’ in English. According to Goddard & Wierzbicka (2014), these Polish phrases reveal a philosophy of life that sees difficulties as burdens that need to be carried on one’s back throughout one’s lifetime.

Differences can also manifest within a single language group (Gibbs, 2021; Kövecses, 2005; Sharifian, 2014). For example, Mandarin Chinese is spoken in both the mainland of China and in Taiwan, but there are differences in the ways in which ideas are expressed metaphorically in these two groups, as illustrated in the utilization of the BUILDING metaphor by Kuomintang presidents in Taiwan, realized by linguistic expressions such as ‘*reconstruct* the Republic of China’ to express their views on national identity (Lu & Ahrens, 2008), whereas the FATHER metaphor, as in *zǔ guó* (祖國 ‘ancestral country’, translated as ‘fatherland’ or ‘motherland’) was utilized by government officials in mainland China to discuss the same topic. Such differences can also be found in medical discourse. For example, when referring to the ‘aqueous humour’ in the eyes, mainland Chinese uses the term ‘room water’ (*fáng shuǐ* 房水), whereas Taiwanese Chinese uses the term ‘front room liquid’ (*qián fáng yè* 前房液) (Cai, 2006). Both expressions exploit the metaphor of THE EYE AS A BUILDING, with different parts of the eye being referred to as ‘rooms’, but in Taiwanese Chinese there is more specificity. These intra-cultural variations between mainland

China and Taiwan reflect the fact that different ways of living and beliefs have been practiced in these two locations for decades, for instance, simplified Chinese and traditional Chinese writing systems are adopted in mainland China and Taiwan respectively, and official holidays are celebrated on different days for instance, ‘Children’s Day’ is celebrated on 4th April in Taiwan³ while mainland China celebrates ‘International Children’s Day’ on 1 June of each year⁴. Thus the languages spoken in the two communities also show signs of divergence.

If there are differences across cultures in terms of the ways in which cancer care is metaphorically construed, this has the potential to affect the ways in which the disease and its symptoms are understood, which may lead to different understandings of how cancer patients should be treated and cared for. In addition to providing a potential impediment to shared understanding, these differences may also contribute to a diversification of the ways in which cancer patients are cared for. Exposure to different metaphorical conceptualizations of the illness and its treatments could open new care pathways for researchers and practitioners who may have been constrained by culturally specific ways of thinking. It is therefore worthwhile exploring the ways in which healthcare professionals from different languages and cultures employ metaphor to conceptualize knowledge about cancer treatment and care, as this may help enhance international knowledge exchange and drive innovation in cancer treatment and care.

3. Aims of the study and research questions

This study aims to explore the ways in which metaphors are utilized by oncology researchers and professionals to conceptualize knowledge about cancer treatment in Mandarin Chinese and English,

3. Please see <https://publicholidays.tw/2022-dates/>

4. Please see <https://www.chinahighlights.com/festivals/china-public-holiday.htm>

specifically British English, which are the two most spoken languages in the world. The ways in which cancer treatment is described in mainland Chinese and Taiwanese Chinese are also compared. This allows us to focus on cross-linguistic differences (between English and Chinese) and on differences between cultures that share a common language (mainland Chinese and Taiwanese Chinese). Oncology nursing journal articles are the focus, as these constitute one of the most established formal mechanisms in which cancer care specialists share their ideas. Read by both researchers and practitioners, they contain reports of cutting-edge developments in cancer treatment and care. These journals also constitute their own form of linguistic community, displaying various communicative patterns, which provide useful insights into the construction of thought within the field.

Within these journals, the concordance lines containing all instances of the term ‘treatment’ are examined and the language that is used in relation to this term is analysed, with a focus on metaphor.

The research questions are:

1. What metaphors are used in relation to cancer treatment in oncology nursing journal articles published in English and in mainland and Taiwanese Chinese?
2. In what ways do these metaphors display cross-cultural and intra-cultural differences?
3. What beliefs, values, and ways of living are apparent in the metaphors used to write about cancer treatment in these two languages?

4. The data and methodology

4.1 The data

To answer the research questions, two Chinese corpora and one English corpus were compiled, each of which contains research articles on cancer treatment published between 2010 and 2016. The *English Oncology Nursing Corpus* contains 349 research articles about cancer treatment downloaded from the ‘*European Journal of Oncology Nursing*’ and ‘*Cancer Nursing Practice*’.⁵ The *mainland Chinese Oncology Nursing Corpus* contains 578 research articles (in simplified Chinese script) about cancer treatment downloaded from three nursing journals published in the mainland of China, namely ‘*Chinese Journal of Nursing*’, ‘*Journal of Qilu Nursing*’, and ‘*Nursing Journal of Chinese People’s Liberation Army*’. The *Taiwanese Chinese Oncology Nursing Corpus* contains 140 research articles (in traditional Chinese script) about cancer treatment downloaded from the ‘*Journal of Oncology Nursing*’ published in Taiwan. Detailed information about these three corpora is provided in Table 1.

Table 1 Background information and word counts of the three corpora

The English Oncology Nursing Corpus	The mainland Chinese Oncology Nursing Corpus	The Taiwanese Chinese Oncology Nursing Corpus
<i>European Journal of Oncology Nursing</i> 133 articles: 609,569 words	<i>Chinese Journal of Nursing</i> 110 articles: 174,925 words	<i>The Journal of Oncology Nursing</i> 140 articles: 807,211 words
<i>Cancer Nursing Practice</i> 216 articles: 505,436 words	<i>Journal of Qilu Nursing</i> 152 articles: 165,215 words	/
/	<i>Nursing Journal of People’s Liberation Army</i> 316 articles: 517,748 words	/
Total: 349 articles 1,115,005 words	Total: 578 articles 851,888 words	Total: 140 articles 807,211 words

Concordance lines of the search word ‘treatment(s)’, *zhìliáo* (治疗) (simplified Chinese characters in mainland China), and *zhìliáo* (治療) (traditional Chinese characters in Taiwan) in the

5. British English is used in both journals, although American English spelling is accepted in the *European Journal of Oncology Nursing*.

English and Chinese languages respectively were displayed in the Key Word in Context (KWIC) format with the use of *AntConc* (Anthony, 2019). In the English corpus, the search covered five content words to the left and the right of the node word. As the Chinese language uses characters to represent meaning and disyllabic forms (that is, two-character lexical items) tend to be the more frequently employed form to express meaning (Duanmu, 2013; Wang, 2002), the same search covered ten characters to the left and right of the node words in the mainland Chinese and Taiwanese Chinese corpora.

4.2 Metaphor identification procedure

The study focuses on the ways in which cancer treatment and its effects are construed via metaphor in the three sets of concordance lines. An adapted version of the metaphor identification procedure proposed by the Pragglejaz group (2007) was used to help determine the metaphoricity of lexical units utilized in these concordance lines (ibid.; 3). The revised version utilized to determine the metaphoricity of a lexical unit includes the following procedure.

1. Read the entire corpus line, and if necessary, read the original paragraph in which it occurred, to establish a general understanding of the meaning.
2. Determine the lexical units in the text–discourse.
3. Establish the potential metaphoricity of the lexical unit in the following ways:
 - a. For each lexical unit in the text, establish its meaning in context – that is, how it applies to an entity, relation, or attribute in the situation evoked by the text (i.e.,

contextual meaning). Take into account what comes before and after the lexical unit.

- b. For each lexical unit, determine whether it has a more basic contemporary meaning in other contexts than the one in the given context. Basic meanings tend to be:
- more concrete (what they evoke is easier to imagine, see, hear, feel, smell, and taste);
 - related to bodily action;
 - more precise (as opposed to vague); and
 - historically older;

Basic meanings are not necessarily the most frequent meanings of the lexical unit.

- c. If the lexical unit has a more basic current–contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.
4. If so, mark the lexical unit as metaphorical.

For example, the phrase: ‘the goal of treatment’ appeared in our data. According to the *Macmillan English Dictionary*,⁶ the lexical item ‘goal’ has the following entry: “the net or structure that you try to get the ball into in games such as football and basketball”. The meaning of the word ‘goal’ in the context of our data was more akin to a different entry in the dictionary: “something that you hope to achieve”. The first meaning is considered to be more basic as it is more concrete and more related to bodily action (the scoring of a goal). The contextual meaning of the word ‘goal’ in our data (i.e., something that needs to be achieved in a medical context) is

6. <https://www.macmillandictionary.com/>

different from the basic meaning (a net into which a ball can be thrown or kicked), but it can be understood in comparison to it, as both meanings make reference to a desired result. In determining the contextual meaning of a lexical item, and when deciding whether or not to code it as metaphorical, both the denotative and connotative components of its meaning are considered (see Genette, 2005), as well as any of these parts of the meaning could be understood through a process of comparison with the more basic meaning of the lexical item.

In cases where the researchers were unsure about the basic meaning of a lexical unit, multiple dictionaries were consulted, namely the *Macmillan Dictionary* (plus the *Collins Dictionary* and the *Merriam Webster Dictionary* in cases that were not clear), the *Xiandai Hanyu Cidian* (Chinese dictionary), and the *Kangxi Zidian* (Chinese dictionary), to determine the basic meaning of the words or phrases under investigation (Reijnierse et al., 2018). In some of the corpus lines, more than one metaphorical item was identified, as in the following example:

- (1) 面臨 到 漫長 的 化學治療 療程
faced DAO prolonged DE chemotherapy treatment-course
“faced a prolonged chemotherapy treatment course” (Taiwanese Chinese corpus)

Here the corpus line was marked as containing two metaphors: a SIGHT metaphor (面臨 ‘faced’) and a SOURCE-PATH-GOAL metaphor (療程 ‘course’).

However, in cases where two contiguous metaphorically used lexical items represented the same metaphorical idea, or where they constituted a phrasal verb, they were categorized as a single metaphorical item. For example, in the phrase ‘go through treatment’, ‘go’ and ‘through’ were counted as a single metaphor. Similarly, expressions such as ‘conveyor belt’ and ‘on track’ were also treated as single metaphorical items. This approach is also adopted when coding the Chinese data, following Wang et al. (2019). For example, the fixed expression *hù gān bǎo shèn zhìliáo* (护

肝保肾治疗, ‘guard the liver and protect the kidneys treatment’), which has a single meaning in traditional Chinese medicine, was counted as a single metaphor. This was done despite the fact that *hù* (护, ‘guard’) and *bǎo* (保, ‘protect’) convey different meanings if used separately with other characters, such as *jiù hù* (救护, ‘rescue’) and *bǎo zhèng* (保证, ‘guarantee’). The metaphor identification was conducted individually by each researcher separately based on the adapted Pragglejaz procedure. All cases in which there were disagreements were discussed until agreements were reached.

It is worth noting here that the perceived metaphoricity of certain lexical item may vary across individuals. The ways in which we perceive of the connotative meaning or metaphoricity in a context resemble the production of a story or a discourse, which is to a certain extent psychological and social, and influenced by different factors, such as personal experiences and cultural influence (Genette, 2005). Thus, on some occasions it was difficult to decide whether a lexical item should be coded as metaphorical or not (see Cameron & Low, 2004 for a discussion of the difficulties inherent in coding for metaphor). For example, it was difficult to decide whether the word ‘begin’ in the phrase ‘to *begin* treatment’ should be coded as metaphorical. This word could refer to the start of any process, and therefore at first sight would be coded as literal. However, the fact that the word occurred in close proximity to the expression ‘cancer journey’ meant that it could, in this context, be viewed as being part of a broader ‘JOURNEY’ metaphor. This phenomenon, whereby the metaphoricity of a word or phrase (i.e., the word ‘begin’) is amplified by its proximity to a metaphor (i.e., ‘cancer journey’) within the same sentence or phrase is referred to as ‘peripheral response’ (see Low et al., 2008 for a discussion of this phenomenon). For cases such as these, a sub-category of ‘WIDLII’ (‘when in doubt leave it in’) was used (Steen et al., 2010; Krennmayr, personal communication, November 25, 2020).

After identifying metaphorical expressions in the three corpora, they were then categorized into different ‘source domains’ (or ‘metaphor themes’) by which cancer treatment is metaphorically conceptualized. In Conceptual Metaphor Theory, the term ‘source domain’ refers to the conceptual domain employed to understand or conceptualize another domain (i.e., ‘the target domain’), which is usually more abstract (Lakoff & Johnson, ([1980] 2003). For example, we frequently conceptualize the abstract concept TIME (target domain) in terms of a more concrete domain such as JOURNEY, as reflected in linguistic expressions such as ‘we’re approaching the end of term’ and ‘looking back over the year’. As many linguists observe, some metaphorical expressions involve more than one source domain. For instance, Deignan (2008) points out that the metaphorical expression ‘attack’ invokes the source domains of both SPORTS and VIOLENCE. Because the term ‘source domain’ carries connotations of mental representation, we use the term ‘metaphor theme’ in our study, as we have no evidence to suggest that they were conceptual categories in the minds of the writers.

In total, eighteen metaphor themes were identified (Please refer to Figures 1a and 1b in the Appendix for details). Each metaphorically used expression was assigned to at least one metaphor theme. In some cases, one metaphorically used item was assigned to more than one metaphor theme, and some themes were more over-arching than others. So that we would not miss any important information, a maximally inclusive approach was adopted, in which all categories were treated at the same level despite the fact that some categories may presuppose others. For example, the words ‘target’, ‘trajectory’, and ‘journey’ were all deemed to be associated with PATH and DIRECTION. However, they could not all be categorized as involving the ‘JOURNEY’ metaphor theme since it is uncertain whether all of them evoke mental pictures of cancer and treatment as a physical journey. As Grady (1997) argues, many conceptual metaphors originate from more basic

schemas and embodied experiences. For instance, the LIFE IS A JOURNEY metaphor is derived from the more basic SOURCE-PATH-GOAL schema, as human beings usually conceptualize a process or an experience as a journey with a source, a path, and a final destination (or goal). The metaphorically used items ‘journey’ ‘target’, and ‘trajectory’ are all derived from the SOURCE-PATH-GOAL schema because all of them involve concepts related to PATH and DIRECTION. Therefore, in our study, they were classified as examples involving the SOURCE-PATH-GOAL theme. However, ‘journey’ was further categorized as being a member of the JOURNEY metaphor theme, whereas ‘target’ and ‘trajectory’ were further categorized as being members of the PROJECTILE metaphor theme (see Tables 2.1 and 2.2).

Another example of this phenomenon involved the phrase *hù gān bǎo shèn zhìliáo* (护肝保肾治疗, ‘guard the liver and protect the kidneys treatment’) in the mainland Chinese corpus. The phrase *hù gān bǎo shèn* (护肝保肾, ‘guard the liver and protect the kidneys’) is a marginal candidate for categorization under the ANIMACY metaphor theme, since it may evoke a mental image of treatment taking action in order to enact its guarding and protecting. It can also be categorized under the WAR metaphor theme, as the liver and kidneys need to be protected from the enemy (i.e., the cancer). Therefore, this phrase was categorized in both the WAR and ANIMACY metaphor themes under the WIDLII subcategory.

Sight-related metaphorical expressions such as ‘face’⁷, ‘see’, ‘look at’, ‘focus’, and ‘seek’ were somewhat difficult to code as they often involved a conflation of visual and mental activity. They could be interpreted as referring to physically ‘seeing’ things or as referring to mental reflection, or both (e.g., ‘they [patients] *viewed* themselves as experts’). The basic meaning of

7. Based on the *Collins Dictionary*, the word ‘face’ has a basic sense of ‘look onto’ when it is a verb. Therefore, it is grouped under the category named ‘sight-related’ metaphor and metonymy theme.

‘view’ here is a physical one, as one can view, for example, a film or a house (*Longman Online Dictionary*). The meaning in this context lies somewhere between the idea that the patients literally ‘see’ themselves as experts and the idea that they ‘understand’ themselves to be experts, following the conceptual metaphor ‘SEEING IS UNDERSTANDING’ (Lakoff & Johnson, [1980] 2003). The blurred distinction between the metaphorical, metonymic or literal nature of terms such as those that involve vision has been discussed in detail elsewhere (MacArthur et al., 2015). For this reason, these expressions were grouped under the category named SIGHT-RELATED metaphor and metonymy theme. Finally, metaphors which could not be grouped under any of the broad themes were placed in a category named ‘ad hoc metaphors’. There was also a separate category for metaphorical cultural keywords.

Table 2.1 Metaphorical expressions realizing CANCER AND TREATMENT ARE A JOURNEY under the SOURCE-PATH-GOAL metaphor theme in the three corpora

SOURCE-PATH-GOAL metaphor theme		
English corpus	mainland Chinese corpus	Taiwanese Chinese corpus
642 instances with WIDLII: (629: about treatment) (12: about cancer) (1: about patients)	152 instances: (146: about treatment) (5: about cancer) (1: about patients)	281 instances: (275: about treatment) (2: about cancer) (4: about patients)
I. CANCER AND TREATMENT ARE A JOURNEY		
undergo (88) throughout treatment (38) through treatment (9) go through treatment (9) through treatment (1) guide through treatment (1) throughout treatment (1) the course of treatment (30) treatment course (11) disease course (2) treatment pathway (40) established pathway (1) care pathway (3) cancer pathway (3) pathway (2) diagnostic pathway (1) path (1) gone by the wayside (1) paved the way (1) route (2) cancer journey (3) recovery journey (1) treatment journey (10) journey from diagnosis to treatment (3)	進一步 (24) <further one step> 下一步 (6) <next step> 一步 (1) <a step> 逐步 (2) <step by step> 一步步 (1) <step by step> 同步 (3) <same step (concurrent)> 不同步 (1) <not the same step (not concurrent)> 疗程 (18) <treatment course> 病程 (5) <disease course> 历程 (1) <course of experience> 臨床 護理 路徑 (4) <clinical care path> 通路 (3) <path> 護理 路徑 (1) <clinical path> 治療 路徑 (1) <treatment path> 途中 (1) <on the way> 途徑 (13) <ways> 障礙 (3) <barriers>	追蹤 (67) <go after (follow-up)> 同步化 學與 放射 線治療 (24) <same step (concurrent) chemo – radiotherapy treatment> 進一步 (9) <further one step> 下一步 (1) <next step> 療程 (40) <treatment course> 病程 (2) <disease course> 障礙 (4) <barriers> 臨床 路徑 (3) <clinical path> 途徑 (3) <ways> 度過 (2) <go through> 困境 (2) <trapped environment (predicament)> 里程碑 (1) <milestone> 一條 漫長 的路 (1) <a long road> 心路 歷程 (2) <the course of experience on the road of the heart>

survivorship <u>journey</u> (1) <u>navigate</u> (1) <u>map out</u> (1) <u>barriers</u> (2) across (8) <u>ways</u> (14) <u>start</u> (n.) (21) <u>end</u> (v./n.) (55) a <u>move</u> towards palliative treatment (1) <u>return to</u> a normal life (1) every <u>step</u> (2) each <u>step</u> (1) first <u>step</u> (1) Entailment - TREATMENT IS JOURNEY THROUGH A LANDSCAPE unexplored area (2)	治疗点(1) <treatment point> 热点 (1) <hot spot> 渡过(1) <go through> 无路可走 (2) <no road to go> 迈进 (1) <stride forward> 跟踪 (3) <go after (follow- up)> 追踪 (1) < go after (follow- up)> 金属 标记 物 跟踪 (1) <metal label to chase> 患者 走得 时候 (1) <when the patient left (died)> Entailment - TREATMENT IS JOURNEY THROUGH A LANDSCAPE 领域 (2) <area> 前景 (4) <scenery ahead (outlook)> 困境 (1) <trapped environment (predicament)> 里程碑 (2) <a milestone> 治疗 领域 (1) <treatment area>	臨終前 (1) <before approaching death> 走完人生 (1) <walked to finish life> 走出人生 低潮(1) <walked out of life low-tide> Entailment - TREATMENT IS JOURNEY THROUGH A LANDSCAPE 人生低潮 (1) <life low tide> 領域 (2) <area>
WIDLII		
<u>complete</u> treatment (59) <u>start</u> (v) (47) <u>restart</u> treatment (2) <u>finish</u> treatment (28) <u>initial</u> treatment (25) <u>beginning</u> treatment (13) <u>commence</u> treatment (13) from the <u>beginning</u> to (3) at the <u>beginning</u> of treatment (1)		

Table 2.2 Metaphorical expressions realizing CANCER AND TREATMENT ARE PROJECTILES under the SOURCE-PATH-GOAL metaphor theme in the three corpora

SOURCE-PATH-GOAL metaphor theme		
2. CANCER AND TREATMENT ARE PROJECTILES		
English corpus 78 instances	mainland Chinese corpus 42 instances	Taiwanese Chinese corpus 114 instances
<u>trajectory</u> (21) cancer <u>trajectory</u> (2) <u>targeted</u> treatments (48) 62-day <u>target</u> (1) <u>targeted</u> screening (1) <u>targeted</u> support (1) treatments are <u>targeted</u> (1) <u>target</u> (v) (3)	靶向治疗 (36) <targeted treatment > 靶点 (1) <target (n)> 靶区 (4) <targeted area> 射程 (1) <range of fire>	標 靶治療< <u>targeted</u> treatment> (114)

5. An Overview of the metaphors identified in the three corpora

In Sections 5.1 to 5.3, the ways in which the SOURCE-PATH-GOAL, ANIMACY, WAR, and MECHANICAL metaphor themes, the SIGHT-RELATED metaphor and metonymy theme, and metaphors involving cultural keywords (please see Tables 2.1 to 9 in Section 4.2 to Section 5.3) are discussed, in an attempt to illustrate the ways in which metaphorical conceptualization of medical phenomena related to cancer treatment are influenced by Chinese and British cultures.

5.1 Differences between the three corpora in terms of their relative use of SOURCE-PATH-GOAL, ANIMACY and WAR metaphor themes and their linguistic manifestations

SOURCE-PATH-GOAL, ANIMACY, and WAR metaphors were pervasive across the three corpora. Nevertheless, nuanced differences were observed in the linguistic realization of these three metaphor themes. The following sections discuss how these three metaphors were employed in the three corpora and discuss the different conceptualizations of cancer treatment that they reveal.

5.1.1 The SOURCE-PATH-GOAL metaphor theme

In all three corpora, treatment was described as following a ‘course’ (*chéng* 程), and as ‘targeted’ (*bǎ xiàng/ biāo bǎ* 靶向/標靶) (please refer to Tables 2.1 and 2.2). Here are some examples:⁸

8. Following Deignan et al. (2013), continuous underlining is used to indicate metaphorically used words or phrases. These involve what may be described as a potential ‘incongruity’ or ‘clash’ between the ‘contextual’ meanings of the underlined expressions (or, more generally, the topic of the utterance), and the ‘basic’ meanings of these expressions. The contextual meaning can be understood through a process of comparison with its basic meaning. For example, in the case of ‘course’, the basic meaning is defined as an area of land or water where a race takes place (online *MacMillan dictionary*, entry 7) and the contextual to be a medical treatment that someone is given over a period of time (online *MacMillan dictionary*, entry 6). Basic meanings, in other words, are the most concrete and embodied

- (2) ...time in which to make decisions about the course of treatment. (English corpus)
- (3) ...The side effects of chemotherapy and targeted treatments also differ. (English corpus)
- (4) 所有 病例 均 于 治疗 前
all medical-cases all at treatment before
及 每个 疗程 治疗 结束 后...
and every treatment-course treatment end after
“before and after the end of every treatment course, all medical cases...”
(mainland Chinese corpus)
- (5) 向 患者 及 家属 介绍 靶向治疗 的 知识
to patient and family introduce targeted therapy DE knowledge
“introduced knowledge of targeted therapy to the patient and the family members”
(mainland Chinese corpus)
- (6) 依據 病人 之 化學治療 療程 計畫
according to patient 's chemotherapy treatment-course plan
“according to patient's chemotherapy treatment course plan” (Taiwanese Chinese corpus)
- (7) 常見 之 醫療 處置
common ZHI medical management
為 化學治療、 放射線治療 及 標靶治療
are chemotherapy radiotherapy and targeted therapy
“the common medical managements are chemotherapy, radiotherapy and targeted therapy” (Taiwanese Chinese Corpus)

As shown in Table 2.1, in the English corpus the stages in cancer treatment were described as a ‘start’, a ‘path’, and an ‘end’ on a journey that patients ‘go through’ or ‘undergo’, and which they are ‘guided through’ ‘throughout’ their treatments. These expressions evoke a mental picture of a patient moving forward from the start, along a path to the end, whereas in the mainland Chinese and Taiwanese Chinese corpora, the focus was much more on the steps (actions) along the path.

meanings of words, and tend to be (though are not always) historically older than conventional metaphorical meanings of words (Pragglejaz Group, 2007).

This suggests that different parts of the treatment process are profiled through metaphor in the different languages. We can see this in the following examples:

(8) 制定 下一步 治疗 方案
 formulate next step treatment plan
 “formulated the next treatment plan” (mainland Chinese corpus)

(9) 無法 確保 異常 者 是 否
 cannot guarantee unusual cases will will not
進一步 接受 治療
further one step receive treatment
 “cannot guarantee whether the unusual cases will receive further treatment”
 (Taiwanese Chinese corpus)

(10) 同步 化學 與 放射線 治療 對
same-step chemo and radio treatment to
 身體 影響 及 其 護理
 body influence and its care
 “[having] chemo- and radio- therapy treatments concurrently
 influences the health condition and its care” (Taiwanese Chinese
 corpus)

These expressions foreground two different foci in the JOURNEY metaphor: the English corpus emphasizes the overall structure of a cancer treatment journey, while the mainland Chinese and Taiwanese Chinese corpora focus on the details on the path (‘the process’) – that is, different ‘steps’ (or ‘actions’) taken during the process. In other words, the presence of differing foci regarding treatment described in these corpora has influenced the selection of linguistic expressions belonging to the JOURNEY metaphor theme to delineate cancer treatment in these languages.

Moreover, it is worth noting that in the mainland Chinese and Taiwanese Chinese corpora, when an author was talking about the overall structure of cancer treatment, they talked in terms of ‘segments’ (*huán* 環, or *huánjié* 环节), or as different entities which are ‘linked’ together (*guàn*

chuān 貫穿). The basic meaning of the word ‘segment’ in mainland and Taiwanese Chinese here

refers to a part or ‘segment’ of an invertebrate such as a caterpillar or a worm. Consider:

(11) 頭皮膿疱 的 治療 是 非常 重要 的 一環
scalp pustule DE treatment is very important DE one-segment-CL
“scalp pustule treatment is a very important segment” (Taiwanese Chinese corpus)

(12) 控制 癌痛 和 腫瘤 治療 一樣 重要,
control cancer-pain and tumour treatment same important
貫穿 于 疾病 治療 的 始 終
link at disease treatment DE start end
“cancer pain control and tumour treatment are both important, linking the start and end of a disease treatment” (mainland Chinese corpus)

(13) 活血 化瘀 應 貫穿 於
invigorate-blood remove-bruises should link YU
臃脹 治療 的 始 終
tympanites treatment DE start end
“invigorating blood and removing bruises should link the start and end of tympanites treatment” (Taiwanese Chinese corpus)

In Example 11, the treatment is described as a segment or as having ‘segments’. The other two examples describe the use of a certain kind of treatment in different cancer treatment stages as ‘linking’ (*guàn chuān* 貫穿) the start and end of the whole treatment of a cancer patient. The image is of a static entity, which contrasts with the English approach, where cancer treatment is conceptualized as a dynamic ‘journey’. The differing metaphorical conceptualization of the overall structure of cancer treatment may entail different emphases in the provision of patient care during treatment. The JOURNEY metaphor entails a need for travelling companions to enrich the journey so this may lead to an emphasis being placed on psychological support. In contrast, the SEGMENT metaphor entails the need to dissect and link the segments together to make the invertebrate whole, so this may lead to an emphasis on clinical skills.

5.1.2 The ANIMACY metaphor theme

The ANIMACY metaphor theme was used to refer to the treatment, the organs, and the cancer itself, as all could be endowed with agency (please refer to Table 3). Like other living things, both the cancer and the treatment ‘progress’. Of course, the valence is different in each of these cases; when cancer progresses, it is seen as a negative outcome, whereas when treatments progress it is seen as a positive outcome. In the mainland Chinese corpus, providing treatment may also mean the protection of organs. In traditional Chinese medicine theory, the liver and kidneys are accorded special status and viewed as semi-animate entities that are involved in protecting the health of the whole body, particularly in relation to cancer. The fact that the liver is delineated as agentive (and therefore animate) – that is, having its own thinking or emotions – in the mainland Chinese corpus was exemplified by phrases such as *gān xǐ tiáo dá* (肝喜条达, ‘the liver likes smooth accessibility’). This phrase shows an influence of the *five elements* and *yin-yang* concepts derived from Taoism in traditional Chinese medicine theory. According to the classical literature of traditional Chinese medicine, *Huangdi Neijing (The Yellow Emperor's Classic of Medicine)* (Raphals, 2020; Veith & Barnes, 2016), everything in the universe is derived from and categorized into five types of energetic *yin-yang* elements, namely *gold* (or *metal*), *wood*, *water*, *fire*, and *earth* (or *soil*). These elements have given life and energy to different things on Earth, including the liver, which is a *yin* wood-energy organ. This Taoist concept is reflected in the animate conceptualization of the liver in the mainland Chinese corpus as something that needs to be ‘protected’.

The additional function of treatment – that is, protecting the organs of patients in addition to killing cancer cells – is also foregrounded in the phrase *hù gān bǎo shèn zhìliáo* (护肝保肾治疗, ‘guard the liver and protect the kidneys treatment’) in the mainland Chinese corpus. As explained in Section 3 where the metaphor identification procedure is discussed, the phrase is on the cusp of

the ANIMACY and WAR metaphor themes and is discussed in detail in Section 5.1.3 under the WAR metaphor theme.

Whereas there is a tendency in the mainland Chinese corpus to utilize the above phrase to highlight the importance of protecting organs in providing cancer treatment, in the English corpus, a wider range of adjectives was used when referring to animate entities in relation to cancer treatment *per se*. For example, treatment could be ‘active’ and it could have ‘longevity’.

However, in comparison with the English corpus, the word ‘active’ or ‘actively’ was more likely to be used literally in the Taiwanese Chinese corpus, giving more agency to patients by saying that they should be ‘active’ in their cancer treatment processes. This contrasts with the idea in the English corpus that it is the treatment that is ‘active’. Illustrative examples are as follows:

(14) [個案] 是否 積極 (或 放棄) 接受 治療
 [subject] is is not actively (or give up) receive treatment
 “whether [the subject] is actively (or has given up) receiving treatment”
 (Taiwanese Chinese corpus)

(15) 增進 個案 的 自信心 並 能
 increase subject DE confidence and can
積極 配合 治療
actively comply with treatment
 “increases the confidence of the subject, and the subject can comply with treatment actively” (Taiwanese Chinese corpus)

Table 3 Metaphorical expressions realising the ANIMACY metaphor theme in the three corpora

119 instances with WIDLII: (103: about treatment) (16: about cancer)	210 instances with WIDLII: (53: about treatment) (50: treatment as protecting organs) (106: about cancer) (1: about organs)	51 instances with WIDLII: (9: about treatment) (33: about cancer) (9: about organs)
1. CANCER AND TREATMENT ARE LIVING ORGANISMS (sometimes human but often difficult to tell - therefore grouped together)		

<p>active treatment (52) aggressive treatment (10) longevity of treatment (1) civility of treatment (1) treatment rekindle hope (1) treatment progressed (v) (7) treatment progression (1) treatment progressing (1) progress (n) (4) disease progression (6) disease progresses (v) (2) cancer progress (n) (1) treatment pushing the boundary (1) treatment doesn't take away from me (1) treatment has turned cure into a reality (1) cancer cell acquire resistance (1) proactive (1) (technology/treatment) evolving (3) malignant (5) indolent disease (1)</p>	<p>积极治疗 (39) <active treatment> 恶性 (105) <malignant> 治疗 进展 期 (6) <treatment progression period> 治疗 进展 (4) <treatment progress> 治疗 肾 肿瘤 方面 技术 的 逐渐 成熟 (1) <treatment of kidney tumour gradually mature> 肿瘤 进展 (1) <tumour progression> 顽固性 呃逆 (1) <stubborn hiccup> 肿瘤 细胞 坏死、凋 亡 (1) <tumour cell dead and withered> “肝 喜 条 达 ” (1) <the liver likes smooth accessibility> 自主 神经 兴奋 性 (1) <autonomic nervous system excited></p>	<p>積極 治療 (2) <active treatment> 良性 腫瘤 (1) <benign tumour> 惡性 (13) <malignant> 疾病 進展 (17) <cancer progression> (n) 新的 進展 (1) <new progress> (n) 時間 進展 (1) time progresses (v) 移植 物 抗 宿 主 (5) <transplant anti-host (graft versus host)> 最 兇 (1) <the most fierce [cancer]> 開放 式 照 護 (1) <open style care> 癌 症 ... 離 開 身 體 (1) <cancer... left body> 成 熟 的 心 靈 (1) <mature heart and soul> 慈 心 疲 憊 (2) <the merciful heart exhaustion (compassion fatigue)> 萌 生 退 意 (1) <bud the idea of [treatment] withdrawal> 主 幹 (1) <main trunk> 扶 正 [氣] 祛 邪 (2) <support the positive [qi] and get rid of the evil></p>
WIDLII	WIDLII	WIDLII
<p>maintenance treatment (14) treatment puts high demands (1) treatment meets the demands (1) treatments create opportunity (1) treatment falls into 4 main categories (1)</p>	<p>保/护肝 (39) <protect / guard the liver> 保肾治疗 (7) <protect kidney treatment> 保护 胃 黏 膜 等 治 疗 (1) <protect mucous etc treatment> 护肝保肾治疗 (1) <protect liver and kidney treatment> 保 护 唾 液 腺 (2) <protect salivary gland></p>	<p>肝 也 長 癌 症 (1) <liver also grew cancer></p>

The differing levels of agency that are given to cancer treatment, bodily organs, and patients in the three corpora reflect and affect the ways in which the disease is tackled. Agency given to cancer treatment and bodily organs suggests the importance of medicine in eradicating cancer cells and protecting organs. At the same time, giving more agency to patients may result in them finding effective ways to improve their self-care skills, albeit with the support of technological advances.

5.1.3 The WAR metaphor theme

In all three corpora, the WAR metaphor theme was mainly used to describe the main function of cancer treatment, stopping cancer growth (please refer to Table 4). There was talk of [the treatment] ‘attacking’ and ‘killing’ cancer cells, which were referred to as ‘invasive species’, causing pain to the physical bodies and minds of the patients. In a similar way to what we saw with the ANIMACY metaphor theme, when cancer and treatment were construed as opponents that patients as ‘fighters’ needed to combat, a wider range of adjectives was employed in the English corpus. For example, treatment could be ‘savage’, ‘inhuman’, and ‘brutal’. Again, as with the ANIMACY metaphor, this suggests that more agency is given to the cancer treatment itself (rather than involving organs such as the liver or the kidneys) in English than in the mainland Chinese or Taiwanese Chinese corpus. These examples are evocative of the kinds of war metaphors identified in the MELC project and elsewhere.

In contrast, in the mainland Chinese corpus, the focus is more on ‘protection’, as indicated by the use of phrases such as *hù gān bǎo shèn zhìliáo* (护肝保肾治疗, ‘guard the liver and protect the kidneys treatment’). As explained in the previous section, in line with traditional approaches in Chinese medicine, treatment is more likely to be seen as something that ‘protects’ organs from an illness rather than attacking the illness head-on. It thus appears to be construed differently in Chinese from how it is construed in the West. Furthermore, when human organs such as the liver and kidneys are protected, they are energized to perform their normal functions as *yin* wood-energy and *yin* water-energy organs respectively; consequently, positive *qi* (氣, literally means ‘gas’, translated as ‘vital energy’) can be enabled to flow freely in the body to get rid of the harmful *evil qi* such as cancer, as revealed in the phrase *fú zhèng[qi] qū xié* (扶正[氣]祛邪, ‘support the positive [qi] and get rid of the ‘evil’) (Ni, 1995; Stibbe, 1996; Veith & Barnes, 2016). It is worth noting

that ‘good health’ and ‘poor health’ are conceptualized as ‘positive’ and ‘evil’ respectively in traditional Chinese medicine theory, instead of ‘positive’ and ‘negative’ in the English language.

As shown in Table 4, in the mainland Chinese corpus, when the actual treatments were talked about as opponents, they were more likely to be delineated as explicitly involving ‘war’ (*zhàn*, 战/戰). This can be seen in the lexical item *zhàn shèng* (战胜, ‘won in a war’) in Example 16, where recovering from cancer was conceptualized as beating an opponent (i.e., the cancer) in a war. In addition, both the benefits and harms that a surgery treatment may cause to a patient were delineated as a *shuāng rèn jiàn* (双刃剑, ‘double-edged sword’) (Example 17), just as a double-edged sword may bring both protection and self-inflicted harm in a war, depending on how it is utilized. Although expressions like ‘colonizing pathogen’ and ‘coalition of scientific and clinical knowledge’ (Examples 18 & 19), which were observed only once in the English corpus, might also entail army and war scenarios, here the emphasis is more on the treatment strategy rather than on depicting the all-out fight against an opponent in a war.

- (16) 树立 治疗 和 战胜 疾病 信心 和 勇气
 establish treatment and won in a war disease confidence and courage
 “establishes confidence and courage to undergo treatments and to defeat the disease”
 (mainland Chinese corpus)

- (17) 手术 治疗 是 一把 双刃剑, 既是
 surgery treatment is one-CL double-edged sword is
 治疗 过程, 也 是 创伤 过程
 treatment process also is trauma process
 “surgery treatment is a double-edged sword. It is a treatment process and also a traumatic process” (mainland Chinese corpus)

- (18) ... to identify the colonizing pathogen, and appropriate treatment should be initiated ...’
 (English corpus)

(19) ...regarding the rationale of each treatment option. The coalition of scientific and clinical knowledge, along with... (English corpus)

Table 4 Metaphorical expressions realizing the WAR metaphor theme in the three corpora

English corpus	mainland Chinese corpus	Taiwanese Chinese corpus
49 instances with WIDLII: (25: about treatment) (2: about cancer) (22: about patients)	100 instances with WIDLII: (96: about treatment) (3 of which about organs) (1 of which about patients)	35 instances with WIDLII: (30: about treatment) (5 of which about organs)
I. OVERCOMING CANCER AND TREATMENT ARE STRUGGLING AGAINST OPPONENTS		
<u>invasive treatment</u> (7) <u>invasive cancer /disease</u> (2) <u>treatment selection dictated</u> <u>by</u> (2) <u>defense mechanism</u> (1) <u>fighter</u> (1) <u>torture</u> (1) <u>salvage</u> (1) <u>forcible</u> (1) <u>inhuman</u> (1) <u>traumatic</u> (1) <u>brutal</u> (1) <u>threatening</u> (1) <u>attack</u> (1) <u>identifying colonizing</u> <u>pathogen</u> (1) <u>coalition of scientific and</u> <u>clinical knowledge</u> (1)	<u>战胜</u> (7) < <u>won in a war</u> (defeat)> <u>战胜疾病</u> (3) < <u>won in a war</u> against disease (defeat disease)> <u>殺死</u> (5) < <u>kill</u> > <u>侵害(犯)</u> (8) < <u>invaded</u> > <u>侵入/蚀性</u> (5) < <u>invasive</u> > <u>非侵入性</u> (1) < <u>non-invasive</u> > <u>侵犯</u> (1) < <u>invasion</u> > <u>浸润性膀胱肿瘤</u> (1) < <u>invasive gall bladder tumour</u> > <u>双刃剑</u> (3) < <u>double-edged</u> <u>sword</u> > <u>杀伤</u> (3) < <u>injured</u> > <u>身心痛苦</u> (2) < <u>body heart</u> <u>painful</u> > <u>杀癌</u> (1) < <u>killed cancer</u> > <u>攻下法</u> (1) < <u>attack the lower</u> part method (purgation method)> <u>身心损伤</u> (1) < <u>body and heart</u> (psychological) <u>injury</u> > <u>防御 应激能力</u> (1) < <u>defense</u> stress ability> <u>消亡</u> (1) < <u>died</u> > <u>自我防护</u> (1) < <u>self-defense</u> >	<u>侵入性</u> (9) < <u>invasive</u> > <u>侵犯/ 侵入</u> (8) <(cancer) <u>invaded</u> > <u>非侵袭性</u> (1) < <u>non-</u> <u>invasive</u> > <u>移植抗 宿主</u> (5) < <u>transplant anti-host (graft</u> versus host)> <u>扶正祛邪</u> (2) < <u>support the</u> positive and <u>get rid of the</u> evil> <u>陷阱 亟待克服</u> (1) < <u>traps</u> <u>need to be overcome</u> > <u>长期 抗战</u> (1) < <u>long term</u> <u>war</u> > <u>治療 戰爭</u> (1) < <u>treatment</u> <u>war</u> > <u>創傷</u> (1) < <u>trauma</u> > <u>襲擊</u> (1) < <u>attack</u> > <u>奮力一搏</u> (1) < <u>put up a fight</u> <u>with all energy</u> > <u>殺死</u> (1) < <u>kill</u> > <u>防禦 細胞</u> (1) < <u>defense cell</u> >
WIDLII	WIDLII	WIDLII
<u>survivors</u> (21) <u>impede</u> (2) <u>surviving</u> (2) <u>survive</u> (1)	<u>保/护肝</u> (39) < <u>protect/ guard</u> the liver> <u>保肾治疗</u> (7) < <u>protect kidney</u> treatment> <u>护肝保肾治疗</u> (1) < <u>protect</u> <u>liver and guard kidney</u> treatment> <u>保护唾液腺</u> (2) < <u>protect</u> salivary gland> <u>保护 胃黏膜 等治疗</u> (1) < <u>protect mucous etc treatment</u> > <u>决策冲突</u> (1) < <u>strategy</u> <u>conflict</u> > <u>心理 冲突</u> (1) < <u>psychological</u> <u>conflict</u> > <u>创伤</u> (1) < <u>trauma</u> > <u>精神创伤</u> (1) < <u>mental trauma</u> > <u>生存者</u> (1) < <u>survivor</u> >	<u>角色冲突</u> (1) < <u>role conflict</u> > <u>决策冲突</u> (1) < <u>strategy</u> <u>conflict</u> >

5.2 Differences between the three corpora in terms of their relative use of the MECHANICAL metaphor theme, SIGHT-RELATED metaphor and metonymy theme and the BURDEN metaphor theme, and their linguistic manifestations

Most of the linguistic expressions realizing the MECHANICAL metaphor theme, SIGHT-RELATED metaphor and metonymy theme, and the BURDEN metaphor theme were remarkably similar across the three corpora. In the following sub-sections, the utilization of these three metaphors to conceptualize cancer treatment is discussed.

5.2.1 The MECHANICAL metaphor theme

The MECHANICAL metaphor theme was mainly realized through expressions related to collision, such as ‘impact’ (*chōng jī* 衝擊/ 冲击; *dǎ jī* 打击), or about construction and stability, as in ‘based on’ (*jī chǔ shàng* 基础上), ‘stable’ (*wěn dìng* 穩定), ‘unstable’, *jiàn lì* (建立 ‘build’), and *zhī zhù* (支柱 ‘pillars’) (please refer to Table 5).

The word ‘impact’ suggests the conceptualization of the effects of treatment as forces resulting from collision. As with the kinds of injuries that would result from having been being physically hit, the word ‘impact’ was employed more frequently to describe negative effects brought about by cancer and its treatment. For instance:

- (20) ...the impact of cancer and its treatments on their psychosocial well-being (depressive symptoms and self-esteem) (English corpus)

- (21) 对 患者 的 心理 方面 产生 的 重大 冲击
to patient DE psychological aspect generated DE great impact
“had a significant impact on the psychological state of the patient”
(mainland Chinese corpus)
- (22) 當 個案 面臨 癌症 診斷 衝擊
when subject face cancer diagnosis impact
治療 副 作用 影響, 容易 造成
treatment side effect influence easily cause
個案 及 家屬 負面 情緒
subject and family member negative emotion
“When a subject faces the impact of a cancer diagnosis and is influenced by treatment side-effects, it will cause negative emotions in the subject and family members”
(Taiwanese Chinese corpus)

In contrast, building-related expressions such as *jiàn lì* (建立, ‘build’) and *zhī zhù* (支柱, ‘pillars’) in the mainland Chinese corpus and the Taiwanese Chinese corpus foregrounded a mental picture of curing cancer, and increasing patient confidence as a construction project. For instance:

- (23) 增強 治療 信心 的 重要 支柱
increase treatment confidence DE important pillar
“an important pillar to increase treatment confidence” (mainland Chinese corpus)
- (24) 讓 我 可 以 在 治療 中 逐漸 建立 信心
allow me can ZAI treatment inside gradually build-up confidence
“helped me to gradually build my confidence during treatment”
(Taiwanese Chinese corpus)

Table 5 Metaphorical expressions realizing the MECHANICAL metaphor theme in the three corpora

English corpus	mainland Chinese corpus	Taiwanese Chinese corpus

43 instances: (42: about treatment) (1: about patients)	60 instances: (59: about treatment) (1: about patients)	41 instances with WIDLII: (40: about treatment) (1: about cancer)
1. TREATMENT INFLUENCES ARE COLLISION		
<u>impact</u> of treatment (17) <u>impact</u> of cancer and its treatment (13)	冲击 (3) < <u>impact</u> > 打击 (1) < <u>impact</u> >	衝擊 (10) < <u>impact</u> > (癌症)衝擊 (6) <(cancer) <u>impact</u> >
2. CANCER TREATMENT IS A CONSTRUCTION		
Entailment - PROVIDING APPROPRIATE TREATMENT IS LAYING STABLE FOUNDATION based on (4) balance (3) stable (1) unstable (1)	建立 (12) < <u>build</u> > 重建 (1) < <u>rebuild</u> > 重要 支柱 (2) < <u>important pillar</u> > 精神 支柱 (1) < <u>spiritual pillar</u> > 团队间的 桥梁 (1) < <u>the bridge of the team</u> > 治疗是一项长期 工程 (1) <treatment is a long- term <u>project</u> > Entailment - PROVIDING APPROPRIATE TREATMENT IS LAYING STABLE FOUNDATION 基础 (14) <<u>foundation</u>> 基础上 (18) <<u>on the foundation</u>> 平衡 (4) <<u>balance</u>> 稳定 (1) <<u>stable</u>>	建立 (6) < <u>build</u> > 重建 (1) < <u>rebuild</u> > 主軸 (6) < <u>principle axis</u> > Entailment - PROVIDING APPROPRIATE TREATMENT IS LAYING STABLE FOUNDATION 基礎 (4) <<u>foundation</u>> 平衡 (2) <<u>balance</u>> 失衡 (1) <<u>lost balance</u>> 失去 重心 (1) <<u>lost balance</u>> 舉足 輕重 (1) <<u>lift one leg and lost balance</u>> 穩定 (1) <<u>stable</u>>
WIDLII	WIDLII	WIDLII
		扶正祛邪 (2) < <u>support</u> the positive and get rid of the evil>
3. CANCER TREATMENT AND PATIENTS ARE MACHINES		
(patient on) <u>conveyor belt</u> (2) treatment <u>resistance</u> (1) <u>on track</u> (1)	机械 损伤 (1) < <u>mechanical injury</u> >	

5.2.2 The SIGHT-RELATED metaphor and metonymy theme

The SIGHT-RELATED metaphor and metonymy theme is derived from the THINKING/KNOWING / UNDERSTANDING IS SEEING metaphor, and in the three corpora, it was realized through linguistic expressions such as ‘seek’, ‘focus on’ (*jiāo diǎn* 焦點), ‘view’ (*shì wéi* 視為), ‘see’, and ‘look at’ (please refer to Table 6). Unsurprisingly, these expressions were employed in all three corpora to

draw attention to different aspects of patient experience. For instance, the lexical item ‘seek’ was used to construe the needs of cancer patients as being in pursuit of physical objects (e.g., ‘seeking treatment’), while ‘focus on’, ‘view’, ‘see’, and ‘look at’ were more likely to refer to the viewpoints and feelings of the authors of the papers.

The lexical item ‘focus on’ (*jiāo diǎn* 焦點), a frequently used academic term that authors employ to introduce the main theme in their research papers, was also used in the three corpora to highlight important aspects of cancer treatment. However, the lexical items ‘view’ (*shì wéi* 視為), ‘see’, and ‘look at’ were more often employed in the English corpus to convey different stances taken by healthcare professionals and their patients toward cancers and their treatments. For instance, patients who expressed disagreement or dissatisfaction with their treatment were described as ‘[having] difficulty seeing the point of treatment’, and patients who were perceived as being too interfering were described as ‘view[ing] themselves as experts’. Patients were also described as ‘want[ing] to be seen as individuals’. This reflects a stronger focus on patient behaviour and identity in the English corpus, where this behaviour was sometimes evaluated negatively. The term ‘looking’ was also employed by the professionals in the English corpus to convey a sense of, and a need for, ‘learning’. Examples included: ‘look[ing] at people’s quality of life’ and ‘looking at how they can play a greater role’. These usages conveyed an idea of openness to new ideas, which was less evident in the mainland Chinese and Taiwanese Chinese corpora.

In contrast, the SIGHT-RELATED metaphor and metonymy theme was much more likely to be realized by the verb *miàn duì / miàn lín* (面對/面臨, ‘face’) in the Taiwanese Chinese corpus. The verb ‘face’ in mainland Chinese and Taiwanese Chinese is used to describe positive attitudes held by patients when they experience difficulties and stress incurred by cancer treatment. As shown in Example 25 below, the act of physically facing difficulties and stress as if they were tangible

objects located in front of the patients suggests that patients are able to display much more agency in overcoming the problem.

- (25) 正面 迎向 治療 過程 的 種種 困境
face towards treatment process DE various trapped-environment
 “faced various predicaments relating to the treatment process” (Taiwanese Chinese corpus)

Table 6 Metaphorical expressions realizing the SIGHT-RELATED metaphor and metonymy theme in the three corpora

English corpus	mainland Chinese corpus	Taiwanese Chinese corpus
32 instances: (30: about treatment) (2: about patients)	17 instances: (11: about treatment) (6: about patients facing illnesses)	70 instances: (66: about treatment) (4: about patients)
1. OVERCOMING DIFFICULTIES AND STRESS IS FACING		
<u>facing</u> (7)	<u>面對</u> (transitive v) (4) < <u>facing</u> > <u>面對</u> 疾病 (transitive v) (4) < <u>facing</u> illness> <u>面臨</u> (intransitive v) (4) < <u>facing</u> > <u>正視</u> 疾病(1) < <u>face forward</u> illness> <u>正視</u> 疾病和治療(1) < <u>face forward</u> illness and treatment> <u>看到</u> 希望(1)< <u>saw</u> hope>	<u>面對</u> (transitive v) (49) < <u>facing</u> > <u>面臨</u> (intransitive v) (11) < <u>facing</u> > <u>面臨</u> 負荷/死亡 (intransitive v) (4) < <u>facing</u> burden / death >
2. PERCEPTION OF CANCER AND TREATMENT IS SEEING		
<u>focus</u> on (12) <u>focus</u> (n) (3) <u>view</u> (v) (2) <u>view</u> themselves (v)(1) <u>see</u> (v) (4) <u>seek</u> (2) <u>look at</u> (1)	<u>焦點</u> (1) < <u>focus</u> (n)> <u>着眼点</u> (1) < <u>focus</u> >	<u>觀點</u> (2) < <u>view</u> (n) > <u>視</u> (2) < <u>view/see</u> (v)> <u>焦點</u> (1) < <u>focus</u> (n)> <u>眼光</u> (1) < <u>eye sight</u> >

5.2.3 The BURDEN metaphor theme

Like the SIGHT-RELATED metaphor and metonymy theme, the BURDEN metaphor theme was also used to describe the ways in which the patients experienced difficulties and stress caused by cancer treatment (please refer to Table 7). The BURDEN metaphor theme was salient in the mainland

Chinese corpus. This possibly reflects two very different attitudes between mainland Chinese and Taiwanese Chinese cultures towards difficulties and stress caused by cancer treatment.

For the mainland Chinese writers, as illustrated in Example 26, cancer treatment was seen as more of an unavoidable and inescapable burden, which meant that patients needed to ‘bear’ or ‘tolerate’ it, as if they were physically carrying a ‘burden’ on their back. In contrast, the SIGHT-RELATED metaphor and metonymy theme realized by the word ‘face’ entails a more active attitude, suggesting that efforts will be made to ‘overcome’ or ‘get rid of’ difficulties and stress caused by cancer treatment.

- (26) 担心 自己 是 否 能 承受
worry self is is not can bear/tolerate
大 剂量 化疗 治疗
large dosage chemotherapy treatment
“[the subject] worried whether he/she could bear/tolerate a large dosage of chemotherapy treatment” (mainland Chinese corpus)

Table 7 Metaphorical expressions realizing the BURDEN metaphor theme in the three corpora

English corpus 16 instances: about treatment	mainland Chinese corpus 73 instances: about treatment	Taiwanese Chinese corpus 17 instances: about treatment
1. BEARING DIFFICULTIES AND STRESS IS CARRYING A BURDEN		
<u>burden</u> of cancer and treatment (1) <u>burden</u> of treatment (1) <u>tolerate</u> (v) (7) <u>tolerance</u> (7)	<u>负担/负荷</u> (41) < <u>burden</u> > <u>忍受</u> (3) < <u>tolerate</u> > <u>难忍</u> (1) < <u>cannot tolerate</u> > <u>承受</u> (17) < <u>bear</u> > <u>耐受</u> (9) < <u>endure</u> > <u>重负</u> (1) < <u>heavy burden</u> > <u>不堪</u> (1) < <u>cannot bear</u> >	<u>負擔/負荷</u> (7) < <u>burden</u> > <u>忍受</u> (5) < <u>tolerate</u> > <u>承受</u> (3) < <u>bear</u> > <u>耐受</u> (2) < <u>endure</u> >

These differences may relate to some of the ideas that were discussed in the introduction. For example, we saw that in Chinese society, patients and their families are expected to cope with chronic conditions together, and not to discuss them outside the family. The idea that cancer is ‘a burden to be endured’ fits with this view.

5.3 Differences between the three corpora in terms of their relative use of the metaphors that involved cultural keywords

Metaphors that involve cultural keywords were found in both the mainland Chinese and Taiwanese Chinese corpora. The keywords in question were *yin* (陰, translated as ‘negative’), *yang* (陽, translated as ‘positive’), positive *qi* (氣, which literally means ‘gas’, translated as ‘vital energy’), and *zào* (灶, translated as ‘cooking stove’ or ‘kitchen range’) (please refer to Table 8). The first three cultural keywords derive from traditional Chinese medicine theory, which shows a strong Taoist influence, while the last is related to folk beliefs among Chinese. As explained earlier, the Taoist *yin* and *yang* concepts are the foundation of traditional Chinese medicine theory. According to *Huangdi Neijing (The Yellow Emperor's Classic of Medicine)* (Veith & Barnes, 2016), the universe is governed by the law of *yin* and *yang*, in which *yin* stands for the moon, cold, dampness and quiet elements, and *yang* stands for the sun, heat, dryness, and active elements. *Yin* and *yang* are complimentary to each other and it is necessary to keep a balance between them. When the *yin* and *yang* concepts are applied to Western medicine, for instance, to describe the results of medical tests that aim to diagnose cancer, the quiet nature of *yin* is highlighted and metaphorized as a non-responsive (negative) test result, while the active nature of *yang* is foregrounded and metaphorized as an active (positive) test result. In other words, a *yin* response to a diagnostic test for cancer means the patient is not confirmed to have cancer, while a *yang* response means that they do in fact have cancer.

The final cultural keyword, *zào* (灶, ‘cooking stove’) reflects folk beliefs, including Chinese geomancy (referred to by the colloquial term *feng shui*), which relates to interior house design in

ancient China. In classical Chinese buildings, *zào* carried a symbolic meaning; it represented family. It was one of the three most important elements in a house that would influence the health, prospects, and fortunes of people living in it (the other two were the main door of the house and the bedroom of the house owner). Wealthy people and government officials had strict requirements about the design and measurement of the *zào* in their home, and the date and time of installing it. A clean *zào* was beneficial to the health, destiny, and fortune of the whole family. They worshipped the god of the *zào* before the start of a new year so that the deity would protect the whole family and bless them with abundance and numerous offspring (Chard, 1994). To date, many Chinese still practise these customs relating to *zào*.

In the mainland Chinese and Taiwanese Chinese corpora, folk beliefs involving *zào* were used to refer metaphorically to the importance of human organs. The implication is that we should keep our organs in good condition, just as we must keep the *zào* in our house clean. If a lesion occurs in our organs (for example, as a result of infection by cancer cells), other organs and the health of the person will be seriously affected; if a *zào* is dirty, everyone living in the house will be harmed. Following this logic, the organ/location infected by cancer cells (or ‘tumour’) is called a *bìng zào* (病灶, ‘sick cooking stove’). The organ/location where a tumour first developed (that is, a primary tumour) is called a *yuan fā zào* (原发灶, ‘primary stove’). Cancer cells or satellite tumours that later grow around the primary tumour are called *zǐ zào* (子灶, ‘offspring stove’); the organ or location that cancer cells spread to is called a *zhuǎnyí zào* (转移灶, ‘metastasis stove’); and the organs or locations affected by a tumour that is non-responsive to treatment and is highly likely to relapse after surgery are called *duō fā zǐ zào* (多发子灶 ‘refractory multiple offspring stoves’). These *zào*-related terms reveal the ways in which folk beliefs continue to shape conceptualizations of cancer in mainland Chinese and Taiwanese Chinese healthcare.

Table 8 Metaphorical expressions involving cultural keywords in the mainland Chinese and Taiwanese Chinese corpora

mainland Chinese corpus	Taiwanese Chinese corpus
27 instances: (2: about treatment) (1: about illness) (24: about tumour)	26 instances: (18: about treatment) (3: health condition) (5: about tumour)
1. CANCER AND TREATMENT RESPONSES ARE YIN-YANG RESPONSES	
阴性 杆菌 (1) <yin's gram-bacillus (gram-negative bacillus)> 阳性的早期乳腺癌患者 (1) <yang's early breast cancer patient> 阴 (1) <yin>	陽 (13) <yang> 陰 (5) <yin>
2. GOOD HEALTH IS POSITIVE GAS (qi)	
	扶正祛邪 (2) <support the positive and get rid of the evil> 正氣 (1) <positive qi (gas)>
3. TUMOUR IS A SICK COOKING STOVE	
癌灶 (2) <cancer cooking stove> 病灶 (16) <sick cooking stove> 原发灶 (2) <primary stove> 转移灶 (2) <metastasis stove> 多发子灶 (2) <refractory multiple offspring stove>	病灶 (5) <sick cooking stove>

Metaphors involving cultural keywords were also observed in the English corpus (please see Table 9). One example is the ‘gold standard’ metaphor. The ‘gold standard’ was originally an economic term, describing the use of gold as the basis for a monetary system. Money was valued in reference to the gold standard. However, gold is no longer used in this way, though it is still valuable, so the term has taken on a looser metaphorical meaning. In present-day English, the term ‘the gold standard’ is used to convey the idea that it is the best possible example of something. In the English corpus, the metaphor ‘a gold standard’ was employed to describe what was thought to be the best available treatment method. We can see this from Examples 27 and 28 below:

(27) ...this remains the gold standard for the treatment of a range of NMSCs...

(English corpus)

(28) ... hormone therapy is a gold standard treatment ... (English corpus)

Although gold is precious in different parts of the world and metaphors involving the word ‘gold’ are also common in the Chinese language, they do not have the economic undertones that the gold standard has in English.

The fact that the ‘gold standard’ metaphor refers to an economic phenomenon means that one might view it as being tangentially related to the SERVICE metaphor theme. Indeed, this theme as a whole is, to some extent, a cultural metaphor, reflecting ideas about customer service culture which originated in Western societies. In the English corpus, cancer treatment as a kind of ‘customer service’ was much more in evidence than it was in the mainland Chinese and Taiwanese Chinese corpora. ‘First class’ cancer treatments were ‘tailored’ and ‘delivered’ to patients. This metaphor theme appears to shape the ways in which cancer treatment and nursing care are viewed in English. It parallels the ways in which ‘bespoke’ products are produced for individual customers in the business world; the use of the word ‘tailored’ emphasizes the fact that individual cancer patients may need a treatment that is exclusively designed to meet their needs, in the same way that a tailored suit or dress is designed to fit the body of a particular customer and would be too loose or too tight for other customers.

Table 9 Metaphorical expressions realizing the SERVICE metaphor theme in the three corpora

English corpus 40 instances with WIDLII: about treatment	
I. CANCER TREATMENTS ARE BESPOKE PRODUCTS	
metaphorical expressions	WIDLII
<u>first class</u> (3) <u>tailor</u> (11)	<u>delivery</u> (26)

6. Conclusion

In this paper, the differences in the way in which cancer treatment is conceptualized in English, mainland Chinese, and Taiwanese Chinese healthcare cultures have been discussed. The findings provide some interesting insights into the ways in which cancer treatment is construed in these different cultures. All three cultures appear to draw extensively on SOURCE-PATH-GOAL, ANIMACY, WAR, and MECHANICAL metaphor themes, although they are elaborated in different ways across the different cultures. This indicates a tendency across the three cultures to construe cancer as a living entity that needs to be opposed, and to use metaphors that draw on physical interactions with the environment.

However, the analysis has revealed quite marked differences across the three cultures in terms of how these metaphor themes are deployed. One of the most notable differences is the way in which the course of treatment is construed. The use of the SOURCE-PATH-GOAL metaphor theme to talk about the course of the treatment was much more prevalent in the English corpus, whereas in the mainland Chinese and Taiwanese Chinese corpora, the course of treatment was more likely to be discussed in terms of ‘related segments’. It can be concluded from this that the English language emphasizes the overall structure of treatment while mainland Chinese and Taiwanese Chinese appear to focus more on the details and stages of the process through the JOURNEY metaphor theme.

Another interesting difference is that more agency appears to be given to the treatment in English, through the ANIMACY and WAR metaphor themes. Metaphors within these themes are used to foreground various characteristics of cancer and the ability of treatments to ‘attack’ the cancer. In contrast, in mainland Chinese and Taiwanese Chinese corpora, the main purpose of the treatment is to ‘protect’ the organs from the cancer. The resulting energy that these organs then

acquire can subsequently spread to other parts of the body. This suggests that there are subtle differences in the ways in which the purpose of the treatment is construed in these different cultures.

Differences between two cultural groups that speak the same language have also been identified. When conceptualizing the difficulties experienced by cancer patients, Taiwanese Chinese writers tend to make more use of the SIGHT-RELATED metaphor and metonymy theme, and talk about ‘facing’ the difficulties, whereas mainland Chinese writers are more likely to employ the BURDEN metaphor theme. This suggests that Taiwanese authors attribute more agency to the patients than mainland Chinese authors. Furthermore, metaphors involving cultural keywords also reveal interesting differences in the ways in which cancer treatment is perceived across cultures. In English, more use is made of SERVICE metaphors, perhaps reflecting the commercialization of healthcare providers. In contrast, in mainland Chinese and Taiwanese Chinese corpora, more references are made to the ‘energy’ present in human organs, and they are more likely to be presented as animate objects.

The idea that different cultures employ broadly similar metaphor themes to express a wide variety of meanings resonates with the findings of Semino et al. (2018), who note that the framing effects of metaphors within the same theme can vary based on their context and usage. This study demonstrates that the specific implications of thematically similar cancer metaphors are shaped by the norms, practices, and traditions of the culture in which they are being used.

Building knowledge of the ways in which healthcare practitioners from different cultures conceptualize cancer treatment may help to prevent miscommunication in international health communication and provide opportunities to view the role treatment plays in different ways. Gaining insights such as these into the ways in which cancer treatment is conceptualized in

different languages and cultures should ultimately help to drive innovation in the treatment of cancer.

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Appendix Frequencies of the eighteen metaphor themes in the three corpora

Figure 1a Frequencies of the eighteen metaphor themes in the three corpora (raw data)

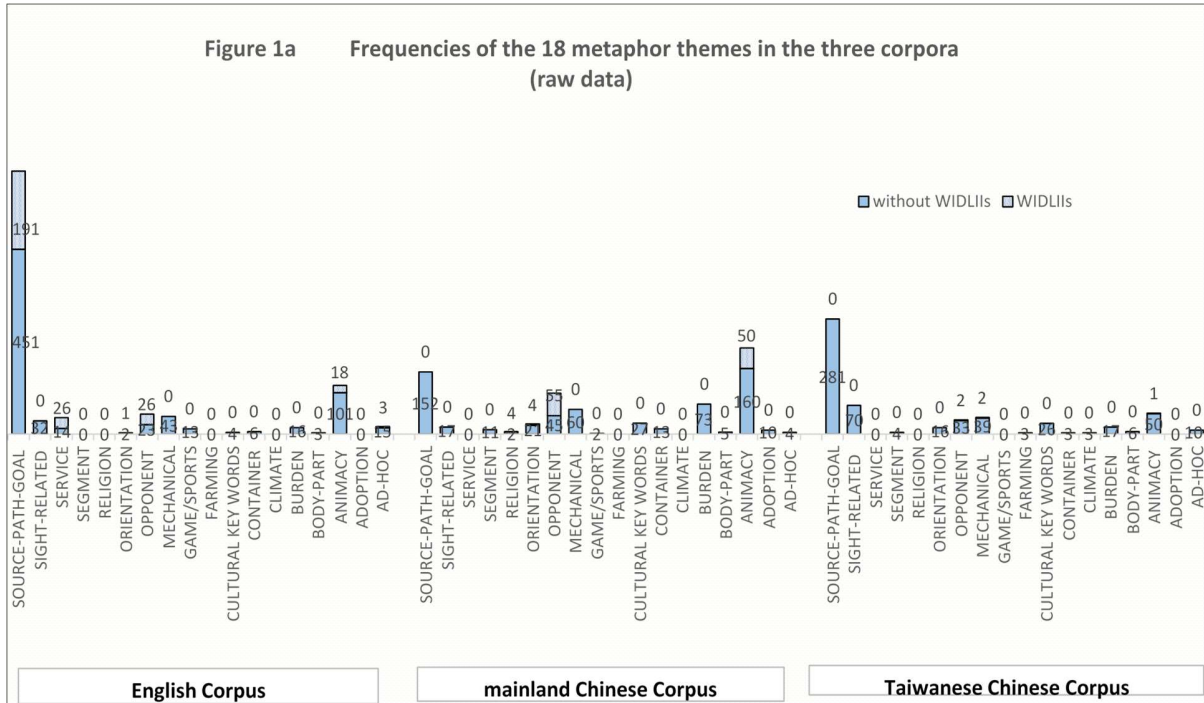


Figure 1b Frequencies of the eighteen metaphor themes in the three corpora (per 100,000 words)

