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Exploring metaphorical conceptualizations of ENVY in English and Chinese: A multifactorial corpus analysis

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Abstract
Adopting a multifactorial analysis, this corpus-based comparative study examines the metaphorical conceptualizations of ENVY in American English and Chinese. All the metaphorical occurrences of ENVY in the two languages were collected from the corpora and then submitted to a detailed semantic and usage analysis. The qualitative and quantitative analyses show both striking similarities and differences in the metaphorical structuring of ENVY across the two languages. Both languages resort to largely the same common conceptual metaphors but use divergent elements from these metaphors' source domains in their conceptualizations of ENVY. Moreover, a correspondence analysis of the most frequently used envy metaphors in relation to four important factors reveals some noticeable cross-language differences in their behavioural profiles. Based on the corpus findings, this study also explores the motivations underlying the similarities and differences in the metaphorical structuring of ENVY. The results indicate that the similarities are grounded mainly in common bodily experiences, whereas the differences are motivated by either differential cultural experiences or differential cognitive preferences.

Keywords: ENVY; emotion; metaphorical conceptualization; corpus; multifactorial analysis

1. Introduction
Conceptualizations of human emotions have been a research topic of great interest in linguistics, for there have been many studies on various emotion concepts, such as ANGER (Glynn, 2014; Kahumburu, 2016; Yu, 1995), FEAR (Caballero & Díaz-Vera, 2021; Oster, 2010, 2012), HAPPINESS (Nguyen, 2016; Rajeg, 2019; Stefanowitsch, 2004), JEALOUSY (Díaz-Vera & Caballero, 2013; Ogarkova, 2007), LOVE (Gawda, 2019; Glynn, 2002), PRIDE (Soares da Silva, 2020), SADNESS (Verdaguer & Castaño,

2018), and SHAME (Krawczak, 2014a, 2014b, 2018). These studies have revealed that, in contemporary language use, human emotions are often understood or conceptualized in metaphorical terms (e.g. Díaz-Vera & Caballero, 2013; Kahumburu, 2016; Ogarkova, 2007; Rajeg, 2019). Their findings highlight the importance of metaphor in human thought and language, although, in historical language use, expressions of emotions have been found to be largely literal in some research (e.g. Gevaert, 2007). Despite the large existing body of research on emotion metaphors, there appear to have been only a few studies on ENVY and its conceptualizations. This is somewhat surprising considering that envy is a common emotion that is experienced around the world (Foster, 1972) and it has always been included in the list of universal emotions (e.g. Hupka et al., 1999).

As a common human emotion, ENVY was recognized and defined tersely by Aristotle (350BC/1954) as 'the pain at the good fortune of others'. In particular, this emotion, according to Parrott and Smith (1993, p. 906), "occurs when a person lacks another's superior quality, achievement, or possession and either desires it or wishes that the other lacked it". ENVY is routinely referred to as JEALOUSY, but the two are actually emotional responses to quite different situations (Clanton, 2006). ENVY arises when someone else is better off, while JEALOUSY occurs when one fears losing something important to another person (Parrott & Smith, 1993). Furthermore, JEALOUSY is generally limited largely to the domain of romance (Guerrero, 1998). It is a protective reaction to a perceived threat to a valued relationship or its quality (Clanton & Smith, 1998). In contrast, ENVY is an emotional reaction generated more broadly by social comparison (Alicke & Zell, 2008; Vrabel et al., 2018). Another important point is that ENVY is often an emotional reaction based on "cultural information and personal experience" (Zinck & Newen, 2008, p. 14).

While there has been substantial research on the emotion envy in the field of psychology (e.g. Chan et al., 2013; Parrott & Smith, 1993; Quintanilla & de López, 2013; Stepanova & Coley, 2002; Zhou & Tse, 2020), linguistic studies on this emotion are relatively few, with only the following four. Ogarkova (2007) provided a detailed analysis of the conceptual metaphors of JEALOUSY and ENVY in British English. Her results show that the two emotions exhibit significant similarities in the source domains, but there are also jealousy- and envy-specific metaphors. The study also indicates that JEALOUSY is perceived as a significantly more painful and unwelcome emotion than ENVY. Díaz-Vera and Caballero (2013) presented a corpus study of the ways that JEALOUSY is metaphorically construed in American English and Spanish, focusing on the role of sensorial perception in expressing this emotion across genres. A major finding of their study is that while touch figures prominently in both languages, American English speakers make much more frequent use of a wide variety of sensory-related metaphors (including vision, hearing, smelling, and tasting) than in Spanish, foregrounding the physical component of this emotion. Mizin et al. (2021) conducted a comparative study of ENVY between British English and Ukrainian by exploring phraseological units denoting envy in the two languages. It is found that there are universal characteristics of ENVY across the two languages, but some ethnic and socio-cultural factors imbue the two concepts with specific linguistic and cultural meanings. Research on the conceptualizations of ENVY in Chinese was scarce. Luo's (2010) study is the only exception. She analysed both commonalities and variations in the envy metaphors between English and Chinese and explored their philosophical basis and cultural models. However, this study is introspective without the support of corpus data.

Thus, despite its commonality, it appears that the emotion envy, especially its conceptualizations, has not been examined closely and adequately. Furthermore, there are a couple of limitations in the existing studies on ENVY in terms of both research methodology and scope. Methodology-wise, all the existing linguistic studies on this topic thus far are qualitative in nature with only a couple involving some descriptive statistics. Unlike the research on the conceptualizations of other emotions, there has not been any corpus-based quantitative study on ENVY that adopts newly developed methods in cognitive semantics such as the multifactorial usage-feature methodology (Dirven et al., 1982; Divjak, 2010; Geeraerts et al., 1994; Glynn & Biryukova, 2022; Glynn & Fischer, 2010; Glynn & Robinson, 2014; Gries, 2003). This approach has been successfully utilized to explore the metaphorical structures of many emotions across cultures or languages (e.g. Glynn & Biryukova, 2022; Nordmark & Glynn, 2013; Ogarkova & Soriano, 2014). In terms of the research scope, there have been very few cross-cultural studies on the conceptualizations of ENVY, a well-known socially driven emotion, generated mainly by social comparison (Alicke & Zell, 2008; Vrabel et al., 2018). Other socially driven emotions include ANGER (Glynn, 2014), PRIDE (Soares da Silva, 2020), and SHAME (Krawczak, 2014a, 2014b, 2018).

Given the overall inadequacy in the existing research on the conceptualizations of ENVY, the limited methodologies used, and the scarcity of cross-language research on this important emotion, this study aims to investigate the ways in which envy is conceptually (particularly metaphorically) construed across two vastly different languages: American English and Chinese. In particular, the study attempts to address the following questions:

1) What metaphors are used to structure the concept of ENVY in American English and Chinese?
2) What are the metaphorical profiles of ENVY across American English and Chinese?
3) If there are similarities and differences in the metaphors used and their profiles between the two languages, what are the underlying motivations?

The article is organized as follows: Section 2 describes the methodology including data source, data analysis, and data evaluation. Section 3 presents the results and compares the metaphorical conceptualizations of ENVY between American English and Chinese. Section 4 delves into the motivations behind the similarities and differences between the two languages. Section 5 concludes the article by summarizing the main findings and the study's contributions.

2. Methodology

This study combines a detailed qualitative analysis of corpus data with subsequent statistical evaluation to reveal the conceptual structure and common conceptualizations of ENVY.

2.1. Data source

We included two widely used large, general-purpose corpora as our data source because "emotion words are not high-frequency words and a very large amount of text material

is needed in order to draw conclusions about their behavior" (Oster, 2012, p. 333). The English corpus was the Corpus of Contemporary American English (COCA), which is continuously updated. At the time of this study, the COCA contains approximately one billion words from a variety of genres, such as newspaper, fiction, magazine, spoken, web, television (TV)/movies, and academic writing. The Chinese corpus was the Center for Chinese Linguistics (CCL) corpus (http://ccl.pku.edu.cn:8080/ccl_corpus). This corpus contains roughly one billion characters, which convert to approximately 500 million words as, in general, two Chinese characters equal one word (Zhan et al., 2019, pp. 85–86). Like COCA, CCL consists of texts of various genres, including spoken, literature, newspaper, web discussions, TV/movies, and academic writing. It is necessary to note that CCL contains both modern and classical Chinese texts. Given our purpose of comparing contemporary American English and Chinese related to emotion envy, only the modern Chinese section of the CCL was used. In short, the American English and Chinese corpus data selected were generally comparable in both genre/register and time. However, the two corpora differed substantially in size with COCA's size doubling that of CCL. Typically, in a comparative study involving corpora of substantially different sizes, normalized frequencies are used in data analysis. This practice was thus used in this study, as will be explained as follows.

2.2. Target item selection and data query procedures

Given that research has shown metaphors often reveal our conceptualizations of human activities, events, and the world at large, examining the metaphors related to ENVY would allow us to understand how the latter is conceptualized. Therefore, in the data query and selection, we adopted the metaphorical pattern analysis (hence MPA) proposed by Stefanowitsch (2004, 2006). In this analysis, researchers must first select one or more lexical items referring to the concept of research interest in the target domain (e.g. ENVY in this study) as the operationalizations of the concept before they extract a large sample of the chosen lexical items. To select the lexical items for the target domain ENVY, researchers must also determine which of the four main parts of speech (nouns, verbs, adjectives, or adverbs) to include in the selection pool as all of them may be used in referencing or describing an emotion (e.g. *envious, enviously*, and *envy* the noun and verb for ENVY). For the purposes of this study, we decided on nouns because research (e.g. Oster, 2018; Soares da Silva, 2022) has shown that nouns better express and summarize an emotion than the other parts of speech do. Moreover, studies (e.g. Glynn, 2002; Glynn & Biryukova, 2022) have also found that metaphors (a focus of this study) occur almost exclusively when speakers are profiling an emotion concept nominally.

After deciding on nouns as the lexical category for analysis, it is still necessary to narrow our search down to one or two specific nouns because there is often more than one noun for a given concept in a language. For the concept ENVY, in English, *jealousy* is often considered a synonym or near-synonym of *envy* (*Merriam-Webster Online*, 2023; *Oxford English Dictionary Online*, 2023). Similarly, there are two synonyms for the envy emotion in Chinese: 1)妒*[du],* which often appears in the following compound words: 妒忌/妒嫉*[duji]* or 忌妒/嫉妒*[jidu],* and 2) 醋*[cu],* which is often used in compound words such as 吃醋*[chi cu]* and 醋意*[cu yi]* (*The Contemporary Chinese Dictionary,* 2016; *The Great Chinese Dictionary*, 2018). It is necessary to note that the Chinese noun *cu* also means *vinegar* and, in fact, its *envy/jealousy* meaning is a metaphorical extension from the core meaning of *vinegar* because in Chinese culture,

the *envy/jealousy* emotion is perceived or sensed as the feeling of sourness that one experiences after eating vinegar (Zhang et al., 2023). Because of its extensive and repeated popular use in the *envy* sense in the everyday Chinese language, *cu* has long become a conventional metaphor.

It is also imperative to point out that the synonyms in each pair, especially in the English pair, have different meanings and their usage contexts also vary. According to the *Merriam-Webster Dictionary Online* (2023), although 'both *jealousy* and *envy* are often used to indicate that a person is covetous of something that someone else has…, *jealousy* carries the particular sense of "zealous vigilance" and tends to be applied more exclusively to feelings of protectiveness regarding one's own advantages or attachments' and it is also used far more frequently 'in the domain of romance' than *envy*. A similar pattern also exists for *du* and *cu* in Chinese where *cu* (e.g. *chi cu* 'eat vinegar') is used much more frequently in the domain of romance, although, as a metaphor-generated term, *cu* has a lower overall frequency than *du*. Given the above facts regarding *jealousy* and *cu* and lack of space, we decided not to include these two words in this study but to examine them in our future research. In other words, this study focuses exclusively on *envy* in American English and *du* in Chinese.

Then, we searched for all the tokens of *du* and *envy* in CCL and COCA, respectively. In particular, concerning the query of CCL, it is important to note that *du* can also be used as a verb (e.g. *Wo duji ni* 'I envy you', *yige jidu de ren* 'an envious person'). Because CCL does not have the capability of limiting the query of target words by parts of speech, we had to first retrieve all the *du* tokens (3,496 in total) and then manually remove those irrelevant ones. This process yielded a total of 1,691 noun tokens of *du*. The query for the noun *envy* in COCA was simpler because COCA allows the search for words by parts of speech. Our search of the lexeme *envy* as a noun yielded 4,224 tokens, but there were 257 false tokens, in which envy was actually used as a verb or proper noun (e.g. HP ENVY Photo Printer, Massage Envy, and Venus Envy). The exclusion of these false tokens resulted in a total of 3,967 true noun tokens of *envy*. It is imperative to note that the number of *envy* tokens (3,967) more than doubles that of *du* (1,691) due to, as noted earlier, the size of COCA doubling that of CCL. To have a valid comparison of the frequencies and usage patterns of the two target nouns, we included normalized frequency-based tokens of the two words in our data analysis using the following per million frequency rate calculation: for *du*, 1,691 tokens÷500,000,000 total CCL tokens×1,000,000 = 3,382 tokens per million, and for *envy*, 3,967 tokens÷1,000,000,000 total COCA tokens×1,000,000 = 3,967 tokens per million, which resulted in a ratio between *du*'s and *envy*'s per million frequencies being 3,382:3,967 or 0.852. Based on this ratio, when we included all the 1,691 *du* tokens in the analysis, we should randomly select 1,691÷0.852 = 1,985 tokens from the total of 3,967 *envy* tokens for analysis. In other words, 1,691 *du* tokens and 1,985 *envy* tokens were included in our analysis.

2.3. Metaphor identification and variable annotation

The methods for metaphor identification we used were based on Stefanowitsch's (2006) MPA. This method involves perusing the concordance lines with the key-words and manually identifying all the instances of metaphors associated with the target concept. Whenever the contextual meaning of the lexical item in question contrasts with its basic literal meaning, it can be regarded as metaphorical. For

instance, in 'I feel envy growing inside me', *envy* is presented as a living organism, and in 'I experience a twinge of envy', *envy* is depicted as a pain. If the contextual information in the concordance line was not enough, we accessed the broader contextual information of the item in the source corpus. Out of the 1,985 *envy* tokens in American English, 1,165 (58.69%) were found to be used metaphorically, and out of the 1,691 *du* tokens in Chinese, 997 (58.96%) were determined to be metaphorical.

To gain an in-depth understanding of the conceptualizations of ENVY and the usage patterns of the metaphors involved in American English and Chinese, we also identified and coded some relevant variables that are considered important in the study of conceptual metaphors of emotions (Fontaine et al., 2013; Kövecses, 2000; Krawczak, 2018), including 'cause' (what triggered the emotion envy), 'evaluation' (whether the emotion was positive, negative, or neutral), 'intensity' (whether it was strong or neutral), and 'inter-connection' (what other emotions envy was mentioned together with). These selected variables are presented in Table 1. Our selection of these factors for analysis was informed by the usage-based linguistic research tradition in emotion concepts and social psychology (Fontaine et al., 2013; Krawczak, 2018). Previous studies have shown that conceptual metaphors of emotion tend to form meaningful clusters, highlighting various affective semantic dimensions or foci (Kövecses, 2000, pp. 40–46). Furthermore, they are indicators of cultural and linguistic differences, helping facilitate exploring the aspects of variation reported in cross-cultural research. We now explain our research-based rationales for each of the factors selected.

'Cause' of the emotion envy was investigated because prior research suggests that "causes are not only indicative of distinct cultural patterns but can be interpreted as an operationalisation of the emotion experience itself" (Nordmark & Glynn, 2013, p. 113). Eleven broad types of causes were identified in the data (see Table 1). 'Evaluation' is included because being perceived as positive, negative, or neutral is a well-known characteristic of emotion concepts for both psychologists and lay-people (Fontaine et al., 2013). Concerning ENVY, while it is generally negative, it can be positive or neutral in some situations, for, as Crusius et al. (2020) argued, ENVY could be benign or malicious. 'Intensity' was selected for analysis because it is a very crucial factor in the description of emotion concepts. Intensity is often expressed by degree adjectives and adverbs (e.g. extreme, thick, and completely) and verbs (e.g. die of envy). In our annotation of this variable, if there are no intensifiers or no words indicating intensity in a given token, it was coded as 'neutral'. Finally, 'inter-connection' was selected as a factor because previous research indicates that emotions tend to be closely connected with other related emotions.

Table 1. Factors selected for binary correspondence analysis

Factors	Features
Cause	Activity/state of affairs, achievement/skill, body/health/appearance, education/system/ideas, emotion/relationship, human being, occupation/status/wealth, physical entity, place/institution, quality, unspecified
Evaluation	Positive, negative, neutral
Intensity	Strong, neutral[a]
Inter-connection	Negative emotion (e.g. meanness, greed, hatred, resentment, sadness, sorrow, panic, indignation)
	Positive emotion (e.g. ambition, admiration, awe, happiness, love, pleasure)
	Ambivalent or neutral emotion (e.g. pity, hesitancy, bewilderment)

[a]In the data analysis, this 'neutral' is specified as 'intensity_neutral' to distinguish it from the 'neutral' evaluation.

2.4. Statistical evaluation

The observational data of the major conceptual metaphors for ENVY in the two languages that were systematically annotated for the four key factors were submitted to a binary correspondence analysis using the R package {MASS}(R Development Core Team, 2018). We chose to conduct a correspondence analysis because "it is an exploratory tool that helps one find which usage-features co-occur with other usage-features, giving a map of their overall patterning" (Glynn & Robinson, 2014, p. 444). The results of such analyses can uncover patterns of language use relative to its linguistic and socio-cultural contexts. In this study, the correspondence analysis would help us understand the significant factors and their interactions in the metaphorical uses and conceptualizations of ENVY across American English and Chinese. The data and datasets are stored in an on-line repository on the Open Science Framework: https://osf.io/dwq6u/?view_only=86bc057fab104a84acc5682cb04abdb0.

3. Results and discussion

3.1. Conceptual metaphors of ENVY used in American English and Chinese

As reported in the previous section, a rigorous process of corpus search, screening, annotation, and frequency normalization yielded 1,165 tokens of *envy* in English and 997 tokens of *du* in Chinese that carried metaphorical meaning. A total of 16 different conceptual metaphors were identified in these tokens. It is paramount to note that the 16 metaphors include not only highly schematic metaphors (e.g. ENVY IS AN OBJECT/A SUBSTANCE/A LOCATION) but also less-schematic ones (e.g. ENVY IS A DISEASE/AN ENEMY/A FIRE). Furthermore, the less-schematic metaphors can simultaneously be included in one of the highly schematic metaphors; for example, ENVY IS A FIRE can be included in the ENVY IS A SUBSTANCE metaphor. Our rationale for not grouping such less-schematic metaphors into the highly schematic ones is that they are more likely to be culture/language-specific, which can help reveal the differences in the conceptualizations of ENVY between American English and Chinese. Before we describe and explain the 16 conceptual metaphors with examples, it is also imperative to point out that some of the examples given below can each also be classified as a metaphor different from the one indicated. For instance, in one of the examples below where a person is said to be 'stabbed with envy', envy may be classified metaphorically either as a harmful weapon or as pain resulting from being stabbed with envy. In our classification of the metaphor in each such case, we chose the source domain that was the most prominent. One more point worth mentioning is that some of the examples of metaphors in our study may also be considered metonymy or synaesthesia. Due to space limitations, we did not address this issue in this study, but will explore it in our future research.

3.1.1. ENVY IS AN OBJECT

This conceptual metaphor presents envy as a physical or tangible object with three dimensions that can be acted on. In particular, ENVY can be portrayed as a moving object (e.g. hold your envy, *kongzhi jidu* 'control envy'), a stationary possession (e.g. have envy, harbour envy, produce envy, *yincang jidu* 'hide envy', and *meiyou jidu* 'have no envy'), a sharp object (e.g. *jianke de jidu* 'a sharply pointed envy'), and an

object in some locations (e.g. there is envy in X, unpack envy, and *xinhuai jidu* 'harbour envy in heart'). (1a-d) provide some examples of this conceptual metaphor.

(1) a. Hill's financial acumen, which enabled him to purchase an automobile that was <u>the envy of many whites</u>.

  b. The words are spoken to <u>remove Cain's envy</u>.

  c. <u>收藏</u>　　起　我　对　C　先生　　的　　<u>妒忌</u>。
   Shōucáng qǐ   wǒ duì C xiānshēng de   dùjì.
   hide   up I   to   C Mister   POSS[1] envy.
   'I <u>have hidden my envy</u> for Mr. C'.

  d. <u>豆蔻</u>　不　　知道　隐藏　<u>自己</u>　的　　妒嫉。
   Dòukòu bù   zhīdào yǐncáng zìjǐ de   dù jí.
   Doukou NEG know hide   self POSS envy
   'Doukou doesn't know how to <u>hide her own envy</u>'.

It is notable that most of the metaphorical expressions that instantiate this metaphor take the form of 'envy of Noun' in English as in (1a), which indicates that envy is a type of emotion possessed by many individuals, groups, organizations, and countries.

3.1.2. ENVY IS A SUBSTANCE

In this metaphor, envy is described as a substance rather than a three-dimensional object. It appears as something mixed with something else as in (2a-b). It can also be portrayed as an indefinite substance in a container, in which the lexemes of ENVY are often modified with quantifier-like phrases such as 'a trace of, a note of, a touch of, a bit of' in English and *yisi* 'a trace of' and *xiexu* 'some' in Chinese, as shown in (2c-d).

(2) a. <u>A mixture of awe and envy</u> enveloped him as the cops grouped around.

  b. 一　阵　<u>妒嫉</u>和　<u>痛苦</u>　交集　在　一起　　的
   Yī zhèn dùjí hé   tòngkǔ jiāojí zài yīqǐ   de
   one CLF envy and pain   mix   at   together ASSOC
   感情　突然　　袭　上　菲利普　的　　心头。
   gǎnqíng túrán   xí   shàng fēilìpǔ de   xīntóu.
   feeling suddenly hit up   Philip   POSS heart
   '<u>A sudden surge of envy</u> and pain mixed together in Philip's heart'.

  c. I thought I detected <u>a note of envy</u> in his voice.

  d. 我　被　深深　　感动　了，并且　夹　　着　　<u>一</u>
   wǒ bèi shēn-shēn gǎndòng le, bìngqiě jiā   zhe   yī
   I   by deeply   moved   PFV, and   mingle PROG one
   <u>丝</u>　忌妒。
   sī   jìdù.
   CLF   envy
   'I was deeply moved and also felt <u>a trace of envy</u>'.

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[1]The abbreviations used in glossing follow those of the Leipzig Glossing Rules with the addition of ASSOC 'associate *de*, genitive/adjectival/adverbial marker' and BA 'the *ba* structure'.

When ENVY is conceptualized as a substance, the substance can be liquid (3a-b), fuel (4a-b), or light (5a-b)[2].

(3) a. Even now he felt <u>a quick rush of envy</u> that Joshua should be courting this storekeeper's daughter.

　　 b. 妒忌　和　仇恨　　淹没　　　了　一　个　无法　选择
　　　　 Dùjì　hé　chóuhèn　yānmò　　le　yī　gè　wúfǎ　xuǎnzé
　　　　 envy　and　hatred　overwhelm　PFV　one　CLF　unable　choose
　　　　 自己　命运　的　　　男孩。
　　　　 zìjǐ　mìngyùn　de　　　nánhái.
　　　　 self　destiny　ASSOC　boy
　　　　 '<u>Envy and hatred overwhelmed</u> a boy who couldn't choose his own destiny'.

(4) a. <u>A certain amount of envy</u> has <u>fuelled</u> the analysts' wishes to decode the writer's secrets.

　　 b. 妒忌　往往　　为　爱情　之　　火　的　　　迸发
　　　　 Dùjì　wǎngwǎng　wèi　àiqíng　zhī　huǒ　de　　bèngfā
　　　　 envy　often　　for　love　ASSOC　fire　ASSOC　outbreak
　　　　 提供　了　燃料。
　　　　 tígōng　le　ránliào
　　　　 provide　PFV　fuel.
　　　　 '<u>Envy</u> often <u>provides fuel</u> for the flames of love'.

(5) a. The older people say 'congratulations' while trying to <u>hold back the glint of envy</u> in their eyes.

　　 b. 一些　年轻　　的　　　女人　脸　上　笑　着,　　眼睛
　　　　 Yīxiē　niánqīng　de　　nǔrén　liǎn　shàng　xiào　zhe,　yǎnjīng
　　　　 some　young　ASSOC　woman　face　up　smile　PROG,　eye
　　　　 里　却　射　出　嫉妒　的　　　光。
　　　　 lǐ　què　shè　chū　jídù　de　　guāng
　　　　 inside　but　shoot　out　envy　ASSOC　light.
　　　　 'Some young women were smiling on their faces, but there is <u>a gleam of envy</u> in their eyes'.

3.1.3. ENVY IS A DISEASE/PAIN[3]

In this metaphor, ENVY is depicted as a physical or mental disease or illness. The experiencer appears to be infected by envy and suffering from it like a disease or a pain, as exemplified in (6a-c). In Chinese, envy can be conceptualized as an illness directly, as represented in *dubing* 'envy illness' in (6d). In some instances, as shown in (6e-f), having or experiencing envy is portrayed as 'going mad/insane', which can be

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[2]Although light has been described by some scientists to contain particles called photons, light is not a substance in the strict sense. We group it with the SUBSTANCE category for lack of a better category and for the purpose of not creating a single-item category.

[3]Pain is often categorized as a sensation, but we group it with "disease" because the pain sensation resulting from envy is much more like the pain sensation from a disease, injury, or wound than the sensations from the taste-related metaphors of envy (e.g., bitterness and sourness).

considered having a mental illness because being mad/insane typically means being irrational and out of control. As such, this metaphor highlights the intensity of ENVY.

(6)   a. Perhaps she had found my letter to Ella and <u>grown sick with envy</u>.
      b. The sight sent <u>a sharp twinge of envy</u> through him.

    c. 不管   怎么   说,   他 还是 感到   了 一   阵
       Bùguǎn zěnme shuō, tā háishì gǎndào le yī zhèn
       despite how say, he still feel PFV one CLF
       刺骨   的   嫉妒。
       <u>*cìgǔ*</u> *de* <u>*jídù*</u>.
       chilling ASSOC envy
     'Anyway, he still felt <u>a pang of envy</u>'.

    d. 把   她 丈夫   的   妒   病   医   好   了   再   说。
       Bǎ tā zhàngfū de <u>dù</u> bìng <u>yī</u> <u>hǎo</u> le zài shuō.
       BA her husband POSS envy illness cure good PFV again talk
     'We need to wait until she <u>cures her husband's envy</u>'.

    e. The ladies <u>went mad with envy</u> and committed an evil deed.

    f. <u>妒忌</u> 令   <u>他</u>   <u>疯狂,</u>   令   他   失去 理智。
       <u>*Dùjì*</u> *lìng* <u>*tā*</u> <u>*fēngkuáng,*</u> *lìng* *tā* *shīqù* *lǐzhì.*
       envy cause him insane, cause him lose reason
     '<u>Envy drives him mad</u> and makes him lose his reason'.

3.1.4. ENVY IS AN ENEMY/OPPONENT

This conceptual metaphor implies that ENVY is an enemy or an opponent, which accentuates the internal struggle involved in being envious; that is, envy is viewed as the opponent in a struggle, with the envier being portrayed as the defender. The conceptual mappings highlight winning over envy or controlling/losing control of ENVY as an enemy or opponent.

(7)   a. Throughout my life I've been <u>the victim of envy</u>.
      b. 斤斤计较   和 妒忌 一定 是   快乐 心境   的   <u>克星。</u>
       Jīnjīnjìjiào hé dùjì yīdìng shì kuàilè xīnjìng de <u>*kèxīng.*</u>
       calculatedness and envy must COP happy mood POSS enemy
     'Calculatedness and envy must be <u>the enemy</u> of happiness'.

3.1.5. ENVY IS AN ANIMATE/BOTANIC BEING

In this conceptual metaphor, ENVY is conceptualized as a human being (8a-b), an animal (8c-d), or a plant (8e-f). Sometimes it can be portrayed as a supernatural being, such as a monster or devil in (8g-h). Both American English and Chinese map behaviours of animate/botanic beings onto the emotion envy, but which animals, plants, or persons and which aspects of their lives are reflected in human understanding are determined by specific cultures. For instance, while the Chinese data boast tokens of envy as a snake or a tiger, the American English data register instances of envy as a fly or a worm.

(8) a. <u>Envy would rather punish and even destroy the rich</u> than raise up the poor.

b. 爱情　　用　　望远镜　　　看　世界,　<u>嫉妒</u>　<u>用</u>　　<u>显微镜</u>
Àiqíng yòng wàngyuǎnjìng kàn shìjiè, jídù yòng xiǎnwéijìng
love use telescope see world, envy use microscope
看　世界。
kàn shìjiè.
see world
'Love looks at the world through a telescope, while <u>envy sees it through a microscope</u>'.

c. <u>Envy is like a fly</u> that passes all the body's sounder parts…

d. 自私　　　和　嫉妒　不断地　　<u>蚕食</u>　着　　人们
Zìsī hé jídù bùduànde cánshí zhe rénmen
Selfishness and envy constantly nibble PROG people
的　　良知。
de liángzhī.
POSS conscience
'Selfishness and envy constantly <u>nibble</u> away at people's conscience'.

e. You've sown <u>the seeds of envy</u> since your first win at a tournament.

f. 在　舞　　池　光滑　　的　地板　上　<u>生长</u>　　　<u>出</u>　了
Zài wǔ chí guānghuá de dìbǎn shàng shēngzhǎng chū le
at dance pool smooth REL floor up grow out PFV
<u>嫉妒</u>　的　　　<u>牛蒡</u>。
jídù de niúbàng.
envy ASSOC burdock
'From the smooth and flashing dance floor has sprouted up <u>a burdock of envy</u>'.

g. Shakespeare called envy <u>the green-eyed monster</u>.

h. 如果　我　处　　在　他　的　　位置　　上,　　在　<u>妒忌</u>
Rúguǒ wǒ chù zài tā de wèizhì shàng, zài dùjì
if I locate at he POSS position up, at envy
<u>这个</u>　<u>魔鬼</u>　面前　　　是　　不会　完全　　　无动于衷　　　　的。
zhège móguǐ miànqián shì bùhuì wánquán wúdòngyúzhōng de.
this devil before COP NEG completely indifferent NMLZ
'If I were in his position, I wouldn't be completely indifferent when facing <u>the devil of envy</u>'.

3.1.6. ENVY IS A LOCATION/CONTAINER

This conceptual metaphor portrays the concept of ENVY as a location or container. The emoter is depicted as a person located in the ENVY location/container. The metaphor tends to be used with a prepositional phrase whose nominal object slot is occupied by envy. The most frequent prepositions are 'out of' in the American English data as in (9a) and *zai…zhong* 'in' in the Chinese data as in (9b).

(9)   a. I would never hurt any colleagues even when they hurt me <u>out of envy</u>.

     b.
在	嫉妒	中	长	大	的	孩子,	将来
Zài	*jídù*	*zhōng*	*zháng*	*dà*	*de*	*háizi,*	*jiānglái*
at	envy	in	grow	big	ASSOC	child,	future

容易	钩心斗角。
róngyì	*gōuxīndòujiǎo.*
easy	scheme

'Children who grow up <u>in envy</u> tend to scheme easily in the future'.

3.1.7. ENVY IS A PHYSICAL SENSATION

This metaphor helps showcase some of the manifold relationships between emotional reactions and physical sensations. Envy can be portrayed as a sense of touch, sight, hearing, or taste, as exemplified in (10a-e). It is particularly important to mention that envy in Chinese is highly frequently associated with a sourness taste as in (10d). In contrast, envy in English tends to be associated with bitterness as in (10e).

(10) a. Father looked at Gideon with the <u>cold envy</u> of a man unwilling to relinquish history to the next generation.

     b. I could <u>see the envy in his eyes</u>.

     c. Instantly I <u>heard envy in her voice</u>.

     d.
网上		有	几	个	人	对	'大师'	这	个
Wǎngshàng		*yǒu*	*jǐ*	*gè*	*rén*	*duì*	*'dàshī'*	*zhè*	*ge*
on-line		have	several	CLF	person	to	master	this	CLF

名词	曾经	有	过	一点	酸酸	的	妒嫉。
míngcí	*céngjīng*	*yǒu*	*guò*	*yīdiǎn*	*suān-suān*	*de*	*dùjí.*
noun	once	have	PFV	a bit	sour	ASSOC	envy

'Several people have shown on-line a bit of <u>sour envy</u> about the term "master"'.

     e. There it was again, that <u>bitter envy</u> that jarred her common sense and turned her cold and hard.

3.1.8. ENVY IS A FORCE

In this metaphor, envy is conceptualized as a force that propels individuals into actions that are often irrational and destructive as shown in (11a-b), but it can also be constructive in some situations as manifested in (11c-d).

(11) a. <u>A surge of envy</u> stops me from answering.

     b.
妒忌	的	破坏性	如何?
Dùjì	*de*	*pòhuàixìng*	*rúhé?*
envy	ASSOC	destrutiveness	how?

'How <u>destructive</u> is envy?'

     c. <u>Envy drives the wheels</u>. It makes things happen.

d. 嫉妒　也　是　促使　人类　进取　的　　某　种　<u>动力</u>。
Jídù　yě　shì　cùshǐ rénlèi　jìnqǔ　de　　mǒu zhǒng dònglì.
envy　also　be　drive human progress ASSOC some kind　force
'Envy is also <u>a force</u> that drives human progress'.

3.1.9. *ENVY IS AN EVENT/ACTION*

This conceptual metaphor presents ENVY as an action or event typically described with emotion-causing verbs such as 'evoke, promote, provoke' in English and *yinqi* 'cause' or *zhaozhi* 'provoke' in Chinese.

(12)　a. It is too choked with love to <u>incite envy</u>, too humble for admiration, and still too startling to escape astonishment.

　　b. 这　引起　了　他　的　　妒嫉。
　　Zhè yǐnqǐ　le　tā　de　　dùjí.
　　this cause PFV him POSS envy
　　'This <u>caused his envy</u>'.

3.1.10. *ENVY IS A COMPLEXION COLOR*

In this metaphor, being envious is often described as a colour of complexion to express the intensity of envy. It is notable that in English it is mostly the green colour that is associated with ENVY as shown in (13a). In some cases, the colour pale is also used to depict ENVY as in (13b). In contrast, it is almost exclusively the red colour that is associated with ENVY in Chinese, as exhibited in (13c).

(13)　a. On Thanksgiving, the Obamas had a feast that would have made Marie Antoinette <u>green with envy</u>.

　　b. The sisters stood in the corner, <u>pale with envy</u>.

　　c. 她的　脸　上　立刻　　泛　出　愤　妒　的
　　Tāde　liǎn shàng lìkè　　fàn chū fèn dù de
　　her　face up　immediate suffuse out rage envy ASSOC
　　红色　来。
　　hóngsè lái.
　　red　come
　　'Her face immediately turned <u>red with raging envy</u>'.

3.1.11. *ENVY IS FIRE*

This conceptual metaphor is used extensively in Chinese, but relatively infrequently in American English. It often conveys the meaning or image of the starting, intensifying, or dying out of ENVY as a fire (e.g. spark the envy, ignite envy, burn with envy, *duhuozhimao* 'gushing fire of envy', *duhuozhongshao* 'burning fire of envy', and *duhuocongsheng* 'spreading fire of envy'). (14) provides two examples in context from our corpus data.

(14)　a. John Travolta burns up the dance floor as well as <u>inflaming the envy of men</u> and the hearts of women.

b. 嫉妒 是 一 把 烈 火, 会 毁灭 一 个 人。
Jídù Shì yī bǎ liè huǒ, huì huǐmiè yī gè rén.
envy Be one CLF strong fire, can destroy one CLF person
'Envy is a raging fire that can destroy a person'.

Finally, it is noteworthy that there are also some other metaphors with a very low frequency in both American English and Chinese data. For instance, ENVY is conceptualized as a harmful or lethal weapon, as shown in (15a-b). Similarly, ENVY is sometimes portrayed as a poison or a wrongdoing. However, it is also occasionally presented as a virtue. Examples (15c-g) illustrate such occurrences.

(15)   a. He wanted to shout in Tommy's face, stabbed with sudden envy.

b. 妒忌 会 撕 碎 我 的 心, 会 使 我 立刻 就 疯狂。
Dùjì huì sī suì wǒ de xīn, huì shǐ wǒ lìkè jiù fēngkuáng.
envy will tear smash my POSS heart, will make me immediately at-once crazy
'Envy will rip my heart apart and drive me crazy immediately'.

c. How do you prevent yourself from having a toxic envy of people who could do things that you cannot?

d. 嫉妒 的 毒 一旦 深 入 心灵, 便 使 患
Jídù de dú yī dàn shēn rù xīnlíng, biàn shǐ huàn
envy ASSOC poison one day deep into soul, then make suffer
此 病 的 人 加倍地 患 病。
Cǐ bìng de rén jiābèide huàn bìng.
this illness ASSOC person doubly suffer illness
'Once the poison of envy penetrates the soul, it causes those afflicted with the illness to suffer even more'.

e. Envy is a deadly sin, Mary!

f. 甚至 啜 乳 的 婴儿 也 充满 了 罪恶, 例如:
Shènzhì chuò rǔ de yīng'ér yě chōngmǎn le zuì'è, lìrú:
even sip milk ASSOC baby also full PFV sin, example:
贪食、 嫉妒 和 其他 一些 可怕 的 邪恶。
tānshí, jídù hé qítā yīxiē kěpà de xié'è.
gluttony, envy and other some dreadful ASSOC evil
'Even suckling babies are full of sins, such as gluttony, envy, and some other dreadful evils'.

g. 曼青 未 始 不 承认 '妒 为 妇
*Mànqīng wèi shǐ bù chéngrèn '*dù* wèi fù*
Manqing NEG initial NEG acknowledge 'envy be woman
人 美德'。
rén měidé'.
person virtue'
'Manqing initially did not deny that "envy is a virtue for women"'.

It is also important to note that the metaphor ENVY IS A CLIMATE ELEMENT is present in Chinese, but not attested in our English data. An illustration of this metaphor is provided as follows.

(16) 我　　一向　　认为　　那　　妒忌　的　　　狂飙疾风,　　只是　　袭击
Wǒ　yīxiàng　rènwéi　nà　dùjì　de　　kuángbiāojífēng,　zhǐshì　xíjí
I　　always　　think　　that　envy　ASSOC　wild gale　　　only　　attack
着　　　高　　楼　　　危　　塔,　　摇撼　　着　　　大　　树
zhe　Gāo　lóu　　wēi　tǎ,　　yáohàn　zhe　　dà　　shù
PROG　high　building　peril　tower,　shake　PROG　big　tree
的　　　最　　高　　枝。
de　　zuì　gāo　zhī.
POSS　most　high　branch
'I have always believed that the wild gusts of envy would only attack tall buildings and perilous towers and shake the highest branches of tall trees'.

The distributions of these conceptual metaphors of ENVY in the two languages are presented in Table 2 ordered by frequency. The cross-genre distributions of the various conceptual metaphors in English are provided in Table 3.

As Table 2 shows, the metaphors of ENVY used in American English and Chinese are to a larger extent similar. First, of the 16 conceptual metaphors of ENVY reported in Table 2, all are found in Chinese and 15 are attested in American English. This indicates that the two languages utilize the same 15 conceptual metaphors to structure the concept of ENVY. Second, similarity has been observed in the frequency and productivity of the conceptual metaphors found in our data. The metaphor ENVY IS AN OBJECT, which constitutes 55.71% of the metaphor tokens in American English and 36.31% in Chinese, is the most frequently used envy metaphor in both languages. Third, the following five metaphors are among the top eight most productive ones with at least 40 tokens in both languages: ENVY IS AN OBJECT,

Table 2. Distribution of envy metaphors in American English and Chinese

Source domains in English	Number of tokens	Percentage of tokens	Source domains in Chinese	Number of tokens	Percentage of tokens
OBJECT	649	55.71%	OBJECT	362	36.31%
COMPLEXION COLOR	90	7.73%	SUBSTANCE	165	16.55%
SUBSTANCE	90	7.73%	FIRE	96	9.63%
DISEASE/PAIN	82	7.04%	DISEASE/PAIN	85	8.53%
ANIMATE/BOTANIC BEING	59	5.07%	EVENT/ACTION	71	7.12%
LOCATION	42	3.61%	LOCATION	71	7.12%
EVENT/ACTION	32	2.75%	ANIMATE/BOTANIC BEING	40	4.01%
FORCE	30	2.58%	FORCE	38	3.81%
ENEMY/OPPONENT	22	1.89%	PHYSICAL SENSATION	18	1.81%
FIRE	19	1.63%	ENEMY/OPPONENT	17	1.71%
WRONGDOING	18	1.55%	WRONGDOING	12	1.2%
PHYSICAL SENSATION	16	1.37%	POISON	7	0.7%
WEAPON	13	1.12%	WEAPON	5	0.5%
POISON	2	0.17%	CLIMATE ELEMENT	4	0.4%
VIRTUE	1	0.09%	COMPLEXION COLOR	4	0.4%
			VIRTUE	2	0.2%
Total	1165	100%	Total	997	100%

Table 3. Envy metaphors across genres in the American English and Chinese corpora

American English							
Genre	OBJECT	SUBSTANCE	DISEASE/PAIN	LOCATION	ANIMATE/BOTANIC BEING	Other[a]	Total
Spoken	51	5	6	0	1	14	77
Fiction	114	35	32	13	16	61	271
Newspaper	109	4	6	1	2	19	141
Magazine	106	14	12	4	13	35	184
Academic	53	12	1	6	8	15	96
Web	87	9	8	11	3	26	144
Blog	79	8	11	6	12	39	154
Movie/TV[b]	50	3	6	1	4	34	98
Total	649	90	82	42	59	243	1165
Chinese							
Spoken	1	0	0	0	0	0	1
Literature[c]	86	48	12	7	7	51	211
Translation	128	51	25	31	16	114	365
Newspaper	109	48	34	25	13	79	308
Academic	2	2	0	0	0	0	4
Web	18	5	5	3	1	13	45
Essay	8	8	6	4	1	9	36
Movie	6	2	0	0	1	1	10
History	4	1	3	1	1	5	15
Drama	0	0	0	0	0	2	2
Total	362	165	85	71	40	274	997

[a]We only report the top five conceptual metaphors and combine the rest of the metaphors into the 'other' category for their low frequency.
[b]In CCL, both the 'literature' and 'translation' genres contain fiction exclusively.
[c]Movie and TV are listed as two different genres in COCA, but we combine them because the two are listed as one genre in CCL.

ENVY IS A SUBSTANCE, ENVY IS A DISEASE/PAIN, ENVY IS A LOCATION, and ENVY IS AN ANIMATE/BOTANIC BEING. The less frequent and productive metaphors of envy are also the same in both languages. They are those metaphors that have WRONGDOING, WEAPON, POISON, and VIRTUE as source domains.

Important differences between American English and Chinese are also observed in the metaphorical conceptualizations of envy. First, there is one metaphor used only in Chinese: ENVY IS A CLIMATE ELEMENT, which is not attested in American English. Second, the metaphorical representation of envy as a COMPLEXION COLOR is the second most productive metaphor of ENVY in American English, which is much more frequent and productive than in Chinese (7.73% versus 0.40%). In contrast, the metaphor ENVY IS A FIRE is used far more frequently in Chinese than in American English (9.63% versus 1.63%). It is the third most productive metaphor in Chinese. Third, a closer analysis of the metaphorical expressions in the data will reveal that ENVY is characterized or portrayed with the use of a variety of items from similar conceptual source domains, but they highlight different aspects of the conceptualizations of this emotion across the two languages. For example, while both American English and Chinese depict envy as a taste sensation, they differ in the specific tastes chosen to represent the emotion, with American English favouring the taste of bitterness (e.g. *bitter envy*) but Chinese opting for the taste of sourness (e.g. *suan suan de duji* 'sour envy'). Similarly, both American English and Chinese metaphorically structure the concept ENVY as A COMPLEXION COLOR

metaphor, but the colors chosen for this metaphor differ, with green being used extensively in English along with some pale tokens and red being preferred in Chinese.

Regarding the cross-genre distributions of the various conceptual metaphors in American English and Chinese shown in Table 3, clearly fiction in both languages boasts by far the highest use of metaphors (for, as explained in our note under Table 3, both the literature and translation genres in Chinese contain fiction exclusively), a finding that is similar to that reported in Díaz-Vera and Caballero's (2013) study on JEALOUSY in American English and Spanish. The frequencies of metaphors in the other genres that were included in our study are also fairly similar to those found in Díaz-Vera and Caballero's (2013) study except that the frequency of metaphors in spoken Chinese was very low, but this may be caused by the extremely small size of the spoken data in the Chinese corpus (with spoken data accounting for only 0.26%, i.e. less than 1%, of the Chinese corpus).

3.2. *Behavioural profiles of the ENVY metaphors in American English and Chinese*

Having identified and discussed the conceptual metaphors of ENVY in American English and Chinese, we now examine the behavioural profiles of the most frequently used metaphors in the two languages by adopting a binary correspondence analysis. In particular, we included, in this correspondence analysis, the five metaphors whose frequencies were ranked among the highest in both languages (listed in Table 4 with their frequencies). Our rationale for including only these top five metaphors was that of the 11 excluded metaphors, one (CLIMATE ELEMENT) was used only in one language (Chinese), two (COMPLEXION COLOR and FIRE) had a high frequency in only one language, and the remaining eight all registered a relatively low frequency (all below 40 in at least one language). We first performed a chi-square test for independence, which reveals statistically significant differences ($df = 4$, $p < 0.001$) between the two languages. Then, we conducted a binary correspondence analysis. Figure 1 presents the results of this analysis, which exhibits the associations of the conceptual metaphors with the factors of 'cause', 'evaluation', 'intensity', and 'inter-connections'. The distance between the points in the bi-plot figure indicates the degree of association or disassociation.

The visualization in Figure 1 is reliable, accurately accounting for 71.9% of the variation in the behaviour of the data in the first two dimensions. Thus, the patterns revealed are stable.

From a coarse-grained perspective, the plot divides into two general halves, one featuring mainly those envy metaphors prominent in American English, while the other figuring largely envy metaphors eminent in Chinese. The SUBSTANCE,

Table 4. Top five conceptual metaphors of ENVY in American English and Chinese

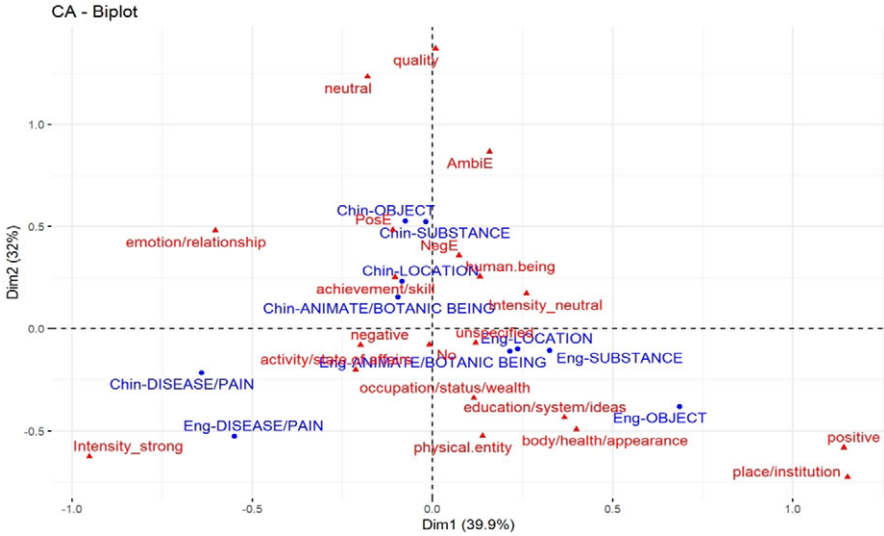| Source domain	Frequency in American English	Frequency in Chinese
OBJECT	649	362
SUBSTANCE	90	165
DISEASE/PAIN	82	85
LOCATION	42	71
ANIMATE/BOTANIC BEING	59	40
Total	922	723

Figure 1. Behavioural profiles of the top five metaphors of ENVY in American English and Chinese.

LOCATION, ANIMATE/BOTANIC BEING, and OBJECT metaphors of envy are used in the Chinese cluster in the upper-left quadrant, while these metaphors are used in the English aggregate in the lower-right quadrant. This indicates that, although the five top conceptual metaphors are used frequently in both languages, there are some marked differences in their behavioural profiles.

Before discussing the differences, it is necessary to point out, though, that there is one noteworthy similarity: the very close proximity between the American English and Chinese uses of the metaphor ENVY IS A DISEASE/PAIN clustered in the lower-left quadrant. Both the American English and Chinese uses of this metaphor are plotted near the following three factors: 'negative' EVALUATION, 'strong' INTENSITY, and the 'activity/state of affairs' CAUSE. The result suggests that this conceptual metaphor is used in an almost identical fashion in American English and Chinese. The finding that the emotion envy depicted as a DISEASE/PAIN caused by activity/state of affairs is highly intense supports the argument that emotion intensity tends to be associated with high physiological arousal or excitement (Soriano, 2013).

Concerning the differences, first, in the upper-left quadrant, there is a relatively tight-knit cluster of the envy metaphors used in Chinese, including the ENVY as A LOCATION, OBJECT, ANIMATE/BOTANIC BEING, and SUBSTANCE metaphors. The key factors concerning the use of this group of metaphors in Chinese are three CAUSE variables, that is 'achievement/skill', 'human being', and 'emotion/relationship', indicating that these three variables constitute the main causes for ENVY presented in the four metaphors in Chinese. Particularly noteworthy is the near overlapping of the CAUSE 'achievement/skill' with the LOCATION metaphor, suggesting that 'achievement/skill' is the most likely cause for the ENVY IS A LOCATION metaphor in Chinese. Another important point is that while the four metaphors are located in the upper-left quadrant where the 'neutral' EVALUATION is, they are actually closer to the 'negative' EVALUATION in the lower-left quadrant.

It appears to indicate that the four metaphors in Chinese tend to be negative, but could also be neutral and even positive sometimes.

In contrast to the above four metaphors used in Chinese, the metaphors such as LOCATION, SUBSTANCE, ANIMATE/BOTANIC BEING, and, to a certain degree, OBJECT used in English aggregate in the lower-right quadrant. They are located close to the CAUSE variables of 'occupation/status/wealth' and 'physical entity', implying that the latter two are the main causes for ENVY being presented in these metaphorical terms. Another notable point is that the OBJECT metaphor is very close to the CAUSE variables of 'body/health/appearance' and 'education/ system/ideas', and it is also quite near 'positive' EVALUATION. This implies that 'body/health/appearance' and 'education/system/ideas' are most likely to engender the ENVY IS AN OBJECT metaphor in English and, when so used, ENVY is viewed quite positively. The most noteworthy finding here is perhaps that the CAUSE variable 'place/institution' is situated right under 'positive' EVALUATION, suggesting that when places and institutions are the targets of envy, ENVY is viewed very positively in American English, such as 'Hungary was the envy of its neighbors'.

One other difference is that the envy metaphors used in Chinese shown in the upper-left quadrant are closely associated with the INTER-CONNECTION variables of 'negative emotion' and 'positive emotion', but no such association is observed for the envy metaphors used in English located in the lower-right quadrant. Does this mean that the emotion envy is often mentioned together with other negative and positive emotions only in Chinese? The answer is clearly no, based on a close analysis of our results. According to the results, the emotion envy is mentioned together with other positive and negative emotions in both languages, but its occurrences with other emotions are substantially more frequent in Chinese than in American English. Of the 723 envy metaphor tokens used with the top five metaphors in Chinese, there are 160 tokens (22.1%) in which *du* co-occurs with other emotions, but only 84 (9.1%) of the total 922 envy metaphor tokens in American English co-occur with other emotions. In other words, the number of metaphorical envy tokens occurring with other emotions in Chinese doubles that in American English, resulting in the bi-plot figure showing that Chinese envy metaphors tend to co-occur with other positive and negative emotions.

One more interesting difference observable in the bi-plot figure is that whereas the principal causes for the major ENVY metaphors used in Chinese shown in the upper-left quadrant are 'achievement/skill' and 'emotion/relationship', the main causes of the primary ENVY metaphors used in American English displayed in the lower-right quadrant included 'occupation/status/wealth', 'body/health/appearance', 'physical entity', and 'place/institution'. This indicates that individuals' success and relationships (mostly in romance) tend to be the main causes or targets of envy in Chinese. In contrast, personal appearance, health, wealth, social status, institutions, and places constitute the major causes and targets of envy in American English.

Finally, a general difference can be inferred: overall, ENVY appears to be more likely presented or viewed as being positive in American English than in Chinese thanks to the findings reported above that good body/health/appearance, places (e.g. cities), and institutions (e.g. prestigious universities) are often the targets of ENVY in American English but not in Chinese. As is well known, these targets of envy are what human beings generally love to possess or have access to as valuable things without any negative connotations or ramifications. This very difference in the

ENVY concept between the two languages demonstrates that ENVY is conceptualized positively much more often in American English than in Chinese.

4. The motivations underlying the similarities and differences between American English and Chinese

4.1. The motivations underlying their similarities

To begin with, a likely reason for the two languages sharing several same conceptual metaphors (e.g. OBJECT, SUBSTANCE, and DISEASE/PAIN) as the most productive ones is that metaphors with these source domains belong to what are called universal conceptual metaphors (Kövecses, 2006), that is conceptual metaphors that are found in almost all languages. Such conceptual metaphors have generally derived from common universal experiences and, in some cases, as Kövecses (2006) argues, from certain universal aspects of human physiology and embodied experience. Regarding the high popularity of the ENVY IS AN OBJECT and ENVY IS A SUBSTANCE metaphors in both languages, the most likely reason is perhaps the universal human tendency to conceptualize abstract ideas, including emotions, in concrete physical terms, with each of the two metaphors focusing on one aspect of ENVY. The OBJECT metaphor conceivably highlights ENVY as a controllable emotion, an emotion, which, according to Stefanowitsch (2006), tends to be conceptualized as an object because, just as an object can often be kept, moved around, discarded, and so forth based on our experience, a controllable emotion can thus also be manoeuvred by the emoter, as shown by examples (1a-d). However, the SUBSTANCE metaphor likely underscores ENVY as an emotion possessing various forms and levels of force/intensity, as evidenced by examples (2a-d). By the same token, the high use of the ENVY IS A LOCATION/CONTAINER metaphor in both languages is also likely driven by the universal human tendency to conceptualize abstract ideas in concrete physical entities. However, unlike the OBJECT and SUBSTANCE metaphors, the LOCATION/CONTAINER metaphor highlights ENVY as the source of various emotional and physical problems that it often engenders as illustrated by examples (9a-b).

Similarly, the fact that the metaphor ENVY IS A DISEASE/PAIN is among the top five most frequent conceptual metaphors and is used in a largely identical fashion (i.e. as a strongly negative emotion) in both languages suggests that the physical experience of ENVY is similar in the two cultures. Individuals who are consumed by envy do appear to experience the same feeling as the one caused by an illness or pain. This is further evidenced by our finding that the instantiations of this metaphor in the two languages all emphasize the intensity of the sufferings caused by envy through expressions, highlighting the loss of rationality and control. Other metaphors based on shared perceptual/physical experience include ENVY IS AN ANIMATE/BOTANIC BEING as shown in 'Rachel felt the bite of old envy newly sharpened by her husband's recent coolness toward her' and 'I could see the envy sprouting in their faces'. In these examples, the conceptual mappings are based on common human bodily experiences with animals and plants.

In sum, American English and Chinese converge in many aspects of their metaphorical conceptualizations and expressions of the envy emotion deeply grounded in shared bodily experiences.

4.2. The motivations underlying their differences

Before we discuss the motivations for their differences, it is important to note that most of the differences between the two languages do not lie in the conceptual metaphors or their source domains but in the items selected from a given domain for a specific metaphorical expression. This type of difference, we argue, belongs to what Kövecses (2006, p. 164) identifies as a variation in "the aspects of source and target [domains]" where the use of the same conceptual metaphor may vary across languages and cultures. Such variation occurs because, in the case of universal metaphors based on bodily experience, "The bodily basis on which universal metaphors could be built is not utilized in the same way or to the same extent in different languages and varieties" (Kövecses, 2006, p. 170). In particular, in metaphorical expressions for emotions, speakers of different languages may focus on different aspects of a source domain due to some "differential cognitive preferences" or "differential experiences" resulting from different cultural contexts and/or histories, two main reasons for cross-language metaphor use according to Kövecses (2006, pp. 167–171).

The use of the COMPLEXION COLOR metaphor provides a good example. While this conceptual metaphor is expressed almost exclusively by the red colour in Chinese, it is conveyed mostly by the green or pale colour in American English. A reason for this difference is that *red* in Chinese is associated with *fire*,[4] which, as noted above, is an important ENVY metaphor in Chinese. In fact, there is an idiomatic phrase with *red* for ENVY: *yanhong* 'eye red' as used in *Tamen yanhong ni* (They eye red you 'They envy you'.). However, in American English, both *green* and *pale* are associated with sickness, a practice that was reportedly passed down from the ancient Greeks, who viewed a green complexion as a sign of illness, envy, and other unpleasant emotions because, according to ancient Greek medicine, a green complexion was the result of an overproduction of bile in one's digestive system (Neaman & Silver, 1995). In short, the main cause of difference here appears to be cultural/ historical differential experience and differential cognitive preferences.

Another example can be found in the SENSATION metaphor where sourness is the dominant taste for ENVY in Chinese, but bitterness is the one in English. In discussing this specific difference and its motivations, it is imperative to recall that Chinese has another widely used word for ENVY: *cu* 'vinegar', which is not included in the data analysis of this study. As noted earlier, *cu* is used metaphorically to stand for ENVY due to its sourness. There are even numerous idioms and folk adages involving the use of *cu* for ENVY in Chinese, such as *zhengfeng chicu* (fight wind eat vinegar 'be jealous of a rival'), *fengyan cuyu* (wind word vinegar word 'baseless rumours out of envy'), and *cuhai shengbo* (vinegar ocean make wave 'a tempest of jealousy'). A well-known reason for the extensive use of the *cu* 'vinegar' for ENVY is perhaps the fact that cooking/eating is a dominant source domain of metaphor in Chinese used for almost any target domain (Link, 2013; Liu, 2002). The extensive use of cooking/eating metaphor in Chinese has likely resulted from the fact that on the one hand, China is a country well-known for having historically suffered repeatedly from famine, but on the other hand, the Chinese people are famous for treating

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[4]It is necessary to mention that red in Chinese is also used for other emotions, such as ANGER, HAPPINESS, and SHAME, but there does not appear to be any inherent inter-connection in the use of red for these different emotions.

cuisine as an art striving to make foods that, in their words, have perfect colour, aroma, and taste simultaneously (Liu, 2002). Clearly, the Chinese adoption of sourness and the English selection of bitter taste for the metaphorical conceptualization of ENVY IS A SENSATION provide further support for Kövecses's (2006) theory that cultural/historical differential experiences and differential cognitive preferences constitute the main motivations for cross-language variation in metaphor use.

Regarding the motivations for why the ENVY IS A FIRE metaphor is used much more frequently in Chinese than in American English, a likely reason is that, in Chinese, fire is one of the well-known 'five elements' used in traditional Chinese philosophy and medicine to describe and classify a person's character type ('metal', 'water', 'wood', and 'earth' are the other four types). Individuals of each of the five personal character types are believed to possess a series of both positive and negative characteristics. The negative characteristics of individuals of the 'fire' type include being overly competitive or even combative, narcissistic, and prideful. It is also important to note that 'fire' is often associated with ANGER as shown in the common Chinese expression *mandu nuhuo* (a belly filled with fire of anger 'extremely angry'). All this helps explain why an envious person is often viewed as a person with 'fire' in Chinese. Thus, the much higher use of the fire metaphor for ENVY in Chinese can be said to have stemmed from a Chinese historical experience and can hence be attributed to historical differential experience.

Concerning the metaphor ENVY IS A CLIMATE ELEMENT that was found in the Chinese data but not attested in the English data, there does not appear to be any convincing motivations. One possible reason is that China had remained largely an agricultural society until the late 1980s or early 1990s when economic reforms began to bring about rapid industrialization in the country. Living as farmers, most Chinese citizens then were likely to be more directly affected by climate elements than residents of the major English-speaking countries, which have gained the status of developed countries for a long time. In other words, Chinese speakers tend to be more aware of climate elements than American English speakers. The aforementioned reason for the use of the CLIMATE ELEMENT metaphor for ENVY in Chinese is largely the result of a contextually differential experience.

Regarding why ENVY is more positive in American English than in Chinese, it might be explained by differential cognitive preferences, whereby Chinese speakers have historically decided that the positive aspect or use of ENVY found in American English should be conveyed using a different word: *xianmu.* In Chinese, when discussing one's desire or envy for having a good appearance, health, and access to beautiful cities and prestigious universities, speakers will generally not use the ENVY word *du*, but resort to the word *xianmu* whose meaning is essentially that of the positive uses of envy in English. More importantly, according to Google Translate, the word *xianmu,* like the word *du,* is also translated into 'envy' in English. In other words, the Chinese ENVY word *du* does not really possess the positive conceptualizations found in English because such positive English conceptualizations of ENVY are expressed by the Chinese word *xianmu.*

In short, our above discussion has demonstrated that the similarities between the two languages are grounded largely on common bodily experience, while the differences are motivated by either various culturally differential experiences or differential cognitive preferences. Such cross-cultural differences are fully understandable because every aspect of human experience is filtered through culture (Gibbs, 1999;

Yu, 1998). The results of our study offer support for the theory that different languages may not only use universal conceptual metaphors for emotions but also employ divergent metaphorical expressions with different foci on the various aspects of the same source domains (Chen, 2022; Kövecses, 2006). In fact, Chen (2022, pp. 219–224) provides an interesting account of the latter practice, which he labels as achieving "effectiveness through domain mapping" in metaphor use, a practice that helps highlight the unique and interesting differential experiences, cognitive preferences, and perspectives across cultures and individuals.

5. Conclusion

Via a corpus analysis combining qualitative and multifactorial usage-based quantitative methods, this study has presented a detailed cross-language comparison of the metaphorical conceptualizations of the common emotion ENVY in American English and Chinese. In particular, the study has not only examined the similarities and differences in the distributions of the ENVY metaphors between American English and Chinese but also quantitatively uncovered the behavioural profiles of the frequently used ENVY metaphors across the two languages, yielding some important and interesting findings as reported above including the motivations for the key similarities and differences.

As the first corpus-based comparative study of the metaphorical conceptualizations of ENVY in English and Chinese, this study has enriched research on emotion conceptualizations in general and, particularly, on such research in Chinese because, as noted earlier, there has been little research on the conceptualizations of ENVY in Chinese. Theoretically, the study has adduced evidence in support of the argument that metaphorical conceptualizations of emotions are subject to human experience soaked in culture, which, in turn, supports the theory that metaphor use boasts both universality and variation across languages (Kövecses, 2006). This can be clearly seen in the universally embodied experience-based conceptual metaphors (e.g. the OBJECT/SUBSTANCE/DISEASE metaphors) and differential experiences and cognitive preferences-engendered variations in specific linguistic metaphors across the two languages well documented in this study. Methodologically, this study provides evidence for Glynn and Biryukova's (2022) claim that quantitative tools are very important for the description of conceptual metaphors. This is because, as shown in this study's analysis of the conceptual metaphors of ENVY, a corpus-based multifactorial analysis of metaphors and emotions can unravel the complex conceptual structure of a given emotion.

There are, however, a few limitations in this study. First, we did not include *jealousy* and *cu* (a Chinese synonym for *du* 'envy') in our analysis. Second, the American English and Chinese corpora differ substantially in size. Even though we employed normalized frequency in item selection, the corpus-size difference could still have affected the results of the study. Third, this study covered only two languages and the results may not be generalizable to other languages. To address these limitations, future research on ENVY conceptualizations will need to include *jealousy* and *cu* along with *envy* and *du* to gain a more comprehensive understanding of this emotion. Furthermore, researchers should try to use comparable corpora in size and, also, examine the conceptualizations of this emotion in other languages. In addition, future research can

combine corpus analysis with experimental psychological methods using cutting-edge technology to triangulate research results and enhance research validity and reliability.

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