

## The use of body part terms in Taiwan and China: Analyzing 血 xue ‘blood’ and 骨 gu ‘bone’ in Chinese Gigaword v. 2.0

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### Abstract

This article, examining the qualia roles retrieved from the metaphorically/metonymically used body part terms in news texts, addresses the similarities and differences of such uses in Taiwan and China. Analyzing the behavior of 血 xue ‘blood’ and 骨 gu ‘bone’, two corporeal terms with relatively high visibilities compared with 肉 rou ‘flesh’ and 脈 mai ‘meridian’ (Duann and Huang 2015) in the Chinese Gigaword Version 2 (Huang 2009), this research have the following findings: (1) For the use of 血 xue ‘blood’, the agentive role predominates in both Taiwan and China, which is not in line with the argument in Duann and Huang (2015). (2) Regarding the use of 骨 gu ‘bone’, the telic role predominates. However, China uses it in personification much more often than Taiwan does. (3) The unique dimension of a place triggers the use exclusive to the place.

### 1 Introduction

Embodiment, referring to ‘understanding the role of an agent’s own body in its everyday, situated cognition’ (Gibbs 2006: 1), is a manifestation of the significance of the human body in cognition. Embodiment, of which the tenet is that meaning stems out of ‘the organic activities of embodied creatures in interaction with their changing environments’ (Johnson 2008: 11), has been drawing scholars’ attention for more than three decades.

While providing cognitive accounts for meaning generation and functioning as the foundation of conceptual metaphor understanding and interpretation (e.g. Yu 2003, 2007; Lakoff and Johnson 1980, 1999; Johnson 2006), embodiment does not address what triggers conceptual metaphors, or the constraints which motivate the selection of a corporeal term to represent another concept.

Incorporating the theories of embodiment and of generative lexicon (Pustejovsky 1991, 1995), Duann and Huang (2015) proposes a method to uncover what constrains the use of a body part in the stead of a comparatively abstract notion. They focus on the qualia structure of the corporeal terms as the source concept and testify their approach with authentic corpus data. Examining the behavior of four atypical body parts, 血 xue ‘blood’, 肉 rou ‘flesh’, 骨 gu ‘bone’ and 脈 mai ‘meridian’ in Sinica Corpus (Chen et al. 1996), they contend that the visibility of these body parts and the telic role from the qualia structure constrain the selection. In this current research, we explore the metaphorical/metonymical uses of 血 xue ‘blood’ and 骨 gu ‘bone’, the two corporeal terms with relatively high visibilities compared with 肉 rou ‘flesh’ and 脈 mai ‘meridian’ (Duann and Huang 2015) in the Chinese Gigaword Version 2 (Gigaword2, Huang 2009), and finds out: (1) Regarding the use of 血 xue ‘blood’, the agentive role predominates in both Taiwan and China, which differs from the argument in Duann and Huang (2015). (2) Concerning

the use of 骨 gu ‘bone’, the telic role still predominates. However, China tends to use it in personification much more often than Taiwan. (3) The political ecology of Taiwan motivates the use unique to Taiwan. For the first finding we would like to amend the argument in Duann and Huang (2015): instead of the telic role only, we think both the telic and agentive roles constrain the selection, as these two roles represent eventive dimensions which reveal the interaction between the object/entity and human beings. For the second finding, we claim that China tend to use certain body parts in a more holistic way, which is attributable to the genre of the corpus. For the third finding, we argue certain dimensions of a place lead to the use exclusive to the place.

## 2 Research Questions and Hypotheses

This research aims to answer the following questions:

- (1) What are the similarities and differences between the uses of identical body part terms in Taiwan and China?
- (2) What qualia role dominates the use of the body part terms in the corpus at issue?
- (3) Does a specific genre influence the metaphorical/metonymical use of body part terms?
- (4) How do we explain the findings?

This research is conducted based on the following hypotheses:

- (1) As Mandarin Chinese is the major/official language in both Taiwan and China, the metaphorical/metonymical uses of body part terms in Taiwan and China should be similar to a large extent.
- (2) Genre plays a role in the uses of an identical corporeal term in Taiwan and China.
- (3) There should be metaphorical/metonymical uses of a body part term exclusive to Taiwan or China.

## 3 Data and Method

### 3.1 Data

The corpus data comes from the Chinese Gigaword Version 2.0 (henceforth Gigaword2), which is a part-of-speech tagged corpus created by scholars at Academia Sinica (Huang 2009). This corpus, con-

taining 831,748,000 Chinese words, is composed of news texts from three sources of news: Central News Agency (CNA, 501,456,000 words) in Taiwan, Xinhua News Agency (XIN, 311,660,000 words) in China, and Lianhe Zaobao (ZBN, 18,632,000 words) in Singapore. As we aim to compare the similarities and differences between Taiwan and China, we take the data from CNA and XIN. There are 4,670 occurrences of 血 xue ‘blood’ in CNA and 3,760 in XIN. Regarding the occurrences of 骨 gu ‘bone’, 1,006 hits are found in CNA and 1,198 in XIN. Table 1 below summarizes the two sub-corpora:

| Sub-corpus                                   | CNA         | XIN         |
|--|-------------|-------------|
| Total number of words                        | 501,456,000 | 311,660,000 |
| Total number of occurrences of 血 xue ‘blood’ | 4,670       | 3,760       |
| Total number of occurrences of 骨 gu ‘bone’   | 1,006       | 1,198       |

Table1. Basic information of CNA and XIN in Gigaword2

### 3.2 Method

We searched 血 xue ‘blood’ and 骨 gu ‘bone’ in the two sub-corpora of Gigaword2 respectively through the Word Sketch function at <http://158.132.124.36/>. We go through the following four categories:

- (1) and/or, which shows the words occurring in parallel with the body part
- (2) Subject\_of, which displays the behavior of the words functioning as the subject in the syntactic structure
- (3) Object\_of, which shows the behavior of the words when functioning as the object in the syntactic structure
- (4) Measure, which lists the classifiers of these body parts

We manually examine all the hits of all the entries in each category, in order to check whether the body part terms are used literally or metaphorically/metonymically.

We then apply the modified version (Duann and Huang 2015) of metaphor identification procedure (MIP, Pragglejaz 2007) to identify the metaphorically/metonymically used words so as to better analyze Chinese data. The modified version focus-

es not only on the basic contemporary meaning of a lexical unit as a whole, but also on the meaning of the parts in compounds. Examining how the body part terms behave in compounds is important, because a word usually undergoes metaphorical or metonymical extension when functioning as a part of a compound.

For example, the contemporary meaning of 鐵骨 tiegu in the online dictionary of the Ministry of Education (MOE), Taiwan, is

比喻意志堅貞不變<sup>1</sup> (Metaphorical) unyielding, uncompromising<sup>2</sup>

According to the MOE dictionary, the meaning of the morpheme 骨 in the compound 鐵骨 deviates from its original definition:

動物體內支持身體的支架組織 ‘The frame inside the body of an animal which supports the body’

In other words, the morpheme 骨 gu ‘bone’ in the compound 鐵骨 has undergone meaning extension. Rather than the internal frame which supports the body, it represents where the specific personal trait resides.

After identifying the metaphorically/metonymically used words, we proceed to retrieve the qualia roles of the body part terms under discussion.

Following the steps described in Duann and Huang (2015), we retrieve the qualia roles of the corporeal terms:

(1) We first examine whether there is more than one sense of the body part at issue. E.g. in Gigaword2, two senses are found in 血 xie “blood”:

Sense 1 refers to the liquid circulating naturally inside human body, and sense 2 to the liquid flowing inside/out of human body due to injury or effort making.

(2) We spell out the qualia structure, i.e. the four roles, of the body part at issue according to the sense(s) found in step (1). The qualia structures

of the two senses of 血 xie “blood” is shown below:

#### Sense 1

Constitutive=...

Formal= liquid, red

Telic= sustain life, carry ethnic tie, carry emotion and personal traits, etc.

Agentive: Natural kind

#### Sense 2

Constitutive=...

Formal=liquid, red, smell, coagulation

Telic=...

Agentive=X which causes blood to flow out of body/body parts

- (3) We investigate the behavior of the body part term in a lexical form and see whether a specific role is highlighted.
- (4) We then go beyond the lexical level into the clausal level to find out the role(s) of the body part which is/are specified at the clausal level.

In Example 1, no specific role is retrieved from 血 xie ‘blood’ at the lexical level. However, when the context, specifically 手 shou ‘hand’ and 沾滿 zhanman ‘stained/covered with’, is taken into consideration, it is found that ‘blood’ here realizes Sense 2, i.e. the liquid flowing inside/out of human body due to injury or effort making. Specifically, ‘blood’ here refers to blood flowing outside human bodies due to injury or killing (thus can stain/cover another’s hands), the agentive role is retrieved. Moreover, the verb 沾 refers to liquid, which realizes the formal role.

#### Example 1

他的手沾滿阿富汗人民的血

‘His hands are stained with Afghanistanis’ blood.’

We proceed to practice the steps and retrieve the qualia roles from all the metaphorically/metonymically used 血 xie ‘blood’ and 骨 gu ‘bone’ of the four categories in Gigaword2, and obtain the results discussed in the following section.

<sup>1</sup> The other definition 鐵鑄的骨架 ‘framework made of iron’ is discarded as it is not used on human being.

<sup>2</sup> The translation of the definition of all the entries in the MOE dictionary is done by the authors.

## 4 Results

### 4.1 Blood

Tables 2 and 3 show the metaphorically/metonymically used 血 in the two sub-corpora:

| Sense (no. of hits) | Target                                     | Qualia Role                | Personification (%)      |
|---------------------|--|----------------------------|--------------------------|
| Sense 1 (25)        | Essence: 13<br>Ethnic tie: 12              | Telic: 25<br>Formal: 11    | 10 (0.214%) <sup>3</sup> |
| Sense 2 (79)        | Wound: 32<br>Death: 38<br>Making effort: 9 | Agentive: 79<br>Formal: 45 | Null                     |

Table2. Metaphorically/metonymically used 血 xue 'blood', its qualia role and personification in CNA

| Sense (no. of hits) | Target   | Qualia Role                               | Personification (%) |
|---------------------|--|---|---------------------|
| Sense 1 (6)         | Close connection: 1<br>Essence: 1<br>Ethnic tie: 2<br>Emotion: 2 | Constitutive : 1<br>Telic: 5<br>Formal: 2 | 2 (0.053%)          |
| Sense 2 (67)        | Wound:10<br>Death: 34<br>Making effort: 23                       | Agentive: 67<br>Formal: 58                | 9 (0.239%)          |

Table3. Metaphorically/metonymically used 血 xue 'blood', its qualia role and personification in XIN

According to Table 2, for Sense 1 of 血 xie 'blood' in CNA, there are 25 occurrences in total, among which 13 refers to the ESSENCE (Example 2) and 12 to ETHNIC TIE (Example 3). Regarding the qualia structure, the telic role is retrieved from 25 occurrences, and the formal role from 11 hits. (Please note that there is no one-on-one correspondence between a figuratively used body part and the qualia roles, as more than one qualia role may be retrieved, which is exemplified by Example 1 above.) Ten occurrences are personification. When it comes to Sense 2, there are 79 occurrences of metaphorically/metonymically used 血 xie 'blood' in total, among which 32 occurrences stand for WOUND (Example 4), 38 for DEATH (Example 5), and 9 for MAKING EFFORT (Example 6).

<sup>3</sup> We divide the frequency with the total number of hits of 血 xie 'blood' in CNA so as to reveal whether personification is significant in this corpus. In this case, it is  $10/4,670=0.214\%$ . Same for the rest personifications.

In terms of the qualia role, 79 occurrences are agentive and 45 are formal. There is no personification of the metaphorically used 血 of Sense 2 in CNA.

#### Example 2

##### ESSENCE IS BLOOD

佛教與儒、道二教，無一不是中國文化的血與肉、骨與髓

'All Buddhism, Confucianism and Taoism compose the blood and flesh, bone and bone marrow [i.e. essence] of Chinese culture.'

血 xie 'blood' here refers to essence. First of all, Chinese culture is personified. Then the essential parts of the personified entity are pointed out in parallel: blood, flesh, bone and bone marrow. We thus consider blood stands for essence in this examples.

#### Example 3

##### ETHNIC TIE IS BLOOD

大家都是流著中國人的血，有難相助

'Chinese blood is flowing in our bodies [i.e. we are all Chinese], and we should help whoever is in need.'

When blood collocates with 流 liu 'flow' and an ethnic group modifies blood, blood stands for ethnic tie.

#### Example 4

##### BLOOD FOR WOUND (in CNA)

看到這些八卦新聞令人吐血

'It makes me vomit blood when reading the gossips'.

#### Example 5

##### DEATH IS BLOOD

戈巴契夫兩手沾滿了立陶宛人的血

'Both hands of Gorbachev are stained/covered with Lithuanian's blood.'

#### Example 6

##### MAKING EFFORT IS BLOOD

每一處繁榮，無不浸透了中國人的血與汗

'The prosperity which is seen everywhere is soaked with the blood and sweat of Chinese people.'

Table 3 shows that, regarding Sense 1 of 血 xie ‘blood’ in XIN, there are 6 occurrences in total, among which 1 represents CLOSE CONNECTION (with something else), 1 ESSENCE, 2 ETHNIC TIE, and 2 EMOTION. In terms of the qualia role, there are 1 constitutive role, 5 telic and 2 formal roles. For Sense 2, there are 10 occurrences of WOUND, 34 of DEATH, and 23 of MAKING EFFORT. Regarding the qualia role, 67 occurrences are agentive and 58 are formal. There are 2 occurrences and 9 occurrences of personification of Sense 1 and Sense 2 respectively in XIN.

What merits attention is the diverging uses of 吐血 ‘to vomit blood’ in CNA and XIN. Originally a symptom caused by a serious wound or disease, 吐血 can be regarded as a metonym of serious wound/disease. However, the use of 吐血 goes a step further to refer to a negative emotion, e.g. anger, aversion, depression, of a person in CNA. On the other hand, in XIN, 吐血 occurs to the personified corporate or group, as exemplified as Example 7 below:

Example 7

BLOOD FOR WOUND in XIN

罰得企業吐了血，誰來創造財富？

‘Who can create prosperity if corporates vomit blood because of the penalties?’

The difference between this use of 血 in Sense 2 in CNA and XIN discloses that, XIN, with its less embodied way which is applied to personified corporates/groups, tends to take a more holistic manner, while CNA still uses this symptom in a more embodied manner, referring to the ongoing emotion of a human being.

What also draws attention is that Tables 2 and 3 reveal something which differs from the argument in Duann and Huang (2015): the agentive role predominates in the metaphorical/metonymical uses of 血 xie ‘blood’ in both CNA and XIN. We thus need to broaden the argument in Duann and Huang to include both telic and agentive roles motivating the figurative uses of body parts, as both involve the eventive dimension in which human beings interact with the entities/objects.

4.2 Bone

Tables 4 and 5 summarize the metaphorically/metonymically used 骨 gu ‘bone’ in the two sub-corpora:

| Sense (no. of hits) | Target                                     | Qualia Role | Personification (%) |
|---------------------|--|-------------|---------------------|
| Sense 1 (13)        | Political orientation: 7<br>Met of body: 6 | Telic: 13   | 3 (0.298%)          |

Table 4. Metaphorically used 骨 gu ‘bone’, its qualia role and personification in CNA

| Sense (no. of hits) | Target                               | Qualia Role             | Personification (%) |
|---------------------|--------------------------------------|-------------------------|---------------------|
| Sense 1 (80)        | Met of body: 78<br>Personal trait: 2 | Telic: 80<br>Formal: 43 | 74 (6.177%)         |

Table 5. Metaphorically used 骨 gu ‘bone’, its qualia role and personification in XIN

According to Tables 4 and 5, only one sense is activated in both sub-corpora, and the telic role of this body part predominates in both sub-corpora. In CNA, there are 13 occurrences in total, among which 7 refer to the POLITICAL ORIENTATION (Example 8), and 6 are used metonymically: BONE FOR BODY (Example 9). Three occurrences are personification. In the XIN sub-corpus, there are 80 occurrences in total, among which 78 are metonymically used and 2 refer to personal trait. Aside from the telic role, the formal role is also retrieved. Personification occurs extensively in the XIN.

The metaphorical/metonymical uses of bone present a more interesting case, though only Sense 1 comes into play in these uses.

First of all, elections in Taiwan triggers a use of 骨 gu ‘bone’ unique to Taiwan: it functions to represent one’s political orientation. Though it can be subsumed under ‘personal traits’, this use is not found at all in the XIN.

骨 gu ‘bone’ representing a person’s political orientation co-occurs with 皮 pi ‘skin’, and the typical structure is X皮Y骨, in which X and Y usually refer to candidates, as exemplified in Example 8 below:

Example 8

POLITICAL ORIENTATION IS BONE (in CNA)

有中常委則說，黨內確實有不少是連皮某種骨



A central standing committee member said, there are quite a few members who are covered with the skin of Lien but carry the bones of other people [i.e. in favor of Lien on the surface but actually support other candidates].

This use, arising due to the political ecology in Taiwan, describes one's political orientation via the use of bone, which is inside the body and supporting it, in contrast to what s/he pretends to vote for, via the use of skin, the outmost part covering the whole body.

Another use is prominent: the metonymical use of 骨 gu 'bone', i.e. BONE FOR BODY, occurs in a less embodied manner; that is, it occurs in the personified industry, city, enterprise, etc, and this is significant in the XIN corpus (6.177%). Moreover, this specific use of 骨 gu 'bone' always co-occurs with 筋 jin tendon/meridian, as in 強筋壯骨 qiangjin zhuanggu 'to strengthen the body' as in Example 9 and 傷筋動骨 shangjin donggu 'to get seriously wounded' as in Example 10.

#### Example 9

##### BONE FOR BODY

電子業「強筋壯骨」見成效

'The electronic industry successfully strengthens his body.'

Example 9 presents several mappings. Firstly, the electronic industry is personified, i.e. THE ELECTRONIC INDUSTRY IS A PERSON. It is inferred from the context that the industry lacks competitiveness, from which another mapping is retrieved: LACK OF COMPETITIVENESS IS WEAKNESS OF THE HUMAN BODY. Something needs to be done to boost the competitiveness of the industry, which is regarded as strengthening the human body: REFORMATION OF THE INDUSTRY IS STRENGTHENING THE HUMAN BODY.

#### Example 10

##### BONE FOR BODY

在上海「傷筋動骨」的大改造中，約有三十萬市民必須搬出家園

'In the large-scaled/drastring reformation of Shanghai, around 300,000 citizens have to move out of their hometown.'

The mappings in Example 10 are more complicated than those of Example 9. Still, the city is personified: THE CITY IS A PERSON. There are problems in this city which need to be tackled, which is conceptualized as disease in a person: PROBLEM IN A CITY IS DISEASE IN A PERSON. The solution, or reformation in this case, will be drastic which will damage a bit to the city in the beginning. This is compared to a surgery, in which a person will be cut up at the first stage in order to settle the medical issue. The mapping thus emerges: SOLUTION TO PROBLEM (REFORMATION) IS SURGERY TO A PERSON.

In terms of the use of 骨 gu 'bone', the telic role still predominates. However, Taiwan and China present different pictures. Taiwan uses 骨 to represent a person's political orientation, which is not found in the XIN corpus. China uses 骨 in personified organization/industry/place much more often than Taiwan does. Overall, we argue that XIN takes a more holistic view, while CNA more analytical, in the use of 骨 gu 'bone'.

## 5 Conclusion

We have analyzed and compared the metaphorical/metonymical uses of two atypical body parts with comparatively high visibility, 血 xie 'blood' and 骨 gu 'bone', in Gigaword2, a corpus of news from Taiwan and China. We have found that the agentive role predominates the use of 血 in both Taiwan and China. We thus broaden the argument in the that work: instead of the telic role only, we think both the telic role and the agentive role constrain the selection, as these two roles represent eventive dimensions which demonstrate embodiment, i.e. the interaction between the object/entity and human beings. In terms of the use of 骨 gu 'bone', the telic role still ranks the highest. However, Taiwan presents a use unique to its political ecology, and China tends to employ it in a less embodied way than Taiwan does, which reveal Taiwan's inclination to use certain body parts in a more analytical way while China in a more holistic way. Whether it is the unique use of 骨 in the CNA sub-corpus, or it is the holistic use of 骨 in XIN, we argue it is attributable to the genre of this corpus, and to the specific dimension of a country.

For the future studies, we aim to explore the rest categories of 血 and 骨, and all the categories of

肉 rou ‘flesh’ and 脈 mai ‘meridian’, so as to get a complete picture of the constraints of the selection of the metaphorical/metonymical uses of these four body parts.

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