Where are the "Monsters" from? The Semantic Evolution of Ancient Chinese Animal Nouns

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Abstract

Ancient images of Chinese animal nouns often include allusions of "monsters". This paper investigates such "monsters" from the perspective of lexical semantic evolution based on diachronic corpora. Disyllabic modifier-head nouns are most likely to involve into semantic shifts, which may mislead people's understanding of some animal images. The linguistic phenomenon can be attributed to adaptations made after the disappearance of the referential objects. Owing to the familiarity and cognitive figures, some sememes were strengthened, and then generated new relationships between the head and modifier, which finally changed the conceptual integration into a whole–part model.

Keywords

Animal nouns, Semantic evolution, Disyllabic, Monosyllabic, Conceptual integration, Sememe.

1. Introduction

Animals are closely associated with human's life, and the naming of them reflects the how human beings conceptualize animals, as well as the world. The study of animal nouns has yielded rich results in studies of various languages. For Chinese language, (Li 2002) used exegetic and phonological methods to explore the origins, characteristics and rules of animal nouns. Cultural historical approaches are also applied to researches such as animal nomenclature (Sterckx 2016), and interpretations of animal nouns in *Er Ya* (尔雅) (Xie 2012), which both had deep investigations of human thinking modes e.g. mysterious thinking, associative thinking, concrete thinking, etc.

However, most previous researches of animal nouns in Chinese focused on corpus studies without referring to images or other types of resources. Image data is significant for the research of animal noun since noun forms may change over time, the researcher's understanding of a term could be inconsistent with that of the writers. For example, (Shen, 2016) demonstrated that the character denoting the globefish in the Song Dynasty differed from that recorded in previous literatures. (Takeda 2017) published a brief analysis of

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monstrous depictions of common animals in the graphic literature since the Song and Ming Dynasties. The animals depicted in such images are often unknown to zoology, and their associated nouns often diverge from the original semantics of the terms. Therefore, if we want to fully understand the origin and evolution of animal nouns in ancient Chinese, it is not sufficient to rely solely on the literal corpus. We must refer to the image data to model the meaning evolution process of animal nouns. It would display vivid changes of animal nouns in ancient Chinese and, in turn, stimulate the exploration of some lexical semantic phenomena that were neglected in previous studies.

In this paper, animal images are collected from the following literatures¹:

- Pharmacological atlases: Outlines of Materia Medica with Pictures (类要图注本草), Compendium of Materia Medica (本草纲目) and Notes of Bronzes and Tablets, Insects and Plants (金石昆虫草木疏);
- General cyclopedias: Album of Three Talents (三才图会) and Collection of Ancient and Present Books (古今图书集成);
- Geographical books: Graphic Books of the Land (坤舆图说);
- Japanese painting books: An Illustrated Book of the Things in the Book of Songs (诗 经名物图解) and An Illustrated Book of the Things in the Book of Songs Compiled and Annotated by Mao Chang (毛诗名物图考).

In addition, two corpora are used for diachronic analysis:

- Database of Basic Chinese Ancient Books²;
- CNCORPUS (Ancient Chinese)³.

The names of animals in ancient Chinese primarily consist of disyllabic words and monosyllabic words.

Most disyllabic animal nouns have modifier-head structures, including two typical types: comparative type, e.g. *hu* (tiger) *yu* (fish) (虎鱼) which means "tiger-like fish", and locational type, e.g. *shan* (mountain) *yang* (goat) (山羊) which means "goat living in the mountain". Additionally, there are some disyllabic binding words composed with two characters which are inseparable, such as *yuan yang* (鸳鸯, mandarin duck) and *qing ling* (蜻蛉, dragonfly). Since the individual characters in binding words do not constitute sememes, the meaning of these words demonstrated few changes in history.

Monosyllabic animal nouns are mostly composed of associative characters or pictophonetic characters, in which a shape symbol is used to represent animal categories, such as *niu* (牛, cattle) in *xi* (犀, rhinoceros), *yu* (鱼,fish) in *li* (鲤, carp) and *niao* (鸟, bird) in *luan* (鸾, phoenix). Such monosyllabic words can be used in conjunction with their shape symbol character, i.e. animal category nouns to obtain the disyllabic words *xi niu* (犀牛, rhinoceros), *li yu* (鲤鱼, carp), *luan niao* (鸾鸟, phoenix).

The remaining of this paper is organized as following: Section 2 and 3 discuss separately the semantic evolution of the disyllabic modifier-head animal nouns and monosyllabic animal nouns. Section 4 gives theoretical analysis of these lexical semantic phenomenon from the perspective of cognitive linguistics, so as to uncover why the "monsters" appear in ancient Chinese records.

¹ <u>https://shuge.org/</u>

² <u>http://igjk.er07.com/</u>

³ <u>http://corpus.zhonghuayuwen.org/ACindex.aspx</u>

2. Semantic Evolution of Disyllabic Animal Nouns

As discussed above, the disyllabic binding words rarely have changes in meaning. This section introduces the semantic evolution of two typical types of modifier-head animal nouns: comparative type and locational type.

2.1. Comparative type

The comparative type of word has a structure of "AB" and means "A-like B". The semantic evolution of such terms can be found in the example of the "*tuo* (camel) *niao* (bird)" (現空 均, ostrich).

2.1.1. The case study of tuo niao (驼鸟, camel bird)

The ostrich came to China in the early 1st century A.D. as a tribute from the Parthia Kingdom to Emperor He of Han. In 101 A.D, the Parthians dispatched envoys to offer lions and *"tiaozhi dajue"* (条枝大爵). *dajue* was described by people in the Tang Dynasty as:

- Dajue has a neck as long as its body, with its chest and hooves like those of a camel. Its raised head has a height of about eight or nine feet, while its spread wings have a width of over one *zhang* (about 3.33 meters) (Fan 2000).
- There is a camel bird, with a height of four feet. Its feet resemble hooves of camels (Du 1988).

In the Han Dynasty, *tiaozhi dajue* is a transliteration name. However, in the Tang Dynasty, the transliterated name had been replaced by the name of *tuo niao* (camel bird) which appears to be a direct translation of the word *ushtur murgha* (camel bird) used by Persian visitors to China during the Tang Dynasty (Schafer 2016). Whether translated from Persian or not, the naming of the camel bird is clearly related to its similarity with the camel. In the Ming Dynasty, Zhu pointed that the name *tuo niao* (camel bird) came from a Tang poem *Qiupu Song* (秋浦歌) by Li Bai: "In Qiupu there are brocade ostriches, which are rare in the world", but the appearance of the camel bird is unclear. Thus, owing to their rarity, the image of the camel bird was prone to have variations in literatures of later dynasties.



(Collection of Ancient and Present Books)

Figure 2: Camel bird (Compendium of Materia Medica)

Figure 3: Camel bird (Graphic Books of the Land)

As shown in Fig. 1, the *Collection of Ancient and Present Books* depicted the front half of a camel and added the wings of the bird. In Fig. 2, the *Compendium of Materia Medica* maintained the image of a camel-hoofed bird with a crane grafted to its upper half. Both Fig.1 and Fig. 2 present monster images, which differ significantly from the real camel bird depicted in the *Graphic Books of the Land* published by the missionary Ferdinand Verbiest (Fig. 3). Thus, although the original name of the camel bird was derived from its camel-like

hooves (a camel-like bird), the word meaning had evolved into "a camel with bird wings" in the Ming and Qing Dynasties.

2.1.2. The case study of hu yu (虎鱼, tiger fish) and yao ji (鹞鸡, harrier chicken)

Similar to the case of the camel bird, ancient literatures also misunderstood the appearances of "hu yu" (虎鱼, tiger fish) and "yao ji" (鹞鸡, harrier chicken). In Selections of Refined Literature (文选), the painter annotated that "a tiger fish has a head like those of a tiger or can turn into a tiger" (Xiao 1986), indicating that people in the Tang Dynasty had no clear idea whether the animal is a fish or a tiger. The Compendium of Materia Medica painted it as "a tiger-like fish" (Fig. 4), whereas the Collection of Ancient and Present Books followed the example of the camel bird in grafting the tiger and the fish together (Fig. 5). Similarly, yao ji in Fig. 6 was depicted as a chicken body with a harrier head.



(Compendium of Materia Medica)

Figure 5: Tiger fish (Collection of Ancient and Present Books)

Figure 6: Harrier chicken (Collection of Ancient and Present Books)

2.2. Locational type

The locational type nouns are formed by using locational nouns to modify category nouns. They have also undergone changes of meaning because of the vague semantics caused by word structures. In this section, we will illustrate the locational type animal nouns with two typical case, *jiang tun* (江豚, river pig) and *hai ma* (海马, sea horse).

2.2.1. The case study of *jiang tun* (江豚, river pig)

A typical example is "*jiang* (river) tun (pig)" (江豚, finless porpoise). Guo clarified that the river pig and sea hog are varieties of river-dwelling fish, noting that "in the river, there are river pigs (江豚) and sea hogs (海狶)", and "in the sea, there are sea hogs, who have fish bodies and pig-like heads" (Li in the Tang Dynasty). The Compendium of Materia Medica further explained that "the sea pigs (dolphins) are born in the sea, waiting for the wind and waves to appear. In a pig shape, it has a nose on its brain. It makes sounds and sprays water upward... The river pigs are born in rivers, with smaller shapes of sea pigs, and often appear above the water" (Li in the Qing Dynasty) (Fig. 7), which share the same understanding as that of today. However, in the Album of Three Talents and Collection of Ancient and Present Books, river pigs are interpreted more literally as an animal with a pig head in the river or as a swimming pig (Fig. 8 and 9). These literatures misinterpreted the phrases "pig-like animals in the river" as "pigs in the river" images that conflicted with common sense.



Figure 7: Sea pig (*Compendium of Materia Medica*)

Figure 8: River pig (Collection of Ancient and Present Books)

Figure 9: River pig (Album of Three Talents)

This phenomenon can also be explained by the theory of Language Diseases proposed by (Muller 1989): humans usually use metaphors to express the meanings of new words. However, since the metaphorical meanings can be forgotten, or the original meaning of the root becomes blurred, new meanings emerge, and might raise misunderstandings of the original meaning. In the case of *jiang* (river) *tun* (pig), the misunderstanding led to monstrous depictions of the animals.

Different from *jiang* (river) *tun* (pig)(江豚, finless porpoise), although the word "*he tun*" (河豚, globefish) has the same word structure with *jiang tun*, it has never been depicted incorrectly, which is probably because the fresh and delicious tasting (albeit poisonous) fish is so well-known. Su Shi and Mei Yaochen both wrote poems exalting the taste of globefish. On the one hand, *he tun* (河豚, globefish) could be considered misused from *he tun* (河鲀, puffer fish). As (Tao 2012) noted, "*hou zhi* (ذ) is a *tun* (鲀, puffer), which has a black back and white belly. It turns angry once toughing something else. Its liver is poisonous. It is what the people call *he tun* (河豚) for now, yet the *tun* (豚) should be *tun* (鲀)." However, since the beginning of its usage, there has been no image of a pig associated with this word, and it later became a well-known delicacy, thus avoiding semantic deviation.

2.2.2. The case study of hai ma (海马, sea horse)

Another example of "language disease" is the word "hai (sea) ma (horse)" (海马, hippocampus). A Tang poem by Du Fu mentioned an animal called "water (sea) horse", which raised conflicted opinions whether the sea horse is an aquatic animal or a horse by nine scholars in the Song Dynasty: some claimed that "a water horse lives in water, which is good at running like a horse and is thus called sea horse". Some others explained that "a water horse is a variation of shrimp." (Du in the Qing Dynasty) Geographic Records of the New Historical Book of Tang Dynasty recorded the local tributes from Chaozhou, including cannas, mackerels, shells, anaconda gallbladders, turtles and water horses (Ouyang et al. 1975). Considering other tributes and referring to Schafer's judgment, the water horse is more likely to be a food than to be a horse. In the Ming Dynasty, the Album of Three Talents described it as "horses in the sea" (Fig. 10), and the court uniforms of the ninthrank military officials of the Ming and Qing Dynasties depicted this image on their back patches (Fig. 11). However, both Compendium of Materia Medica and Notes of Bronzes and Tablets, Insects and Plants adopted the interpretation of "horse-like animals in the sea" (Fig. 12 and 13). By search "sea horses" in the Database of Basic Ancient Chinese Books

from the Han Dynasty to the Ming Dynasty, 81 works include images of horses and 32 works depict aquatic animals, whereas the interpretations shown in the remaining 8 works are difficult to judge. It shows that most ancient people interpreted "sea horse" as a kind of horse. It is noteworthy that the medical literatures mostly depicted sea horse as aquatic animals, while the other kinds of literatures mainly recorded sea horse as horse figures. This phenomenon reflects the objectivity of medical literature in recording animal images.



Figure 10: Sea horse (*Album of Three Talents*) Figure 11: Sea horse (patches of the court dress in the Ming and Qing Dynasties) Figure 12: Sea horse (Compendium of Materia Medica)

Figure 13: Sea horse (Notes of Bronzes and Tablets, Insects and Plants)

3. Semantic Evolution of Monosyllabic Animal Nouns

The above example of camel bird demonstrates that when two monosyllabic animal nouns are combined to form a disyllabic modifier-head word, one of the animals may not only have an impact on the meaning of the disyllabic word, but also further affect the meaning of another monosyllabic animal noun that makes up the disyllabic word. The most typical example is xi (\mathbb{F} , rhinoceros) in xi niu (\mathbb{F} , rhinoceros).

3.1. The case study of xi (犀, rhinoceros)

By searching *xi niu* (\mathbb{P} [‡], rhinoceros) keywords in the Database of the Basic Ancient Chinese Books, the oldest use of the term was identified in *Guan Yin Zi* ($\notin \neq \neq \uparrow$), and it has been used increasingly frequently since the Han Dynasty. *History of the Han Dynasty* includes a record of tributes of rhinoceros from Conjeevaram in the spring of 2 A.D. Table 1 shows the frequency of the term *xi niu* over the past dynasties in CNCORPUS and the Database of Basic Ancient Chinese Books.

| | Han and Jin Dynasties | Sui, Tang and Five Dynasties | Song Dynasty | Yuan and Ming Dynasties | Qing Dynasty and Republic of China |
|----------------------|-----------------------------|------------------------------------|-----------------|-------------------------------|--|
| CNCORPUS | 2 | 16 | 14 | 32 | 34 |
| Database of | 34 | 131 | 228 | 396 | 955 |
| Basic Ancient | | | | | |
| Chinese | | | | | |
| Books | | | | | |

Table 1. Frequency of collective use of "Xi Niu" (Rhinoceros) since the Han Dynasty

Fig. 14–18 illustrate depictions of the rhinoceros in various Chinese literatures. As noted above, over the centuries, the use of xi niu has gradually increased and replaced the role of xi to represent the meaning of rhinoceros. The meaning of xi has shifted as well. According to Shuo Wen (说文解字), "xi, cattle from foreign countries, has a horn on its nose and another horn on its head (Duan 2013)." Xu Shen's explanations are consistent with the image of Sumatran rhinoceros, both of which have two horns with one of them in the nose. Natural historical studies suggest that rhinoceros were widely distributed in the Asian continent in ancient times (Schafer 2016), and literature descriptions were consistent with the characteristics described in Shuo Wen. However, a subtle change can be observed in the annotations of the *History of Han*: "xi has a shape like that of a buffalo, a head like that of a pig, and four feet like those of an elephant. It is black, with one horn on its forehead and another small horn on its nose (Ban 2003)." This description is mostly consistent with that of Shuo Wen, but it clearly states that xi looks like a buffalo, and the two horns mentioned in Shuo Wen have become one horn and another small horn. In Shuo Wen, Duan claimed that "si (兕, bison), looks like a bison and is green, with its skin strong and thick enough to be made into armors," and his notes quoted Guo: "rhinoceros look like buffalo, with a head like that of a pig and short feet. A si is also like a buffalo." (Duan 2013) Guo's description was supposedly derived from that of (Ban 2003), but does not mention the location of "a small horn". According to records of the Tang Dynasty, rhinoceros were precious and rare at that time. Thus, people might be misled by ancient literatures, and produce "monster" images by adding a horn on a buffalo.



In the images from the Song to Qing Dynasty, the horns are all located on the top of the rhinoceros heads, which are neither the appearances of rhinoceros nor the original meaning of *xi* but are mixed with another animal called *si* (Fig. 19–22). *Xi* and *si* are two different species, and the latter is more like a buffalo. However, *si* is depicted identically to *xi* in books such as the *Collection of Ancient and Present Books* (Fig. 19), *Notes of Bronzes and Tablets, Insects and Plants* and two others (Fig. 20–22).



Mao Chang)

Whether it is a *xi* or a *si*, the images are consistent with the descriptions of the *si* (兕, bison) in *Shuo Wen*. The meaning of *xi niu* is more reflective of cattle than rhinoceros. Influenced by this phenomenon, the meaning of *xi* (rhinoceros) also leans toward cattle. Interestingly, in the Ming and Qing Dynasties, Chinese people came to know there were beasts with horns on their nose. Although the form of character *xi* exactly denotes such kind of beasts, the meaning of *xi* had already changed, and people had to create other names. Thus, in the Ming Dynasty, they were named as "*hu mao xi*" (胡帽犀, foreign hat rhinoceros) to indicate their exotic origin, and in the Qing Dynasty, people described their shapes directly and called them "*bi jiao shou*" (鼻角兽, nose horn beasts).

3.2. The case study of e (鳄, crocodile)

and Plants)

In addition to the above examples, the "e" (鳄, crocodile) is a special case in which the semantic evolution occurred based on both linguistic and philological reasons. As Fig. 23-24 illustrate, depictions of crocodiles over the generations evolved into an initial conceptualization of an animal with a body shaped like that of a tortoise.



Figure 23: Crocodile (Collection of Ancient and Present Books)



Figure 24: Crocodile (Album of Three Talents)



Figure 25: Tuo (An Illustrated Book of the Things in the Book of Songs Compiled and Annotated by Mao Chang)



Figure 26: Tuo (An Illustrated Book of the Things in the Book of Songs)



Figure 27: Tuo Fish (Notes of Bronzes and Tablets, Insects and Plants)

Books)

Shuo Wen did not include the character e (鳄), but it included an equivalent character "tuo" (鼍, crocodile), explained as "a water creature, like a lizard, with a length of over one zhang (3.33 meters) and skins able to be made into drums (Duan 2013)." A line in the poem "Daya Lingtai" (大雅·灵台) reads "a tuo drum sounds." An examination of the An Illustrated Book of the Things in the Book of Songs identifies the tuo as a crocodile, thus demonstrating that tuo (鮀) and tuo (鼍) have similar pronunciations and meanings.

The name of e (鳄) was retrieved in the books of the Jin Dynasty e.g. Stories of Immortals (搜神记), Records of the Natural History (博物志) and Annotations to the Water Classics (水经注), etc. The annotated version of Records of the Natural History provides a clear clue regarding the e's (crocodile) transformation into a tortoise: "in the southern sea there are crocodiles which looks like tuo (鼍)", and its annotation also said the crocodiles look like tortoise (龜) (Zhang, in the Qing Dynasty). From the perspective of philology, the incorrect use of the term gui (龜) is because the character form of tuo (鼍) is very similar to bie (鼈) and yuan (鼋) under the category of gui (龜).

Even the polymathic scientist Shen could not distinguish among e (鳄, crocodile), tuo (鼍) and yuan (鼋). Dream Pool Essays (梦溪笔谈) (Shen 2016) vividly reflects his knowledge of e (鳄, crocodile): "it looks like tuo (鼍), with a beak as long as its body and saw-like teeth. It is yellow, black, or sometimes white. At its tail has three extremely sharp hooks, which can stab deer and pigs for foods." These descriptions are very realistic. However, the description about the reproduction of crocodile is very strange: "there are plenty of eggs, with some turned into tuo (鼍) or yuan (鼋), with only one or two eggs turned into e (鳄)". This statement clearly shows that the author confused crocodile with tortoise. When the term of e (鰐) cannot refer to the real crocodiles, people can only follow the exotic literature (such as Ferdinand Verbiest's Graphic Books of the Land) and use the new, transliterated name, the lajiaduo (喇加多) fish when they see crocodiles.

4. Conceptual Integration and Semantic Transfer of Animal Nouns

As discussed above, the disyllabic modifier-head animal nouns are most likely to have semantic transfers, including both comparative and locational types. Monosyllabic animal nouns can also have semantic transfers in some cases.



Figure 28: Cognitive transfer of case tuo niao (鸵鸟, camel bird)

From a cognitive perspective, the semantic transfer of animal nouns represents an exception of the cross-domain mapping in the process of conceptual integration of a word. As shown in Fig. 28, at the beginning of word creation, its meaning is typically built by

metaphorical relationships such as "camel-like bird". People tend to integrate and transform the metaphorical relationship into "part–whole" relationship, such as "a camel with bird wings". For the semantic transfer of e (crocodile), it also derived from "a fish like a *tuo* (鼍)" to a "fish with a tortoise body" with the help of character confusion. In other words, people's visualization of unfamiliar objects depends on the combination of the meanings of different parts.

The animal images in the Ming and Qing literatures directly reflect the semantic strength of different sememes and the semantic direction of the terms. A disyllabic animal noun is usually constituted by a category sememe and a differentiating sememe, the latter of which could be either an animal noun or a location noun. For example, in the word *xi niu* (\mathbb{F}^{+} , rhinoceros), *niu* (cattle) is category sememe, and *xi* (rhinoceros) is differentiating sememe. The category sememe and differentiating sememe are both important to the meaning of the word. However, when the referential object disappears in the cognition of the language user, the original word becomes a strange concept, and people need to re-conceptualize the term. In this process, the original sememes will be integrated into a new structure, and on the basis of the association principle, different sememes will be assigned new weights.

In Chinese animal nouns, the familiar sememe was often strengthened and became more important. Livestock are most familiar to people, thus they were often involved in naming unfamiliar animals, such as sea cattle, sea horse, sea dog and sea chicken. What's more, the depictions of their appearances were also influenced by these livestock animals. As record in *Marine Utterances* (海语), a book of the Ming Dynasty, most of these sea animals are described in the form of "[the land animal name] in the sea"(Huang in the Qing Dynasty). Fig. 29 illustrates how the meaning of *hai ma* transferred from "sea animals like a horse" to "horse living in the sea", since the land animal horse is familiar to people, and its image has been integrated into the sea animal.



Figure 29: Cognitive transfer of case hai ma (海马, sea horse)

Also, for monosyllable words, their meanings also faced similar cognitive transfer. As shown in Fig. 30, the monosyllable word xi (\mathbb{P} , rhinoceros) is often used as the disyllable xi niu (\mathbb{P} +, rhinoceros cattle). In the process of lexical evolution, the familiar sememe niu (cattle) was strengthened and triggered the cognitive confusion.



Figure 30: Cognitive transfer of case xi (犀, rhinoceros)

For nouns composed of two monophonic animal nouns, people tend to have a cognition focus when they are not familiar with the referral object. In Chinese words, differentiating sememes usually locate before the category sememes, such as *ban jiu* (斑鸠, turtledove), *shi jiu* (鸤鸠, dove), *li yu* (鲤鱼, carp) and *zun yu* (鳟鱼, trout). Given an unknown animal noun, the differentiating sememe is more likely to be highlighted. (Talmy 2000) applied the concepts of focus and background in psychology to semantic analysis. According to his focus–background structure, the differentiating sememes in animal nouns are more likely to be conceptual integration of the "part–whole" relation. In the images, the differentiating sememe will thus occupy a main part of the "monsters", such as the ostrich with a body of camel, the *si xi* (兕犀) with a body of buffalo and the tiger fish with a tiger head.

This article demonstrates the semantic evolution process of animal nouns, and present how the "monster" images appeared in ancient literatures. It is because the original animal name is usually created with metaphor-based conceptual integration. Once the word became detached with the referral objects, the meaning of it could change with the "part– whole" conceptual integration. The process of the integration is determined by the topology principles proposed by (Fauconnier and Turner 2013) i.e. "the force and strength with an important relationship should be strengthened rather than weakened." The importance of the relationship is determined by the familiarity and prominence of the concept. Thus, the "monsters" depicted in the Chinese image literature since the Song and Ming Dynasties may be effectively explained from the perspective of lexical semantics.

How many animal nouns in ancient China have undergone semantic evolution in their diachronic development? Are there any other linguistic or philological laws accounting for the semantic evolution? To answer these questions, further studies should be conducted based on this work with more systematic literature investigation and retrievals, especially the collection and use of pictorial literature in addition to the general cyclopedias.

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