

A Diachronic Research of the Contronyms in Chinese by Using the Chinese Character (乖) *Guāi* and Its Words

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Abstract

In many languages, a large portion of words are semantically ambiguous. The contronyms are some of these words. A contronym is defined as having two opposite meanings, that is the original meaning and the transferred meaning. There has been some research on contronyms in English, but they have not been studied in Chinese. The purpose of this research is to provide a way to explore these contronyms. Based on this, 乖 *guāi* with contronyms meanings was selected as the research object. The number of 乖 *guāi* was investigated through digital network and literature, the frequency was calculated by formula, and the frequency obtained by big data statistics was studied using a drawing method, in order to analyze the causes of the contronyms meanings and predict their application prospects. The results revealed that the percentage usage rate of 乖 *guāi* was lowest in the Qin Dynasty and highest in the Sui, Tang and Five dynasties. The percentage usage rate of words corresponding to 乖 *guāi* showed cyclical changes over the course of social and historical development. As far as the application of the transferred meaning is concerned, the Tang Dynasty is the earliest recorded period, the Song Dynasty is the initial use period, the Ming and Qing dynasties are the maturity use periods, and the republic of China has many use periods. The reasons for the emergence of its transferred meaning are associated with Fuxi culture and the region in which folk language evolved. The obtained graphs clearly showed the diachronic relationship between the change of words meaning and its application and the change with time. This method can elucidate the diachronic relationship between the application of words and social development and is also suitable for similar language and character studies.

Keywords

Contronyms, Original Meaning, Transferred Meaning, Diachronic Research, Chinese Character 乖 *Guāi* and Words

1. Introduction

The resolution of lexical ambiguity has proved to be one of the more refractory problems in the study of language comprehension. In many languages, a large portion of words are semantically ambiguous, such as polysemy, homonymy, synonym and antonym. Given this, scientists have spent a lot of time trying to understand how semantic ambiguity can be resolved, and how semantically ambiguous words are processed.

In previous studies, polysemy and homonyms have been used to study context and frequency-of-meaning effects in lexical access and other issues (Grainger & Ferrand, 1994; Twilley & Dixon, 2000). Eddington and Tokowicz (2015) focused on the similarities and differences between different types of ambiguous words (e.g., polysemes and homonyms) and summarized and reviewed these studies in detail. Recently, Rice et al. also researched these linguistic phenomena and proposed a new method for estimating meaning frequency based on the meaning of a homonym evoked in lines of movie and television subtitles according to human raters (Rice et al., 2019).

One of the polysemous words is *contronym* (Shipley, 1960). One of the meanings of *contronyms* is the antonym of another—that is, a word which is its own opposite. Specifically, a contronym is a word with a homonym (another word with the same spelling but different meaning) that is also an antonym (a word with the opposite meaning). Some pairs of contronyms are true homographs, i.e., distinct words with different etymology which happen to have the same form. There has been some research on contronyms in English. Early work focused on turning arbitrary words into their opposites via chains of synonyms by Borgmann (1967). Subsequently, the researcher collected and summarized this type of words, and more comprehensive lists abound in past *Word Ways* articles (Lederer 1978, 1979) and on the Internet. Since that time, many others have been carrying out research on this subject (Dewdney, 1987; Eckler, 1988; Morice, 2005). Recently, Miller put forward a method to call “Higher-Order contronyms” (Miller, 2014) in English. There are contronyms not only in English, but also in other languages including Italian, French, Spanish, Russian, Arabic, Chinese and so on (Lieberman, 2013; Al-Khamash, 2011; AlBader, 2017; Odilov, 2014).

The Chinese case is rather different to English. A written Chinese character has a more direct connection with its meaning than a written word in English does. Chinese characters have a long history. Some characters evolved to generate multiple pronunciations and multiple meanings, and in some instances, the

same character evolved to produce contronyms with the opposite meanings. The Chinese character 乖 *guāi* and words related to it also took on this characteristic. However, the contronyms in Chinese have not been extensively studied as a linguistic phenomenon. Due to the differences in structure and etymology between English and Chinese, it is difficult to apply the methods developed in English to Chinese. English studies only use the summary and formation of contronyms, but rarely investigate the diachronic development of these words.

In order to research contronyms in Chinese, this study employed the method of collecting contronyms from different Chinese historical documents, statistically analyzed usage frequency in different historical periods, identified the characteristic pattern of usage frequency in each historical period, and compared the obtained ratings of meaning frequency. In addition, the causes of the emergence of contradictory words from the etymologies and the perspective of Chinese phonology were analyzed and the use rule of contronyms with the development of history and culture of China in their graphic forms was investigated using the example of the Chinese character 乖 *guāi* and its words. This method has more reliability and authenticity. It is our hope that this type of model will prove useful in understanding the influence of contronyms on context and comprehension in many domains.

2. Study Background

Almost all Chinese dictionaries provides two definitions of 乖 *guāi*, one of which conveys the original meaning of 乖 *guāi*, that is, “disobey” and “disharmony”, whereas the other definition states that the character means “obedient”, “smart” and “clever”, which is the opposite of the original meaning, and is called the transferred meaning. Obviously, the two meanings of 乖 *guāi* are opposite and therefore it is a contronym.

Why did the literal meaning of one character undergo such enormous changes, and what are the reasons for these changes? In recent years, some scholars have carried out research to examine this issue. Wu Xuan (2011) analyzed this question from two perspectives, that is, society and vocabulary, and proposed that “the two opposite usages of 乖 *guāi* are the result of the reverse extension of vocabulary instead of reverse exegetic interpretation”. Yi Yapeng (2012) discussed the reasons for the generalized use of the character 乖 *guāi* as a form of address. Li Li (2018) believed that the transferred meaning of the character 乖 *guāi* began to evolve after the Song Dynasty, while word meanings associated with the character were brought about by the “theory of giving one word both its original and opposite meanings”.

Although the above studies summarized the utilization of both the original meaning and the transferred meaning of 乖 *guāi*, and also expounded the reasons for the emergence of the transferred meaning from different viewpoints; however, these studies did not explore the characteristics of changes in word meanings from the perspective of the historical evolution of China and the

emergence of different dialects. For this reason, this paper used big data to carry out an in-depth exploration of the evolution and development of Chinese society, history, and culture.

3. Study Methods

The researcher used computer and artificial cognition methods to carry out an Internet and literature search of the Chinese character 乖 *guāi* and words associated with it. To this end, the search involved a total of 38,529 documents sourced from the Han Dian Gu Ji (<http://gj.zdic.net/>). Word-meaning retrieval and word-meaning verification were conducted by referring to other ancient literary works, modern famous works, and partial contemporary prize-winning works that were awarded the Mao Dun Literature Prize, Lu Xun Literature Prize, Nobel Prize, and Stalin Literature Prize (see the net working profile).

The percentage of the total number of the Chinese character 乖 *guāi* was then calculated, as well as the total number of the character 乖 *guāi* and words related to it that contained different character meanings in each stage of literary history and in each dynasty. This information was obtained using the following formula:

$$\text{Percent}(\%)_1 = \frac{n_t}{N_t} \times 100\% \quad (1)$$

Note: n_t represents the total number of the character 乖 *guāi* in each dynasty or in each literary history stage, and N_t represents the total word count of the books that contained the character 乖 *guāi* in the corresponding dynasty or stage.

$$\text{Percent}(\%)_2 = \frac{n_{o,t} \text{ or } n_{c,t}}{n_t} \times 100\% \quad (2)$$

Note: $n_{o,t}$ and $n_{c,t}$ respectively refer to the number of the character 乖 *guāi* that expressed the original meaning or the transferred meaning in each dynasty or in each literary history stage, and n_t is the same as above.

$$\text{Percent}(\%)_3 = \frac{n_{o,t}^w \text{ or } n_{c,t}^w}{\sum_{\text{xian qin}}^{\text{dang dai}} n_t^w} \times 100\% \quad (3)$$

Note: $n_{o,t}^w$ and $n_{c,t}^w$ represents the number of one of the words in each dynasty, and n_t^w represents the total number of this word from the pre-Qin period to the contemporary era.

The history of Chinese literature was classified using a classification method that refers to three ancient periods consisting of seven time spans, as proposed by Yuan Xingpei. This method involves dividing Chinese literature history into the following periods: the pre-Qin period; the Qin and Han Dynasties; the Wei and Jin Dynasties to the mid-Ming Dynasty; the mid-Tang Dynasty to the late Southern Song Dynasty; the early Yuan Dynasty to the mid-Ming Dynasty; the mid-Ming Dynasty to the Opium War; and the Opium War to the May Fourth Movement. An eighth time span was also added to include the Republican Pe-

riod since the May Fourth Movement to the founding of the People's Republic of China (PRC) in 1949, and the ninth time span extends from the founding of the PRC until the Present day. The relevant calculation results were graphed and analyzed using MS Excel 2007 software.

4. Study Results and Analysis

4.1. Survey of the Distribution of Various Types of 乖 *Guāi* in the Chinese Literature

4.1.1. Distribution of Total 乖 *Guāi*

This study retrieved and reviewed more than 40,000 ancient and modern Chinese documents with a word count of 3.7 billion Chinese characters, and found a total number of 18,452 characters for 乖 *guāi*. We then calculated and graphed the percentages according to formula (1), and drew **Figure 1** and **Figure 2** as shown below.

4.1.2. Distribution of the Character 乖 *Guāi* in Terms of the Contronyms

In order to further explore how the original meaning of the character 乖 *guāi* was transferred to various other meanings, that is, how are the contronyms of “乖” *guāi* distributed, and to examine the distribution of these two types of meanings in different literature histories and dynasties, this study analyzed the distribution of the word count in relation to the original meaning and the transferred meaning of the character 乖 *guāi* across the nine time spans and various dynasties. Using the study methods and formula (2), this research determined the total word count of the character 乖 *guāi*, the results of which are shown in **Figure 3** and **Figure 4**.

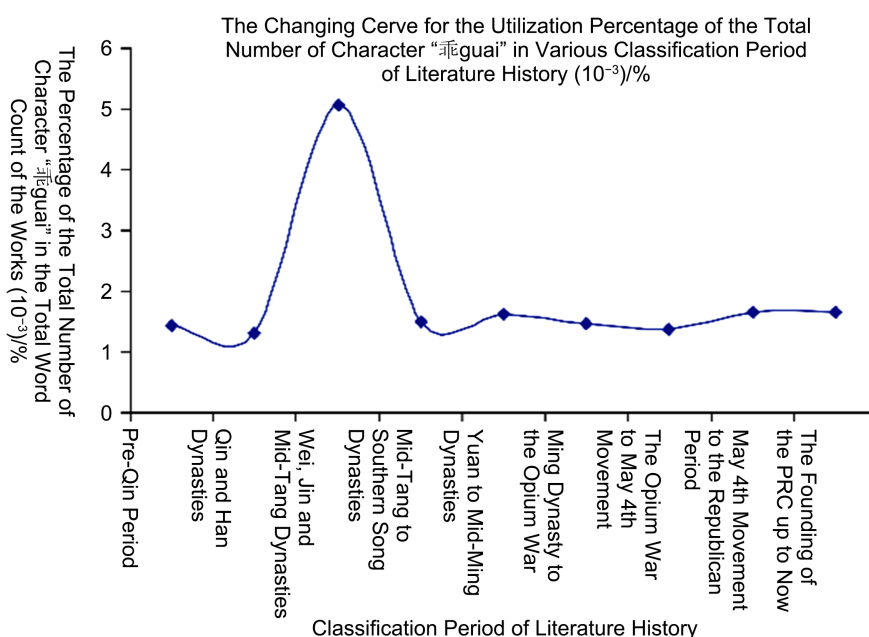


Figure 1. The distribution curve of the percentage usage rate of the character 乖 *guāi* in the NineTime spans.

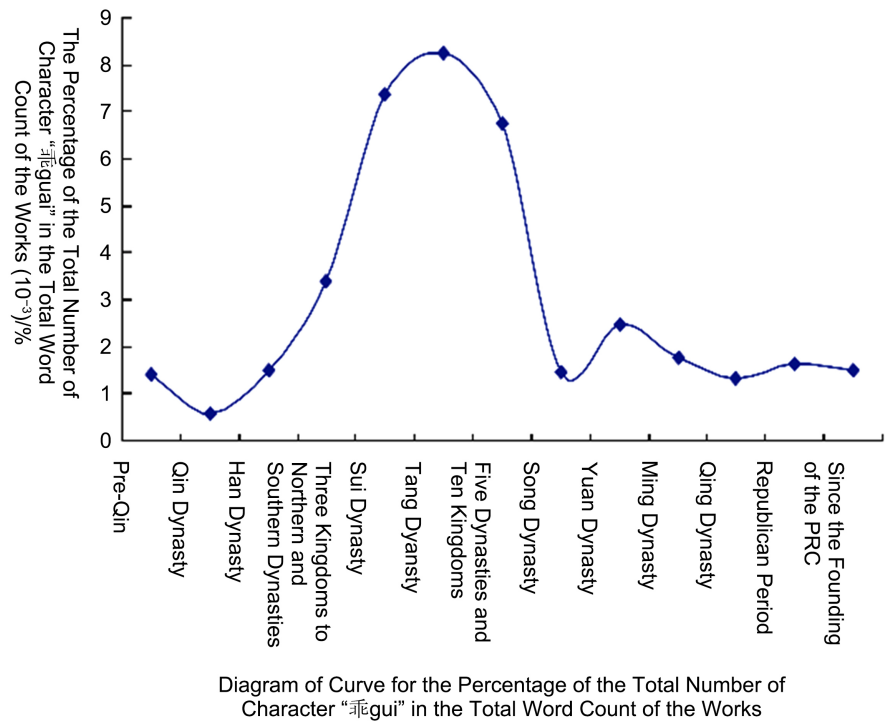


Figure 2. The distribution curve of the percentage usage rate of the character 乖 *guāi*, following dynasty changes.

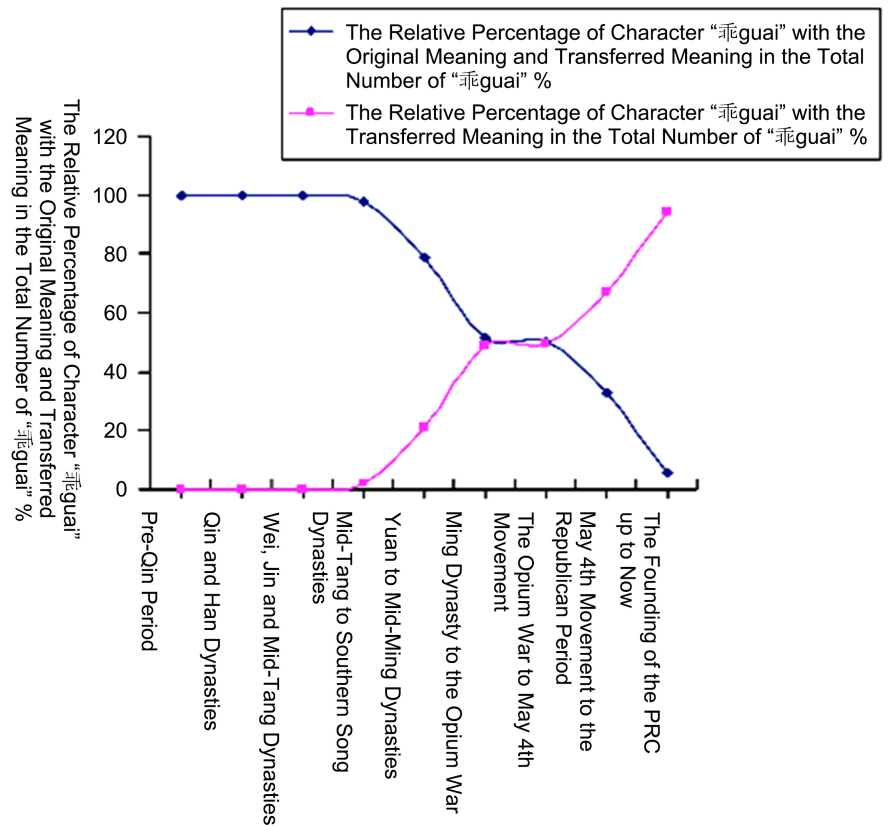


Figure 3. Curve diagram for the percentage of original meaning and transferred meaning of character 乖 *guāi* in nine time spans in the total word count of 乖 *guāi*.

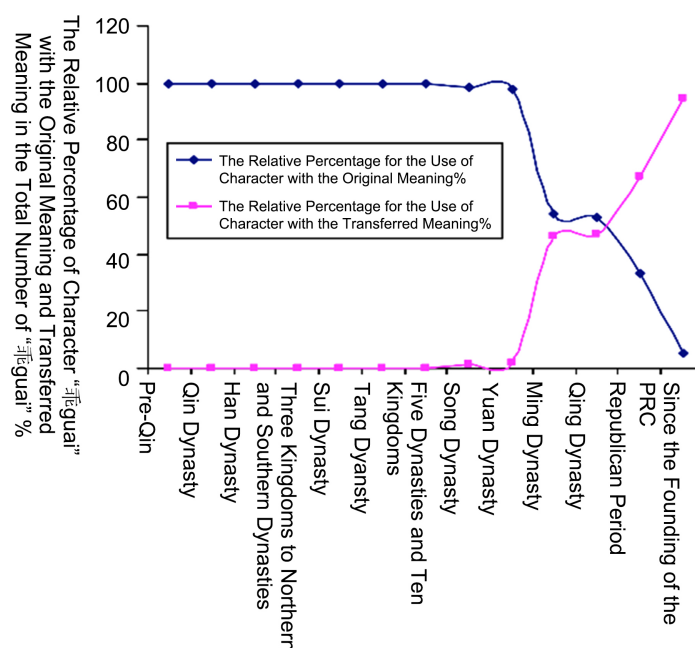


Figure 4. Curve diagram of the percentage usage rate of the original meaning and transferred meaning of the character 乖 *guāi* in various dynasties in relation to the total word count of 乖 *guāi*.

4.1.3. Composition and Distribution of Words Containing 乖 *Guāi*

From classical literature, to modern literature, to contemporary literature; the character 乖 *guāi* can be broadly defined as having five meanings: the first meaning is “ill-fated” and “unfortunate”, when interpreting the hexagrams of the Book of Changes; the second meaning is used to describe an individual’s disposition that manifests in the form of unreasonable words and deeds, written as 乖戾 *guāi lì* or “perverse”, and these two meanings retain the original meaning of 乖 *guāi*; the third meaning is used to belittle and praise the behavior of others, and it is written as 乖滑 *guāi huá* or “clever but guile”, as well as 乖觉 *guāi jué* or “smart but cunning”; the fourth meaning expresses love and praise, and it is written as 乖巧 *guāi qiǎo* or “cute” and “lovable”, as well as 乖顺 *guāi shun* or “obedient”; the fifth meaning involves its use as an exclamation to convey a response about things or behaviors, such as the colloquial exclamation 乖乖 *guāi guāi* or “dear”. The last three meanings are essentially different from the first two, and they are thus referred to as “transferred meanings”.

Although the original meaning and transferred meaning of 乖 *guāi* are expressed in the form of a single character, there are also a number of words and expressions that contain 乖 *guāi*. The largest Chinese-Chinese dictionary of compound characters (Luo, 1986) includes 128 words and phrases containing 乖 *guāi*. Using retrieval methods and statistics related to the vocabulary used in literary works containing the Chinese character 乖 *guāi*, this study calculated the distribution of each word in different dynasties by referring to formula (3). The top ten words with the largest utilization times were then selected for the purposes of this research, the results of which are shown in Figure 5.

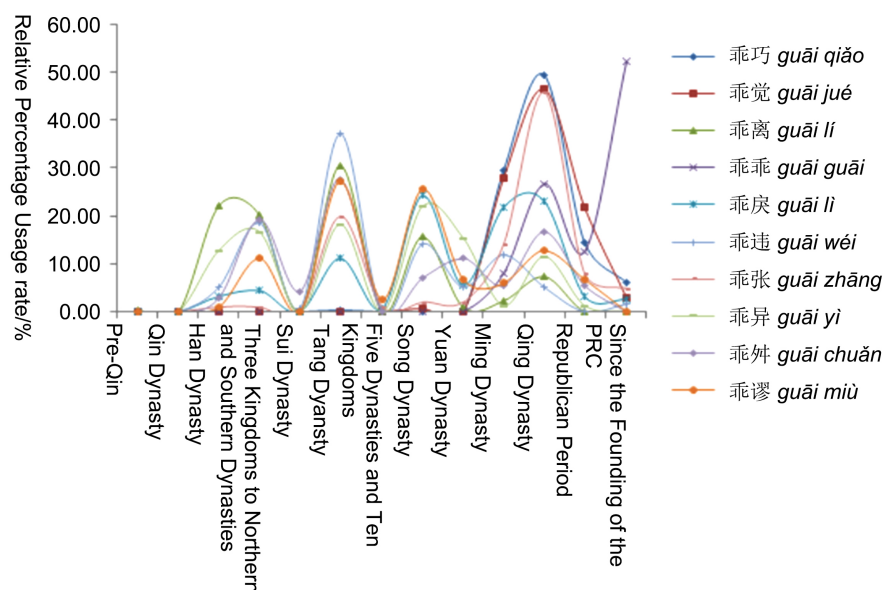


Figure 5. The distribution curve of the relative percentage usage rate of the main words in different dynasties.

4.2. Diachronic Relationship between the Use of the Contronyms of 乖 *Guāi* with Historical and Cultural Development

It can be observed from **Figure 1** that the usage of 乖 *guāi* was at its lowest level between the pre-Qin period and the Qin and Han Dynasties, whereas it reached a peak between the Qin and Han Dynasties and the Wei, Jin and mid-Tang Dynasties. The peak value (5.15×10^{-3} %) was found to be more than three times larger than the valley value (1.43×10^{-3} %). The trend changes illustrated in **Figure 2** are basically the same as those in **Figure 1**. However, **Figure 2** provides a clearer view of the association between the usage of the character 乖 *guāi* and the historical and cultural development of each dynasty. It can be seen from **Figure 2** that the percentage usage rate of 乖 *guāi* in the pre-Qin period was nearly three times higher than that in the Qin Dynasty (0.561×10^{-3} %). Pre-Qin literature mainly consists of ancient ballads, myths, poetry, prose and the songs of Chu. Among the works created during this period, the book entitled *Zixia's Commentaries on Yi* by Bu Zixia used the character 乖 *guāi* the most, with a percentage usage rate of (6.35×10^{-3} %). The book's interpretation of the Chinese character 睽 *kuí* is “睽之极，……，大乖其道……。” which is translated into English as “the deviation to the extreme extent... deviates from the starting point of change”..., “家道穷必乖，故受之以睽。睽者，乖也。乖必有难，故受之以蹇” which is translated into English as “If the family is in poor situation, it would definitely deviate, and then the next is Kui Hexagram. 睽 or *kuí* means ‘disorder’ and ‘violation’, which is bound to bring disasters, and the next is Jian Hexagram”. The character 乖 *guāi* was used the least amount of times in the book in titled *The Book of Rites*, with a percentage usage rate of (0.292×10^{-3} %), in which the chapter called “The Book of Music” contains the character 乖 *guāi*. However, this chapter discusses the production of music, the relationship

between music and etiquette, society and people, and the role of music in human society. It also advocates the use of methods such as “rites” and “music” to influence people’s hearts and the governance of the country, the dominant idea of which is obviously different from the meaning of 乖 *guāi*, and this also explains why the usage of this character was limited.

During the Qin Dynasty, the usage of 乖 *guāi* reached a low point, which was largely due to an event that involved “burning books and burying the literati in pits” after the First Emperor of Qin had unified China, while cultural autocracy led to a reduction in the number of literary works created during this period.

After the Han Dynasty, the percentage usage rate of 乖 *guāi* rose from $(1.51 \times 10^{-3})\%$ to $(3.41 \times 10^{-3})\%$ in the Three Kingdoms (i.e., The Wei, Jin, and the Southern and Northern Dynasties), and it then reached its highest level during the Sui, Tang, and the Five Dynasties, with a percentage usage rate of $(7.39 \times 10^{-3})\%$, $(8.24 \times 10^{-3})\%$ and $(6.77 \times 10^{-3})\%$, respectively. This shows that the usage of 乖 *guāi* had a special association with the historical, economic and cultural development of the Sui, Tang and the Five Dynasties.

Chinese economic and cultural history underwent a significant turning point in the Sui, Tang and Five Dynasties, during which the Prosperity of Zhenguan established a more enlightened politics, which made the Tang Dynasty the most advanced, most civilized, most prosperous, strongest and richest country in the world at that time. It remained influential until the subsequent Five Dynasties and Ten Kingdoms, and it thus, created the cultural heights that were reached in the Sui, Tang and Five Dynasties.

With respect to the literature of the Tang Dynasty, poetry occupied a dominant position. Tang poetry inherited the traditions of “elegant statement and comparison” and “the poetic style of the Han and Wei Dynasties”, which was composed of a combination of realism and romanticism. For this reason, the character 乖 *guāi*, the original meaning of which was “fate” and “deviation”, was used less in Tang poetry. The Complete Tang Poems are a collection of 49,403 poems written by 2873 poets of the Tang Dynasty, and some of these poems used the character 乖 *guāi*, but the percentage usage rate was relatively low at $(1.66 \times 10^{-3})\%$ (Peng, 2015). Metaphysics and Buddhism were popular during the Tang Dynasty, and 乖 *guāi* appeared many times in Confucian and Buddhist literature. For instance, in the Tongxuan Scripture written by Wen Zi, who was conferred the title of Tongxuan Daoist Spiritual Master by Emperor Xuanzong in the first year of the Tang Dynasty, the percentage usage rate of the character 乖 *guāi* was $(5.77 \times 10^{-3})\%$ (Xu (n.d.); Handian Guji); in the Guanghongming Collection written by Shi Daoxuan, an eminent monk in the Tang Dynasty, the percentage usage rate of 乖 *guāi* reached $(15.22 \times 10^{-3})\%$ (Shi (n.d.) (Guanghong Minji); Handian Guji). In addition, the character 乖 *guāi* featured prominently in the prose style of the Tang Dynasty. For example, in the Generality of Historiography written by Liu Zhiji, the percentage usage rate of the character 乖 *guāi* reached $(18.13 \times 10^{-3})\%$. In the Entire Donovan, which is

the largest collection of literary works from the Tang Dynasty so far, the percentage usage rate of the character 乖 *guāi* reached $(85.0 \times 10^{-3})\%$ (Dong, 1983; Handian Guji), and in the Addendum of Entire Donovan and the Supplements of Entire Donovan which were later revised to add omitted and missing contents from the Entire Donovan, the percentage usage rate of the character 乖 *guāi* reached $(8.73 \times 10^{-3})\%$ and $(5.79 \times 10^{-3})\%$ (Lu (n.d.); Handian Guji), respectively. In the *Finest Blossoms in the Garden of Literature*, which mainly collected the literary works of the Tang Dynasty, the percentage usage rate of the character 乖 *guāi* in the total word count was $(3.87 \times 10^{-3})\%$ (Li et al., 1966). Although the Five Dynasties and the Ten Kingdoms were in a state of disunion and melee, the influence and legacy of the literature from the Tang Dynasty led to an increase in the percentage usage rate of the character 乖 *guāi*, which reached $(6.77 \times 10^{-3})\%$.

The literature of the Song Dynasty mainly consists of ci-poetry, poems, prose, story-teller's scripts and drama scripts, among which ci-poetry reached the highest achievements during the Song Dynasty. Ci-poetry expresses nostalgic consciousness, learning from history and discussion style, and it is characterized by free and flexible forms, and sentence lengths that vary, all of which enabled the expression of feeling as well as reflections on social reality. Its artistic style is marked by grace and restraint, in addition to bold and fresh features. Therefore, the character 乖 *guāi*, with meanings including "adversity", "deviation" and "misfortune", was rarely used in Song Ci-poetry. In the *Complete Collection of Song Ci Poetry* (Tang, 2009), which incorporated 20,000 poems composed by more than 1330 poets from both the Southern and Northern Song Dynasties, the character 乖 *guāi* only accounted for $(0.882 \times 10^{-3})\%$. Moreover, the prose, drama and novels that were created during the Song Dynasty share vernacular literature characteristics, as they are plain and natural, smooth and tactful, suitable for reasoning, narrative and lyrical. As such, the character 乖 *guāi* was rarely used. For instance, in two monumental works from the Song Dynasty (i.e., *Comprehensive Mirror in Aid of Governance* and *Extended Continuation to Zizhi Tongjian*), the percentage usage rate of the character 乖 *guāi* was only $(0.721 \times 10^{-3})\%$ and $(0.494 \times 10^{-3})\%$, respectively.

Literature from the Yuan Dynasty is represented by opera and verse, based on which, narrative literature dominated the literary world during the Yuan Dynasty. However, the character 乖 *guāi* was rarely used in these works. Instead, it appeared more frequently in works that involved historical research, as well as the dissemination and interpretation of Buddhism, Confucianism and Taoism. For example, the percentage usage rate of 乖 *guāi* in the *Commentary of Jingzhai on Things Old and New* (Li (n.d.) (Jingzhai gujin zhu); Handian Guji) was $(7.37 \times 10^{-3})\%$, ranking first among the works from the Yuan Dynasty. The *General Records of Buddha* is a composition that relates to Confucianism, Taoism and Buddhism, and the percentage usage rate of the character 乖 *guāi* in this work was $(6.54 \times 10^{-3})\%$ (Shi (n.d.) (Fo Zu Tongzai); Handian Guji). The

high percentage usage rate of the character in these two works means that the percentage usage rate of 乖 *guāi* in the Yuan Dynasty was $(2.48 \times 10^{-3})\%$ higher than that in the Song Dynasty.

After the Jiajing period in the Ming Dynasty, with the opening and smooth operation of the Grand Canal that connected the northern region to the southern region of China, as well as the maritime Silk Road which led to foreign countries, the socio-economic culture of Western countries flowed into China, bringing about changes to Chinese culture. Novels that depicted life began to prevail, resulting in a lower percentage usage rate of the character 乖 *guāi* in the Ming Dynasty $(1.75 \times 10^{-3})\%$ than in the Yuan Dynasty. The Four Great Classical Novels composed in this period all used the character 乖 *guāi*, with a percentage usage rate of $(3.54 \times 10^{-3})\%$ in *The Story of the Stone*, $(0.409 \times 10^{-3})\%$ in *The Romance of the Three Kingdoms*, and $(5.37 \times 10^{-3})\%$ in *The Journey to the West* and $(2.29 \times 10^{-3})\%$ in *The All Men are Brothers—Blood of the Leopard*. The total percentage usage rate of 乖 *guāi* in the Qing Dynasty was $(1.33 \times 10^{-3})\%$. In literature from the Republican Period after the May Fourth Movement, the percentage usage rate was $(1.65 \times 10^{-3})\%$, and in the literature created after the founding of the PRC, it was $(1.48 \times 10^{-3})\%$.

After the May Fourth Movement, with the emergence of new culture and fresh composition methods, the composition forms of literature broke through the shackles of old stereotypes, which drove the production of impassioned political essays, and the creation of vigorous and unrestrained free poetry, prose and novels that embodied real life. As it proved difficult to fuse the meaning of character the 乖 *guāi* with the thought expressed in these works, the original meaning of 乖 *guāi* had no use value, which greatly reduced the frequency with which the character 乖 *guāi* was utilized in the works created by the new literature. For instance, no character 乖 *guāi* was found in the Complete Works of Mr. Qian Mu, while the original meaning of the character 乖 *guāi* appeared in the work intitled *Commentary on How Newspapers Are Beneficial to National Affairs*. This work was included in the Collection of Liang Qichao, which contained his 56 works. The General Discussion on Political Reforms and the Theory of Young China: Commentary on the General Trend of the Modern Civil Movement and the Future of China and other articles written by Liang Qichao on the eve of the Reform Movement of 1898 expressed his expectations and encouragement regarding the future of China. Following the characteristics of ancient texts, if the thoughts advocated by these articles were lost, it would bring disaster to China, by which time, China would face “乖运” or *guāi yùn*, which means “adversity”. Therefore, the character 乖 *guāi* should have appeared, but it was not found in these texts. This represented the ideological trend of the new culture, which abandoned old practices in favor of new ones: In the poems written by Guo Moruo and Xu Zhimo, the character 乖 *guāi* was rarely used, and in numerous prose works composed by Zhou Zuoren, the percentage usage rate of 乖 *guāi* was also very low. Moreover, the character 乖 *guāi* does not appear in

novels written by Guo Moruo, Zhao Shuli and Ding Ling. In many of Shen Congwen's novels, the percentage usage rate of 乖 *guāi* was only $(0.76 \times 10^{-3})\%$, while the percentage usage rate of 乖 *guāi* in Ba Jin's full-length novels, entitled *Spring and Autumn*, was $(2.96 \times 10^{-3})\%$ and $(0.40 \times 10^{-3})\%$, respectively. In *Rickshaw Boy* and *Tea House* written by Lao She, the percentage usage rate was $(2.28 \times 10^{-3})\%$ and $(18.6 \times 10^{-3})\%$, respectively.

The percentage usage rate of the character 乖 *guāi* in contemporary works is also low. Taking the 1st to the 10th Mao Dun Literary Prize as an example, the percentage usage rate of character 乖 *guāi* in works that were awarded the first prize was as follows: In the work entitled *Li Zicheng* written by Yao Xueyin (2005), the percentage usage rate was $(0.289 \times 10^{-3})\%$; in the work *Bell and Drum Tower* by Liu Xinwu (2005), 乖 *guāi* did not appear; in *Ordinary World* written by Lu Yao (2012), the percentage usage rate was $(0.161 \times 10^{-3})\%$; in *White Deer Plain* by Chen Zhongshi (2012), the rate was $(1.39 \times 10^{-3})\%$; in *Choice* by Zhang Ping (2005), it was $(0.379 \times 10^{-3})\%$; in *Zhang Juzheng* by Xiong Zhaozheng (2003), the rate was $(1.02 \times 10^{-3})\%$; in *Shaanxi Opera* by Jia Pingwa (2019), it was $(0.68 \times 10^{-3})\%$; in *You Are in the Plateau* by Zhang Wei (2010), 乖 *guāi* did not appear; in the *Jiangnan Trilogy* by Ge Fei (2019), the rate was $(1.77 \times 10^{-3})\%$; in *Secular World* by Liang Xiaosheng (2018), the rate was $(0.348 \times 10^{-3})\%$; and in the *Frog* by Mo Yan (2009), who was the winner of the 2012 Nobel Prize for Literature and the 8th Mao Dun Literary Prize, the rate was $(3.72 \times 10^{-3})\%$. However, other award-winning works, including *Red Sorghum Family* (2017), *Big Breasts and Wide Hips* (2003) and *Transparent Radish* (2000), were not retrieved.

According to the statistics of the transferred meaning of 乖 *guāi*, the earliest recorded literature is the Tang Dynasty (Luo, 1986: p. 279). However, due to the small proportion of this meaning of 乖 *guāi* used in the Tang Dynasty, the percentage of the transferred meaning of 乖 *guāi* in the Tang Dynasty was not obvious in Figure 3 and Figure 4. Up to the Song Dynasty and beyond, the use of the transferred meaning of 乖 *guāi* gradually increased and became more and more obvious. The percentage usage rate of 乖 *guāi* in the Ming and Qing Dynasties was 46.1% and 46.9%, respectively. A rapid transferring period was observed in the Republic of China era. During this time, the percentage word count of the character 乖 *guāi* that contained the transferred meaning surpassed that of the original meaning, reaching 66.9%, and since the founding of the PRC, the percentage reached 94.5%.

Between the early Jiajing period in the Ming Dynasty and the Opium War, with smooth cultural communications between North and South China, and the introduction of Western culture, the utilization frequency of the transferred meaning of the character 乖 *guāi* increased greatly. Since the May Fourth Movement, the new literati began to write in the vernacular. This led to a decrease in percentage usage rate of the character 乖 *guāi* in these works, although the percentage usage rate of its transferred meaning was higher than that

of its original meaning. For example, Ding Ling's novel *Sun Shines over the Sanggan River* (Ding, 2005), which won the Stalin Prize for Literature, Shen Congwen's 12-volume novel (Shen, 2009), Ba Jin's three full-length novels (Ba, 2003), and Lao She's works entitled *Rickshaw Boy* (Lao, 2010) and *Tea House* (Lao, 2002) all used the transferred meanings of the character 乖 *guāi*.

The transferred meaning of 乖 *guāi* did not appear in literary works that predated the Tang Dynasty, and this may be understood in terms of a general lack of objective understanding about things at that time. The birth and development of three religions, namely, Buddhism, Taoism and Confucianism in Chinese history, as well as the preferences of emperors from different periods, prompted rivalry between these three religious groups, with each competing to become the overlord of the ideological field at different times. However, none of them could escape superstition, and this meant that the original meaning of the character 乖 *guāi* was utilized more frequently, as it conformed to the characteristics of that time and the literary works composed before the Tang Dynasty. After the Tang Dynasty, the maturity of the three religions, the improvement in people's understanding of objective things, and the emergence of a new culture after the May Fourth Movement, impelled the upper class and academics in China to form new ideas, which naturally led to breakthroughs and developments in the old culture. Therefore, the decrease in the utilization of the original meaning of 乖 *guāi* and the increase in the utilization of its transferred meanings are the inevitable result of this development.

The Chinese ideographic characters have close relations with the social culture. Figure 5 shows that few words in the literature of the pre-Qin and Qin Dynasties contained 乖 *guāi*, although the percentage usage rate gradually increased in the Han Dynasty. In addition, in line with social, historical and economic development, the word utilization frequency showed periodic changes. This study took the following periods and dynasties as cycles: the Qin-Han-Sui Dynasties; Sui-Tang-the Five Dynasties and Ten Kingdoms; the Five Dynasties and Ten Kingdoms-Song-Yuan Dynasties; Yuan-Ming-Qing Dynasties-the Republic of China; and the Republic of China-the founding of New China-the Present-day. In each of the most prominent periods of literature development, the utilization frequency of words containing 乖 *guāi* remained at a peak in the corresponding cycle. In the first cycle, the highest peak appeared in the Han Dynasty, and the word that appeared the most frequently was 乖离 *guāi lí* or "deviation", accounting for 22.22% of the total number of words containing 乖 *guāi*. This word was mainly distributed in the Orthodox Exposition of The Book of Rites (Zheng (n.d.); Handian Guji), the Interpretation of Analects of Yangzi (Yang (n.d.); Handian Guji), and the Interpretation of Gongyang Commentary on the Spring and Autumn Annals (Gong & He, 2014). In the second cycle, the highest peak appeared in the Tang Dynasty, with a peak value higher than that of the first cycle, in which the word that appeared the most frequently was 乖违 *guāi wéi* or "disorderly", "abnormal", "conflicting", and "separate", accounting

for 37.31% of the total number of words containing the character 乖 *guāi* with a wide distribution. In the third cycle, the highest peak appeared in the Song Dynasty, and the word that appeared most frequently was 乖謬 *guāi miù* or “absurd”, accounting for 25.64% of the total use of this word. The fourth cycle formed a peak across the Ming and Qing dynasties, with a peak value higher than that of the former three cycles, and the words that appeared the most frequently were 乖巧 *guāi qiǎo* or “clever” and “lovable” and 乖觉 *guāi jué* or “alert”. Expressed in percentage terms, the number of times that each of these words were found among the total number of words containing 乖 *guāi* was 29.50% and 27.92%, respectively, in the Ming Dynasty, which was in contrast to 49.64% and 46.70% in the Qing Dynasty, and the novels referred to different themes. These changing laws clearly reflect the historical lens through which the prosperity and decline of literature unfolded. These peaks appeared precisely during historical periods that were characterized by the prosperous study of Confucian classics in the Han Dynasties after the pre-Qin Dynasty, the popularity of metaphysics in the Wei, Jin, Southern and Northern Dynasties, the coexistence of Confucianism, Buddhism and Taoism in the Sui and Tang Dynasties, as well as the development of Neo-Confucianism in the Song and Ming Dynasties, all of which set the course for the growth, enrichment and expansion of traditional Chinese culture.

In various historical periods, the usage rate of 乖 *guāi* in the Tang Dynasty was higher than that in other dynasties, and its meaning had the characteristics of both the original meaning and transferred meaning. After the Ming and Qing Dynasties, more and more semantic words of the transferred meaning were applied. The occurrence of this phenomenon was partly due to the introduction of Western culture into China, but also to the emergence of novel creations that expressed people’s thoughts and emotions, and literary works that depicted life at the grassroots level started to appear and gain traction. As such, words that praised and depicted figures, as well as their ideology, were used more frequently, and this represented a significant change and a shift away from stereotyped literature that preached about and restrained human behavior prior to the Five Dynasties and Ten Kingdoms. These characteristics were also evidenced by the utilization of words; that is, there was a gradual decrease in the utilization of the original meaning of 乖 *guāi*, but an increase in the utilization of its transferred meaning.

In addition, the percentage usage rate of the word 乖乖 *Guai Guai* or “well-behaved”, “good”, and “gracious”, which expressed meanings that conveyed both praise and exclamation, increased in literary works that were created since the beginning of the Ming Dynasty. Since the founding of the PRC, the current rate has reached 52.54%. From the obvious rise in the percentage usage rate of 乖巧 *guāi qiǎo* or “clever” and “lovable”, 乖觉 *guāi jué* or “alert” and 乖乖 *Guai Guai* or “well-behaved”, “good” and “gracious”, it is possible to envisage that Chinese culture will enjoy broad development prospects into the fu-

ture, particularly given the predominating direction of “cultural self-confidence” in China.

To sum up the above findings, the following conclusions can be drawn:

A, The usage rate of 乖 *guāi* is closely related to the historical culture and economic prosperity at that time. In the era of historical and cultural economic prosperity, its percentage usage rate is high.

B, The transferred meaning of 乖 *guāi* was first recorded in the Tang Dynasty. The use of 乖 *guāi* words of different meanings shows periodic changes with the development of history.

C, With the change of time, the original meaning of 乖 *guāi* is used less and less, especially nowadays, and has tended to disappear, and the use of the transferred meaning words has become the mainstream. This phenomenon is worthy of consideration and attention.

4.3. Reasons for the Meaning Transfer of the Character 乖 *Guāi* and Words Containing 乖 *Guāi*

In general, polysemous words became contronyms in one of two ways: 1) different words with different etymologies converged into one word, or 2) one word acquired different and opposite meanings over time.

As for the cause of the transferred meaning of 乖 *guāi*, there have been some studies carried out (Gu, 2003; Wu, 2011; Li, 2018), and preliminary results have been obtained, but there are also deficiencies and a lack of evidence in these studies. Based on an investigation of the large number of historical documents mentioned above, it can be argued that the transferred meanings of 乖 *guāi* was first recorded in the Tang Dynasty rather than the Song Dynasty, and the reason for the change was related to social development and the need for interpersonal communication.

4.3.1. The Word Meaning Derived from Etymology

The purpose of etymology is to trace back and find what where words originated from. The morphemic nature of Chinese writing has resulted in a close connection between graphic form and meaning (Tan & Perfetti, 1998). Chinese characters are the oldest written words of any language in the world. Originating from hieroglyphs and imitation of nature, each Chinese character provides us with a picture. Most of the current Chinese characters are derived from oracle bone scripts, but there is no specific oracle bone script for 乖 *guai*.

The interpretation of 乖 *guai* in “Zi yuan” is that it is both an ideographic character and a pictographic character. 乖 *guai* source is “𠂔” that was seen in the Shang Dynasty oracle. Component “𠂔” start as 𠂔, 𠂔, then to 𠂔, 𠂔. Another component of 乖 *guai* is “八”, which is actually the transformation of “北” (see oracle bone script, see character “𠂔”). The official script change, 𠂔 the word returned to the shape of the ancient beginning 𠂔, 𠂔, 𠂔, as two people back to back. “𠂔” combines “𠂔, 𠂔, 𠂔” to form “𠂔” with an ideographic character and a pictographic character. Official script characters “𠂔”

become regular script 乖 (Li, 2013: p. 314; Xu, 2017: p. 452).

According to the above, the appearance of 乖 *guāi* original glyph expressed some meaning of “departure”, “violation”, and “disharmony”, that is, the original meaning. The words associated with 乖 *guāi*, such as 乖离 *guāi lí*, 乖背 *guāi bèi*, and 乖舛 *guāi chuǎn* are also similar in meaning to “departure”, “violation”, and “disagreeable”. The use of the original meaning of 乖 *guāi* can be seen from the curves in **Figure 3** and **Figure 4**. The meaning of 乖 *guāi* appeared with these original meanings in ancient literature before the Tang Dynasty, but in Tang Dynasty literature 乖 *guāi* began to have the transferred meaning (Luo, 1986: p. 279), for example, “Poetry” is the most characteristic and dazzling literature at the Tang Dynasty. There are about 178 乖 *guāi* in the Complete Tang Poems, but only one of them has the transferred meaning and it is found in Li Kuo’s poem 《上令狐舍人 shàng lín hú shè rén》, “宿客嫌吟苦, 乖童恨睡迟 sù kè xián yín kǔ, *guāi* tóng hèn shuì chí” which translates into English as “The guest complained that the reading is bitter, and the good boy hated sleeping late.” (Peng (2015), Vol. 479-51). For the first time, the meaning of 乖 *guāi* expressing “cleverness and cleverness” appeared (Luo, 1986). In the Song Dynasty the meaning of 乖 *guāi* further evolved into “cunning, clever, clever” and other more transferred meanings, for example, in A Collection of Chinese Family Maxims (《名贤集》, Handian guji: <http://gj.zdic.net/>), the following maxim is found: “乖汉瞒痴汉, 痴汉总不和, 乖汉做驴子, 却被痴汉骑 *guāi* hàn mán chī hàn, chī hàn zǒng bú hé, *guāi* hàn zuò lú zi, què bèi chī hàn qí” or “the crafty person always deceives the fool, and the fool is always unable to see through. But the crafty person would become a donkey in his next life, and thus be ridden by a fool”. The narrative literature that flourished in the Yuan Dynasty is expressed by Chinese opera and non-dramatic songs, with the appearance of transferred meanings, such as “壮者曰士乖, 幼者曰子 zhuàng zhě yuē shì *guāi*, yòu zhě yuē zǐ”, or in English, “the middle-aged people are enlisted in the army, and children are taken as slaves” which are respectively found in volume 8 and volume 19 of the Records of Discontinuing Farming in Nan Village by Tao Zongyi (n.d.) (Handian Guji), etc. During the Ming Dynasty, in the 23rd of Wu Cheng’en’s “Journey to the West”, there is “娘啊, 你女儿这等乖滑得紧... niáng a, nǐ nǚ ér zhè děng *guāi* huá de jǐn” or “oh mom, your daughter this lovely slippery tight”. During the Qing Dynasty, Yu Wanchun’s creation of the novel “人却乖觉 rén què *guāi* jué” or “Dangkou Zhi” in the seventy-ninth “But men are perverse”; In contemporary literature, “...你给人的感觉挺乖的...显得乖巧了... nǐ gěi rén de gǎn jué tǐng *guāi* de... xiǎn de *guāi* qiǎo le” or, in English: “You actually come across as nice on TV... And your treachery is so sweet” (Wang & Lao, 2000).

Obviously, the appearance of these transferred meanings can no longer be explained by the 乖 *guāi* etymology. Therefore, there are other reasons that the original meaning of 乖 *guāi* is transferred into the different or opposite meaning. The phonetic shifts and the pragmatic changes from other dialects may be

the influencing factors.

4.3.2. The Word Meaning Derived from Phonetic and Pragmatic

Ideographic characters and pictographic characters can be seen from the shape on the meaning of the words, but they are not allowed to deliver voice. It is very productive to dissimilate the meaning of a word by the phonetic shifts and the pragmatic changes since ancient times, some being natural and some being influenced by other dialects (Luo, 1986; Li, 2005). In the early days, the pronunciation of Chinese characters was spelled out by relevant two-character pronunciation, and later marked with the same or similar pronunciation of Chinese characters. Now, Chinese phonetic symbols are used to read the correct pronunciation. For example, the definition of 乖 *guāi* in the Chinese Character Etymology Dictionary refers to the use of 拐 *guǎi* in Mandarin dialects (Gu, 2003). 拐 *guǎi* has the meaning of abducting and selling, thus causing 乖 *guāi* to have a cunning and other meaning.

Zhai Hao in the Qing Dynasty stated that “姁字，长言之则转为乖，*huá zì, cháng yán zhī zé zhuǎn wéi guāi*” or in English, “the character 姁 *huá* sounds like 乖 *guāi* when reading with a prolonged pronunciation”, in respect to the meaning transfer from 姁 *huá* to 乖 *guāi*. Later on, in Shu Dialect, Ji Guotai stated that “乖 *guāi* is an interchangeable word of 姁 *huá*”. From the perspective of today’s Shu dialect, 黠 *xiá* or “guile” is expressed as 鬼 *guǐ*, instead of 乖 *guāi*, while 乖 *guāi* means “well-behaved”, “tame”, “pretty” and “charming” (Ji, 2007). In the Qing Dynasty, Li Tiaoyuan described the Guangdong dialect in Volume I of the Notes of Nan Yue that: “The residents in Guangzhou describe ‘beautiful things’ as 靚 *liàng*, ‘perversion’ as 废 *fèi*, ... ‘disorder’ as 则 *zé*. They described ‘seductively charming’ as 姁 *jiāo*, with a pronunciation of 豪 *háo*, and described ‘clever’ as 乖 *guāi*...” (Li (n.d.) (Notes of Nan Yue); Handian Guji).

Although the above documents, to a certain extent, explained the reasons for the transfer of meaning in regard to the character 乖 *guāi*; however, the lack of relevant historical evidence cannot fully explain the meaning of “meek and obedient” transformed from the word 乖 *guāi*. In this paper, it is proposed that there is another possible explanation for the transferred meaning of the character 乖 *guāi*, i.e., the “borrowed word” is used in communications. For example, the Tianshui dialect in the Longyou area, which is used in eastern Gansu adjacent to Shaanxi, shares the characteristics of “borrowing” in its expressions (Xie, 2018; He, 2018).

Long you is one of the inhabited areas along the Yellow River valley. It has a very important position in China’s culture history. Tianshui is situated in the Weihe River basin, a main tributary of the Yellow River. It is the birthplace of the ancient Yellow River civilization and the origin of the Fuxi culture. Fuxi was the first of China’s three earliest emperors in remote antiquity and he was the earliest creator of Chinese characters, according to the ancient books of China.

From the Fuxi era to the establishment of the Qin Dynasty, the population of the Tianshui region was in a constant flux, with continuous transformations taking place in language development and transmission. Since the extinction of the Shang Dynasty and the establishment of the Qin Dynasty, the Qin people's activity center moved eastward, driving the language exchange, as well as change and development (Wang et al., 2014).

In Long you dialect, Gangu County, to which Tianshui belongs, and in which Duke Wu of Qin stayed when he dispatched an expedition against Jirong in 688 BC (Du, 1999), the elderly had a unique way of "borrowing abusive expressions" (referred to as "borrowed terms") to express emotions when they communicated. For instance, 死完根的 *sǐ wán gēn de*, 乖孙子 *guāi sūn zi*, 乖儿子 *guāi ér zi* and 乖死的 *guāi sǐ de* all mean a "vicious attack" and "derogation". However, two people who have a good relationship but have not seen each other for a long time or who are very congenial also use 死完根的 *sǐ wán gēn de*, 死去的你 *sǐ qù de nǐ*, 乖死的 *guāi sǐ de*, and 把你乖的 *bǎ nǐ guāi de* in a very cordial tone without any abusive meaning, 将顺从听话称为“乖乖的” *jiāng shùn cǒng tīng huà chēn wéi “guāi guāi de”*, i.e., obedience is called “guai-guai de” (Shen & Mo, 2011). When greeting the child of the listener, one would say “乖不乖? *guāi bú guāi?*” or “well-behaved or not?”, and when praising a child who is obedient and polite, one would say “你家小孩很乖 *nǐ jiā xiǎo hái hěn guāi*, or ‘is your child as good as gold/well-behaved?’, 将小孩生病叫做“不乖”, or *jiāng xiǎo hái shēng bìng jiào zuò bú guāi* (Du, 1999), or call a sick child “*bú guāi*”; 将小孩身体无恙、听话和懂礼貌会说成“乖爽” *jiāng xiǎo hái shēn tǐ wú yǎng, tīng huà hé dǒng lǐ mào jiào zuò “guāi shuǎng”* (Li, 1988), or will the child healthy, obedient and polite will be said as “*guāi shuǎng*”. It is evident that this style of expression has a long history. Originally, it was a word that had a derogatory meaning, but as communication increased, it became a cordial greeting. The original meaning and the transferred meaning of the character 乖 *guāi* were both reflected by this type of communication style. In the Tang Dynasty, Li Kuo who was born in Longxi of this region, first used the transferred meaning of the character 乖 *guāi*. His language and experience were affected by the folk dialect language of the place where he was born, so that application of the transferred meaning of the character 乖 *guāi* to his poems is sufficient to prove that the transferred meaning of the character 乖 *guāi* was used in the folk of Long you very early.

It can be concluded that the language convention used in the Tian shui region, with its ancient language characteristics, was introduced into the Guan zhong region in parallel with the population flow that occurred during the Qin people's expedition. However, it can be seen from the analysis in sections 4.1 and 4.2 that the literary works that preceded the Tang Dynasty mainly recorded themes that involved preaching, morality, and the activities of the emperor and other upper-class figures, while few works depicted the daily living habits of those at the grassroots level. Therefore, it was impossible to more record colloquial folk language using the written word as it was not elegant, given the historical condi-

tions at that time. Colloquial folk language was not recorded and expressed until the emergence of new literary novels that reflected the lives of ordinary people. As a result, it was not until after the Song Dynasty, especially in the Ming and Qing dynasties, that those new literary novels reflecting the life of ordinary people were recorded and expressed. This is proved by the large number of the transferred meaning of 乖 *guāi* semantic words in Ming and Qing novels.

From the above analysis, it can be concluded that the language was enriched over the course of the historical evolution process, and as a result of the changes that occurred in people's living habits, in addition to greater opportunities for communication, in particular. This added additional interest to the communications sphere at the time, and antonyms were often used to greet acquaintances, which led to the creation of "borrowed terms", as well as the meaning transfer of 乖 *guāi*.

5. Conclusion

The character 乖 *guāi* and the words containing 乖 *guāi* impart both the word's original meaning and its transferred meaning. The period in which the utilization of the character 乖 *guāi* reached its peak occurred in the flourishing era of the Tang Dynasty. Before the Tang Dynasty, the character 乖 *guāi* and words containing 乖 *guāi* maintained its original meaning, while the initial transferring period occurred during the mid-Tang Dynasty. The Song Dynasty can be regarded as the production period, whereas mature utilization occurred in the Ming and Qing Dynasties. The period after the Republic of China was characterized by the extensive use of transferred meaning. The meaning transfer of the character 乖 *guāi* and the words containing 乖 *guāi* is associated with China's earliest language evolution and migration activities. The ancient "abusive expressions" in the Long you region were used as borrowed terms, and this led to a transfer in the meaning of the character 乖 *guāi* and the words that contained 乖 *guāi*, which then evolved to convey words of praise. As a result of wars that occurred during the establishment of the Qin Dynasty, as well as several large population migration events, this mode of communication was passed on to various locations. Later on, the emergence of the novel, as a literary genre that expressed people's emotions and thoughts, heralded a transformation in this style of expression, which was then recorded in written text.

The frequency of words containing the character 乖 *guāi* highlighted periodic changes that unfolded alongside social, historical and economic development., and the following periods can be regarded as cycles: the Qin Dynasty-Han Dynasty-Sui Dynasty; the Sui Dynasty-Tang Dynasty-the Five Dynasties and Ten Kingdoms; the Five Dynasties and Ten Kingdoms-Song Dynasty-Yuan dynasty; the Yuan Dynasty-Ming and Qing Dynasties-the Republican Period; the Republican period-the founding of the PRC-the Present-day, which has not yet been completed. It is predicted that with the proposal of "cultural self-confidence" in China, the utilization of the character 乖 *guāi* and the words containing 乖

guāi will usher in a longer cycle in the future. It can be concluded from the above that the utilization of the character 乖 *guāi* and the words containing 乖 *guāi* are closely associated with the ancient and modern historical, economic and cultural development of China.

In summary, through this study of “乖” or its words with opposite meanings, it can be concluded that the monoseme in Chinese becomes the contronym which is caused by social development and the evolution of local dialects, and these have the diachronic and even opposite overshoot of its original meaning with the development of society. We may also obtain a research method for the other contronyms in ancient and modern Chinese literature, that is, to employ big data analysis combined with graphical methods to reveal the emergence and forecast the application prospect of words. The obtained graphs clearly showed the diachronic relationship between the change of words meaning and their application with the change of time. This study clearly depicts the diachronic relationship between the application of contronyms and social development of China. This method has reliability and authenticity.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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