

From ‘Deviate’ to ‘Obedient’: a Diachronic Study on the Semantic Change of the Auto-antonym *Guai* in Chinese

Yihan Zhou
University of Illinois
Urbana-Champaign

Abstract *Guai* (乖) is one of the auto-antonyms in Chinese. It has gone through a reverse semantic change from ‘deviant’ to ‘obedient’. The current research conducts a diachronic study on the semantic change of *guai* from Zhou dynasty (BCE 1046) to present (CE 2017). It draws on corpus at different times to provide a panorama of the semantic change of *guai* and explain the mechanism of the semantic change. The data support the internal motivation hypothesis that *guai* developed the ‘obedient’ meaning from itself, not from borrowing.

1 Introduction

1.1 Background

Semantic change is common in every language. However, there is a special group of words that cross a semantic boundary and have acquired the opposite meaning. These words are called AUTO-ANTONYM. For example, the word ‘dust’ in English can refer to ‘cover lightly with a powdered substance’ or a reverse action ‘remove the dust or dirt from the surface of something’ (Karaman 2004).

Auto-antonyms are observed in different languages, such as Turkish, English, and Arabic, and researchers have started to investigate how and why this unusual semantic change could occur (Karaman 2004; Karaman 2008; Alomoush 2010). These languages are alphabetic and the connection between orthographic forms and meanings is weak. Chinese, however, may be a different case. With the residues of logographic features, the connection between orthographic forms and meanings is relatively strong in Chinese. Studying *guai* can provide insights to the understanding of auto-antonyms cross-linguistically.

1.2 Research Purposes and Topic

Guai (乖) is a sample word for studying auto-antonyms in Chinese. It has gone through a reverse semantic change. In ancient Chinese, it means ‘deviate’. However,

in modern Chinese, the meaning changes to 'obedient'. The word is now frequently used in parent-child relation and educational contexts.

The current research conducts a diachronic study on the semantic change of *guai* from Zhou dynasty (BCE 1046) to present (CE 2017). It draws on diachronic corpora to provide a panorama of the semantic change of *guai* over three thousand years and explains the mechanism of the semantic change. This article has three research questions: (1) How did the parts of speech, mutual information, and meanings of *guai* change over time? (2) When did the semantic change happen? (3) Why did the semantic change happen?

2 Literature Review

2.1 Theories on Semantic Change

Traugott (1989) proposes one tendency of semantic change: meanings based on external description will change to meanings based on internal evaluation, perception, and cognition. This tendency can explain pejoration and amelioration. For example, the meaning of the word *boor* changes from 'farmer' to 'crude person'.

Bloomfield (1993) classifies nine types of semantic change: (1) narrowing of meanings: *mete* 'food' > *meat* 'edible flesh' (2) widening of meanings: *dogge* 'dog of a particular breed' > *dog* (3) metaphor: *['bitraz] 'biting' > *bitter* 'harsh of taste' (4) metonymy: *joue* 'cheek' > *jaw* (5) synecdoche: *['tu:naz] 'fence' > *town* (6) hyperbole: *astonish* 'to strike with thunder' > *astonish* (7) litotes: *['kwalljan] 'to torment' > *cwellan* 'to kill' (8) degeneration in subjective attitudes: *cnafa* 'boy' > *knave* (9) elevation in subjective attitudes: *cniht* 'boy' > *knight*.

2.2 Previous Studies on *Guai*

Zhang (1908) believes the 'obedient' meaning of *guai* is the result of borrowing from another word *jia* (佳), which means 'good'. He gives the reason that *guai* and *jia* had very close pronunciation in the past, which meets the necessary condition for borrowing. On the other hand, Qian (2016) proposes that the 'obedient' meaning is derived from 'deviate'. Wu (2011) further attributes the motivations of reverse semantic change of *guai* to psychology, influence of other dialects, and general changes in the Chinese language. However, previous studies did not have much support from diachronic data and it remains unclear if the change from 'deviate' to 'obedient' is abrupt or gradual. It remains to be investigated as to how and when this semantic change took place.

3 Method

3.1 Corpora

Four corpora are used in the study: Academic Sinica Tagged Corpus of Old Chinese (1250 BCE - 8 CE), Academic Sinica Tagged Corpus of Middle Chinese (25 CE – 589 CE), Academic Sinica Tagged Corpus of Early Mandarin Chinese (608 CE – 1912 CE), Academic Sinica Balanced Corpus of Modern Chinese (1912 CE - present).

Pan (1989) posits four major periods of lexical change in Chinese: Old Chinese (1320 BCE – 207 BCE), Middle Old Chinese (202 BCE to 875 CE), Pre-Modern Chinese (875 CE – 1840 CE), and Modern Chinese (1919 CE – present).

Each of the corpora approximately corresponds to one period in Pan's periodization. The corpora in combination depict the diachronic development of the word *guai* in syntactic features, contexts, and meanings.

3.2 Data

Three syntactic and semantic features of *guai* will be compared over time, parts of speech, mutual information between *guai* and surrounding words, and meanings. PARTS OF SPEECH reveal the syntactic role of *guai*. MUTUAL INFORMATION measures the information that two variables share and shows how the context of *guai* changes over time. Finally, we can analyze the potential connection between different meanings of *guai* by tracing the meanings during different periods. We can also pinpoint the time when the modern usage of *guai* first occurs. Parts of speech and mutual information are extracted from the corpora while meanings are manually annotated by the author.

4 Results and Discussion

4.1 Part-of-Speech (POS)

The corpora use the following part-of-speech tagging convention:

- VH: one-argument stative verb
- VH: one-argument stative verb
- VH1: one-argument stative verb with the subject being the theme
- VH1N: one-argument stative verb with the subject being the theme
- VJ: two-argument stative verb with the object being a word
- VK: two-argument stative verb with the object being a clause
- VP: causative usage, interpreted as 'make something or someone *guai*'

- N1: abstract noun
 Na: noun
 DV: verbal adverbial
 R: a character being interpreted

POS	Old Chinese		Middle Chinese		Early Mandarin		Modern Chinese	
	Count	%	Count	%	Count	%	Count	%
VH					70	62	64	100
VH1	30	66.7						
VH1N	10	22.2						
VK					32	28.3		
VJ			21	91.3	2	1.8		
VP	2	4.4						
NI	2	4.4						
Na			1	4.4	9	8		
DV	1							
R			1	4.4				

Table 1 Parts of speech of *guai* in different periods

The distribution of parts of speech seem to be different in the four periods, but we cannot conclude that the part of speech has changed significantly over time because the part-of-speech tagging convention has overlapping categories such as VH and VH1 and NI and Na.

However, two general patterns can still be observed: the change in transitivity and the usage as a noun. During old Chinese, *guai* is mainly an intransitive verb. During middle Chinese and early Mandarin, it can be used both as an intransitive and a transitive verb. Finally, *guai* becomes an intransitive verb in modern Chinese. In old Chinese, middle Chinese, and early Mandarin, *guai* can be used as a noun. While in modern Chinese, this usage is not allowed and *guai* can only be used as a verb. The two patterns suggest that the *guai* acquired modern usage during early Mandarin.

4.2 Mutual Information (MI)

The section presents mutual information between *guai* and the surrounding words. For words preceding *guai*, only those with MI greater than 6.5 are selected. For

words after *guai*, only those with MI greater than 5 are selected. The cutoff values are set to present the most common collocations.

Old Chinese		Middle Chinese		Early Mandarin				Modern Chinese	
Word	MI	Word	MI	Word	MI	Word	MI	Word	MI
Mistake (差遲)	11.1	At (於)	9.5	Lyric (詞)	10.7	Destiny (五行)	7.5		
Epact (間餘)	10	Look down (俯)	8.5	Tame (珍伏)	10.7	So (恚)	7.1		
Inside and outside (內外)	7.5	Sentence (文句)	8.5	Extremely (萬般)	7.9	Bad (劣)	7		
Subject and master (臣主)	7.4	A little (小)	8	Fate (緣分)	7.8	Different (殊)	6.8		
King and courtier (君臣)	6.99			Disposition (情性)	7.768	Mouth (嘴兒)	6.761		
				Suddenly (忽爾)	7.577				

Table 2 CAPTION

Old Chinese		Middle Chinese		Early Mandarin				Modern Chinese	
Word	MI	Word	MI	Word	MI	Word	MI	Word	MI
Hunt (獵)	8.5	Like (愛好)	11.3	Serve parents (色養)	10.7	Fame (聲聞)	6.7	Baby (寶貴)	7.8
		Uprightness (肅正)	11.3	Rite (世禮)	10.7	Fortune (運)	6.2	Kid (孩子)	5.3
		People’s wish (民望)	10.6	Play tricks (弄俏)	10.7	Son (人兒)	5.9		
		Create (製作)	10.6	Serve (驅策)	10.7	Method (方)	5.8		
				Principle (道體)	9.6	Lip (唇)	5.8		
				Think over (斟酌)	8.4	Son and daughter (兒女)	5.7		
				Roe deer (獐)	8.4	Cruel (毒)	5.6		
				One (一)	7.5	Monkey (猴)	5.3		
				Normal (常)	7.2	Nothing but (而已)	5.2		
				Monkey (猿)	6.8	Kid (孩子)	5		

Table 3 CAPTION

In both Table 2 and Table 3, the early Mandarin period has the greatest numbers of collocations which have high mutual information with *guai*. This suggests that *guai* underwent a dramatic change during the period.

In Table 2, the word that directly precedes *guai* seems to be different in all periods. However, in Table 3, the word right after *guai* is very similar during early Mandarin and modern Chinese. During early Mandarin, *guai* can modify smart animals such as deer and monkeys and the usage did not exist before. Most importantly, in early Mandarin, *guai* can modify children, son, and daughter. The usage echoes with modern Chinese in which *guai* only modifies children and babies. The results show that it is very likely that *guai* transform to the usage in modern Chinese during early Mandarin.

4.3 Meanings

Modern Chinese dictionary (7th edition) lists four meanings of *guai*: deviate, strange, Crafty/smart, obedient. The author manually annotated the meanings of *guai* in each entry of the corpora and counted the occurrences of the meanings in different periods.

Meanings	Old Chinese		Middle Chinese		Early Mandarin		Modern Chinese	
	Count	%	Count	%	Count	%	Count	%
Deviate	45	100	23	100	57	50.4		
Strange					4	3.5		
Crafty					24	23.2		
Smart					28	24.8	2	6.3
Obedient							62	93.8

Table 4 CAPTION

Similar to the MI results, early Mandarin exhibits the greatest diversity of meanings, indicating again a drastic semantic change was happening at that time. Modern Chinese retains the 'smart' meaning of *guai*, suggesting that early Mandarin is the transition stage of *guai* to modern usage.

4.4 External Motivation

The evidence supports that the transition of *guai* to modern usage happened during early Mandarin period. The external motivation holds that the modern usage of *guai* is borrowed from another word. Zhang (1908) believes it comes from *jia*, which means 'good' and has similar pronunciation with *guai* in the ancient Chinese. This section offers evidence against the external explanation.

POS	<i>Guai in early Mandarin</i>		<i>Jia in early Mandarin</i>	
	Count	%	Count	%
VH	70	62	135	100
VK	32	28.3		
Na	9	8		
VJ	2	1.8		

Table 5 CAPTION

Guai and *jia* are similar with VH being the dominate part of speech. The part of speech data indicate there may be a connection between *guai* and *jia*.

If *guai* borrows the meaning from *jia*, we should see some degree of interchangeability in collocations. Table 6 shows the collocations of *jia* seem to focus on food, spouse, and alcohol. In addition, the collocations of *jia* suggest that the meaning of *jia* is closely related to marriage ceremonies. However, *guai* collocates with various words, including abstract nouns (e.g. fate), concrete nouns (e.g. lyric), and animate nouns (e.g. roe deer). However, none of the words are related to marriage. Therefore, MI data do not support the borrowing hypothesis. Furthermore, *guai* has two positive meanings in modern Chinese: 'smart' and 'obedient'. *Jia* means 'good' in both ancient Chinese and modern Chinese. It is still unclear how 'smart' and 'obedient' can be derived from 'good'.

Words that precede				Words that follow			
<i>Guai</i>		<i>Jia</i>		<i>Guai</i>		<i>Jia</i>	
Word	MI	Word	MI	Word	MI	Word	MI
Lyric (詞)	10.7	Food (羹饌)	10.5	Serve parents (色養)	10.7	Condition (致)	9.9
Tame (珍伏)	10.7	Innocent (純良)	9.8	Rite (世禮)	10.7	Alcohol (醕)	9.8
Extremely (萬般)	7.9	Marriage (會喜)	9.4	Play tricks (弄俏)	10.7	Food (餼)	9.8
Fate (緣分)	7.8	Honorable officials (蓮幕)	9.4	Serve (驅策)	10.7	Food (肴)	9.6
Disposition (情性)	7.8	Nostalgia (懷古)	8.7	Principle (道體)	9.6	Food (餽)	9.6
Suddenly (忽爾)	7.6	Today (今夕)	8.4	Think over (斟酌)	8.4	Spouse (偶)	9
		Confer (惠)	8.4	Roe deer (獐)	8.4	Vegetables (蔬)	8.9
		Marriage (合巹)	8.2			Composition (作)	8.8
		Delicious food (美味)	8.1			Prediction (識)	8.8
		Twelve days (十二日)	7.6			Alcohol (釀)	8.7
						Spouse (配)	8.2
						Son-in-law (婿)	7.7
						Tea (茗)	7.5

Table 6 CAPTION

4.5 Internal Motivation

This section proposes that *guai* developed the modern usage because of language change and provides a semantic change model that connects all the meanings of *guai*.

The theories of Traugott (1989) and Bloomfield (1993) can be used to build a semantic change model of *guai*. *Guai*'s original meanings is 'deviate', as the symmetrical orthography 乖 suggests. Through evaluative tendency, speakers view themselves as normal and those who deviate as strange. In this way, 'strange' as the second meaning of *guai* emerged. 'Strange' is further narrowed to refer to strangeness in intelligence. The meaning was elevated, producing the 'crafty' meaning. The

'crafty' sense was further elevated and 'smart' is derived. When people behave in a smart way to their superiors, the superiors will think they are 'obedient'. The last derivation is also consistent with the fact that *guai* is usually used by parents and teachers to kids and students.

The semantic change path is shown as below:

Deviate → [evaluation] → Strange → [narrowing, elevation] → Crafty [elevation]
→ Smart → [narrowing, evaluation] → Obedient

5 Conclusion

Guai starts as an intransitive verb in old Chinese era and changes to both an intransitive and a transitive verb in middle Chinese and early Mandarin era. Finally, it changes back to an intransitive verb in modern Chinese era. Only in modern Chinese era, *guai* is used as a verb but not a noun.

Evidence from part of speech, mutual information, and meanings suggests that *guai* in the early Mandarin era and the modern Chinese era bear the most resemblance. Therefore, it is very likely that the semantic change occurred during the early Mandarin era. The article examines two hypotheses on the motivation of the semantic change of *guai*. The external motivation hypothesizes that the modern usage of *guai* is borrowed from *jia*, but it does not receive substantial support. The internal motivation hypothesis posits that *guai* developed the 'obedient' meaning from itself. Mutual information provides some support for this explanation. Moreover, internal motivation is consistent with subjectification theory, and a model can be constructed. In summary, the internal motivation hypothesis seems more plausible than the external motivation hypothesis, as shown in the paper. Nevertheless, more studies are needed to analyze the connection between ancient meanings and modern meanings of *guai* and provide stronger evidence to determine whether the modern meaning is a result of borrowing or language change.

References

- Alomoush, Omar I. 2010. On linguistic aspects of auto-antonyms in arabic. *International Journal of Academic Research* 2(4). 408–413.
- Bloomfield, Leonard. 1993. *Language*. New York: Allen & Unwin.
- Karaman, Burcu I. 2004. Lexical Ambiguity – The Phenomenon of Sense Opposition. In Herwig Rolf (ed.), *Sprache und die modernen Medien - Language and the Modern Media*, Frankfurt: Peter Lang.
- Karaman, Burcu I. 2008. On contronymy. *International Journal of Lexicography* 21(2). 173–192.
- Pan, Yunzhong. 1989. *Hanyu Cihui-shi Gaiyao [The introduction of the history of Chinese lexicon]*. Shanghai: Shanghai Classics Publishing House.
- Qian, Wei. 2016. http://www.cssn.cn/yyx/yyx_tpxw/201612/t20161208_3306103.shtml.
- Traugott, Elizabeth Closs. 1989. On the Rise of Epistemic Meanings in English: An Example of Subjectification in Semantic Change. *Language* 65(1). 31–55.
- Wu, Xuan. 2011. *Guai de yan bian [The evolution of guai]*. *Anhui Literature* 8. 262–263.
- Zhang, Binglin. 1908. *Xin fangyan [New dialect]*. <http://ctext.org/wiki.pl?if=gb&res=286961>.