

# **Quantitative Analysis on Verb Valency Evolution of Chinese**

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# SECTIONS

01/ Question

02/ Methods and Materials

03/ Results and Discussion

04/ Conclusion

# PART 01

## Question

1.Are there any change in the verb valence during the long history period of Chinese?



# PART 01

## Question

2.If it is, is it a small change or a big one?



# PART 02

Methods and  
Materials



## 2. Methods and Materials

- The ancient classical Chinese dates back from 1600 BC to 618 AD;
- The ancient vernacular Chinese dates back from 618 to 1911;
- The modern vernacular Chinese dates back from 1912 to now.

## 2. Methods and Materials

### **Corpora composition:**

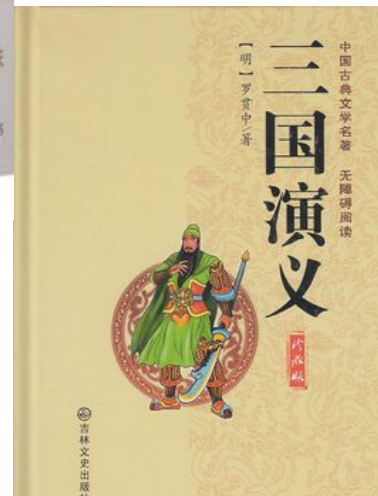
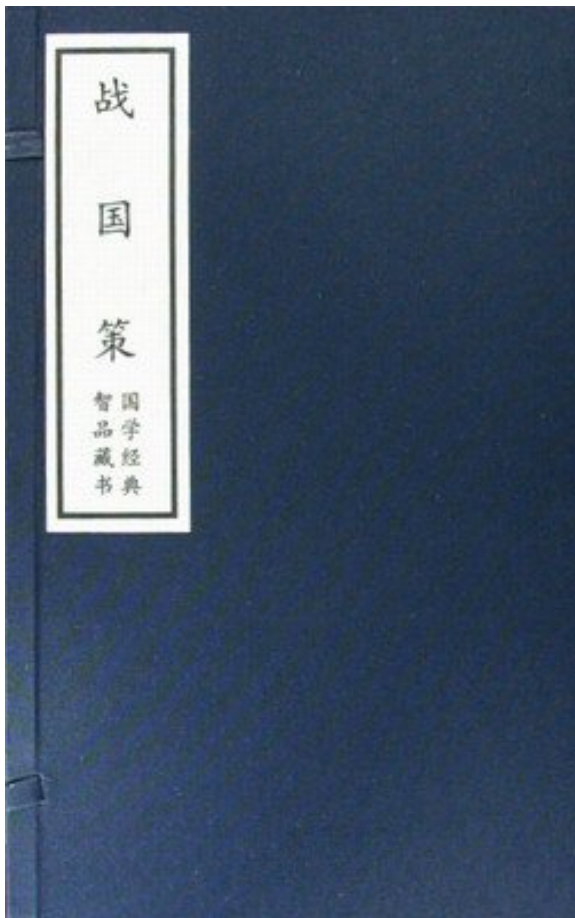
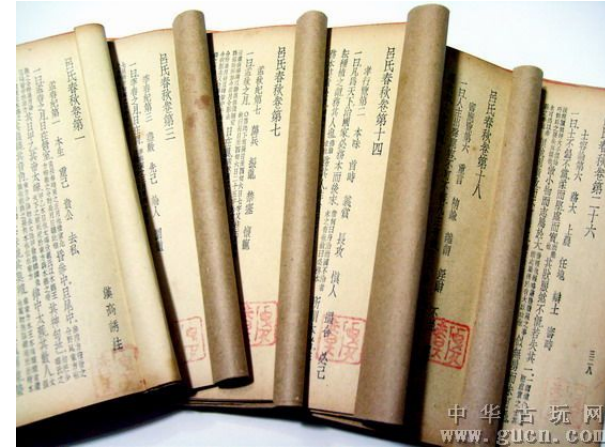
- The ancient classical Chinese: Zuo zhuan (narrative chronicle), Lv Shi Chun Qiu (a book on political theory), Liu Tao (a book on military strategies), Shangshu (government archives), Mencius (quotations from a sage), Xunzi (a book on philosophical treatise), Zhanguo ce, Shiji, Han Shu, Sanguozhi, Houhanshu (5 books on history), Guoxiaoshuogoucheng, Shishuoxinyu (novels)

## 2. Methods and Materials

- The ancient vernacular Chinese: Dunhuangbianwenji, Qingpingshantanghuaben, Xixiangji, Sanguoyanyi, Chukepaianjinqi, Erkepaianjinqi, Shuihuzhuan and Xiyouji (they are all novels or playbooks of Chinese)
- The modern vernacular Chinese:samples from novels.



## 2. Methods and Materials



## 2. Methods and Materials

- Ten verbs are selected because of their diachronic lexeme stability:
- 走(walk), 听(listen), 到(arrive), 爱(love), 有(have), 为(be), 能(can), 来(come), 使(let), 愿(wish).

## 2. Methods and Materials

	ancient classical Chinese	ancient vernacular Chinese	modern vernacular Chinese
到(arrive)	166	52	102
来(come)	91	97	78
爱(love)	98	51	70
能(can)	211	100	100
使(let)	210	62	97
听(listen)	71	76	72
为(be)	201	100	100
有(have)	207	116	104
愿(wish)	53	108	151
走(walk)	75	51	58
Total	1383	813	932

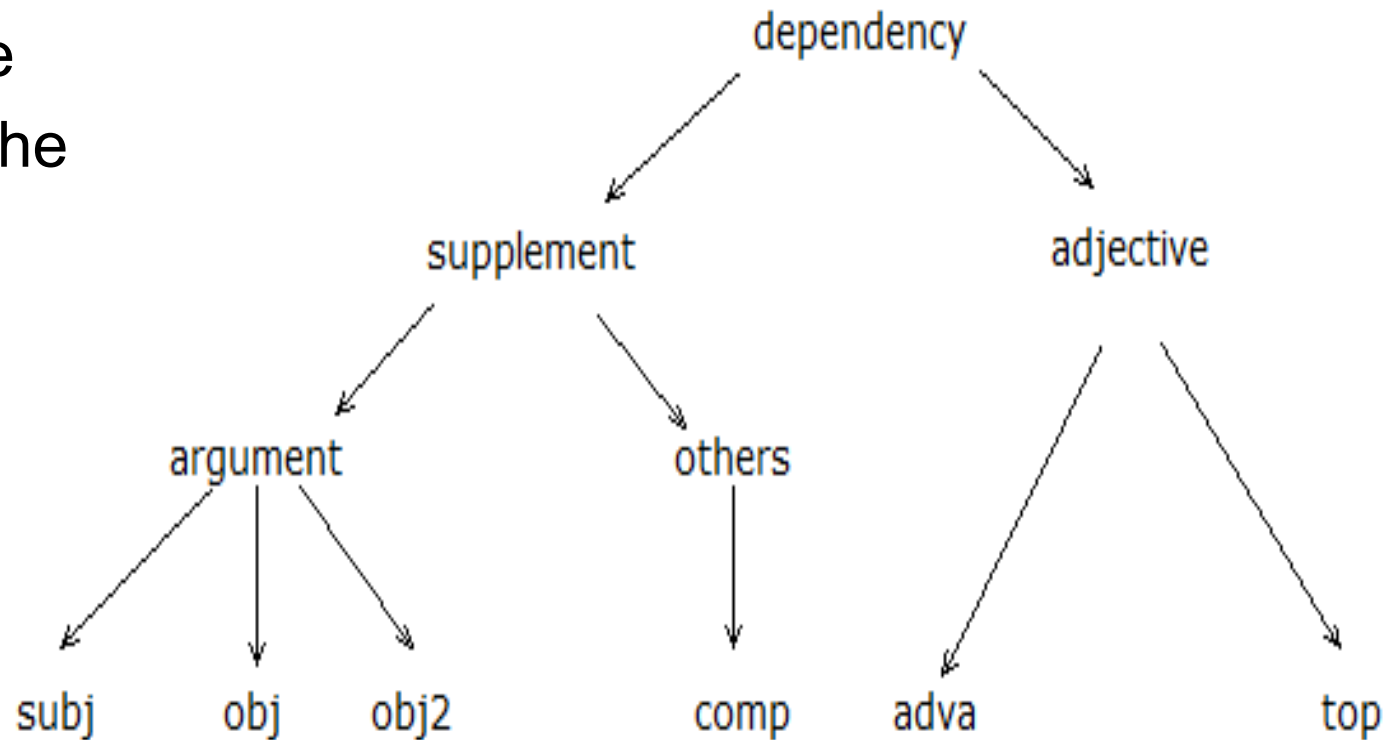
Table 1. Number of sentence containing the 10 verbs

## 2. Methods and Materials

- Criteria to select sentences:
  - (1) The verb is used in the active voice
  - (2) The verb has similar semantic meaning across different periods

## 2. Methods and Materials

Then we begin to annotate the sentences which include the verbs chosen according to the dependency grammar.



# PART 03

## Results and Discussion



### 3. Results and Discussion

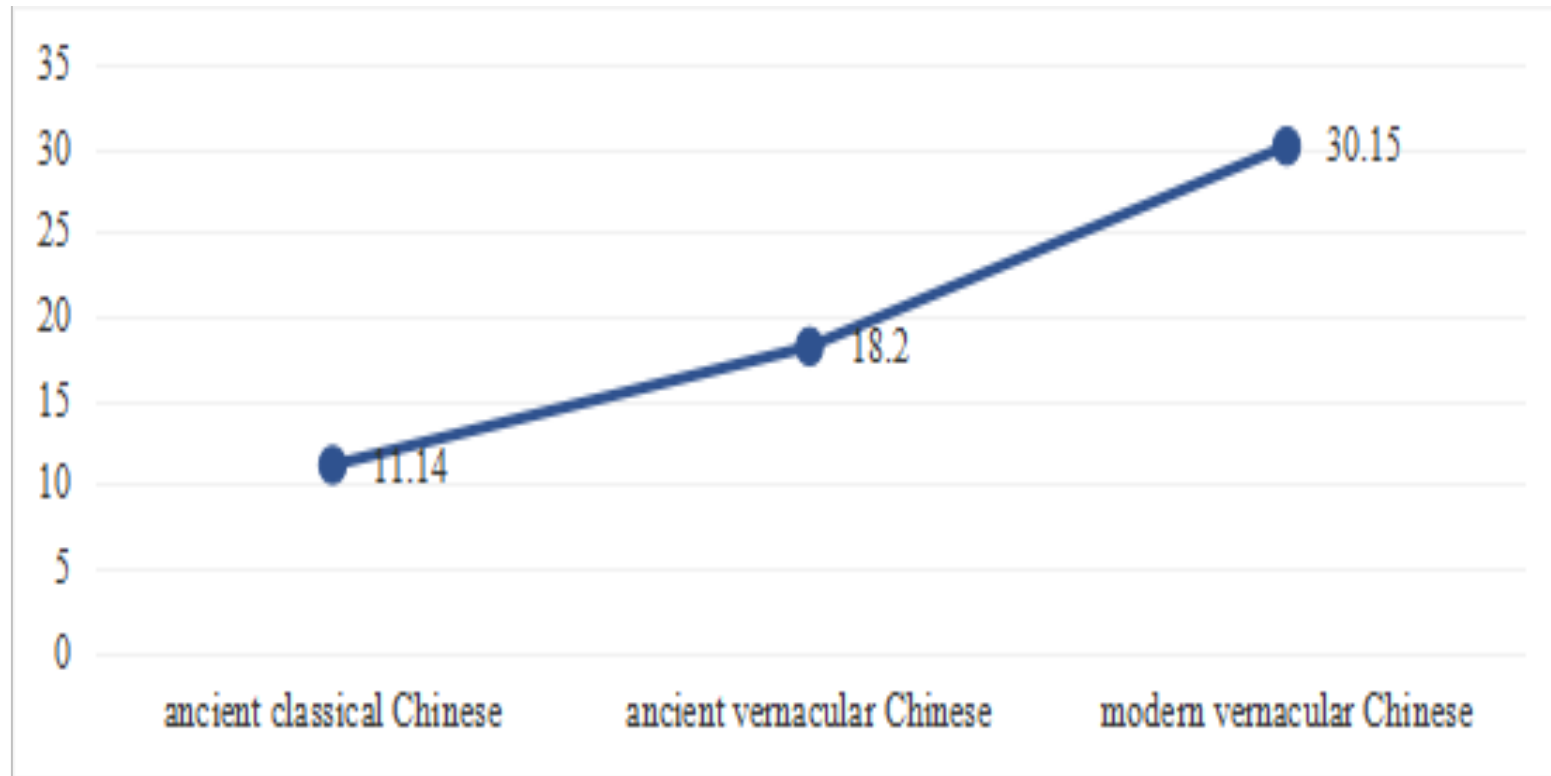


Figure 1. Average ratio of the **complex constituent** in the subject argument (%)

### 3. Results and Discussion

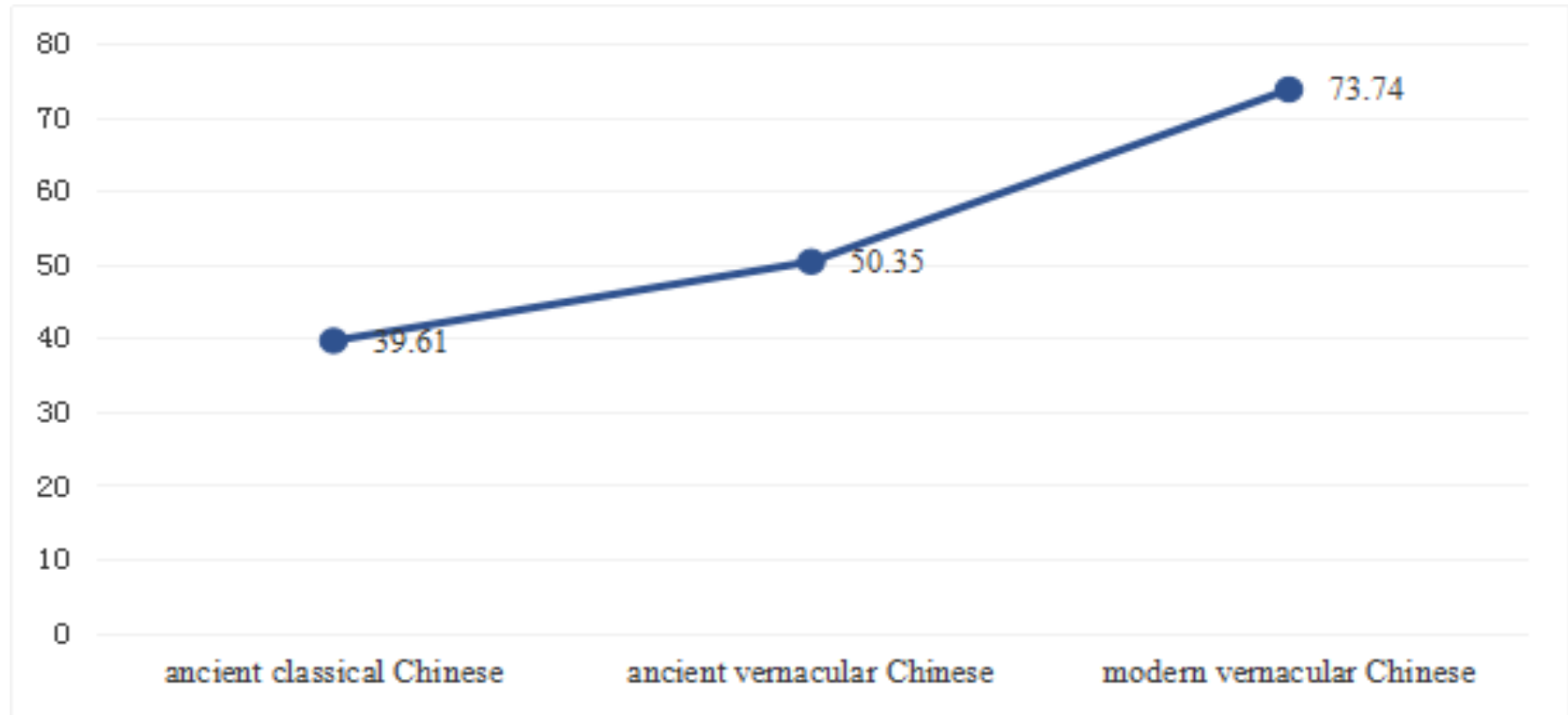
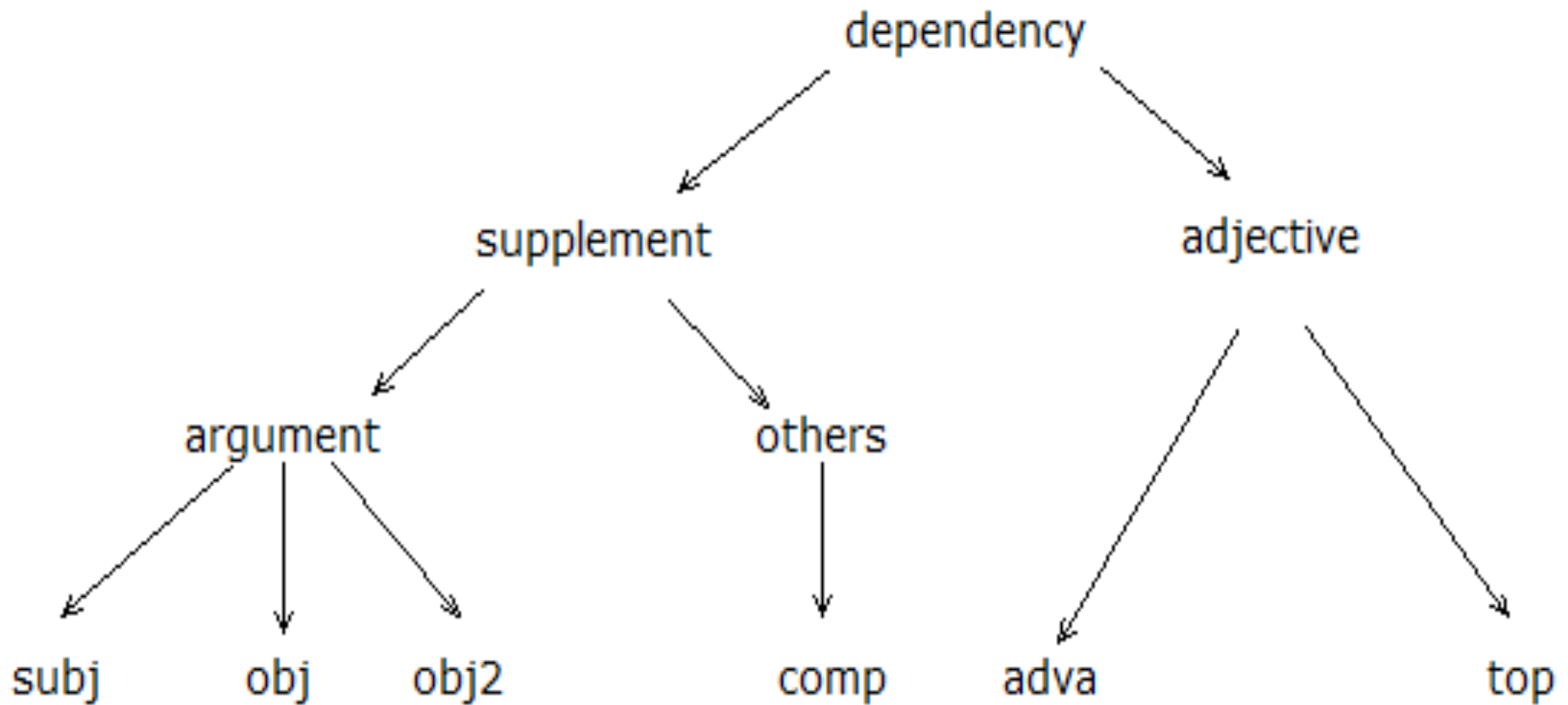


Figure 2. Average ratio of the complex constituent in the object argument (%)



### 3. Results and Discussion



### 3. Results and Discussion

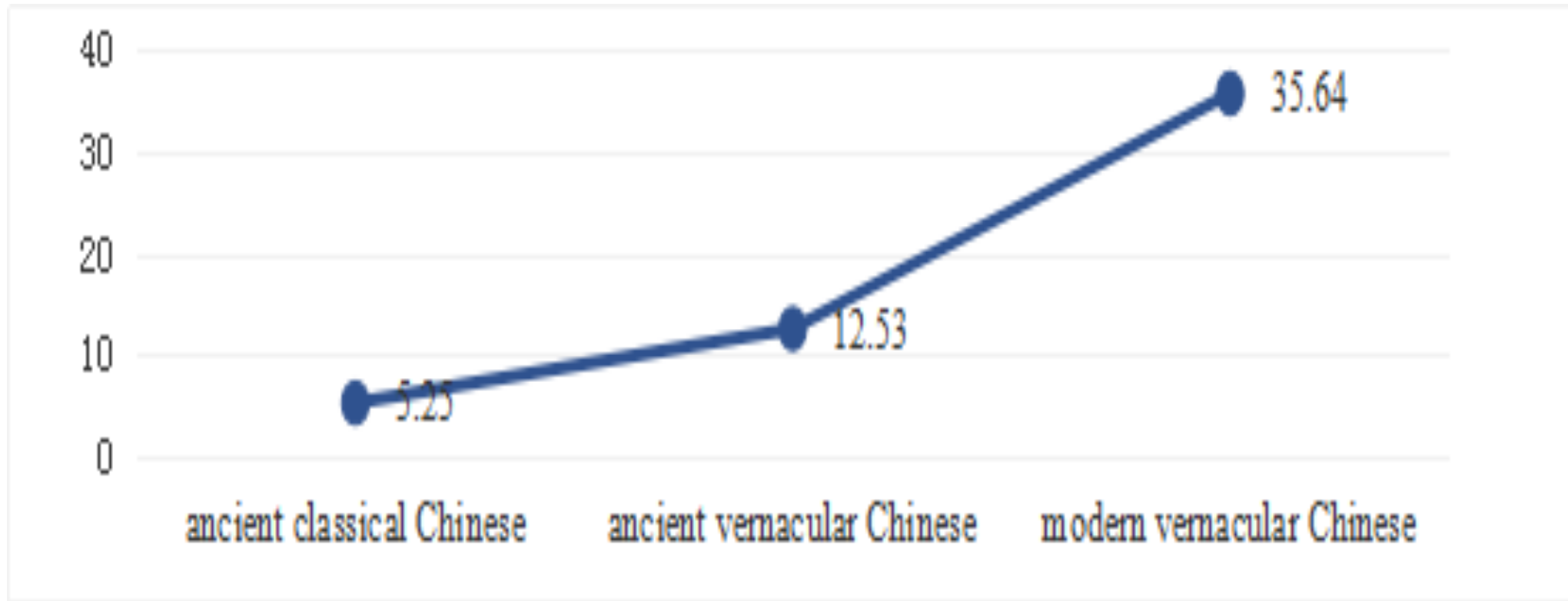


Figure 3. Average Ratio of **other constituent** (%)

### 3. Results and Discussion

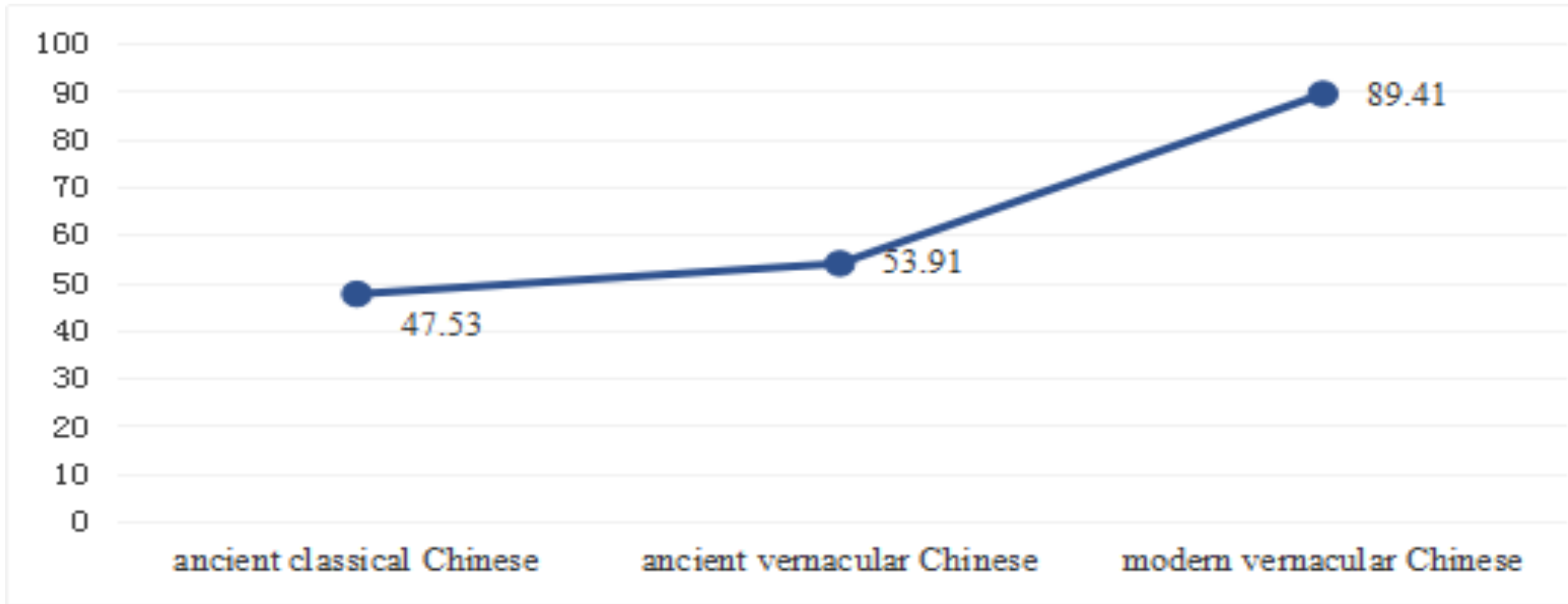


Figure 4. Average Ratio of the **adjective** in the sentence (%)

### 3. Results and Discussion

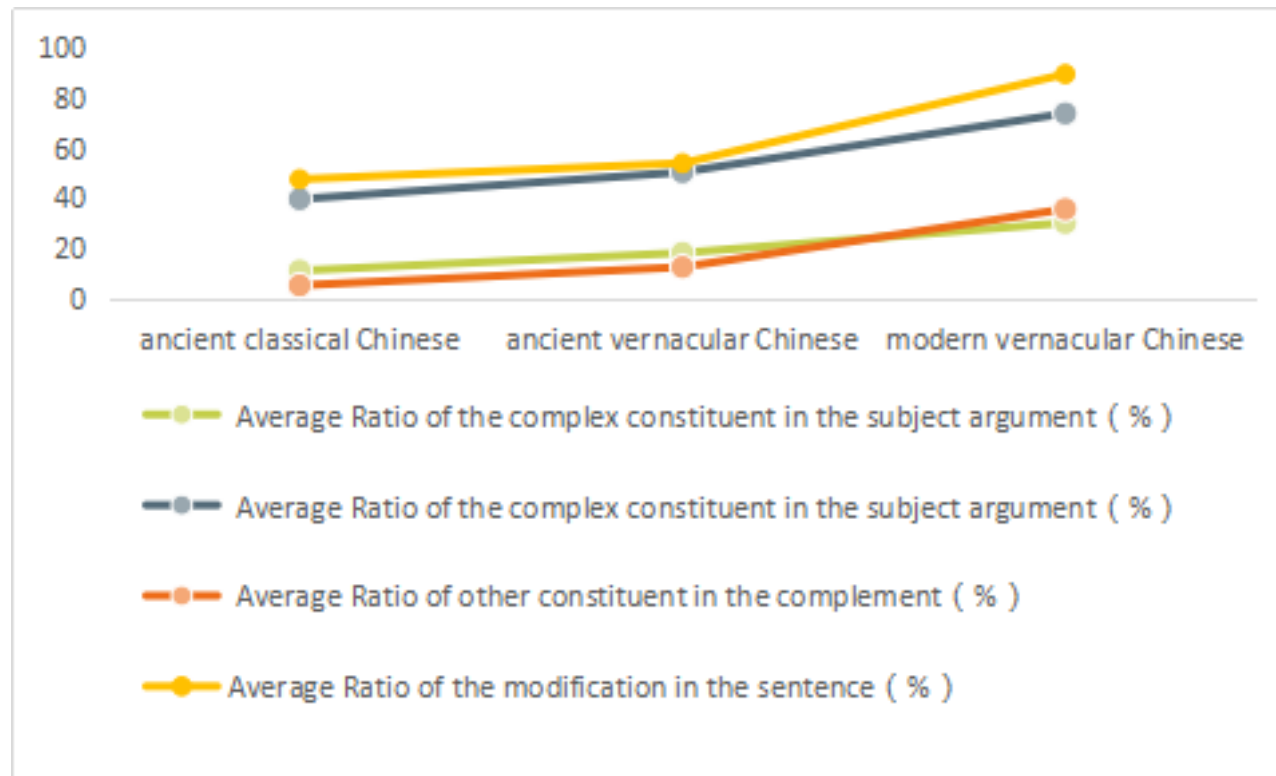


Figure 5. The valency evolution of the main verbs in the three forms of Chinese (%)

# PART 04

Conclusion



## 4. Conclusion

- Chinese syntax has a tendency toward increasing complexity.
- The ancient classical Chinese and the ancient vernacular Chinese are more similar in valency patterns.
- The transition from the ancient vernacular Chinese to the modern vernacular Chinese seems to be drastically increased in the syntactic complexity.

**Thank you for your attention !**