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*Original Paper*

# Acquisition of Valency Patterns of English Cognitive Attitude Verbs by Chinese EFL Learners: A Corpus-Driven Study

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***Abstract***

*Valency reflects the governing ability of lexical items, detailing their syntactic and semantic relationships within sentences. Studying verb valency enhances our understanding of language use and provides insights into second language acquisition. While substantial research has been conducted on learners' second language acquisition of English verb valency, issues remain. Most studies rely on written corpora, overlooking spoken language data. Additionally, many focus on a specific verb, which limits the analysis of learners' acquisition patterns across a broader range. This study adopts the SWECCL (Version 2.0) as the observation corpus and the BNC as the reference corpus to explore valency patterns of think, believe, consider, and prefer among Chinese ELF learners in both spoken and written corpora. Results show that Chinese learners exhibit distinct valency preferences compared to L1 speakers, resulting in overuse, underuse, and misuse. Notably, they often place animate subjects before think and believe, a pattern not observed in L1 speakers. These differences arise from second language exposure, mother tongue transfer, and cultural difference. The findings provide a comprehensive description of verb valency patterns, aiding learners in understanding valency patterns of VCAs and minimizing errors. Additionally, these insights have significant implications for foreign language teaching, particularly in vocabulary instruction.*

***Keywords***

*Valency, Verbs of cognitive attitude, Chinese EFL learner, Second Language Acquisition*

## 1. Introduction

"As with atoms, the ability of words to combine with other words can be termed valency (Herbst et al., 2004, p.vii)." The notion of valency was first introduced into grammar by French linguist Tesnière (1959), and after hundreds of years' development, valency plays an important role in pattern grammar.

Verbs of cognitive attitude (VCAs) are ubiquitous in language and constitute an essential resource for communication. The study of verb valency of VCAs, therefore, plays a significant role in linguistic research as well as in foreign language teaching and learning. On the one hand, Chinese English as

foreign language (EFL) learners tend to rely on a limited range of specific words when expressing cognitive attitudes, resulting in a lack of richness and accuracy compared to L1 speakers. Therefore, investigating the valency of these words can provide Chinese learners with a diverse array of oral and written expression resources, thereby enhancing the authenticity of their English expression. On the other hand, the author has observed instances of grammatical errors and collocational confusion of Chinese learners. How to overcome the pragmatic errors caused by negative transfer from their mother tongue and how to enable Chinese EFL learners to correctly use VCAs through second language teaching are a significant challenge currently.

Numerous studies have explored verb valency and VCAs, highlighting the errors in valency patterns used by Chinese EFL learners. Unfortunately, these existing studies on verb valency are still insufficient. In terms of research objects, previous studies have focused solely on a single verb as the research subject such as *think* (Reichardt, 2014), *know* (Simon-Vandenbergen, 2000) and *consider* (Zhen & Yang, 2015), resulting in a relatively narrow scope. Particularly in analyzing the misuse of valency patterns, examples of individual words cannot be generalized to draw universal conclusions, which inherently lacks persuasion in explaining the underlying causes. In terms of research materials, most of the previous studies on verb valency are based on written corpus (Tor Arne Haugen 2013; Chen 2022), and scant attention has been paid to data from spoken corpus, which leads to the neglect of the integrative acquisition of verb valency.

Attempting to address this gap, this study examines four high-frequency cognitive attitude verbs, which enhances both the scope and depth of the analysis. The findings on valency pattern differences between L2 learners and L1 speakers are more thorough, with a convincing exploration of underlying causes. Since studies have shown that there are certain differences in lexical, syntactic, semantic, pragmatic and grammatical domains of spoken and written second language output (Akinnaso, 1982), in contrast to previous studies, this study adopts both written language and spoken language as research data, which makes the research findings more comprehensive.

To achieve this purpose, this study uses a corpus-based approach to examine the valency patterns of four VCAs (think, believe, consider, and prefer) in spoken and written language among Chinese EFL learners. This study adopts SWECCL, consisting of 2,020,207 tokens, as the observation corpora to reveal the characteristics of L2 learners' valency patterns and conducts a contrastive analysis with L1 speakers using the BNC as a reference corpus. By comparing the two groups, this research aims to highlight the differences, enhancing Chinese learners' awareness of their shortcomings and allowing teachers to make meaningful contributions to the field of vocabulary teaching.

## 2. Verb Valency and VCAs

Until now, a lot of researches on verb valency of VCAs have been conducted. At the very beginning, those studies are mainly from theoretical aspects. Within recent years, quantitative studies on verb valency have been done with the rapid development of corpus linguistics. Considerable progress has

been made in this aspect.

*2.1 Review of Verb Valency and VCAs*

"Valency theory is a model of language that derives from the framework of dependency grammar" (Herbst et al., 2004, p.xxiii). Dependency grammar can be traced back to Tesnière's masterpiece Eléments de Syntaxe Structurale (1959). In dependency grammar, he believed that the verb is the center of the sentence, dominating the other elements, while not being governed by any other elements. Constituents that are directly governed or dominated by verbs, are called "actants", which are constituted by noun phrases, and "circonstants" which are constituted by adverbial phrases. "Such elements are called complements in valency theory." (Herbst et al., 2004, p.xxiv) This thesis, like most linguists' viewpoint, holds that valency concerns only the relationship between verbs and actants. According to Tesnière, the valency of verb is dominated by the "actants" connected to it. Depending on how many actants a verb can pair with, verb valency can be classified as zero-valent, monovalent, divalent, trivalent and, though rarely seen, tetravalent.

The focus on VCAs as a case study is based on their role in expressing speakers' stances and evaluations toward a state of affairs. There are a large number of VCAs in English. Limited by time and research scale, this study attempts to select several high-frequency English verbs that express cognitive attitudes as representatives. The common VCAs incorporate *think, know, guess, believe, expect, imagine, count, suppose, consider, deem, regard, prefer* and *reckon* (Zhou & Zhang, 2019). In the search interface of AntConc for the SWECCL and the British National Corpus (BNC), these verbs have been entered into the blank field, with total tokens as the retrieval objects. Based on the statistics, this research will take VCAs as a case study, selecting four representative verbs: *think*, *believe*, *consider*, and *prefer*.

The rationale for choosing high-frequency English verbs is that they are acquired more readily by learners compared to low-frequency verbs. By examining high-frequency verbs, this study aims to more fully reveal learners' acquisition status regarding different valency patterns. According to the author's retrieval of *think, believe, consider* and *prefer*, the results show that they appear 88617, 20401, 11566 and 5639 times respectively in BNC, and 14946, 923, 588 and 413 times respectively in SWECCL. Meanwhile, the frequency of the four VCAs exists significant difference ($P=0.000 < 0.001$; $P=0.000 < 0.001$; $P=0.000 < 0.001$; $P=0.000 < 0.001$) in the two corpora, which indicates that learners tend to overuse them. However, *know*, despite being the second highest frequency verb, was not selected due to extensive prior research covering its valency, syntax, semantics, and more. This study aims to avoid duplicating those efforts.

*2.2 Empirical Studies on Verb Valency and VCAs*

In the early stage, several studies have explored the classification of verb valency in English. Thomas Herbst (2004), a German scholar, compiled *A Valency Dictionary of English: A Corpus-based Analysis of the Complementation Patterns of English Verbs, Nouns and Adjectives*. In this dictionary, he outlined the valency patterns of frequently used verbs, nouns, and adjectives based on the *Bank of English*

(BoE). As the first English valency dictionary, it has played a vital role in the development of valency theory worldwide.

Recently, the study of valency has increasingly incorporated corpus tools, enhancing the authenticity of the research. In Liu H. T. (2011)'paper *Quantitative Properties of English Verb Valency*, he utilized frequency data from the BNC alongside valency information from Herbst et al.'s *A Valency Dictionary of English* (2004) to investigate the quantitative properties of English verb valency. His research significantly contributes to a deeper quantitative understanding of valency properties. Similarly, Tor Arne Haugen (2013: 35) conducted a corpus-based survey of 180 polyvalent adjective patterns to explore whether valency is word-based or construction-based. His findings demonstrated that predicates indeed require complements, as they maintain a distinct connection to a series of valency patterns.

In the context of VCAs research, from a corpus development perspective, Aijmer (1997) examined the occurrence frequency, positional distribution, and meanings of the expression *I think* using the London-Lund Corpus of Spoken English. This study demonstrated that the function of *I think* is closely related to its position within a sentence and is responsive to the communicative needs of speakers. However, it did not address the varying functions of *I think* across different contexts and failed to capture its roles at the structural and organizational levels of discourse. In contrast, Simon-Vandenbergen (2000) provided a more comprehensive analysis of the uses and functions of *I think* in political interviews compared to casual conversations. The findings indicated that *I think* encompasses complex meanings, with its functions varying significantly across diverse contexts.

In addition, many reports and articles have investigated verb valency and VCAs and the combination of these two. Based on the corpus-driven descriptive system of valency patterns of verbs proposed by Zhen (2017), Zhen and Yang (2015) explored a corpus-driven descriptive system of valency patterns of verbs by using *consider* as a case and applied it to the analysis of learning English. Following the corpus-driven descriptive framework of valency patterns and contrastive interlanguage analysis approach, Chen (2022) investigated the valency patterns of VCAs, their frequency distributions, and semantic features of the noun collocation used by Chinese EFL learners in argumentative writing, by taking the high-frequency verbs as cases. Pedagogically, her study might be instructive for traditional English vocabulary teaching.

Based on the above status quo, this thesis seeks to address the following research questions.

1. What are the characteristics of Chinese learners' valency patterns of *think, believe, consider* and *prefer* in spoken and written English?
2. How do the valency patterns of *think, believe, consider* and *prefer* among Chinese learners differ from those by L1 speakers, and what are the underlying reasons for these differences?

## 3. Methodology

Based on the corpus-driven descriptive framework of valency patterns, this thesis intends to conduct a systematic review of the valency patterns of English VCAs and the acquisition of verb valency by Chinese learners from the second language acquisition perspective, by taking the high frequency four VCAs *think, believe, consider,* and *prefer* as examples.

### *3.1 Corpus Description and Retrieval Tools*

This research will select SWECCL (version 2.0)" as the observation corpus and BNC as the reference corpus.

SWECCL collects spoken and written texts of TEM-4 and TEM-8 of English majors' from 2003 to 2007. SWECCL consists of two parts: Spoken English Corpus of Chinese Learners (SECCL) and Written English Corpus of Chinese Learners (WECCL). SECCL 2.0 collects 916 oral tests of TEM-4 and TEM-8, including 779,731 tokens. WECCL, including 1,248,476 tokens, consisting of 4,950 pieces of time-limited writings from English majors from 2003 to 2007. Totally, SWECCL includes 2,028,207 tokens.

The English native language contrast corpus used in this thesis is the BNC, which contains more than 100 million words, consisting of 4,124 pages of a wide range of modern British English texts. Due to the fact that the size of BNC is dozens of times larger than that of the SWECCL, the results obtained from direct retrieval in BNC cannot be utilized directly. To ensure the validity of the data, a sub-corpus of BNC, referred to as BNC_C, is constructed for this analysis. This sub-corpus, categorized by the same age of the corpus sources (university students) and the genre (school English examinations) with SWECCL, contains 2,083,819 tokens, which are randomly selected from the BNC's spoken and written corpus.

In this study, AntConc 4.0.4 is employed as the corpus retrieval tool, primarily utilizing its KWIC (Key Word in Context) function. This study firstly uses AntConc to retrieve all VCAs and statistically identified the four most frequently occurring ones. Subsequently, the selected four verbs are searched in the two corpora and based on this, statistics and analysis are conducted.

### *3.2 Research Procedures*

To begin with, the author inputs four target words into AntConc and manually classifies all retrieval results. Each valency pattern is analyzed for its occurrence in spoken and written corpora, with frequencies calculated and presented in a table. Following this, the author analyzes and describes the valency patterns for each verb, summarizing the characteristics exhibited by Chinese EFL learners in their use of high-frequency VCAs.

To manually label the corpus, the author refers to *A Valency Dictionary of English* (2004) to identify valency patterns by listing all complements (with the exception of the subject) The symbols used represent phrases or clauses, preceded by a reference code, with specific letter codes for verb patterns:

M a monovalent active use, a pattern with one complement

She came last week.

D a divalent active use, a pattern with two complements

He believed that a journalist should be completely objective.

T a trivalent active use, a pattern with three complements

They supposed the paper to have been lost during the war.

If more than one pattern is covered by such a letter code, the letter is followed by a number: D1, D2 etc. For easy reference, the patterns are always given in the same order.

Secondly, the same four verbs are input into the sub corpus BNC_C, and the previous classification steps are repeated. The valency patterns are compared with those from SWECCL and presented in a table. The Log-likelihood Ratio Calculator is used to compute significance values for both corpora. To facilitate a more intuitive comparison, line graphs illustrate the statistical results for each valency pattern. The author then analyzes verbs with significant differences, providing representative examples for each analysis. This process is repeated for each verb.

Finally, the author analyzes the reasons for the differences in the valency of VCAs between Chinese EFL learners and L1 speakers by referencing various scholarly sources.

## 4. Results

The data, statistical analysis and discussion are focused in this section. The three research questions will also be answered respectively.

### *4.1 Characteristics of Chinese EFL Learners' Valency Patterns of Think, Believe, Consider and Prefer in Spoken and Written English*

The statistical results of valency patterns and the frequency of each verb of cognitive attitude in the SWECCL (including both the WECCL and SECCL sub-corpora) are shown respectively.

#### 4.1.1 Description of *Think*

As can be seen from the data in Table 1, *think* occurs 14546 times as a core predicate verb in SWECCL, and it has twenty-two valency sentence patterns, including one monovalent pattern (M), eleven divalent patterns (D1, D2, D3, D4, D5, D6, D7, D8, D9*, D10*, D11*), and ten trivalent patterns (T1, T2, T3, T4, T5, T6, T7, T8, T9, T10).

The most frequently used divalent pattern is < D3 Sub V(that)-CLp > with a frequency of 9796 times (67.34%). It takes up 68.59% of all the concordance lines in the written corpus, which is similar to its proportion (66.45%) in the spoken corpus, followed by <D7 Sub V+SENTENCE >, with 1131 occurrences (7.78%). Significant difference between speaking and writing lies in <D8 Sub V so/not/otherwise >, with 144 times (2.36%) in writing and 735 times (8.71%) in speaking. Chinese EFL learners often exhibit a greater tendency to employ this pattern in speaking than in writing, as it is characteristic of idiomatic expressions commonly found in spoken language.

**Table 1. Valency Patterns of *Think* in SWECCL**

| Code | Valency pattern | Frequency Percentage% | WECCL (writing) | SECCL (speaking) | SWECCL |
|---|---|---|---|---|---|
| M | Sub V | N | 138 | 353 | 491 |
| | | % | 2.26 | 4.18 | 3.38 |
| D1 | Sub V Np | N | 125 | 71 | 196 |
| | | % | 2.05 | 0.84 | 1.35 |
| D2 | Sub V to-INF | N | 26 | 48 | 74 |
| | | % | 0.43 | 0.57 | 0.51 |
| D3 | Sub V(that)-CLp | N | 4188 | 5608 | 9796 |
| | | % | 68.59 | 66.45 | 67.34 |
| D4 | Sub V wh-CLp | N | 150 | 393 | 543 |
| | | % | 2.46 | 4.66 | 3.73 |
| D5 | Sub V + about Np/V-ing/ + about wh-CLp/wh to-INF | N | 200 | 188 | 388 |
| | | % | 3.28 | 2.23 | 2.67 |
| D6 | Sub V+of Np/V-ing/ + of wh-CLp/wh to-INF | N | 108 | 91 | 199 |
| | | % | 1.77 | 1.08 | 1.37 |
| D7 | Sub V+SENTENCE | N | 256 | 875 | 1131 |
| | | % | 4.19 | 10.37 | 7.78 |
| D8 | Sub V so/ not/ otherwise | N | 144 | 735 | 879 |
| | | % | 2.36 | 8.71 | 6.04 |
| D9* | Sub V over + Np | N | 21 | — | 21 |
| | | % | 0.34 | — | 0.14 |
| D10* | Sub V out + Np/wh-CLp | N | 9 | 3 | 12 |
| | | % | 0.15 | 0.04 | 0.08 |
| D11* | Sub V for + Np | N | 15 | 38 | 53 |
| | | % | 0.25 | 0.45 | 0.36 |
| T1 | Sub V + Np + N/it + N-pattern | N | 279 | — | 279 |
| | | % | 4.57 | — | 1.92 |
| T2 | Sub V + Np + ADJ/it + ADJ-pattern | N | 278 | — | 278 |
| | | % | 4.55 | — | 1.91 |
| T3 | Sub be thought + to-INF | N | 15 | — | 15 |
| | | % | 0.25 | — | 0.10 |
| T4 | Sub V + what + about N/V-ing/ + what + about wh-CL/ wh to-INF | N | 1 | 7 | 8 |
| | | % | 0.02 | 0.08 | 0.05 |
| T5 | Sub V + what/much etc. + of N | N | — | — | — |

| | | | | | |
|---|---|---|---|---|---|
| | | % | — | — | — |
| T6 | Sub V + Np + ADV | N | 150 | 29 | 179 |
| | | % | 2.46 | 0.34 | 1.23 |
| T7 | Sub V + of Np + as N /of it + as N-pattern | N | 3 | 1 | 4 |
| | | % | 0.05 | 0.01 | 0.03 |
| T8 | Sub V + of Np + as ADJ/of it + as ADJ-pattern | N | — | — | — |
| | | % | | — | — |
| T9 | Sub V + to REFL PRON + (that-CL/wh-CL) | N | — | — | — |
| | | % | — | — | — |
| T10 | Sub V + to REFL PRON+(SENTENCE) | N | — | — | — |
| | | % | — | — | — |
| Total | | N | 6106 | 8440 | 14546 |
| | | % | 100 | 100 | 100 |

*Note*. * indicates that this pattern doesn't appear in the valency dictionary but is used by Chinese EFL learners.

4.1.2 Description of *Believe*

It can be seen from Table 2 that a total of 919 valid concordance lines are extracted from SWECCL for *believe*, as a core predicate. As a whole, there are 9 types of valency patterns of *believe*, including a monovalent pattern (M), seven divalent patterns (D1, D2, D3, D4, D5, D6, D7) and a trivalent pattern (T1). It can be seen from the retrieval results that the frequency of the divalent patterns is 889 times (96.74%), which is significantly higher than the monovalent pattern (15times, 1.63%) and trivalent pattern (15 times, 1.63%).

Compared with other patterns, it can be seen that <D2 Sub V(that)-CLp > is used more frequently than other patterns, with 634 times accounting for 69.00%. And D2 in written corpus is especially higher than that in spoken corpus. The reason may lie in that academic English writing is a formal genre, so the use of "that pattern" is more frequent in the written corpus. Similarly, <D6 Sub V so/not/otherwise > is obviously the least used one, with only 0.33%. There is only one trivalent, <T1 Sub V+N+ADJ/it+ADJ-pattern >, which occurs 15 times, accounting for 1.63%.

**Table 2. Valency Patterns of *Believe* in SWECCL**

| Code | Valency Pattern | Frequency Percentage% | WECCL (writing) | SECCL (speaking) | SWECCL |
|---|---|---|---|---|---|
| M | Sub V | N | 10 | 5 | 15 |
| | | % | 1.34 | 2.86 | 1.63 |
| D1 | Sub V Np | N | 66 | 70 | 136 |
| | | % | 8.87 | 40 | 14.80 |
| D2 | Sub V(that)-CLp | N | 574 | 60 | 634 |
| | | % | 77.15 | 34.29 | 69.00 |
| D3 | Sub V wh-CLp | N | 14 | 2 | 16 |
| | | % | 1.88 | 1.14 | 1.74 |
| D4 | Sub V+SENTENCE | N | 25 | 16 | 41 |
| | | % | 3.36 | 9.14 | 4.46 |
| D5 | Sub V + in N/V-ing / + in N V-ing | N | 22 | 19 | 41 |
| | | % | 2.96 | 10.86 | 4.46 |
| D6 | Sub V so/not/otherwise | N | 3 | — | 3 |
| | | % | 0.40 | — | 0.33 |
| D7 | Sub V N to-INF | N | 16 | 2 | 18 |
| | | % | 2.15 | 1.14 | 1.96 |
| T1 | Sub V + N + ADJ/it + ADJ-pattern | N | 14 | 1 | 15 |
| | | % | 1.88 | 0.57 | 1.63 |
| Total | | N | 744 | 175 | 919 |
| | | % | 100 | 100 | 100 |

4.1.3 Description of *Consider*

It can be seen from Table 3 that *consider* is extracted a total of 583 valid concordance lines in SWECCL with three major categories of valency patterns, including monovalent pattern (M), divalent pattern (D1, D2, D3, D4, D5, D6), and trivalent pattern (T1, T2, T3, T4, T5, T6). The retrieval data displays that the monovalent pattern occurs only 24 times and accounts for 4.12%, the bivalent pattern occurs 399 times and accounts for 68.44%, the trivalent pattern occurs 160 times and accounts for 27.44%, indicating that the distribution of the valency patterns of *consider* used by Chinese EFL learners is overwhelmingly dominated by the divalent pattern in SWECCL, especially <D1 Sub V Np> pattern, with 229 occurrences, accounting for 39.28%. The most frequently used trivalent pattern is <T4 Sub V Np+as N/it+as N >, which occurs 52 times, accounting for 8.92%.

**Table 3. Valency Patterns of *Consider* in SWECCL**

| Code | Valency Pattern | Frequency Percentage% | WECCL (writing) | SECCL (speaking) | SWECCL |
|---|---|---|---|---|---|
| M | Sub V | N | 21 | 3 | 24 |
| | | % | 4.40 | 2.83 | 4.12 |
| D1 | Sub V Np | N | 154 | 75 | 229 |
| | | % | 32.29 | 70.75 | 39.28 |
| D2 | Sub V-ingp | N | 6 | 2 | 8 |
| | | % | 1.26 | 1.89 | 1.37 |
| D3 | Sub V(that)-CLp | N | 122 | 9 | 131 |
| | | % | 25.58 | 8.49 | 22.47 |
| D4 | Sub V wh-CLp | N | 13 | 4 | 17 |
| | | % | 2.73 | 3.77 | 2.92 |
| D5 | Sub V wh to-INF | N | 6 | 1 | 7 |
| | | % | 1.26 | 0.94 | 1.20 |
| D6 | Sub V Sp | N | 5 | 2 | 7 |
| | | % | 1.05 | 1.89 | 1.20 |
| T1 | Sub V Np + N/it + N-pattern$_p$ | N | 15 | 2 | 17 |
| | | % | 3.14 | 1.89 | 2.92 |
| T2 | Sub V Np + ADJ/it + ADJ | N | 18 | — | 18 |
| | | % | 3.77 | — | 3.09 |
| T3 | Sub V Np + to-INF | N | 34 | 2 | 36 |
| | | % | 7.13 | 1.89 | 6.17 |
| T4 | Sub V Np + as N/it + as N | N | 51 | 1 | 52 |
| | | % | 10.69 | 0.94 | 8.92 |
| T5 | Sub V Np+as Adj/V-ing/It+as ADJ | N | 30 | — | 30 |
| | | % | 6.29 | — | 5.15 |
| T6 | Sub V Np + for N | N | 2 | 5 | 7 |
| | | % | 0.42 | 4.72 | 1.20 |
| Total | | N | 477 | 106 | 583 |
| | | % | 100.00 | 100.00 | 100.00 |

4.1.4 Description of *Prefer*

It can be seen from Table 4 that a total of 407 valid concordance lines are extracted from SWECCL for *prefer*, and there are 11 types of valency patterns. Chinese EFL learners use the divalent pattern of *prefer* more frequently, accounting for 90.17% of all concordance lines, followed by the trivalent

pattern, which accounts for 9.83%.

It is worth mentioning that <D2 Sub V to-INF > is significantly higher than other patterns, both in speaking and writing, with 135 times accounting for 55.56% in writing and 136 times accounting for 82.93% in speaking. There are five types of trivalent patterns (T1, T2, T3, T4, and T5*). The most frequently used trivalent pattern by Chinese EFL learners is <T1 Sub V Np/V-ing+to N/V-ing >, which occurs 24 times (5.90%), followed by <T3 Sub V to-INF + than INF >, with 7 occurrences, accounting for 1.72%. <T2 Sub V N/V-ing + than + N/V-ing> is the least frequently used, with 2 occurrences, taking the percentage of 0.49%.

Obviously, there are two patterns which are not appeared in the Valency Dictionary, but are misused by Chinese EFL learners. They are < D6* Sub V+INF >, with 5 times accounting for 1.23% and < T5* Sub V INF +to INF>, with 5 times accounting for 1.23%.

**Table 4. Valency Patterns of *Prefer* in SWECCL**

| Code | Valency Pattern | Frequency Percentage% | WECCL (writing) | SECCL (speaking) | SWECCL |
|---|---|---|---|---|---|
| D1 | Sub V Np | N | 57 | 14 | 71 |
| | | % | 23.46 | 8.54 | 17.44 |
| D2 | Sub V to-INF | N | 135 | 136 | 271 |
| | | % | 55.56 | 82.93 | 66.58 |
| D3 | Sub V-ing | N | 2 | 4 | 6 |
| | | % | 0.82 | 2.44 | 1.47 |
| D4 | Sub V+SENTENCE | N | 5 | 5 | 10 |
| | | % | 2.06 | 3.05 | 2.46 |
| D5 | Sub V Np to-INF | N | 2 | 2 | 4 |
| | | % | 0.82 | 1.22 | 0.98 |
| D6* | Sub V+INF | N | 3 | 2 | 5 |
| | | % | 1.23 | 1.22 | 1.23 |
| T1 | Sub V Np/V-ing + to N/V-ing | N | 23 | 1 | 24 |
| | | % | 9.47 | 0.61 | 5.90 |
| T2 | Sub V N/V-ing + than + N/V-ing | N | 2 | — | 2 |
| | | % | 0.82 | — | 0.49 |
| T3 | Sub V to-INF + than INF | N | 7 | — | 7 |
| | | % | 2.88 | — | 1.72 |
| T4 | Sub V to-INF + than + to-INF | N | 2 | — | 2 |
| | | % | 0.82 | — | 0.49 |
| T5* | Sub V INF +to INF | N | 5 | — | 5 |

| | | | | |
|---|---|---|---|---|
| | % | 2.06 | — | 1.23 |
| Total | N | 243 | 164 | 407 |
| | % | 100 | 100 | 100 |

By retrieving the four verbs in the Chinese EFL learners' corpus, the detailed data in the table show the Chinese EFL learners' characteristics of English verb valency.

*4.2 Differences of the English Verb Valency Patterns of Think, Believe, Consider and Prefer between Chinese EFL Leaners and L1 Leaners*

To find the difference of valency patterns used by Chinse learners and English native speakers, Log-likelihood Calculator is used to calculate the significance, and the results are showed in tables.

4.2.1 Differences of *Think*

The following are the difference of each valency patterns of *think* between Chinese EFL learners and L1 speakers.

**Table 5. Significant Difference in Frequency of *Think* between SWECCL and BNC**

| Code | Valency pattern | Frequency in SWECCL | Frequency in BNC | Log-Likeliness Value | Significance(p) | | |
|---|---|---|---|---|---|---|---|
| M | Sub V | 491<br>3.38% | 124<br>6.60% | 38.67 | 0.000 | *** | - |
| D1 | Sub V Np | 196<br>1.35% | 43<br>2.29% | 8.80 | 0.003 | ** | - |
| D2 | Sub V to-INF | 74<br>0.51% | 9<br>0.48% | 0.03 | 0.862 | | + |
| D3 | Sub V(that)-CLp | 9796<br>67.34% | 1242<br>66.06% | 0.41 | 0.523 | | + |
| D4 | Sub V wh-CLp | 543<br>3.73% | 61<br>3.24% | 1.12 | 0.290 | | + |
| D5 | Sub V + about Np/V-ing/ + about wh-CLp/wh to-INF | 388<br>2.67% | 104<br>5.53% | 37.65 | 0.000 | *** | - |
| D6 | Sub V + of Np/V-ing/ + of wh-CLp/wh to-INF | 199<br>1.37% | 126<br>6.70% | 160.60 | 0.000 | *** | - |
| D7 | Sub V+SENTENCE | 1131<br>7.78% | 87<br>4.63% | 25.28 | 0.000 | *** | + |
| D8 | Sub V so/not/otherwise | 879<br>6.04% | 46<br>2.45% | 47.32 | 0.000 | *** | + |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| D9* | Sub V over + Np | 21<br>0.14% | 2<br>0.11% | 0.19 | 0.667 | | + |
| D10* | Sub V out + Np/wh-CLp | 12<br>0.08% | —<br>— | — | | | + |
| D11* | Sub V for + Np | 53<br>0.36% | —<br>— | — | | | + |
| T1 | Sub V + Np + N/it + N-pattern | 279<br>1.92% | 2<br>0.11% | 52.73 | 0.000 | *** | + |
| T2 | Sub V + Np + ADJ/it + ADJ-pattern | 278<br>1.91% | 6<br>0.32% | 35.43 | 0.000 | *** | + |
| T3 | Sub be thought + to-INF | 15<br>0.10% | 5<br>0.27% | 2.83 | 0.093 | | - |
| T4 | Sub V + what + about N/V-ing/+ what + about wh-CL/wh to-INF | 8<br>0.05% | 2<br>0.11% | 0.61 | 0.436 | | - |
| T5 | Sub V + what/much etc. + of N | —<br>— | 3<br>0.16% | — | | | - |
| T6 | Sub V + Np + ADV | 179<br>1.23% | 6<br>0.32% | 16.58 | 0.000 | *** | + |
| T7 | Sub V + of Np + as N /of it + as N-pattern | 4<br>0.03% | 8<br>0.43% | 20.38 | 0.000 | *** | - |
| T8 | Sub V + of Np + as ADJ/of it + as ADJ-pattern | —<br>— | 2<br>0.11% | — | | | - |
| T9 | Sub V + to REFL PRON + (that-CL/wh-CL) | —<br>— | —<br>— | — | | | |
| T10 | Sub V + to REFL PRON+(SENTENCE) | —<br>— | 2<br>0.11% | — | | | - |
| Total | | 14546<br>100% | 1880<br>100% | | | | |

As can be seen from Table 5, overall, Chinese EFL learners use *think* much more frequently than L1 speakers, and the overuse of <D3 think that>, <D7 think, sentence> and <D8 think so/not/otherwise> is particularly obvious. Some trivalent patterns are also overused excessively, like *I think it a useful tool*, or *I think it useful*.

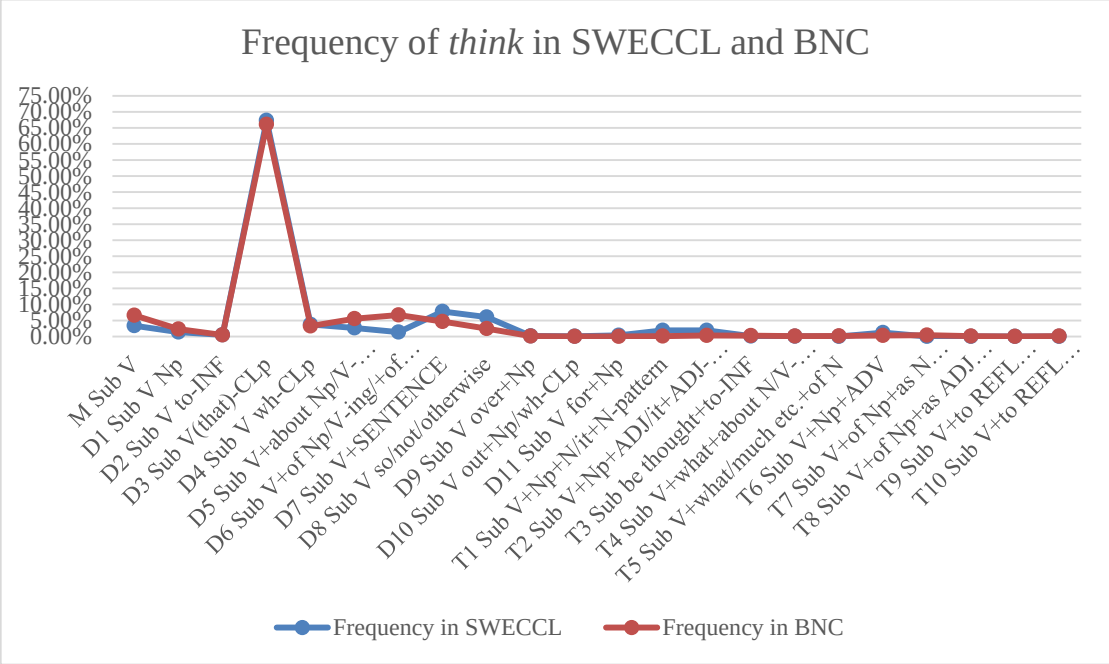


**Figure 1. Frequency Contrast of *Think***

For the verb *think*, the valency information and Figure 1 show that Chinese EFL learners especially underuse <M Sub V>, <D5 think about > and <D6 think of > (with negative Log-likelihood values). Significant differences also lie in these three underused patterns, for their *p* values 0.000 < 0.001.

The example of <M Sub think> used by Chinese EFL learners and L1 speakers are as follows.

Example 1: That's exactly what I think. (SWECCL)

Example 2: There is no big difference as the Americans seem to think. (BNC)

In monovalent pattern, the frequency of it used by Chinese EFL learners is less than that of L1 speakers.

Significant difference of *think about* and *think of* demonstrates that some learners do not discriminate properly between the meanings conveyed by the two syntactic constructions. Examples are presented below.

Example 3: Have you ever thought of the reason why a new technology appears? (SWECCL)

*Example 4: If we thought of it deeply, we will find the key to the problem. (SWECCL)

Example 5: I just can't think of her name. (BNC)

Note: * indicates that this example is misused by Chinese EFL learners.

In the cases illustrated above, Chinese EFL learners misuse the phrase *think about* as *think of*. The original meaning of *think of* is "come up with" and the original meaning of *think about* is "take sth. into consideration". These two phrases have completely different meanings. Example 3 and Example 5 are the correct usage of *think of*, while Example 4 is the misused phenomenon in Chinese EFL learners' corpus. The confusion suggests that partial learners have not entirely captured the semantic features of these two divalent patterns, which is partly the result of the negative transfer of the Chinese mother

tongue.

<Think so/not/otherwise> pattern also shows significant difference in two copra. As shown in Table 1, in Chinese EFL learners' corpus, the total occurrence of *think so/not/otherwise* is 87 9 times, with 144 times (16.38%) in writing and 735 times (83.62%) in speaking, like *Education should be a life-long process, while others do not think so*. This pattern is used relatively frequent by Chinese EFL learners in writing. However, in L1 speakers' corpus, out of 46 uses of instances, 45 sentences occur in spoken language, like "*I don't think so*" as this pattern is originally designed for spoken language.

4.2.2 Differences of *Believe*

The following are the difference of each valency patterns of *believe* between Chinese EFL learners and L1 speakers.

**Table 6. Significant Difference in Frequency of *Believe* between SWECCL and BNC**

| Code | Valency Pattern | Frequency in SWECCL | Frequency in BNC | Log-Likeliness Value | Significance(p) | | |
|---|---|---|---|---|---|---|---|
| M | Sub V | 15<br>1.63% | 17<br>3.94% | 6.09 | 0.014 | * | - |
| D1 | Sub V Np | 136<br>14.80% | 90<br>20.83% | 6.16 | 0.013 | * | - |
| D2 | Sub V(that)-CLp | 634<br>69.00% | 242<br>56.02% | 7.83 | 0.005 | ** | + |
| D3 | Sub V wh-CLp | 16<br>1.74% | 16<br>3.70% | 4.45 | 0.035 | * | - |
| D4 | Sub V+SENTENCE | 41<br>4.46% | 14<br>3.24% | 1.12 | 0.290 | | + |
| D5 | Sub V + in N/V-ing /+ in N V-ing | 41<br>4.46% | 39<br>9.03% | 9.68 | 0.002 | ** | - |
| D6 | Sub V so/not/otherwise | 3<br>0.33% | 3<br>0.69% | 0.84 | 0.361 | | - |
| D7 | Sub V N to-INF | 18<br>1.96% | 10<br>2.31% | 0.18 | 0.674 | | - |
| T1 | Sub V + N + ADJ/it + ADJ-pattern | 15<br>1.63% | 1<br>0.23% | 6.36 | 0.012 | * | + |
| Total | | 919<br>100% | 432<br>100% | | | | |

By analyzing the above Table 6, it can be perceived that Chinese EFL learners and L1 speakers use the

same valency patterns of *believe* in terms of types. In detail, the most frequently used pattern is <D2 Sub V(that)-CLp > both by Chinese EFL learners and L1 speakers.

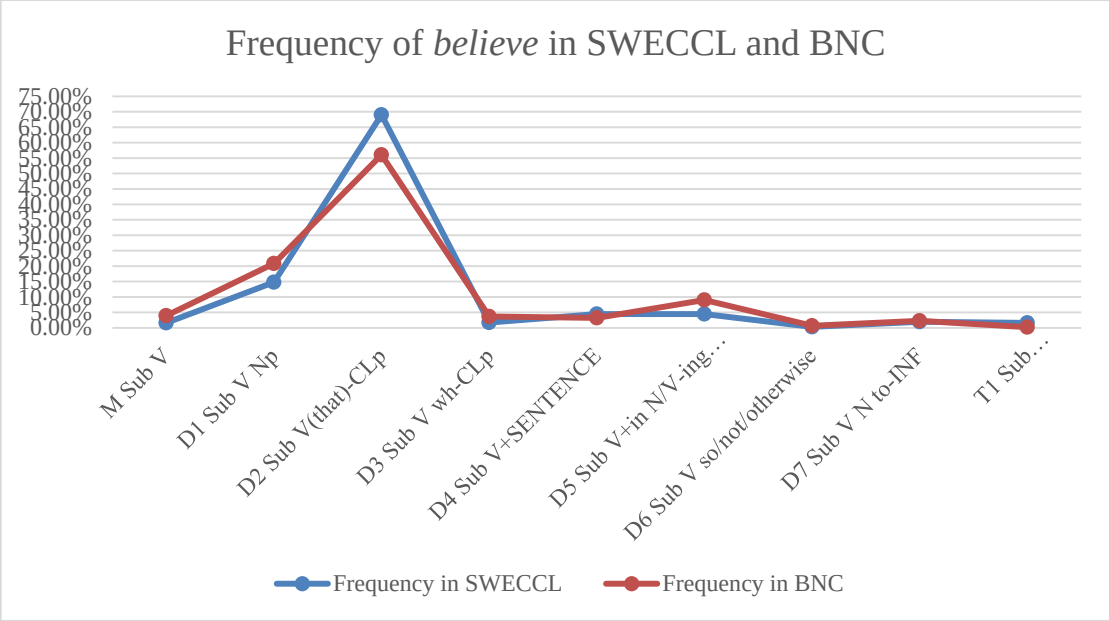


**Figure 2. Frequency Contrast of *Believe***

And the chi-square test reveals that the significant difference lies in the use of <D2 believe that>, <D5 believe in> ($p$=0.005, 0.002 < 0.05). The difference is also evident in Figure 2.

Specifically, there is no misused phenomenon in the use of *believe that*, but the difference lies in the use of subjects.

Example 6: I believe that Internet will replace the book sooner. (SWECCL)

Example 7: It is hard to believe that the Moscow AI Group permitted to change. (BNC)

In Chinese EFL learners' corpus, almost all the sentences are like Example 6. more than 90% of the subjects are personal pronouns, like *I, you, we*, etc. while it cannot be ignored in L1 speakers' corpus that except for personal pronouns, inanimate subjects appear a lot. As showed in Example 7, in addition to "it" as the formal subject, other words can also be used as the subject, such as World Health Organization, institutions and efficiency, etc.

When using the pattern *believe in*, Chinese EFL learners often intend to express the meaning of "trust someone", as evidenced in Example 8. However, the original meaning of *believe in* is "believe that there is something existing in the world", which L1 speakers typically associate with terms like God, ghost, or religions. Most of these items are related to religious beliefs, as demonstrated in Example 9. Based on the connotation of *believe in*, it is clear that this phrase cannot be arbitrarily followed by a noun phrase that refers to a person. This phenomenon indicates a notable misuse among Chinese EFL learners in its application.

Example 8: You should believe in yourself. (SWECCL)

Example 9: Why not if you no longer believe in God or even inspiration and genius? (BNC)

4.2.3 Differences of *Consider*

The following are the difference of each valency patterns of *consider* between Chinese EFL learners and L1 speakers.

**Table 7. Significant Difference in Frequency of *Consider* between SWECCL and BNC**

| Code | Valency Pattern | Frequency in SWECCL | Frequency in BNC | Log-Likeliness Value | Significance(p) | | |
|---|---|---|---|---|---|---|---|
| M | Sub V | 24<br>4.12% | 9<br>3.67% | 0.09 | 0.769 | | + |
| D1 | Sub V Np | 229<br>39.28% | 104<br>42.45% | 0.43 | 0.514 | | - |
| D2 | Sub V-ingp | 8<br>1.37% | 22<br>8.98% | 24.40 | 0.000 | *** | - |
| D3 | Sub V(that)-CLp | 131<br>22.47% | 37<br>15.10% | 4.89 | 0.027 | * | + |
| D4 | Sub V wh-CLp | 17<br>2.92% | 24<br>9.80% | 14.74 | 0.000 | *** | - |
| D5 | Sub V wh to-INF | 7<br>1.20% | 2<br>0.82% | 0.25 | 0.619 | | + |
| D6 | Sub V SENTENCE | 7<br>1.20% | 9<br>3.67% | 4.90 | 0.027 | * | - |
| T1 | Sub V Np + N/it + N-pattern$_p$ | 17<br>2.92% | 12<br>4.90% | 1.82 | 0.178 | | - |
| T2 | Sub V Np + ADJ/it + ADJ | 18<br>3.09% | 1<br>0.41% | 7.23 | 0.007 | ** | + |
| T3 | Sub V Np + to-INF | 36<br>6.17% | 13<br>5.31% | 0.22 | 0.635 | | + |
| T4 | Sub V Np + as N/it + as N | 52<br>8.92% | 6<br>2.45% | 12.52 | 0.000 | *** | + |
| T5 | Sub V Np + as Adj/V-ing/It + as ADJ | 30<br>5.15% | 3<br>1.22% | 8.25 | 0.004 | ** | + |
| T6 | Sub V Np + for N | 7<br>1.20% | 3<br>1.22% | 0.00 | 0.977 | | - |
| Total | | 583<br>100.00% | 245<br>100% | | | | |

To begin with, the results of the verb *consider* in Table 7 show that there is no significant difference in the categories and types of valency patterns used with the verb *consider*.

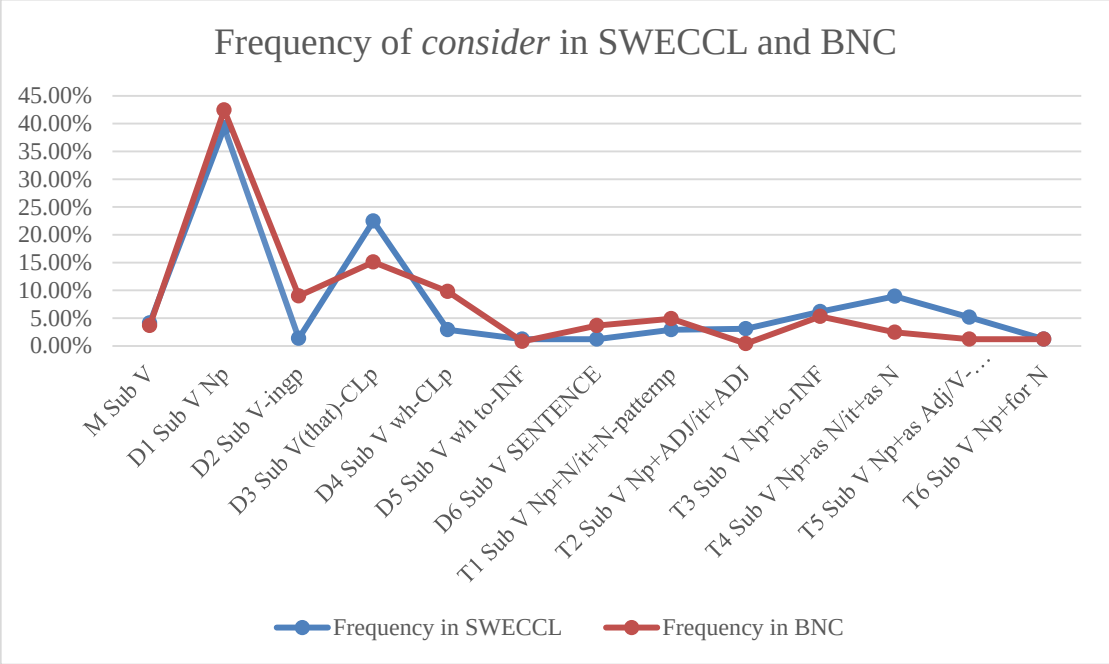


**Figure 3. Frequency Contrast of *Consider***

It can be seen from Figure 3 that there are significant differences in the frequency of use, with Chinese EFL learners using the valency patterns <D2 Sub V-ingp > less frequently (with negative log-likelihood values). As shown in Example 10, this pattern is commonly used among L1 speakers; however, Chinese EFL learners often lack familiarity with the usage of the word *consider* during their foreign language acquisition, because of their confusion with words that are similar in meaning in Chinese.

Example 10: I consider moving to a big apartment. (BNC)

<T4 consider sth/it as…> is also different between two copra. In Example 11, Chinese EFL learners often use *consider it as* in the same way as *regard*, similar to the meaning of *renwei* in Chinese. This misuse phenomenon is influenced by the semantic similarities between the terms in Chinese. While the idiomatic usage in L1 speakers' corpus is illustrated in Example 12, the meaning in dictionary is "to think about something carefully, especially in order to make a decision".

Example 11: I consider you as my best friend. (SWECCL)

Example 12: He still makes that error, then consider it as a phonic alternative. (BNC)

4.2.4 Differences of *Prefer*

The following are the difference of each valency patterns of *prefer* between Chinese EFL learners and L1 speakers.

**Table 8. Significant Difference in Frequency of *Prefer* between SWECCL and BNC**

| Code | Valency Pattern | Frequency in SWECCL | Frequency in BNC | Log-Likeliness Value | Significance(p) | | |
|---|---|---|---|---|---|---|---|
| D1 | Sub V Np | 61 | 31 | 17.54 | 0.000 | *** | - |
| | | 14.99% | 40.26% | | | | |
| D2 | Sub V to-INF | 271 | 26 | 13.20 | 0.000 | *** | + |
| | | 66.58% | 33.77% | | | | |
| D3 | Sub V-ing | 6 | 2 | 0.44 | 0.510 | | - |
| | | 1.47% | 2.60% | | | | |
| D4 | Sub V+SENTENCE | 10 | 3 | 0.45 | 0.502 | | - |
| | | 2.46% | 3.90% | | | | |
| D5 | Sub V Np to-INF | 14 | 2 | 0.15 | 0.700 | | + |
| | | 3.44% | 2.60% | | | | |
| D6* | Sub V+INF | 5 | — | — | | | + |
| | | 1.23% | — | | | | |
| D7 | Sub V + wh-CLp | — | 4 | — | | | - |
| | | — | 5.19% | | | | |
| T1 | Sub V Np/V-ing + to N/V-ing | 24 | 6 | 0.35 | 0.553 | | - |
| | | 5.90% | 7.79% | | | | |
| T2 | Sub V N/V-ing + than + N/V-ing | 2 | 1 | 0.55 | 0.458 | | - |
| | | 0.49% | 1.30% | | | | |
| T3 | Sub V to-INF + than INF | 7 | 2 | 0.24 | 0.621 | | - |
| | | 1.72% | 2.60% | | | | |
| T4 | Sub V to-INF + than + to-INF | 2 | — | — | | | + |
| | | 0.49% | — | | | | |
| T5* | Sub V INF +to INF | 5 | — | — | | | + |
| | | 1.23% | — | | | | |
| Total | | 407 | 77 | | | | |
| | | 100% | 100% | | | | |

When using *prefer*, it can be seen that the valency patterns used by Chinese EFL learners are more than L1 speakers from Table 8. A total of 2 valency patterns show significant difference, namely, D1 and D2($p$=0.000, 0.000 < 0.05). In contrast, Chinese EFL learners are more inclined to use D2, D5, D6, T4, T5 (with positive log-likelihood values) and D1, D3, D4, D7, T1, T2, T3 are less frequently used (with negative log-likelihood values), thereinto, Chinese EFL learners intend to use various patterns of *prefer* to express their emotional attitude.

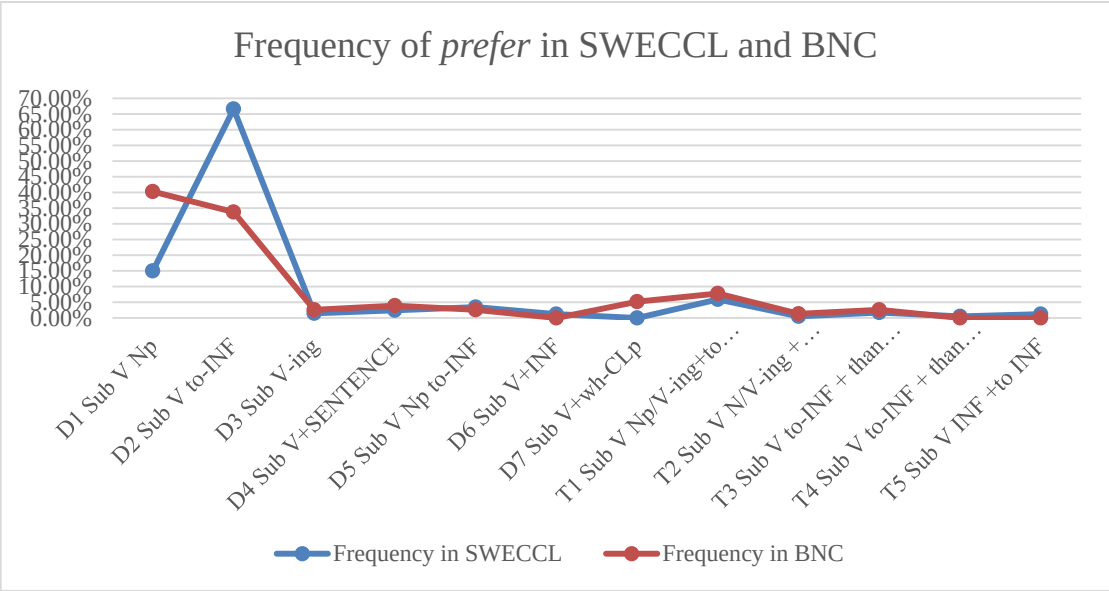


**Figure 4. Frequency Contrast of *Prefer***

It's worth mentioning that some trivalent patterns with more complex components are used more frequently than L1 speakers in the Chinese EFL learners' corpus, e.g. <T4 prefer to do than to do > and <T5 prefer do to do >. Some of these patterns are rare in English, but appear several times in Chinese learners' corpus.

Specifically, <D1 prefer sth.> in Chinese occurs 14.99%, which is used only half as often as the L1 speakers. While <D2 prefer to do sth.> occurs 66.58%, almost double of that in L1 speakers' corpus. The difference is evidently showed in Figure 4.

Example 13: I prefer to use electronic cards. (SWECCL)

Example 14: Some actors prefer the risks. (BNC)

In these two divalent patterns, Chinese learners are more likely to use *prefer to do* to express what they want to do, such as Example 13. While L1 speakers tend to use *prefer sth.* to show their preference, as shown in Example 14. Similarly, <D5 prefer sb. to do sth.>, also including *to do* pattern, a key point in examination, are overused by Chinese learners.

As for trivalent pattern, Chinese learners also show preference in using to-do pattern, like *I prefer to live in campus rather than to rent a house* (SWECCL) of <T4 prefer to do than to do>. This pattern even does not appear in L1 speaker's corpus. Moreover, Chinese students also misuse and overuse <T5 Sub V INF +to INF >, indicating that Chinese students have incomplete grasp of the comparative sentences of "to" and "than".

*4.3 Influencing Factors of the Use of the English Verb Valency Patterns by Chinese Leaners*

Causes of differences in the use of valency patterns of VCAs between Chinese and English college students are further analyzed in the following part.

4.3.1 Second Language Exposure

Input frequency significantly impacts second language acquisition. Ellis (2002) proposed that the processing of linguistic phenomena relies on language frequency, establishing the frequency-centered theory. Baudoin de Courtenay (1985, p.203) also demonstrated, "…every member of a given speech community is bound to acquire by his own mental effort through accumulating and generalizing individual associations." Goldberg (2013) deemed that the higher frequency of input, the more likely they are to be acquired and, in turn, preferentially exported

As noted in the preceding analysis, certain trivalent patterns featuring more complex components are employed more frequently by L2 learners than by L1 speakers, and are better acquired, such as <T4 prefer to do than to do > and <T5 prefer do to do> benefiting from pattern training throughout the English learning process. Both < T4 prefer to do than to do > and <T2 think N/it ADJ-pattern > have emerged as critical points of knowledge assessment across various major English examinations. Because these patterns frequently appear in English textbooks, grammar books, and exercises, teachers emphasize them as key contents in lessons. As a result, students expose to these patterns regularly, leading to a high frequency of usage among Chinese learners.

Moreover, teachers emphasize memorizing key marked usages during lessons to highlight challenging points. This focus enhances cognitive processing and facilitates acquisition, encouraging students to use these trivalent patterns more in their language output.

Conversely, L2 learners frequently misuse patterns like <D6 prefer do> and <D9 think over>, which are absent in *A Valency Dictionary of English* and in L1 speakers' corpora. While they demonstrate a strong ability to use <D2 prefer to do>, gaps in their understanding and application in various situations stem from limited exposure to certain patterns, leading to superficial memorization rather than genuine mastery. Consequently, they may experience confusion and difficulty when attempting to use these patterns in practice.

4.3.2 Mother Tongue Transfer

Interlingual errors could be caused by language transfer, i.e., learner's L1 language, and interlingual errors could also be caused by interference within the target language items or incomplete learning of target language items (James, 2001). Due to the influence of valency patterns of semantically similar verbs, intralingual interference occurs, and learners generalize known and familiar knowledge to unfamiliar related knowledge learning, resulting in misuse or over-generalization of target language rules.

For example, in the bivalent patterns of *consider*, there is a large gap between L2 learners and L1 speakers in the use of <D2 consider doing>, and the frequency is relatively small in Chinese learners' corpus, which may be affected by multiple factors such as foreign language learning and Chinese language confusion (for example, gerunds do not exist in Chinese) (Zhen & Yang, 2015). When we learn the verb *consider*, we mainly translate it to the word of *kaolü* in Chinese, and when it is used in the valency structure of <D2 consider doing>, it conveys the meaning of *xiang* indicating a plan to do

something but have not yet made a final decision. Compared with *kaolü*, *xiang* is more likely to be used directly collocate with verbs, so Chinese learners misuse <D2 consider doing>. In addition, learners use <D3 consider that> more frequently than L1 speakers do. It can be attributed to the influence of Chinese expressions on the learners, such as the mutual influence of *consider, believe, think, know, feel*, etc., because their common valency structure is <Sub V (that)-CLp>.

Similar to *consider*, *think of* and *think about* are also a common error caused by language transfer, as showed in the above examples. According to Lian (1993:104), verbal items in English have a tendency to be frequently grammaticalized as nouns. The dominance of nouns in English inevitably leads to a corresponding dominance of prepositions, whereas Chinese uses fewer nouns, resulting in fewer prepositions. This naturally leads to Chinese learners being influenced by their mother tongue, resulting in unfamiliarity with prepositional usage and the occurrence of misuse in phrases containing prepositions.

4.3.3 Cultural Differences

From a semantic perspective, the semantic types of collocations used by Chinese learners are different from those of L1 speakers. As analyzed before, in the BNC corpus, the agents of *consider* include not only the animate words or pronouns that indicate thinking ability, but also some inanimate words, such as laws, institutions and individual communities, which all denote activities or things related to humans. However, in the SWECCL corpus, the agent of the verb *consider* is represented exclusively as a human or animal noun or pronoun. Similarly, when noting the distinction exists in <D1 believe sth.> and <D2 believe that>, the author also conducted a detailed analysis of the collocation of *believe*, yielding results consistent with those mentioned above. Liang's (2008) research demonstrated a similar result, that is, Chinese learners excessively use personal pronouns as subjects in English use, such as *we*, *you*, and *I* in the investigation of the modal sequences. Differences between *believe in God* and *believe in oneself* can also be attributed to religious reasons.

The dominate reason for the above semantic difference is that Chinese EFL learners have obvious ethnic characteristics due to psycho-cultural influences. The difference in cognitive patterns is an important reason for language differences.

The use of inanimate subjects and religious terminology in English stems from several factors. Firstly, Aristotle's formal logic and 16th to 18th-century rationalism significantly influenced English speakers, which is directly reflected in the morphological rigor of the English language (He, 2003). For instance, the only prerequisite for serving as the subject of an English sentence is the noun-like quality of a word. In other words, any word that appears in noun form or possesses noun characteristics can function as the subject of an English sentence. Given the frequent inflectional variations in English vocabulary, it is not surprising that a significant number of sentences exist without animate subjects (He, 2003). secondly, rationalists argue that rational thinking is key to knowledge acquisition (Lian, 2002). As a result, English speakers have consistently valued science and cultivated a unique habit of logical and analytical thinking, which is linguistically manifested in the syntactic cohesion of English, where the

presence of sentences without animate subjects is quite natural.

Thirdly, the Greek and Roman cultural legacies, along with Christian traditions, form the foundation of European civilization. Most L1 speakers operate within this cultural milieu, characterized by religious beliefs and a reverence for the Bible as a guiding text. Consequently, this environment fosters an objective tendency in language use, as reflected in the frequent occurrence of phrases such as *believe in God* in BNC.

Conversely, the preference for animate subjects and personal objects of belief among Chinese speakers arises from different cultural and philosophical influences. Additionally, above analysis have showed that the frequency of *think* used by Chinese learners is much higher than that of L1 speakers, for Chinese learners are obviously subjective in language expression, and they are more willing to use verbs of cognitive attitude to express personal opinions.

## 5. Conclusion

Through qualitative and quantitative research and analysis of verb valency patterns in Chinese and English, this study reveals and discusses the differences in the usage of valency patterns.

Firstly, Chinese learners exhibit a robust understanding of English verb valency patterns, which can be categorized into three major types: monovalent, divalent, and trivalent patterns. Among these, divalent patterns are utilized more frequently than the others, each encompassing several sub-types. Specifically, the verb *think* is employed by Chinese learners in 22 distinct patterns, *believe* in 9 patterns, *consider* in 13 patterns, and *prefer* in 11 patterns. Through investigation of Chinese learners' corpus, there also exists difference between writing corpus and speaking corpus.

Secondly, several key differences have been identified. To begin with, the total frequency of valency patterns in the Chinese EFL learners' corpus is significantly higher than that in the L1 speakers' corpus. Notably, among the selected verbs of cognitive attitude, *think* is used excessively by Chinese learners compared to L1 speakers. In examining the various valency patterns, it is evident that English verb valency patterns are extensively utilized in the Chinese learners' corpus. Among the three valency types, divalent patterns dominate, yet some complex trivalent patterns are overused relative to L1 speakers' corpus. Examples of such overused patterns include <prefer to do than to do> and <think N/it ADJ>, while some patterns, like <consider doing>, are underused. Furthermore, instances of misuse are observed; certain valency patterns absent from the valency dictionary or L1 speakers' corpus are nonetheless employed frequently by Chinese learners. And patterns with similar structures, such as *think of* and *think about*, are often confused by these learners, leading to inaccuracies and a lack of richness in verb collocations.

Finally, this study analyzes the causes of these distinctions, identifying three primary factors: second language exposure, mother tongue transfer, and cultural differences. Increased exposure to verb valency patterns correlates positively with learners' familiarity with the rules derived from linguistic input, thereby facilitating the acquisition of these patterns. The influence of the mother tongue is also

significant; as Chinese is the first language for these learners, it often results in negative transfer due to the substantial differences between Chinese and English verb valency patterns. In many cases, a single verb in English corresponds to multiple expressions in Chinese, leading to potential misuse influenced by the learners' L1 language. Cultural differences further contribute to the discrepancies observed in the use of valency pattern between Chinese EFL learners and L1 speakers.

*5.1 Pedagogical Implications*

The study's findings have important implications for second language vocabulary teaching. Firstly, educators should focus on the quality and quantity of foreign language input, emphasizing key verb patterns. Secondly, increasing foreign language exposure can help mitigate negative first language transfer providing ample examples in both English and Chinese can clarify similar verbs. Lastly, teachers should address cultural differences between Chinese and English to promote idiomatic usage and enhance critical thinking skills.

*5.2 Limitations and Suggestions*

Primarily, limited by time and scale, only four high-frequency VCAs have been investigated in this study, and other components within a sentence were not covered. Therefore, future research could analyze more verbs and entire sentences for deeper insights. Secondly, verbs were retrieved from SWECCL and BNC, with nearly 2,000,000. The research corpora can be enlarged in later research to improve the accuracy of research results. Furthermore, due to an incomplete theoretical foundation, the analysis of factors influencing VCAs' valency patterns is limited; further studies should explore these reasons in greater depth.

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