High Frequency Words Produced by Typically Developing Mandarin-Speaking Children Between 3 and 6 Years of Age

Shang-Yu Wu1, Shanju Lin2©, Rei-Jane Huang3, and I-Fang Tsai4

Abstract

The purpose of this study was to provide high frequency word lists for Mandarin-speaking children between 3 and 6 years of age and to explore the differences between each part of speech (POS) category among different age groups. Participants were 209 typically developing native Mandarin speakers aged between 3 and 6 years, born in Taiwan, and recruited from Mandarin-language preschools in Taipei, New Taipei City, and Miaoli. Language samples were collected through conversations, free play, and story retelling. The researchers then transcribed the samples, segment utterances, and words, tagging the POS corresponding to each word. The frequencies of word occurrences were then analyzed and ranked to generate a high frequency word list. The mean frequency of each POS category was calculated to identify significant differences between age groups. The results showed high frequency word lists, including the corresponding POS tagging. Significant differences were found in 10 of the 11 POS categories among age groups. The results of this study presented preliminary information concerning high frequency words produced by Mandarin-speaking children aged between 3 and 6 years and the development of their use of each POS category.

Keywords

lexicon, part of speech, Mandarin, high frequency words, child language

Introduction

Background

Vocabulary knowledge and competency play an important role in children’s language development and their later academic and reading success (Loftus et al., 2010; Stahl & Nagy, 2006). High frequency words have been considered important to help students become efficient readers (Johns & Wilke, 2018). Also, word lists of high frequency words are important in academic settings. Gardner and Davies (2013) developed a corpus of high frequency words appearing in English academic texts which is important for academic success (Biemiller, 2010; Townsend et al., 2012). Word lists like this are useful in developing vocabulary goals, evaluating vocabulary knowledge, analyzing text difficulty, generating reading materials, and designing word learning tools (Nation & Webb, 2011). For children with language disorders, word lists can be applied when assessing their vocabulary and selecting target words for intervention (H. M. Liu & Lin, 2017).

Lexical Development Before School Age

Children acquire new words rapidly at preschool stage. They acquire around five novel words each day when they are 1.5 to 6 years old (Carey, 1978). As a result, a lexicon consisting of roughly 10,000 words was developed by the time a child turns 6 years old (Anglin, 1993). Nelson (1973) stated that children acquire nine novel words at most each day. With such a rapid rate of learning, 6-year-old children have expressive vocabulary of approximately 2,600 words and receptive vocabulary of 20,000 to 24,000 words (Owens, 1996). These studies support the assertion that children’s vocabulary grows rapidly every year during the preschool stage.

To better understand children’s lexical development, researchers have collected words produced by young children for word lists. Smith (1926) generated a word list for 88 children aged from 2 to 5 years based on 1-hr language samples of each child during their play with other children. Words which occurred more than 100 times across the collected

1 Mackay Medical College, New Taipei City
2 Chung Shan Medical University, Taichung
3 University of Taipei, Taipei
4 Hsin Chao Rehabilitation Clinic, Hsinchu City

Corresponding Author:
Shanju Lin, Department of Speech Language Pathology and Audiology, Chung Shan Medical University, 110 Jianguo North Road, South District, Taichung 40246.
Email: sjlin@csmu.edu.tw
conversation samples were included in the list. Beukelman et al. (1989) collected six typically developing preschoolers’ communication samples from three different classrooms. The age range of children was from 3 years, 8 months to 4 years, 9 months. The results showed a list of 250 words with a frequency of at least five per 1,000 words. The researchers also identified the 25 most frequently occurring words, suggesting that the word list was helpful for Augmentative and Alternative Communication (AAC) programming for preschoolers. Dempsey (1956) compiled two-word lists to demonstrate words produced by kindergarteners, first graders, second graders, and third graders. These word lists provided detailed information about what words children produced and these words’ frequencies. Such information was helpful for selecting vocabulary targets when teaching children words to increase their vocabulary size.

**Development of High Frequency Word Lists**

Practical applications of word lists are shown in both first and second language acquisition as important references for planning vocabulary instructions. Nation (2001) suggested that high frequency words cover a huge weight of the running words in spoken and written texts, and therefore, these words are particularly significant. Masrai (2019) supported that high frequency words were strongly related to reading comprehension ability of second language learners. It was suggested that high frequency words are so important that teachers and learners should spend more time on these words than low frequency words. Learners should master high frequency words before they move on to study words of lower frequencies (Dang et al., 2020; Nation, 2001).

To aid teachers in recognizing high frequency words, previous researchers have developed several word lists by ranking word frequency according to different corpora. West (1953) published A General Service List (GSL) including 2,000 high frequency words in English written texts. It was claimed that knowing these words gives access to about 80% of the words in written texts. Kilgarriff (1997) developed the British National Corpus (BNC) word list, and Davies and Gardner (2013) developed the Corpus of Contemporary American English (COCA) word list. These two-word lists were generated by ranking word frequency of words in spoken and written language corpora.

Words collected from assessment tools have helped develop high frequency word lists produced by children. The MacArthur Communicative Development Inventory (CDI), which was developed to assess early vocabulary, is such an example. The assessment tool consists of a checklist of words which a child has produced at home or any other setting. The word list for infants comprises 396 words in 19 semantic categories. The word list for toddlers comprises 680 words in 22 categories. Furthermore, H. M. Liu and Tsao (2013) have adapted the CDIs and developed Mandarin-Chinese version of the McArthur Communicative Development Inventories (MCDI-T), which contained word lists for assessing Mandarin-speaking children in Taiwan. With such word lists, Liu and Chen (2015) further analyzed semantic contents of high frequency words in 1,897 young children and generated comprehensive lists of words and their semantic categories. However, the age range for using MCDI-T is 8 to 36 months old. Information about high frequency words used by Mandarin-speaking children aged 3 through 6 years remains unknown.

**Considerations of Part of Speech (POS)**

After children start producing their first words, further examination of POS of these words gains more attention. Contents of children’s vocabulary expand during preschool years (Clark & Sengul, 1978; Cox & Richardson, 1985). Thus, word categorization is utilized when exploring what kind of words are produced by preschoolers. Analyzing the distinct POS is a popular method when constructing linguistic theories and has been widely used to categorize words in linguistic- and language-related research (Bloom et al., 1993). Studies regarding corpus and word lists often tag words according to their POS, which helps researchers better understand distributions of these categories (Gardner & Davies, 2013; C. R. Huang et al., 2017; Lee & Wong, 1998).

Further examination into development of POS is particularly critical in Mandarin, which is a minimally inflected language. After their first words, children who learn languages such as English and Spanish spend much time deciphering rules of morphology, whereas Mandarin-speaking children rarely have to do the same. Rather, their further development is more likely to be observed in lexical categories, as known as POS, than in morphology, thus showing language-specific patterns. Tardif (1996) found such a distinction. Mandarin-speaking 22-month-old children produce more verbs than nouns, thereby contradicting a noun bias in early word learning based on languages such as English. C.-T. J. Huang et al. (2009) pointed out that POS is essential for forming sentences in Mandarin. Thus, it is necessary that we continue investigating Mandarin-speaking children’s lexical development and POS beyond age 3 years.

In Mandarin, there are 12 categories of POS that are commonly used: (a) nouns, (b) verbs, (c) adjectives, (d) numbers, (e) classifiers, (f) pronouns, (g) adverbs, (h) prepositions, (i) conjunctions, (j) particles, (k) onomatopoeia, and (l) interjections (Y. H. Liu et al., 1996). Yang (2015) conducted a Mandarin corpus-based study and reported word percentages of each POS. Yang (2015) analyzed 10 language samples of children’s spontaneous speech: The ages of children ranged from 1 year and 5 months to 4 years and 3 months ($M = 32.76$ months, $SD = 8.25$ months). The POS tagging was used to categorize the words produced by children including noun, verb, adverb, classifier, quantifier, adjective, conjunction, preposition, interrogatives-WH, modal, and others. The results regarding the percentages of POS demonstrated
that 3-year-olds produced 25.5% nouns, 29.6% verbs, 5%
adverbs, 5% classifiers, 2% quantifiers, 0.6% adjectives,
1.4% conjunctions, 1.4% prepositions, 1.9% modals, and
25.8% others. Despite the small sample size, these results
gave us a basic look into Mandarin-speaking 1- to 4-year-
olds’ proportional use of each POS.

However, to the authors’ knowledge, no information
concerning POS percentage produced by children aged 5
and 6 years has been reported in Mandarin literature.
Furthermore, information regarding different types of words
in terms of the POS contribution to the high frequency word
list of preschoolers remains limited. As children’s lexicon
expands, word types reveal a clearer picture of development-
mental growth in each category as to knowing what words
increase their importance with development.

Research Questions
In this study, the high frequency words produced by
Mandarin-speaking children aged 3 to 6 years in their oral
language were generated as a word list to show the pre-
schoolers’ core vocabulary. High frequency word lists for
each age group were also generated. To understand develop-
mental change between ages, the differences of the high
frequency words among different age groups were examined.
The following research questions were answered:

Research Question 1: What are the high frequency words
produced by Mandarin-speaking children aged from 3 to
6 years? What are the percentages of each POS among
these words?

Research Question 2: Do children aged 3, 4, 5, and 6
years produce each POS category differently?

Research Question 3: What are the high frequency words
produced by Mandarin-speaking children of 3, 4, 5, and 6
years old, respectively? What are the percentages of each
POS among these words?

Method
Participants
This study was reviewed and approved by the institutional
review board of National Taiwan University, and the
informed consents were signed by all participants’ caregiv-
ers. Two hundred nine children aged from 3 to 6 years par-
ticipated in this study. They were categorized into four
groups: 3-year-olds (3y), 4-year-olds (4y), 5-year-olds (5y),
and 6-year-olds (6y). Table 1 showed the characteristics of
all participants.

Participants were recruited from Miaoli, Taipei, and New
Taipei City, Taiwan, through sending brochures with informa-
tion about the study to preschools. All recruited children speak
Mandarin as their native language. All children did not have a
diagnosis related to language delay/disorders, intelligence
disability, neurological impairment, sensory impairment, psy-
chological disturbance, or autism/pervasive developmental
disorder (PDD). All children were given the test of Revised
Evaluation Scale for Preschool Children with Language
Disorders (Lin et al., 2008), and all their scores were greater
than one standard deviation below the mean. In this study,
children aged 3 and 4 years were recruited from Wanhua and
Wenshan districts of Taipei, Taiwan. For children aged 4 and
5 years, a questionnaire on the child’s background informa-
tion was filled out by the caregivers. Regarding the main
caregiver, 46% of the children were mainly taken care of by
their mothers, 40% were by both parents, 5% were by moth-
ers and grandparents, 4% were by fathers, and 2% were by
parents and grandparents. Regarding their language use,98% of the reports indicated that children speak Mandarin as
their dominant language. Taiwanese was another language
used by children. According to the questionnaire responses,
one child always spoke Taiwanese, two children often spoke
Taiwanese, and four children sometimes spoke Taiwanese.
Sixty-nine percent of the children passed the hearing screen-
ing and 31% of the caregivers were reported as unavailable.
Mothers’ educational levels were also reported: 45% of the
mothers had college-level education, 33% had graduated
education, 19% were senior high school graduated, and 3% were
junior high school graduated.

Procedure
The members of the research team received 20 hr of train-
ing for the collection of language samples, transcribing,
word segmenting, and POS classification. The researchers
first interacted with children to collect language samples.
Language sample collection was conducted in four different
contexts: conversation about the child’s family, conversation
about the child’s school, story retelling, and free play. The
book “Little Red Riding Hood” was selected for story retell-
ing. This study used collection procedures and elicitation
questions listed in Wu et al. (2019). Language samples were
collected from one child at a time. The collected language
samples were then transcribed. After transcribing, we fol-
lowed the rules described in Wu et al. (2019) to segment and
select utterances. A total of 100 utterances was selected for
each child. For examining transcription reliability, 10 chil-
dren for each age group were randomly selected. A second
transcriber transcribed the language samples of the 10

| Group | 3y | 4y | 5y | 6y | n (%) |
|-------|----|----|----|----|------|
| M age | 3y | 5m | 4y | 6m | 5y | 4m | 6y | 3m |
| SD of age | 3.4 m | 3.6 m | 3.7 m | 2.6 m |
| No. of boys | 15 | 33 | 22 | 20 | 90 (43) |
| No. of girls | 25 | 47 | 32 | 15 | 119 (57) |
| Total | 40 | 80 | 54 | 35 | 209 |
children from each group. We used the following formula: agreements (characters)/agreements + disagreements (characters), to obtain the transcription reliability and the result was .96 in average of 40 children.

Next, utterances were segmented into words. A Mandarin word might contain multiple characters and the basic semantic unit of Mandarin is the word (Wu et al., 2019). In this study, we used the CKIP Chinese Word Segmentation System (Academia Sinica Taiwan, 2014) to segment words. The CKIP Chinese Word Segmentation System automatically identifies and segments words based on the Academia Sinica dictionary of 80,000 written words (Ma & Chen, 2003).

According to Ma and Chen (2003), the CKIP system achieves 99.77% of the success rate when segmenting words without counting the mistakes occurred due to the existence of unknown words. This system provides a solution that can automatically extract new words to establish domain words or online instant word segmentation. It is a Chinese word segmentation system with the ability to recognize new words and add POS tags. This system includes a vocabulary of about 100,000 words and additional data such as POS, word frequency, POS frequency, and double conjunction frequency. The word segmentation is based on this vocabulary, quantitative words, overlapping words, and other word formation rules and new words identified online, and solve the problem of word segmentation ambiguity. It also automatically tags POS categories to words. The CKIP Chinese Word Segmentation System was used to decrease ambiguity and disagreement of word segmentation. The researchers manually modified the automatic segmentation results following the guidelines addressed in Wu et al. (2019). The reliability of manual word segmentation was 97.6%.

All words were then coded in terms of POS. In this study, we adapted the 12 categories from Y. H. Liu et al. (1996) and used 11 of them in this study. The category of onomatopoeia was excluded in this study. Onomatopoeia involves words of imitating sounds such as “bubu” (imitating car horns) and “hu-la hu-la” (imitating raindrops). When children imitate sounds, the phonological forms sometimes were not consistent and intelligible. Therefore, we have excluded these sounds in the language samples and the category of onomatopoeia was then excluded. The POS system used by CKIP included 47 categories and was too complicated for coding children’s production. We simplified the 47 categories and narrowed to 11 categories. Each category of 47 has a corresponding category to 11 categories. To minimize coding errors, the researchers developed simple computer software to convert 47 categories to 11 categories. The corresponding tags that form the CKIP Chinese Word Segmentation System to 11 categories of POS were automatically converted using this computer software. The categories of POS used in this study and its corresponding tags were in the following: noun (N), verb (V), adjective (Adj), cardinal number (Num), classifier (CL), pronoun (Pron), adverb (Adv), preposition (P), conjunction (C), particle (Part), and interjection (I). The automatically converted tags were manually checked and modified according to Mandarin linguistic rules. A character may have two or more different meanings and POS. We considered same characters with different POS as different words.

Analysis

Word frequency list. A computer program was developed to calculate the occurring frequency of each word for all the language samples. Words were ranked by how frequently they occur in these samples. The most frequently occurred word was ranked first. According to Nation (2016),

In this study, the high frequency word list contained the most frequent 302 words, which covered 80% of the word occurrences produced by the children. A high frequency word list was generated for all children aged from 3 to 6 years. We organized the top 302 words that were frequently used across all the groups by summing the raw frequency numbers of words produced by all the children. First, we categorized these top 302 words based on their POS. In addition, a high frequency word list was generated for each age group (3, 4, 5, and 6 years old). The names of characters in the story retelling were excluded from the high frequency word lists.

Differences between POS used by different age groups. POS tagging was used to categorize all the listed words. For the high frequency words of each age group, the percentage of each POS category used by each age group was calculated. The frequency of each POS category was calculated and divided by the number of children to obtain mean frequency. The mean frequency of POS produced was used to examine the significant differences of each POS category between age groups. One-way analysis of variance (ANOVA) and Bonferroni post hoc test (p < .05) were conducted to examine the significance.

Results

High Frequency Words Produced by Mandarin-Speaking Children Aged From 3 to 6 Years

First, we categorized the top 302 words based on their POS as shown in Table 2. Among all POS, verbs were used the most frequently, that is, 30.19% of the top 302 words, and with the highest word type, that is, 118 different verbs were frequently used by children aged 3 through 6 years. Pronouns with 17.35% of use rate were the second highest, followed by adverbs (14.01%) and nouns (12.38%; but with the second
patterns of these words over time. Thus, to better understand
this list was not very informative in terms of developmental
ideas of the core vocabulary from age 3 to 6 years. However,
junctions with high frequency as well.
rúguǒ "if" was among the con-
deshíhòu yīnwéi "because" and
nate conjunctions
háiyǒu "and" were used more frequently than the subordi-
native of the top 302 words, each with less than 7% use rate.

Next, we looked closely at individual words in terms of
frequency ranking, which provided more details about the
exact words that these preschoolers often used (see Table 3).
We first examined content words. Among the high frequency
verbs, a copula verb shì, yǒu “have,” and yào “want” were
the top 3, and not surprisingly, many action verbs about daily
activities, such as qù “go,” zài “locating,” shuō “say,” wán
“play,” and chī “eat,” were also frequently used by these
preschoolers. The adverb jiù was used very frequency, possibly
due to the fact that it is a polysemy that covers meanings of
“at once,” “right away,” “just,” “then,” and so on. For nouns,
kinship names such as māmā “mother” and bābà “father,”
the general noun for objects dōngxi “thing” and body parts,
such as dūzi “stomach,” and names for objects seen in daily
life were commonly used. Several adjectives that described
objects’ property or feature, such as shape and size, were fre-
quently produced by preschoolers.

For function words, some pronouns (such as wǒ “I” and
tá “he or she”), particles (such as DE), and the general clas-
sifier gè were used most frequently. Although there were
only 12 conjunctions among the top 302 words by 3- to
6-year-olds, the ranking of these conjunctions showed how
preschoolers combined clauses into longer sentences. For
example, the coordinate conjunctions ránhòu “then” and
háiyǒu “and” were used more frequently than the subordi-
nate conjunctions yīnwèi “because” and deshíhòu “when.”
The conditional conjunction rúguǒ “if” was among the con-
junctions with high frequency as well.

To sum, these top 302 words provided us with a general
idea of the core vocabulary from age 3 to 6 years. However,
this list was not very informative in terms of developmental
patterns of these words over time. Thus, to better understand
how the core vocabulary developed with age, next we looked
at how the core vocabulary distributed within each age group.

**Differences Between POS Used by Different Age Groups**

Table 4 illustrates the descriptive results of the frequency of
each POS category produced by the four age groups. One-
way ANOVA was used to examine the significance of differ-
cences in each POS category (V, N, Part, Pron, CL, Num,
Adv, C, I, and Adj) among groups of children aged 3, 4, 5,
and 6 years. The results are presented in Table 5. There were
significant effects of age on frequencies of POS at p < .05
for 10 POS categories (V, N, Part, Pron, CL, Num, Adv, C,
and Adj). Bonferroni test was used to test significant differ-
cences between age groups of 3 and 4 years old, 3 and 5 years
old, 3 and 6 years old, 4 and 5 years old, 4 and 6 years old,
and 5 and 6 years old for these 10 POS categories. For all age
groups which showed significant differences, older children
produced higher frequencies than younger children. The
results are presented in Table 6. The p values for all age
group comparisons were extracted from Table 6 and pre-
sented in Table 7. Adverb was found significantly different in
all six age groups. Verb, cardinal number, and conjunction
were found significant in five age groups. Preposition, pron-
noun, classifier, adjective, and noun were found significantly
different in four age groups. Particle was found significantly
different in two age groups.

**High Frequency Words Produced by Mandarin-
Speaking Children of 3, 4, 5, and 6 Years
Individually and the Percentage of POS**

For the age 3 group, the cumulative frequency ratio of the
most frequently used 302 words was 0.83, meaning that
these 302 words covered 83% of the total types of words
produced. For the age 4 group, the cumulated fre-
quency ratio of the most frequently used 302 words was
0.80, meaning that these 302 words covered 80% of the total
types of words children produced. For the age 5 group, the
cumulated frequency ratio of the most frequently used 302 words was
0.78, meaning that these 302 words covered 78% of the total
types of words children produced. For the age 6 group, the
cumulated frequency ratio of the most frequently used 302 words was
0.75, meaning that these 302 words covered 75% of the total
types of words children produced. For all age
groups which showed significant differences, older children
produced higher frequencies than younger children. The
results are presented in Table 6. The p values for all age
group comparisons were extracted from Table 6 and pre-
sented in Table 7. Adverb was found significantly different in
all six age groups. Verb, cardinal number, and conjunction
were found significant in five age groups. Preposition, pron-
noun, classifier, adjective, and noun were found significantly
different in four age groups. Particle was found significantly
different in two age groups.

**Table 2. Frequency Number, Percentage, and Word Types of Each Part of Speech in the Most Frequent 302 Words in All Children From Age 3 to 6 Years.**

| Part of speech | Raw frequency | Percentage (%) | N of word types |
|---------------|---------------|----------------|-----------------|
| Verb          | 27,325        | 30.19          | 103             |
| Pronoun       | 15,699        | 17.35          | 24              |
| Adverb        | 12,681        | 14.01          | 35              |
| Noun          | 11,208        | 12.38          | 79              |
| Conjunction   | 6,273         | 6.93           | 12              |
| Particle      | 6,030         | 6.66           | 10              |
| Classifier    | 3,917         | 4.33           | 8               |
| Number        | 2,193         | 2.42           | 4               |
| Adjective     | 1,853         | 2.05           | 16              |
| Interjection  | 1,801         | 1.99           | 7               |
| Preposition   | 1,528         | 1.69           | 4               |
| Total         | 90,508        | 100            | 302             |

highest word type, 79 nouns). These first four POS already
covered 73.93% of the top 302 words. Functional words, such
as prepositions and interjections, were smaller portions of the
top 302 words, each with less than 7% use rate.

To sum, these top 302 words provided us with a general
idea of the core vocabulary from age 3 to 6 years. However,
this list was not very informative in terms of developmental
patterns of these words over time. Thus, to better understand
Table 3. The Most Frequent 302 Words Used by 3- to 6-Year-Olds Shown in Categories of Parts of Speech (POS).

| Rank | Word  | POS | Rank | Word  | POS | Rank | Word  | POS | Rank | Word  | POS |
|------|-------|-----|------|-------|-----|------|-------|-----|------|-------|-----|
| 6    | shì   | V   | 295  | jiāo  | V   | 173  | máo zǐ | N   |
| 8    | yōu   | V   | 298  | jiāng huà | V | 176  | fāng zì | N   |
| 9    | yào   | V   | 300  | chí fān | V | 182  | qiú   | N   |
| 12   | huì   | V   | 1    | wǒ    | Pron | 184  | jīn tiān | N |
| 16   | qū   | V   | 2    | tā    | Pron | 186  | dān gāo | N   |
| 18   | zài  | V   | 14   | zhè   | Pron | 193  | pāng biān | N |
| 22   | shuō | V   | 15   | nà    | Pron | 194  | wài miàn | N   |
| 23   | wān  | V   | 17   | ní    | Pron | 195  | shǒu  | N   |
| 28   | chī   | V   | 32   | wǒ men | Pron | 203  | tiān   | N   |
| 31   | kē yì | V   | 55   | shí me | Pron | 206  | diān shì | N |
| 34   | méi yǒu | V | 59  | tā men | Pron | 209  | jī mǔ  | N   |
| 36   | gēi  | V   | 70   | zǐ jī | Pron | 210  | à gōng | N   |
| 37   | kǎn  | V   | 83   | zēn me | Pron | 213  | yǎn jīng | N |
| 40   | lái  | V   | 92   | zhè lǐ | Pron | 214  | qiāo kē li | N |
| 42   | yòng | V   | 105  | zhè yāng | Pron | 223  | yì qiān | N   |
| 43   | dào  | V   | 116  | nà biān | Pron | 226  | yǒu xi | N   |
| 44   | nà   | V   | 118  | wéi shí me | Pron | 234  | shū   | N   |
| 45   | xī huān | V | 134 | zhè biān | Pron | 236  | xiāo péng yōu | N |
| 48   | chī diào | V | 150 | méi   | Pron | 242  | chē zǐ | N   |
| 52   | zōu  | V   | 183  | nǎ lǐ | Pron | 250  | hòu miàn | N   |
| 63   | zuò  | V   | 199  | nā lǐ | Pron | 252  | jiāo shì | N   |
| 64   | dài  | V   | 235  | bié de | Pron | 257  | chē | N   |
| 66   | zhī dào | V | 244 | shuí | Pron | 259  | shuǐ guǒ | N   |
| 67   | fāng | V   | 254  | zhè yāng zǐ | Pron | 263  | gu shì | N   |
| 71   | kǎn dào | V | 256 | nǐ men | Pron | 264  | tōng xué | N   |
| 73   | hé   | V   | 260  | ná   | Pron | 268  | xià miàn | N   |
| 76   | pāo  | V   | 275  | dā jiā | Pron | 272  | xiào niǎo | N |
| 85   | jīn qū | V | 5   | jǐu | Adv | 277  | dōng wū | N   |
| 91   | mǎi  | V   | 11   | Bú   | Adv | 278  | yǎn sè | N   |
| 94   | xiàng | V | 19  | le  | Adv | 280  | qiān  | N   |
| 99   | shuǐ jiāo | V | 21 | dǒu | Adv | 283  | tòu | N   |
| 102  | chǔ lái | V | 25 | hén | Adv | 284  | tòu fǎ | N   |
| 103  | diào | V   | 33   | hái | Adv | 285  | diān xīn | N |
| 106  | nèng | V   | 38   | yě | Adv | 288  | tǔ zǐ | N   |
| 109  | jiào | V   | 51   | zǎi | Adv | 289  | shí wù | N   |
| 113  | xiāng yào | V | 62 | méi | Adv | 290  | gōng yuán | N |
| 114  | zhāi | V   | 68   | yǒu shì hòu | Adv | 294  | zào shāng | N |
| 119  | zhū | V   | 77   | xiān | Adv | 296  | yǔ | N   |
| 122  | bāng | V   | 88   | cāi | Adv | 297  | qiāng | N   |
| 130  | chuān | V | 90 | jiǔ shì | Adv | 301  | bīng qiān | N |
| 132  | qí lái | V | 93 | yī qǐ | Adv | 302  | huà | N   |
| 136  | jiāo dé | V | 97 | zhī yōu | Adv | 7 | rán hòu | C   |
| 138  | zhāo | V   | 112  | tài | Adv | 24 | hǎi yōu | C |
| 141  | dǎ | V   | 115  | hǎo | Adv | 26 | yǐn wéi | C   |
| 142  | huà | V   | 120  | zúi | Adv | 30  | gēn | C   |
| 146  | jiā zhūn | V | 125 | yǒu | Adv | 56 | de shí hòu | C |
| 148  | zuò | V   | 127  | yī zhī | Adv | 58  | kē shì | C   |
| 149  | jīn | V   | 133  | yǐ jīng | Adv | 87  | suǒ yī | C   |
| 151  | jiāng | V | 137 | zhī | Adv | 107  | hē | C   |
| 152  | sòng | V | 144 | bǐ jiāo | Adv | 131 | rú guǒ | C   |
| 156  | shuǐ | V   | 155  | ná me | Adv | 181  | jié guǒ | C   |

(continued)
Table 3. (continued)

| Rank | Word | POS | Rank | Word | POS | Rank | Word | POS |
|------|------|-----|------|------|-----|------|------|-----|
| 161  | xià qù | V   | 162  | zhè me | Adv | 204  | ér qié | C   |
| 166  | zhù   | V   | 187  | yì diàn | Adv | 219  | zhǐ hòu | C   |
| 167  | jiā   | V   | 188  | bù xíng | Adv | 3    | de   | Part |
| 169  | tiào  | V   | 197  | nà   | Adv | 13   | le   | Part |
| 170  | tīng  | V   | 201  | ér yǐ | Adv | 49   | zài  | Part |
| 172  | chū qù | V | 217  | dèng yǐ xià | Adv | 79   | zhe  | Part |
| 174  | tīng dào | V | 218  | quán bù | Adv | 82   | guò  | Part |
| 175  | zhōu huáng | V | 262  | yǐ xià | Adv | 100  | ma   | Part |
| 180  | huì jiā | V | 265  | yīng gāi | Adv | 179  | hāo le | Part |
| 185  | dāng  | V   | 266  | yì diàn diàn | Adv | 200  | dé   | Part |
| 189  | kāi   | V   | 269  | hāo xiàng | Adv | 237  | ă   | Part |
| 191  | xià lái | V | 27   | mā mā | N   | 258  | yī   | Part |
| 192  | qí    | V   | 35   | jiā   | N   | 4    | gē   | CL  |
| 196  | biān  | V   | 39   | bā bā | N   | 89   | zhī  | CL  |
| 198  | shǎng | V   | 41   | lǐ   | N   | 139  | yǐ xiě | CL  |
| 202  | xí    | V   | 46   | rén  | N   | 178  | kōu  | CL  |
| 205  | xiāng | V   | 47   | lǐ miàn | N | 208  | kē   | CL  |
| 207  | gāi   | V   | 50   | dōng xī | N | 211  | zhōng | CL  |
| 212  | tāng  | V   | 53   | dōu zǐ | N | 232  | suí  | CL  |
| 215  | jiǔ   | V   | 65   | shuǐ | N | 253  | tái  | CL  |
| 216  | jiān kāi | V | 69   | huā | N | 10   | yī   | Num |
| 221  | shāng qù | V | 72   | shāng | N | 57   | liàng | Num |
| 225  | huàn  | V   | 81   | wàn jū | N | 111  | sān  | Num |
| 227  | chū   | V   | 84   | mén  | N | 220  | sì   | Num |
| 228  | biān chéng | V | 86   | à mó | N | 54   | dā   | Adj |
| 229  | ràng  | V   | 95   | lǎo shī | N | 61   | duō  | Adj |
| 230  | dái  | V   | 96   | gē gē | N | 78   | xiāo  | Adj |
| 231  | fēng qí lǐ | V | 101  | cáo méi | N | 98   | hāo  | Adj |
| 238  | jìn lái | V | 104  | shì tòu | N | 160  | shēng bìng | Adj |
| 239  | zhāo dào | V | 108  | lù  | N | 168  | duì  | Adj |
| 240  | dā kāi | V | 110  | shēng yīn | N | 190  | yī yáng | Adj |
| 243  | shāng kè | V | 117  | zǐ zǐ | N | 222  | zhī jié | Adj |
| 245  | huì lái | V | 121  | xiǎn zài | N | 224  | zhāng | Adj |
| 246  | diū   | V | 124  | yǐ fú | N | 233  | dā de | Adj |
| 247  | yǒu dào | V | 128  | xué xiào | N | 241  | hāo chī | Adj |
| 251  | yāng  | V   | 129  | sēn lín | N | 248  | kuài | Adj |
| 255  | wèn  | V   | 135  | shāng miǎn | N | 249  | jiū  | Adj |
| 261  | wǎng jì | V | 140  | méi méi | N | 271  | zhēn de | Adj |
| 267  | pīn  | V   | 143  | dì dì | N | 291  | sī diāo | Adj |
| 270  | chī wàn | V | 145  | kǒu wèi | N | 292  | yī yáng de | Adj |
| 273  | pà   | V   | 147  | zuǐ bā | N | 29   | ă  | I   |
| 274  | mài  | V   | 153  | cǐ  | N   | 60   | wō  | I   |
| 276  | jiān  | V   | 154  | chuāng | N | 75   | ne  | I   |
| 279  | pà   | V   | 157  | bǐng qǐ lín | N | 80   | lā  | I   |
| 281  | kǎi shǐ | V | 158  | di fāng | N | 126  | yē  | I   |
| 282  | huà huà | V | 159  | lǚ huà tǐ | N | 165  | ba  | I   |
| 286  | dēng  | V | 163  | ér duō | N | 20   | bā  | P   |
| 287  | huì qù | V | 164  | jiān dào | N | 74   | gēn  | P   |
| 293  | qiè  | V | 171  | pǔ tào | N | 123  | bēi  | P   |

Note. V = verb; N = noun; Pron = pronoun; Adv = adverb; C = conjunction; Part = particle; CL = classifier; Num = cardinal number; Adj = adjective; I = interjection; P = preposition.
### Table 4. Descriptive Results of POS Frequency.

| POS | n  | M     | SD    | SEM  |
|-----|----|-------|-------|------|
| **V** |    |       |       |      |
| 3y  | 39 | 122.28| 27.996| 4.483|
| 4y  | 80 | 152.48| 43.423| 4.855|
| 5y  | 54 | 179.33| 53.533| 7.285|
| 6y  | 35 | 195.54| 47.342| 8.002|
| Total| 208| 161.03| 50.649| 3.512|
| **N** |    |       |       |      |
| 3y  | 39 | 103.46| 20.179| 3.231|
| 4y  | 80 | 118.93| 30.923| 3.457|
| 5y  | 54 | 141.35| 35.169| 4.786|
| 6y  | 35 | 146.69| 35.620| 6.021|
| Total| 208| 126.52| 34.834| 2.415|
| **Part** |    |       |       |      |
| 3y  | 39 | 24.46 | 7.074 | 1.133|
| 4y  | 80 | 28.85 | 10.510| 1.175|
| 5y  | 54 | 31.89 | 12.140| 1.652|
| 6y  | 35 | 34.06 | 14.250| 2.409|
| Total| 208| 29.69 | 11.504| 0.798|
| **P** |    |       |       |      |
| 3y  | 39 | 4.18  | 2.533 | 0.406|
| 4y  | 80 | 7.50  | 4.808 | 0.538|
| 5y  | 54 | 9.09  | 4.104 | 0.558|
| 6y  | 35 | 11.11 | 6.178 | 1.044|
| Total| 208| 7.90  | 5.037 | 0.349|
| **Pron** |    |       |       |      |
| 3y  | 39 | 57.41 | 22.968| 3.678|
| 4y  | 80 | 74.13 | 25.241| 2.822|
| 5y  | 54 | 81.11 | 28.085| 3.822|
| 6y  | 35 | 95.74 | 29.433| 4.975|
| Total| 208| 76.44 | 28.692| 1.989|
| **CL** |    |       |       |      |
| 3y  | 39 | 13.74 | 6.256 | 1.002|
| 4y  | 80 | 20.61 | 11.145| 1.246|
| 5y  | 54 | 24.76 | 12.347| 1.680|
| 6y  | 35 | 28.40 | 13.950| 2.358|
| Total| 208| 21.71 | 9.135 | 0.633|
| **Num** |    |       |       |      |
| 3y  | 39 | 5.64  | 3.320 | 0.532|
| 4y  | 80 | 11.93 | 7.629 | 0.853|
| 5y  | 54 | 15.48 | 7.585 | 1.032|
| 6y  | 35 | 16.94 | 8.135 | 1.375|
| Total| 208| 12.51 | 8.030 | 0.557|
| **I** |    |       |       |      |
| 3y  | 39 | 9.38  | 6.77  | 1.08 |
| 4y  | 80 | 9.68  | 8.2   | 0.91 |
| 5y  | 54 | 7.85  | 7.29  | 0.99 |
| 6y  | 35 | 12.65 | 11.17 | 1.88 |
| Total| 208| 9.65  | 8.4   | 0.58 |
| **Adv** |    |       |       |      |
| 3y  | 39 | 33.77 | 16.858| 2.699|
| 4y  | 80 | 62.06 | 24.795| 2.772|
| 5y  | 54 | 79.13 | 27.889| 3.795|
| 6y  | 35 | 95.11 | 32.242| 5.450|
| Total| 208| 66.75 | 32.344| 2.243|
| **C** |    |       |       |      |
| 3y  | 39 | 16.41 | 7.983 | 1.278|
| 4y  | 80 | 29.23 | 16.238| 1.815|

### Table 4. (continued)

| POS | n  | M     | SD    | SEM  |
|-----|----|-------|-------|------|
| 5y  | 54 | 40.54 | 21.100| 2.871|
| 6y  | 35 | 46.14 | 20.924| 3.537|
| Total| 208| 32.61 | 19.986| 1.386|
| **Adj** |    |       |       |      |
| 3y  | 39 | 13.00 | 7.130 | 1.142|
| 4y  | 80 | 19.76 | 7.070 | 0.790|
| 5y  | 54 | 21.33 | 8.737 | 1.189|
| 6y  | 35 | 24.91 | 11.508| 1.945|
| Total| 208| 19.77 | 9.135 | 0.633|

Note. POS = part of speech; V = verb; N = noun; Part = particle; P = preposition; Pron = pronoun; CL = classifier; Num = cardinal number; I = interjection; Adv = adverb; C = conjunction; Adj = adjective; SEM = standard error of the mean.

### Table 5. Results of One-Way Analysis of Variance of the Differences of Age (3, 4, 5, and 6 Years Old) on Each POS Category.

| POS | df | F    | p value  |
|-----|----|------|----------|
| **V** | 3  | 20.758| .000*   |
|      | 204| 207  |          |
| **N** | 3  | 17.523| .000*   |
|      | 204| 207  |          |
| **Part** | 3  | 5.504 | .001*   |
|       | 204| 207  |          |
| **P** | 3  | 15.820| .000*   |
|       | 204| 207  |          |
| **Pron** | 3  | 13.813| .000*   |
|       | 204| 207  |          |
| **CL** | 3  | 12.137| .000*   |
|       | 204| 207  |          |
| **Num** | 3  | 19.987| .000*   |
|       | 204| 207  |          |
| **I** | 3  | 2.377 | .071    |
|       | 204| 207  |          |
| **Adv** | 3  | 40.326| .000*   |
|       | 204| 207  |          |
| **C** | 3  | 23.082| .000*   |
|       | 204| 207  |          |
| **Adj** | 3  | 13.411| .000*   |
|       | 204| 207  |          |

Note. POS = part of speech; V = verb; N = noun; Part = particle; P = preposition; Pron = pronoun; CL = classifier; Num = cardinal number; I = interjection; Adv = adverb; C = conjunction; Adj = adjective. *Significance level set at p < .05.

(continued)
Table 6. Results of Post Hoc of the Differences of Age (3, 4, 5, and 6 Years Old) on Each POS Category.

| POS | Age | Age | M differences | SE  | Significance | Lower bound | Upper bound |
|-----|-----|-----|---------------|-----|--------------|-------------|-------------|
|     | 3   | 4   | −30.193*      | 8.721 | .004         | −53.43      | −6.96       |
|     | 5   | 4   | −57.051*      | 9.384 | .000         | −82.05      | −32.05      |
|     | 6   | 4   | −73.261*      | 10.398 | .000        | −100.96     | −45.56      |
|     | 4   | 3   | 30.193*       | 8.721 | .004         | 6.96        | 53.43       |
|     | 5   | 3   | −26.858*      | 7.865 | .005         | −47.81      | −5.90       |
|     | 6   | 3   | −43.068*      | 9.050 | .000         | −67.18      | −18.96      |
|     | 5   | 3   | 57.051*       | 9.384 | .000         | 32.05       | 82.05       |
|     | 4   | 6   | 26.858*       | 7.865 | .005         | 5.90        | 47.81       |
|     | 6   | 6   | −16.210       | 9.691 | .576         | −42.03      | 9.61        |
|     | 6   | 3   | 73.261*       | 10.398 | .000   | 45.56       | 100.96      |
|     | 4   | 6   | 43.068*       | 9.050 | .000         | 18.96       | 67.18       |
|     | 5   | 6   | 16.210        | 9.691 | .576         | −9.61       | 42.03       |
|     | 6   | 4   | −15.463       | 6.111 | .073         | −31.74      | 0.82        |
|     | 5   | 4   | −37.890*      | 6.575 | .000         | −55.41      | −20.37      |
|     | 6   | 4   | −43.224*      | 7.285 | .000         | −62.63      | −23.82      |
|     | 5   | 3   | 15.463        | 6.111 | .073         | −37.11      | −7.75       |
|     | 6   | 3   | −27.761*      | 6.341 | .000         | −44.65      | −10.87      |
|     | 5   | 3   | 37.890*       | 6.575 | .000         | 20.37       | 55.41       |
|     | 4   | 3   | 22.427*       | 5.511 | .000         | 7.75        | 37.11       |
|     | 6   | 3   | −2.334        | 6.790 | 1.000        | −23.42      | 12.76       |
|     | 6   | 3   | 43.224*       | 7.285 | .000         | 23.82       | 62.63       |
|     | 4   | 5   | 27.761*       | 6.341 | .000         | 10.87       | 44.65       |
|     | 5   | 5   | 5.334         | 6.790 | 1.000        | −12.76      | 23.42       |
|     | 6   | 5   | −5.334        | 6.790 | 1.000        | −23.42      | 12.76       |
|     | 4   | 3   | 7.427*        | 2.342 | .111         | 1.19        | 13.67       |
|     | 5   | 3   | 3.039         | 1.963 | .739         | −2.19       | 8.27        |
|     | 6   | 3   | −2.168        | 2.419 | 1.000        | −8.61       | 4.28        |
|     | 5   | 3   | 9.596*        | 2.595 | .002         | 2.68        | 16.51       |
|     | 6   | 3   | 5.207         | 2.259 | .133         | −0.81       | 11.23       |
|     | 5   | 5   | 9.596*        | 2.595 | .002         | 2.68        | 16.51       |
|     | 4   | 5   | 5.207         | 2.259 | .133         | −0.81       | 11.23       |
|     | 6   | 5   | 2.168         | 2.419 | 1.000        | −4.28       | 8.61        |
|     | 4   | 3   | −3.321*       | 0.892 | .002         | −5.70       | −0.94       |
|     | 5   | 3   | −4.913*       | 0.960 | .000         | −7.47       | −2.35       |
|     | 6   | 3   | −6.935*       | 1.064 | .000         | −9.77       | −4.10       |
|     | 4   | 3   | −3.321*       | 0.892 | .002         | 0.94        | 5.70        |
|     | 5   | 3   | −1.593        | 0.805 | .295         | −3.74       | 0.55        |
|     | 6   | 3   | −3.614*       | 0.926 | .001         | −6.08       | −1.15       |
|     | 5   | 3   | 4.913*        | 0.960 | .000         | 2.35        | 7.47        |
|     | 4   | 3   | 1.593         | 0.805 | .295         | −0.55       | 3.74        |
|     | 6   | 3   | −2.022        | 0.992 | .257         | −4.66       | 0.62        |
|     | 6   | 4   | 6.935*        | 1.064 | .000         | 4.10        | 9.77        |
|     | 4   | 3   | 3.614*        | 0.926 | .001         | 1.15        | 6.08        |
|     | 5   | 3   | 2.022         | 0.992 | .257         | −0.62       | 4.66        |
|     | 6   | 3   | −38.333*      | 6.135 | .000         | −54.68      | −21.99      |
|     | 5   | 4   | −16.715*      | 5.146 | .008         | −30.42      | −3.00       |
|     | 6   | 5   | −23.701*      | 5.537 | .000         | −38.45      | −8.95       |
|     | 6   | 6   | −38.333*      | 6.135 | .000         | −54.68      | −21.99      |
| POS | Age | Age | M differences | SE  | Significance | 95% confidence interval |
|-----|-----|-----|---------------|-----|--------------|------------------------|
|     |     | 4   | 3             | 16.715* | 5.146 | .008 | 3.00 | 30.42 |
|     |     | 5   | 6             | −6.986  | 4.641 | .803 | −19.35 | 5.38 |
|     |     | 6   | 6             | −21.618* | 5.340 | .000 | −35.84 | −7.39 |
|     |     | 5   | 3             | 23.701* | 5.537 | .000 | 8.95 | 38.45 |
|     |     | 4   | 6             | 6.986   | 4.641 | .803 | −5.38 | 19.35 |
|     |     | 6   | 6             | −14.632 | 5.718 | .067 | −29.87 | 0.60 |
|     |     | 6   | 3             | 38.333* | 6.135 | .000 | 21.99 | 54.68 |
|     |     | 4   | 5             | 21.618* | 5.340 | .000 | 7.39 | 35.84 |
|     |     | 5   | 14.632        | 5.718   | .067 | −6.00 | 29.87 |
|     | CL  | 3   | 4             | −6.869* | 2.205 | .013 | −12.74 | −1.00 |
|     |     | 5   | 6             | −11.016* | 2.372 | .000 | −17.34 | −4.70 |
|     |     | 6   | 4             | −14.656* | 2.628 | .000 | −21.66 | −7.65 |
|     |     | 4   | 3             | 6.869*  | 2.205 | .013 | 1.00 | 12.74 |
|     |     | 5   | 6             | −4.147  | 1.988 | .229 | −9.44 | 1.15 |
|     |     | 6   | 6             | −7.787* | 2.288 | .005 | −13.88 | −1.69 |
|     |     | 5   | 3             | 11.016* | 2.372 | .000 | 4.70 | 17.34 |
|     |     | 4   | 6             | 4.147   | 1.988 | .229 | −1.15 | 9.44 |
|     |     | 6   | 6             | −3.641  | 2.450 | .833 | −10.17 | 2.89 |
|     | Num | 3   | 4             | −6.284* | 1.389 | .000 | −9.98 | −2.58 |
|     |     | 5   | 6             | −9.840* | 1.494 | .000 | −13.82 | −5.86 |
|     |     | 6   | 6             | −11.302* | 1.656 | .000 | −15.71 | −6.89 |
|     |     | 4   | 3             | 6.284*  | 1.389 | .000 | 2.58 | 9.98 |
|     |     | 5   | 6             | −3.556* | 1.252 | .030 | −6.89 | −0.22 |
|     |     | 6   | 5             | −5.018* | 1.441 | .004 | −8.86 | −1.18 |
|     |     | 5   | 3             | 9.840*  | 1.494 | .000 | 5.86 | 13.82 |
|     |     | 4   | 6             | 3.556*  | 1.252 | .030 | 0.22 | 6.89 |
|     |     | 6   | 6             | −1.461  | 1.543 | 1.000 | −5.57 | 2.65 |
|     |     | 4   | 3             | 11.302* | 1.656 | .000 | 6.89 | 15.71 |
|     |     | 5   | 4             | 5.018*  | 1.441 | .004 | 1.18 | 8.86 |
|     |     | 6   | 5             | 1.461   | 1.543 | 1.000 | −2.65 | 5.57 |
|     | Adv | 3   | 4             | −28.293* | 5.041 | .000 | −41.72 | −14.86 |
|     |     | 5   | 6             | −45.360* | 5.425 | .000 | −59.81 | −30.91 |
|     |     | 6   | 6             | −61.345* | 6.010 | .000 | −77.36 | −45.33 |
|     |     | 4   | 3             | 28.293* | 5.041 | .000 | 14.86 | 41.72 |
|     |     | 5   | 6             | −17.067* | 4.546 | .001 | −29.18 | −4.95 |
|     |     | 6   | 6             | −33.052* | 5.231 | .000 | −46.99 | −19.11 |
|     |     | 5   | 3             | 45.360* | 5.425 | .000 | 30.91 | 59.81 |
|     |     | 4   | 6             | 17.067* | 4.546 | .001 | 4.95 | 29.18 |
|     |     | 6   | 6             | −15.985* | 3.602 | .029 | −30.91 | −1.06 |
|     |     | 4   | 3             | 61.345* | 6.010 | .000 | 45.33 | 77.36 |
|     |     | 5   | 4             | 33.052* | 5.231 | .000 | 19.11 | 46.99 |
|     |     | 6   | 5             | 15.985* | 5.602 | .029 | 1.06 | 30.91 |
|     | C   | 3   | 4             | −12.815* | 3.397 | .001 | −21.87 | −3.76 |
|     |     | 5   | 6             | −24.127* | 3.656 | .000 | −33.87 | −14.39 |
|     |     | 6   | 6             | −29.733* | 4.050 | .000 | −40.52 | −18.94 |
|     |     | 4   | 3             | 12.815* | 3.397 | .001 | 3.76 | 21.87 |
|     |     | 5   | 6             | −11.312* | 3.064 | .002 | −19.47 | −3.15 |
|     |     | 6   | 6             | −16.918* | 3.525 | .000 | −26.31 | −7.53 |

(continued)
The categories and percentages of each POS among the 302 most frequently used words for 4-year-olds were as follows: (a) verb (32.8%), (b) noun (26.2%), (c) adverb (12.6%), (d) pronoun (7.9%), (e) adjective (5.6%), (f) conjunction (4.3%), (g) particle (3.1%), (h) measure word (2.3%), (i) interjection (2.3%), (j) number (1.3%), and (k) preposition (1.3%).

The categories and percentages of each POS among the 302 most frequently used words for 5-year-olds were as follows: (a) verb (32%), (b) noun (29.1%), (c) adverb (11.1%), (d) pronoun (6.3%), (e) adjective (5.7%), (f) conjunction (4.9%), (g) measure word (3.1%), (h) particle (2.9%), (i) interjection (2%), (j) number (1.7%), and (k) preposition (1.1%).
Table 9. 302 Most Frequently Used Words of 3-Year-Olds.

| Rank | Word  | POS | Rank | Word  | POS | Rank | Word  | POS |
|------|-------|-----|------|-------|-----|------|-------|-----|
| 1    | wǒ    | Pron| 101  | mǎi   | V   | 202  | bǐ jiào | Adv |
| 2    | de    | Part| 102  | yī qí | Adv | 203  | zhī yǒu | Adv |
| 3    | tā    | Pron| 103  | mèi mèi | N | 204  | tài  | CL |
| 4    | gè    | CL  | 104  | de shì hòu | C | 205  | zuò  | V   |
| 5    | shì   | V   | 105  | nà lí | Pron | 206  | nòng | V   |
| 6    | yào   | V   | 106  | mào zǐ | N | 207  | zhāo dào | V  |
| 7    | yǒu   | V   | 107  | zuì  | Adv | 208  | pà   | V   |
| 8    | zhè   | Pron| 108  | pāo  | V | 209  | zhē me | Adv |
| 9    | jiǔ   | Adv | 109  | bāng  | V  | 210  | tāng shí | N |
| 10   | le    | Part| 110  | xià qù | V | 211  | zhǔ fān | V  |
| 11   | hái yǒu | C | 111  | dā | V | 212  | cāi | N |
| 12   | qù    | V   | 112  | xī | V | 213  | bīng qiān | N |
| 13   | bù    | Adv | 113  | ā | Part | 214  | mài | V   |
| 14   | wàn   | V   | 114  | zhè yāng | Pron | 215  | miān bāo | N |
| 15   | chē   | V   | 115  | jiāo | V | 216  | yī | Part |
| 16   | nà    | Pron| 116  | chuāng | N | 217  | shōu | N |
| 17   | ā     | I   | 117  | zǐ zhī | N | 218  | shuǐ guǒ | N |
| 18   | zài   | V   | 118  | běi zǐ | N | 219  | yā chī | N |
| 19   | nǐ    | Pron| 119  | sēn lín | N | 220  | qiǎo kē lǐ | N |
| 20   | mā mā | N   | 120  | huā | V | 221  | dā kǎi | V   |
| 21   | yī    | Num | 121  | zhe  | Part | 222  | dī fāng | N |
| 22   | rán hòu | C | 122  | ma | Part | 223  | yà | I |
| 23   | kè yī | V   | 123  | xiāng  | V | 224  | tǔ zǐ | N |
| 24   | bā    | P   | 124  | xiāo péng yǒu | N | 225  | hé | N |
| 25   | le    | Adv | 125  | ěr duō | N | 226  | ā gōng | N |
| 26   | jiā   | N   | 126  | shū | N | 227  | zuò tiān | N |
| 27   | hǎi   | Adv | 127  | cāo méi | N | 228  | xī zāo | V |
| 28   | yǐn wéi | C | 128  | kāi | V | 229  | kǒng lóng | N |
| 29   | nǎ    | N   | 129  | xiǎo niǎo | N | 230  | jiān kāi | V |
| 30   | huì    | V   | 130  | gōng yuán | N | 231  | tiào wǔ | V |
| 31   | lái   | V   | 131  | chī fán | V | 232  | yóu xī | N |
| 32   | dōu    | Adv | 132  | huì jiā | V | 233  | qiǎo | V |
| 33   | hèn    | Adv | 133  | xī guā | N | 234  | gài zǐ | N |
| 34   | gēn    | C   | 134  | jiān | V | 235  | fēng lǐ | N |
| 35   | bà bà | N   | 135  | zhǔ cái | V | 236  | fēng qī lái | V |
| 36   | gěi    | V   | 136  | xué xiāo | N | 237  | jiào dé | V |
| 37   | kān    | V   | 137  | tóu fā | N | 238  | kōu | CL |
| 38   | chī diào | V | 138  | féng | V | 239  | chū | V |
| 39   | wǒ     | I   | 139  | xiào bái tǔ | N | 240  | hào chī | Adj |
| 40   | zài    | Part| 140  | tà men | Pron | 241  | shōu | V |
| 41   | méi yǒu | V | 141  | wèi shì me | Pron | 242  | sì dià o | Adj |
| 42   | xǐ huān | V | 142  | néng | V | 243  | bié de | Pron |
| 43   | wǒ men | Pron| 143  | dān gāo | N | 244  | nà | Adv |
| 44   | lǐ     | N   | 144  | niú nǎi | N | 245  | ne | Part |
| 45   | lǐ mián | N | 145  | chē | N | 246  | fāng jiān | N |
| 46   | shuō    | V | 146  | zhāng | Adj | 247  | huā | N |
| 47   | dào    | V | 147  | gǔ shì | N | 248  | zhāng jīng lù | N |
| 48   | yě     | Adv | 148  | hǎi mián bāo bāo | N | 249  | yāo | V |
| 49   | shuǐ    | N | 149  | tāo | V | 250  | jiāo | V |
| 50   | yǒng   | V | 150  | píng guò | N | 251  | qiǔ | N |
| 51   | dù zǐ | N | 151  | biǎn | V | 252  | tāng | N |
| 52   | lǎ    | I    | 152  | xiān | Adv | 253  | huá huà | V |

(continued)
Table 9. (continued)

| Rank | Word | POS | Rank | Word | POS | Rank | Word | POS |
|------|------|-----|------|------|-----|------|------|-----|
| 53   | wán jù | N   | 153  | chē zǐ | N   | 254  | duí | Adj |
| 54   | hē   | V   | 154  | zuò  | V   | 255  | qiǎo qiāo | V |
| 55   | shuí jiào | V   | 155  | jìn  | V   | 256  | qīng | V |
| 56   | shí me | Pron | 156  | pù tāo | N   | 257  | tāng | V |
| 57   | dōng xī | N   | 157  | diǎn xīn | N   | 258  | xié zǐ | N |
| 58   | zǐ jǐ | Pron | 158  | yǐ zhì | Adv | 259  | tóu | N |
| 59   | yǐ fù | N   | 159  | shǎng miàn | N   | 260  | yào | N |
| 60   | kǎn dào | V   | 160  | shǎng kē | V   | 261  | biān chéng | V |
| 61   | mén   | N   | 161  | qiē   | V   | 262  | yǐ qiān | N |
| 62   | dǎi   | V   | 162  | zhāo  | V   | 263  | báo | V |
| 63   | shí tóu | N   | 163  | xiāng jiào | N   | 264  | bǐng qí lin | N |
| 64   | rén   | N   | 164  | zhú mǐ cāng | V   | 265  | huì lǎi | V |
| 65   | dà    | Adj | 165  | xiān zǎi | N   | 266  | niǎo bǔ | N |
| 66   | fāng  | V   | 166  | bēi   | P   | 267  | wàng jí | V |
| 67   | chuān | V   | 167  | wǔ wéi xióng | N   | 268  | nǎ lǐ | Pron |
| 68   | hào   | Adv | 168  | diǎn shí | N   | 269  | wěi dào | N |
| 69   | zèn me | Pron | 169  | zuǐ bā | N   | 270  | pénɡ yǒu | N |
| 70   | zhè lǐ | Pron | 170  | dǎi  | V   | 271  | liè | Part |
| 71   | méi   | Adv | 171  | shěng yīn | N   | 272  | shū bào | N |
| 72   | duō   | Adj | 172  | jiāng | V   | 273  | tōu | V |
| 73   | lǎo shī | N   | 173  | yòu  | Adv | 274  | miǎn bēi | N |
| 74   | hǎo   | Adj | 174  | dā de | Adj | 275  | lǎi shǐ | V |
| 75   | hé    | C   | 175  | nǎi nǎi | N   | 276  | fān | N |
| 76   | zhī dào | V   | 176  | chē chē | N   | 277  | yǐn liào | N |
| 77   | xiǎo  | Adj | 177  | nà biān | Pron | 278  | zhāi | V |
| 78   | zǒu   | V   | 178  | suǒ yǐ | C   | 279  | diǎn huà | N |
| 79   | zhǔ   | V   | 179  | shū   | V   | 280  | xiāng | V |
| 80   | zài   | Adv | 180  | zhè yàng zì | Pron | 281  | shuí | Pron |
| 81   | shuì  | V   | 181  | jiū shí | Adv | 282  | baby | N |
| 82   | liǎng | Num | 182  | dēng yǐ xià | Adv | 283  | Dora | N |
| 83   | shàng | N   | 183  | jiē guó | C   | 284  | yǐ xià | Adv |
| 84   | chū lái | V   | 184  | mǎ mǐ | N   | 285  | yǐ yàng | Adv |
| 85   | diào  | V   | 185  | yè yè | N   | 286  | yǐ diàn diàn | Adv |
| 86   | shǔ tiáo | N   | 186  | gèn  | P   | 287  | bù xíng | Adv |
| 87   | jiǎ   | V   | 187  | guō   | Part | 288  | tiān | N |
| 88   | gē gē | N   | 188  | pán zǐ | N   | 289  | bǐ sāi | V |
| 89   | shèng bìng | Adj | 189  | jí mù | N   | 290  | chū xiàn | V |
| 90   | zhī   | CL  | 190  | yǐ shēng | N   | 291  | sì | Num |
| 91   | liǔ huà tǐ | N   | 191  | shǎng xué | V   | 292  | dā diǎn huà | V |
| 92   | mó tuō chē | N   | 192  | dì dì | N   | 293  | shēng qì | Adj |
| 93   | qí lái | V   | 193  | ná me | Adv | 294  | quán bù | Adv |
| 94   | jiǎ zhūhuāng | V   | 194  | ā mò | N   | 295  | huì qù | V |
| 95   | jiān dào | N   | 195  | dāo  | V   | 296  | bā | I |
| 96   | zhūhuāng | V   | 196  | cháng gē | V   | 297  | tōu | V |
| 97   | qí    | V   | 197  | dé    | Part | 298  | zōu lù | V |
| 98   | cái   | Adv | 198  | jiāo shí | N   | 299  | fāng zǐ | N |
| 99   | yē    | I   | 199  | jīn qù | V   | 300  | bèi | CL |
| 100  | zhè biān | Pron | 200  | sān | Num | 301  | zhēn tóu | N |

Note. POS = part of speech; Pron = pronoun; V = verb; Adv = adverb; Part = particle; N = noun; CL = classifier; C = conjunction; I = interjection; P = preposition; Num = cardinal number; Adj = adjective.
| Rank | Word | POS | Rank | Word | POS | Rank | Word | POS |
|------|------|-----|------|------|-----|------|------|-----|
| 1    | ǒ wò | Pron| 101  | lǎo shī | N  | 202  | dōng wù | N  |
| 2    | ǒ tā | Pron| 102  | zǐ zǐ | N  | 203  | mào zi | N  |
| 3    | ǒ de | Part | 103  | chuī lái | V  | 204  | zhōng | CL |
| 4    | ǒ gè | CL  | 104  | mén | N  | 205  | gài | V  |
| 5    | ǒ jiǔ | Adv | 105  | néng | V  | 206  | qiào kē lǐ | N  |
| 6    | ǒ shí | V  | 106  | xiāng yào | V  | 207  | lǎo pān | N  |
| 7    | ǒ rán hòu | C  | 107  | shuǐ jiào | V  | 208  | ér yī | Adv |
| 8    | ǒ yǒu | V  | 108  | shì tóu | N  | 209  | nǐ men | Pron |
| 9    | ǒ yào | V  | 109  | shēng yīn | N  | 210  | chē zǐ | N  |
| 10  | ǒ yī | Num | 110  | tài | Adv | 211  | pā | V  |
| 11  | ǒ le | Part | 111  | bīng qì | Lin | N  | 212  | pīn | V  |
| 12  | ǒ bū | Adv | 112  | zhe | Part | 213  | jiān kāi | V  |
| 13  | ǒ zhè | Pron | 113  | suō yì | C  | 214  | jiǔ | V  |
| 14  | ǒ huì | V  | 114  | lǔ | N  | 215  | yān jīng | N  |
| 15  | ǒ ní | Pron | 115  | yě | I  | 216  | zhē yáng zǐ | Pron |
| 16  | ǒ nà | Pron | 116  | shāng miǎn | N  | 217  | yǔ | N  |
| 17  | ǒ qǔ | V  | 117  | nà biān | Pron | 218  | kē | CL |
| 18  | ǒ bǎ | P  | 118  | jiā zhūhuáng | V  | 219  | rǎng | V  |
| 19  | ǒ zài | V  | 119  | sān | Num | 220  | tiān | N  |
| 20  | ǒ le | Adv | 120  | zhù | V  | 221  | shū guò | N  |
| 21  | ǒ shuō | V  | 121  | gē gē | N  | 222  | bā | I  |
| 22  | ǒ chī | V  | 122  | jiāo dé | V  | 223  | zhāo dào | V  |
| 23  | ǒ dōu | Adv | 123  | yī jīng | Adv | 224  | huān | V  |
| 24  | ǒ hái yǒu | C  | 124  | jiāo | V  | 225  | tāng | V  |
| 25  | ǒ wàn | V  | 125  | xiān zài | N  | 226  | fēng qǐ lái | V  |
| 26  | ǒ hēn | Adv | 126  | bèi | P  | 227  | qì | V  |
| 27  | ǒ yīn wèi | C  | 127  | jiàng | V  | 228  | hāo xiāng | Adv |
| 28  | ǒ mā mā | N  | 128  | yòu | Adv | 229  | sī diào | Adj |
| 29  | ǒ ā | I  | 129  | zhē yáng | Pron | 230  | měi | Pron |
| 30  | ǒ wǒ men | Pron | 130  | zuǐ bā | N  | 231  | nà | Adv |
| 31  | ǒ kē yí | V  | 131  | yī zhí | Adv | 232  | dān gāo | N  |
| 32  | ǒ hái | Adv | 132  | xué xǐo | N  | 233  | xiǎo niǎo | N  |
| 33  | ǒ gēn | C  | 133  | bù xíng | Adv | 234  | qī | V  |
| 34  | ǒ méi yǒu | V  | 134  | zhē biān | Pron | 235  | shōu | N  |
| 35  | ǒ kān | V  | 135  | zhāi | V  | 236  | dā kāi | V  |
| 36  | ǒ gēi | V  | 136  | xià qù | V  | 237  | bēn lái | Adv |
| 37  | ǒ jiā | N  | 137  | jīn tiān | N  | 238  | diū | V  |
| 38  | ǒ yè | Adv | 138  | zuò | V  | 239  | quān bū | Adv |
| 39  | ǒ bà bà | N  | 139  | zhāo | V  | 240  | ér qǐ | C  |
| 40  | ǒ lái | V  | 140  | shuǐ | V  | 241  | hòu miǎn | N  |
| 41  | ǒ dāo | V  | 141  | yī fú | N  | 242  | nà lǐ | Pron |
| 42  | ǒ lǐ | N  | 142  | wéi shì me | Pron | 243  | ā | Part |
| 43  | ǒ yòng | V  | 143  | liū huá tī | N  | 244  | jiāo shī | N  |
| 44  | ǒ xī huān | V  | 144  | tīng | V  | 245  | xiǎo pénɡ yǒu | N  |
| 45  | ǒ dōng xi | N  | 145  | xiā lǎi | V  | 246  | jiā | V  |
| 46  | ǒ chī diào | V  | 146  | nà me | Adv | 247  | yī | Part |
| 47  | ǒ zài | Part | 147  | méi méi | N  | 248  | yī diàn | Adv |
| 48  | ǒ liǎnɡ | Num | 148  | chuān | V  | 249  | yī diǎn diǎn | Adv |
| 49  | ǒ de shī hòu | C  | 149  | qǐ lái | V  | 250  | dà de | Adj |
| 50  | ǒ nā | V  | 150  | dūi | Adj | 251  | tóng xué | N  |
| 51  | ǒ lǐ miàn | N  | 151  | zhī | Adv | 252  | nónɡ | V  |
| 52  | ǒ ké shī | C  | 152  | hào le | Part | 253  | gù shì | N  |

(continued)
Table 10. (continued)

| Rank | Word     | POS | Rank | Word     | POS | Rank | Word     | POS |
|------|----------|-----|------|----------|-----|------|----------|-----|
| 53   | zài      | Adv | 153  | rú guó   | C   | 254  | yù dào   | V   |
| 54   | zōu      | V   | 154  | dāng     | V   | 255  | biàn chéng| V   |
| 55   | dà       | Adj | 155  | huì jiā   | V   | 256  | yì qián  | N   |
| 56   | dǔ zǐ    | N   | 156  | chuàng   | N   | 257  | chǐ wán  | V   |
| 57   | rén      | N   | 157  | zhè me   | Adv | 258  | zhi jiě  | Adj |
| 58   | shuǐ      | N   | 158  | sēn lín  | N   | 259  | nǎ       | Pron|
| 59   | shì me    | Pron| 159  | bǐ jiào  | Adv | 260  | zhēn de  | Adj |
| 60   | zuò      | V   | 160  | zhuāng   | V   | 261  | jié guǒ  | C   |
| 61   | dāi      | V   | 161  | ér duō    | N   | 262  | yī yàng  | Adj |
| 62   | wǒ       | I   | 162  | fāng zí   | N   | 263  | shāng    | V   |
| 63   | duō      | Adj | 163  | pǔ tāo   | N   | 264  | shāng bān| V   |
| 64   | yǒu shí hòu | Adv | 164  | huà      | V   | 265  | dà jiā   | Pron|
| 65   | fāng      | V   | 165  | dā       | V   | 266  | huì lāi  | V   |
| 66   | tā men    | Pron| 166  | dì dì     | N   | 267  | gāng cái | Adv |
| 67   | zhī       | CL  | 167  | nǎ lǐ     | Pron| 268  | gāng gāng| Adv |
| 68   | kān dào   | V   | 168  | èn        | I   | 269  | shū bāo  | N   |
| 69   | lǐ        | I   | 169  | dì fāng   | N   | 270  | yán sè   | N   |
| 70   | zǐ jí     | Pron| 170  | dé       | Part| 271  | huái diào | V   |
| 71   | zhī dào   | V   | 171  | jī mù     | N   | 272  | xià miàn | N   |
| 72   | ne        | I   | 172  | yī xiě    | CL  | 273  | jiù      | Adj |
| 73   | hē        | V   | 173  | jīn       | V   | 274  | chū      | V   |
| 74   | māi       | V   | 174  | tiào      | V   | 275  | cì       | N   |
| 75   | wàn jù    | N   | 175  | yǐ yáng   | Adj | 276  | jiāo     | N   |
| 76   | zēn me    | Pron| 176  | wài miàn  | N   | 277  | bǐng qián| N   |
| 77   | pāo       | V   | 177  | qū       | N   | 278  | jū zǐ    | N   |
| 78   | xiāo      | Adj | 178  | diàn shì  | N   | 279  | diàn xīn | N   |
| 79   | huā       | N   | 179  | chū qù    | V   | 280  | sì       | Num |
| 80   | shāng     | N   | 180  | shēng bǐng| Adj | 281  | bǐng xiāng| N   |
| 81   | cái       | Adv | 181  | xī       | V   | 282  | huì qū   | V   |
| 82   | mèi       | Adv | 182  | jiān dào  | N   | 283  | tū zǐ    | N   |
| 83   | jīn qù    | Adv | 183  | kāi      | V   | 284  | pā       | V   |
| 84   | mà        | Part| 184  | xiàng    | V   | 285  | hóng luò bo| N   |
| 85   | cāo měi   | N   | 185  | tīng dào  | V   | 286  | yǒu xī    | N   |
| 86   | jiū shì    | Adv | 186  | shāng qù  | V   | 287  | shuí     | Pron|
| 87   | xiān      | Adv | 187  | kǒu      | CL  | 288  | mǎi      | V   |
| 88   | guō       | Part| 188  | zhú      | V   | 289  | qián     | N   |
| 89   | gēn       | P   | 189  | sòng     | V   | 290  | yì xià   | Adv |
| 90   | xiāng     | V   | 190  | yáng     | V   | 291  | tài      | CL  |
| 91   | zhè lǐ    | Pron| 191  | bié de   | Pron| 292  | duō de   | Adv |
| 92   | kǒu wèi   | N   | 192  | cóng     | P   | 293  | qī guài  | Adv |
| 93   | hé        | C   | 193  | biàn     | V   | 294  | chǎng gě | V   |
| 94   | ā mó      | N   | 194  | zhī hòu  | C   | 295  | tāng shī | N   |
| 95   | hāo       | Adj | 195  | pǎng biān| N   | 296  | fā xián  | V   |
| 96   | yī qǐ      | Adv | 196  | zuī     | Adv | 297  | dēng     | V   |
| 97   | zhī yǒu   | Adv | 197  | dēng yì xià| Adv| 298  | kāi chē   | V   |
| 98   | diào      | V   | 198  | hāo chī   | Adj | 299  | huà      | N   |
| 99   | bāng      | V   | 199  | dān shì  | C   | 300  | yǐng gāi | Adv |
| 100  | hǎo       | Adv | 200  | zhǎng    | Adj | 301  | shū tiào  | N   |
|      |           |    | 201  | à gōng   | N   | 302  | jiāng huà | V   |

Note. POS = part of speech; Pron = pronoun; N = noun; Part = particle; V = verb; CL = classifier; Adv = adverb; C = conjunction; Num = cardinal number; P = preposition; I = interjection; Adj = adjective.
| Rank | Word | POS | Rank | Word | POS | Rank | Word | POS |
|------|------|-----|------|------|-----|------|------|-----|
| 1    | tā   | Pron| 101  | tài  | Adv | 202  | běn lǎi | Adv |
| 2    | wǒ   | Pron| 102  | rú guǒ | C | 203  | chí wǎn | V |
| 3    | de    | Part| 103  | zǐ | N | 204  | jiǎ zhuāng | V |
| 4    | jiù   | Adv | 104  | shēng yǐn | N | 205  | qiān | N |
| 5    | gē    | CL  | 105  | dì dì | N | 206  | qí | V |
| 6    | rán hòu | C  | 106  | jiào | V | 207  | yǐ yāng | Adj |
| 7    | shī   | V   | 107  | nèng | V | 208  | bǔ xíng | Adv |
| 8    | yǒu   | V   | 108  | zhī | Adv | 209  | shǒu | N |
| 9    | yǐ    | Num | 109  | láo shǐ | N | 210  | dìu | V |
| 10   | yào   | V   | 110  | wéi shí me | Pron | 211  | ā gōng | N |
| 11   | bǔ    | Adv | 111  | diào | V | 212  | hōu lái | N |
| 12   | huì   | V   | 112  | ba | I | 213  | jiù | V |
| 13   | nǎ    | Pron | 113  | mǎi | V | 214  | yǐng gāi | Adv |
| 14   | qù    | V   | 114  | yǐ xiē | CL | 215  | jiāng | V |
| 15   | nǐ    | Pron | 115  | yòu | Adv | 216  | biān | V |
| 16   | zài   | V   | 116  | yǐ zhí | Adv | 217  | jiǔ | Adj |
| 17   | le    | Adv | 117  | zhú | V | 218  | hùi lái | V |
| 18   | le    | Part| 118  | xián zǎi | N | 219  | zhi jiě | Adj |
| 19   | bā    | P   | 119  | sēn lín | N | 220  | jiān kāi | V |
| 20   | shuō  | V   | 120  | ma | Part | 221  | kāi | V |
| 21   | zhè   | Pron | 121  | chū qǔ | V | 222  | zhōng | CL |
| 22   | dōu   | Adv | 122  | hào | Adj | 223  | dǎi | V |
| 23   | mā mā | N   | 123  | cí | N | 224  | yān jīng | N |
| 24   | hén   | Adv | 124  | qǐ lái | V | 225  | jié guǒ | C |
| 25   | wǒ men | Pron | 125  | zúi | Adv | 226  | suí | CL |
| 26   | yǐn wèi | C   | 126  | chū lái | V | 227  | zhùng | V |
| 27   | kē yì  | V   | 127  | zuò | V | 228  | yǔ dào | V |
| 28   | wán   | V   | 128  | sōng | V | 229  | yóu xī | N |
| 29   | gēn   | C   | 129  | zhī | CL | 230  | diān shí | N |
| 30   | hái yǒu | C   | 130  | zhǔ | V | 231  | xuān | V |
| 31   | chǐ    | V   | 131  | shuǐ jiāo | V | 232  | biān chéng | V |
| 32   | méi yǒu | V   | 132  | shí tòu | N | 233  | tāi | CL |
| 33   | hái   | Adv | 133  | dàn shí | C | 234  | xiǎng | V |
| 34   | jiā   | N   | 134  | zhāo | V | 235  | duì | Adj |
| 35   | gēi   | V   | 135  | měi | Pron | 236  | gāi | V |
| 36   | yē    | Adv | 136  | yǐ jīng | Adv | 237  | yǐ yāng de | Adj |
| 37   | ā     | I   | 137  | nà lǐ | Pron | 238  | yī hòu | C |
| 38   | kàn   | V   | 138  | cóng | P | 239  | chū | V |
| 39   | rén   | N   | 139  | tiào | V | 240  | kuài | Adj |
| 40   | zài   | Adv | 140  | tǐng dào | V | 241  | jiāo shì | N |
| 41   | dào   | V   | 141  | shǎng | V | 242  | shuí | Pron |
| 42   | yōng  | V   | 142  | dā | V | 243  | fēng qǐ lái | V |
| 43   | lǐ    | N   | 143  | dì fǎng | N | 244  | suǒ | V |
| 44   | zòu   | V   | 144  | hé | C | 245  | xiǎ qu | V |
| 45   | lǐ mián | N   | 145  | yì diǎn | Adv | 246  | xià mián | N |
| 46   | liǎng | Num | 146  | kǒu | CL | 247  | zhǐ hóu | C |
| 47   | bà bà | N   | 147  | chuān | V | 248  | dà kāi | V |
| 48   | lái   | V   | 148  | jǐn | V | 249  | wǎng jǐ | V |
| 49   | zuò   | V   | 149  | bǎng | V | 250  | hóng sè | N |
| 50   | tà men | Pron | 150  | shǎng miàn | N | 251  | qì chuāng | V |
| 51   | kē shì | C   | 151  | sì | Num | 252  | jiāo | V |
| 52   | dā    | Adj | 152  | měi měi | N | 253  | děng yì xià | Adv |

(continued)
Table 11. (continued)

| Rank | Word      | POS | Rank | Word      | POS | Rank | Word      | POS |
|------|-----------|-----|------|-----------|-----|------|-----------|-----|
| 53   | méi       | Adv | 153  | dàn gāo   | N   | 254  | huá       | N   |
| 54   | ná        | V   | 154  | pú táo    | N   | 255  | yāng      | V   |
| 55   | de shí hòu| C   | 155  | hāo le    | Part| 256  | tòu       | N   |
| 56   | duō       | Adj | 156  | lǎ        | I   | 257  | nián      | V   |
| 57   | huā       | N   | 157  | zhé biān  | Pron| 258  | shāng kē   | V   |
| 58   | dōu zǐ    | N   | 158  | zuī bā     | N   | 259  | dà hū shēng| N   |
| 59   | dōng xī    | N   | 159  | wǎi miàn   | N   | 260  | huí jiā    | V   |
| 60   | chí diào   | V   | 160  | chuāng     | N   | 261  | dān       | C   |
| 61   | dài       | V   | 161  | jiān dào   | N   | 262  | pā        | V   |
| 62   | xì huān    | V   | 162  | qū        | N   | 263  | hòu miàn   | N   |
| 63   | xiān      | Adv | 163  | bèi       | P   | 264  | nǎ lǐ     | Pron|
| 64   | fāng       | V   | 164  | mào zǐ    | N   | 265  | zhēn de    | Adj |
| 65   | shì me     | Pron| 165  | bǐng qí lín| N | 266  | zhāng   | CL |
| 66   | zhe       | Part | 166  | hāo       | Adv | 267  | huá huá   | V   |
| 67   | shāng     | N   | 167  | tīng      | V   | 268  | jiāng huá  | V   |
| 68   | kān dào   | V   | 168  | bǐ jiāo    | Adv | 269  | hǎo chī   | Adj |
| 69   | guó       | Part | 169  | ěr duō      | N   | 270  | qī guài de| Adj |
| 70   | zhī dào    | V   | 170  | yǐ fū      | N   | 271  | shì wū     | N   |
| 71   | jīn qù     | V   | 171  | zhé me     | Adv | 272  | dān       | N   |
| 72   | zhī yōu   | Adv | 172  | dāng yī    | V   | 273  | děng      | V   |
| 73   | zài       | Part | 173  | ěr qiě     | C   | 274  | pǔ táo jiǔ| N   |
| 74   | suō yí     | C   | 174  | de huá     | C   | 275  | jū zǐ     | N   |
| 75   | gēn       | P   | 175  | huá       | V   | 276  | nián tū    | N   |
| 76   | yǒu shì hòu| Adv | 176  | ēn        | I   | 277  | dǎ jiā    | Pron|
| 77   | gē gē     | N   | 177  | jiào dé    | V   | 278  | huí qū     | V   |
| 78   | zhāi       | V   | 178  | jiā        | V   | 279  | zāo shāng  | N   |
| 79   | pāo       | V   | 179  | fāng zǐ    | N   | 280  | chē       | N   |
| 80   | zì jī      | Pron| 180  | lǐ huá tǐ  | N   | 281  | guó qū    | V   |
| 81   | mén       | N   | 181  | xué xiāo   | N   | 282  | guó lái   | V   |
| 82   | zhè lǐ     | Pron| 182  | kē        | CL  | 283  | jǐ mú     | N   |
| 83   | yī qī      | Adv | 183  | ěr yí      | Adv | 284  | yán sè    | N   |
| 84   | hē        | V   | 184  | ná         | Adv | 285  | lán zǐ     | N   |
| 85   | xiāng      | V   | 185  | nà me      | Adv | 286  | rán gǔ     | V   |
| 86   | shuǐ       | N   | 186  | yě        | I   | 287  | yǐ        | Part|
| 87   | nà biān    | Pron| 187  | pāng biān  | N   | 288  | shāng bān | V   |
| 88   | jiù shì    | Adv | 188  | jīn lái   | V   | 289  | xiāo xīn  | V   |
| 89   | xiāo       | Adj | 189  | jīn tiān  | N   | 290  | bù yòng   | Adv |
| 90   | wǒ        | I   | 190  | tiān      | N   | 291  | wū        | Num |
| 91   | ā mò       | N   | 191  | yǐ qián   | N   | 292  | jīng       | N   |
| 92   | ne        | I   | 192  | kuán bù    | Adv | 293  | hào wán   | Adj |
| 93   | lú        | N   | 193  | huán      | V   | 294  | yōu yǐ tiān| N   |
| 94   | cǎi       | Adv | 194  | shūi      | V   | 295  | bié rén   | Pron|
| 95   | wàn jū     | N   | 195  | kōu wěi   | N   | 296  | pí péi    | N   |
| 96   | zēn me     | Pron| 196  | qiāo kē lǐ| N   | 297  | ne        | Part|
| 97   | cāo měi    | N   | 197  | shēng bīng| Adj | 298  | bō lǐ     | N   |
| 98   | zhè yáng   | Pron| 198  | zhūā      | V   | 299  | à yī      | N   |
| 99   | xiāng yào  | V   | 199  | táng      | V   | 300  | xī        | V   |
| 100  | sān       | Num | 200  | shāng qù  | V   | 301  | kū        | V   |

Note. POS = part of speech; Pron = pronoun; Adv = adverb; C = conjunction; V = verb; Part = particle; N = noun; CL = classifier; Adj = adjective; Num = cardinal number; I = interjection; P = preposition.
Table 12. 302 Most Frequently Used Words of 6-Year-Olds.

| Rank | Word | POS | Rank | Word | POS | Rank | Word | POS |
|------|------|-----|------|------|-----|------|------|-----|
| 1    | tā   | Pron | 101  | yǐ jīng | Adv | 202  | nà   | Pron |
| 2    | wǒ   | Pron | 102  | mén  | N   | 203  | qū   | N   |
| 3    | de    | Part | 103  | kàn dào | V  | 204  | yān jīng | N |
| 4    | jiù  | Adv  | 104  | zhī  | CL  | 205  | yǒu xi | N   |
| 5    | gě   | CL   | 105  | jiào dè | V  | 206  | shū   | V   |
| 6    | rán hòu | C  | 106  | xiān zài | N  | 207  | yī xià | Adv |
| 7    | shì  | V    | 107  | jié guò | C  | 208  | wài miàn | N |
| 8    | yǒu  | V    | 108  | rù guò | C  | 209  | qí shì | Adv |
| 9    | bù   | Adv  | 109  | gē gē | N   | 210  | dāng  | V   |
| 10   | yào  | V    | 110  | huà  | V   | 211  | shāng kē | V |
| 11   | yī   | Num  | 111  | chū lái | V  | 212  | rì běn | N   |
| 12   | hui  | V    | 112  | zhī  | Adv  | 213  | tóng xué | N |
| 13   | dōu  | Adv  | 113  | xiāng | V   | 214  | hào le | Part |
| 14   | nà   | Pron | 114  | xiāng yào | V  | 215  | qí guài | Adj |
| 15   | le   | Adv  | 115  | zēn me | Pron | 216  | chuān | V |
| 16   | qù   | V    | 116  | sòng  | V  | 217  | kāi   | V   |
| 17   | zài  | V    | 117  | hào  | Adj  | 218  | shuí  | Pron |
| 18   | nǐ   | Pron | 118  | hē   | V   | 219  | bāng  | V   |
| 19   | bā   | P    | 119  | shēng yīn | N  | 220  | kē   | CL  |
| 20   | zhè  | Pron | 120  | nèng | V   | 221  | dà de | Adj |
| 21   | shuō | V    | 121  | shuǐ  | N   | 222  | bù xíng | Adv |
| 22   | yīn wéi | C  | 122  | jīn  | V   | 223  | běn lái | Adv |
| 23   | le   | Part | 123  | duì  | Adj  | 224  | ya    | I   |
| 24   | hén  | Adv  | 124  | yōu  | Adv  | 225  | wàng jī | V |
| 25   | gēn  | C    | 125  | zhī yǒu | Adv | 226  | zì zǐ | N   |
| 26   | wàn  | V    | 126  | zhāo  | V  | 227  | wàng  | V   |
| 27   | à   | I    | 127  | nà me | Adv  | 228  | méi guó | N |
| 28   | wǒ men | Pron | 128  | wèn  | V   | 229  | shū   | N   |
| 29   | jiā   | N    | 129  | yǐ diǎn | Adv | 230  | jiā zhùhuāng | V |
| 30   | mā mā | N    | 130  | dā   | V   | 231  | jiān dào | N |
| 31   | kē yī  | V   | 131  | yī zhī | Adv | 232  | cǎi  | V   |
| 32   | chǐ  | V    | 132  | lā   | I   | 233  | jiǔ  | V   |
| 33   | hái  | Adv  | 133  | sēn lín | N  | 234  | dān gǎo | N |
| 34   | měi yǒu | V  | 134  | ér qiě | C  | 235  | māo zǐ | N   |
| 35   | kān  | V    | 135  | diào | V   | 236  | xué   | V   |
| 36   | gēi | V    | 136  | zhè lǐ | Pron | 237  | shǒu jī | N |
| 37   | hái yǒu | C  | 137  | jiāng | V  | 238  | zhī shī | Adv |
| 38   | yě   | Adv  | 138  | yǐ yàng | Adj | 239  | tūn   | V   |
| 39   | rén | N    | 139  | shōu  | N   | 240  | xǐ    | V   |
| 40   | yǒu shì hòu | Adv | 140  | dì fāng | N  | 241  | zhōng | Adj |
| 41   | lǐ  | N    | 141  | zhū  | V   | 242  | jiāo  | V   |
| 42   | xǐ huān | V  | 142  | ba  | I   | 243  | děng  | V   |
| 43   | bà bà | N    | 143  | mèi mèi | N  | 244  | chāo  | Adv |
| 44   | tā men | Pron | 144  | ma  | Part | 245  | yǔ dāo | V |
| 45   | dōng xī | N  | 145  | dì dì | N  | 246  | yán sè | N |
| 46   | kē shì  | C  | 146  | zhī jiē | Adj | 247  | biǎn  | V   |
| 47   | lái  | V    | 147  | yē  | I   | 248  | shāng qū | V |
| 48   | ná   | V    | 148  | zhè me | Adv | 249  | xiā  | N   |
| 49   | shì me | Pron | 149  | zhè biān | Pron | 250  | xià miàn | N |
| 50   | yǒng  | V    | 150  | xià qù | V  | 251  | jiǔ  | Adj |
| 51   | zài  | Adv  | 151  | ér yì | Adv  | 252  | yì qián | N |
| 52   | zài  | Part | 152  | fāng zǐ | N  | 253  | quán bù | Adv |

(continued)
| Rank | Word         | POS | Rank | Word         | POS | Rank | Word         | POS |
|------|--------------|-----|------|--------------|-----|------|--------------|-----|
| 53   | zhī dào      | V   | 153  | shàng miàn   | N   | 254  | yǒu yī tiān | N   |
| 54   | méi          | Adv | 154  | jiā          | V   | 255  | bié de      | Pron|
| 55   | huā          | N   | 155  | shēng bìng   | Adj | 256  | tiáo         | CL  |
| 56   | ne           | I   | 156  | shì tòu      | N   | 257  | shí zǐ       | N   |
| 57   | zōu          | V   | 157  | de huā       | C   | 258  | tiáo         | V   |
| 58   | ā mó         | N   | 158  | yǒ yī tiān   | N   | 259  | qiáo         | V   |
| 59   | lǐ miàn       | N   | 159  | páng biān    | N   | 260  | gān kuài     | Adv |
| 60   | dà            | Adj | 160  | suì          | P   | 261  | xìè          | V   |
| 61   | chī diào      | V   | 161  | gāi          | V   | 262  | māi          | V   |
| 62   | dū zǐ         | N   | 162  | shāng        | V   | 263  | yǐng gāi     | Adv |
| 63   | suǒ yī        | C   | 163  | tiān         | N   | 264  | lǐ bái liú   | N   |
| 64   | shǎng         | N   | 164  | ná            | Adv | 265  | suǒ          | V   |
| 65   | duō           | Adj | 165  | dé            | Part| 266  | biān chēng   | V   |
| 66   | de shì hòu    | C   | 166  | cóng         | P   | 267  | dà jiā       | Pron|
| 67   | zuò           | V   | 167  | shuí jiāo     | V   | 268  | bù yòng     | Adv |
| 68   | gēn           | P   | 168  | tōng dào      | V   | 269  | hào xiāng    | Adv |
| 69   | dào           | V   | 169  | rǎng          | V   | 270  | yǒu xiě      | CL  |
| 70   | zhe           | Part| 170  | yī fǔ         | N   | 271  | bié rèn      | Pron|
| 71   | dān shí       | C   | 171  | zhū           | V   | 272  | gāo sù       | V   |
| 72   | zuì           | Adv | 172  | èn            | I   | 273  | zhāo dào     | V   |
| 73   | wǒ            | I   | 173  | qiāng         | N   | 274  | chē          | N   |
| 74   | jiǔ shí       | Adv | 174  | kǒu          | CL  | 275  | ā gōng       | N   |
| 75   | fāng          | V   | 175  | kǒu wèi       | N   | 276  | hòu miàn     | N   |
| 76   | zǐ jí         | Pron| 176  | chū qù        | V   | 277  | shí wù       | N   |
| 77   | cí            | N   | 177  | zuò           | V   | 278  | shí jiān     | N   |
| 78   | sān           | Num | 178  | nà biān       | Pron| 279  | dān          | N   |
| 79   | dài           | V   | 179  | hé            | C   | 280  | kāi shī      | V   |
| 80   | guó           | Part| 180  | cāo méi       | N   | 281  | ài           | V   |
| 81   | yī xiē        | CL  | 181  | qǐ lái        | V   | 282  | pú tāo       | N   |
| 82   | měi           | Pron| 182  | jǐn lái       | V   | 283  | zhuàng       | V   |
| 83   | zhè yáng      | Pron| 183  | xiāng         | V   | 284  | lè gāo       | N   |
| 84   | yī qī         | Adv | 184  | zuì bā         | N  | 285  | tāng         | V   |
| 85   | xiǎo          | Adv | 185  | huì jiā       | V   | 286  | dāi          | V   |
| 86   | bēi           | P   | 186  | hāo           | Adv | 287  | yǐ diān diān | Adv |
| 87   | cǎi           | Adv | 187  | nǐ men        | Pron| 288  | bù rán       | C   |
| 88   | jiāo          | V   | 188  | hōu lái       | N   | 289  | zhī qiān     | N   |
| 89   | xiān          | Adv | 189  | nà lǐ         | Pron| 290  | fēn zhōng    | CL  |
| 90   | lāo shǐ       | N   | 190  | fā xiān       | V   | 291  | shāo         | Adv |
| 91   | pāo           | V   | 191  | zhōng         | CL  | 292  | kē nèng      | Adv |
| 92   | liǎng         | Num | 192  | tīng          | V   | 293  | mǐng zì      | N   |
| 93   | tài           | Adv | 193  | èr Num        | 294  | hù lì       | V   |
| 94   | jīn qù        | V   | 194  | xià lái       | V   | 295  | zāo shàng    | N   |
| 95   | lù            | N   | 195  | zhī hòu       | C   | 296  | yǒu yì cì    | N   |
| 96   | bì jiāo       | Adv | 196  | jīn tiān      | N   | 297  | yǒu diān     | Adv |
| 97   | wēi shí me    | Pron| 197  | chū          | V   | 298  | dān          | C   |
| 98   | mǎi           | V   | 198  | ěr duō         | N  | 299  | nà lǐ       | Pron|
| 99   | zhāi          | V   | 199  | chuáng        | N   | 300  | shí          | N   |
| 100  | xué xiāo      | N   | 200  | kuài          | Adj | 301  | qǐ guài de   | Adj |
|      |               |     | 201  | wàn jù        | N   | 302  | zhǎng        | Adj |

Note. POS = part of speech; Pron = pronoun; Adv = adverb; N = noun; Part = particle; V = verb; CL = classifier; C = conjunction; Num = cardinal number; Adj = adjective; I = interjection; P = preposition.
The categories and percentages of each POS among the 302 most frequently used words for 6-year-olds were as follows: (a) verb (32%), (b) noun (26%), (c) adverb (12.9%), (d) pronoun (7.4%), (e) adjective (5.4%), (f) conjunction (4.9%), (g) measure word (3.1%), (h) particle (2.6%), (i) interjection (2.6%), (j) number (1.7%), and (k) preposition (1.4%). The occurrence rates of all POS for all age groups are presented in Figure 1.

Discussion

High Frequency Words Produced by Mandarin-Speaking Children Aged From 3 to 6 Years

To explore the core vocabulary during preschool period, we examined the high frequency words produced by children between ages 3 and 6 years. Content words, such as verbs (i.e., eat, have, want) and nouns (such as mother, home, father), were among the high frequency words with the most different types. We found that Mandarin-speaking children used verbs for 30% of the time, and such results were consistent with previous findings that Mandarin-speaking caregivers produced verbs over nouns (Tardif et al., 1997). Moreover, children at these ages steadily used a great number of content words, whereas functional words did not seem to be consistently used. However, if one looked more closely, it would be found that function words that are related to more sophisticated use of language, from conjunctions to complex syntax, were evident in the core vocabulary. By carefully examining certain lexical words, parents, clinicians, or educators can better understand children’s development beyond words. Thus, the core vocabulary list we present here can be used as an assessment reference, as well as a reminder to parents and clinicians of which words within a given POS your child may need to learn to enhance lexical performance.

Differences Between POS Used by Different Age Groups

The means of frequency for each POS category among age groups were calculated and compared. The results showed that among 11 POS categories, there were significant differences for 10 categories. The results indicated that as children mature, they produced words from different POS categories. In general, children tend to use more words from each POS category more frequently as their age increases, except for one category, interjection. In the 10 categories that showed significance, 4-year-olds produced more frequencies than 3-year-olds for eight categories (V, P, Nh, Neu, D, C, Nf, and A). Five-year-olds produced more frequencies than 4-year-olds for five categories (V, N, Neu, D, and C). Only one category, adverb, showed a significant difference between children aged 5 and 6 years. These results might indicate that when looking at POS usage, children’s development may be more evident between children aged 3 and 4 years when compared with 4 and 5 years and 5 and 6 years. Significant differences were shown in all paired age groups for one category, adverb. For Mandarin-speaking children, adverbs may be a category that children continue to develop and use more often as age increases from 3 to 6 years. Thus, adverbs could be a potential developmental measure for assessing the language development of children.

Le Normand et al. (2008) examined 316 language samples from French-speaking children aged 2 to 4 years and analyzed frequency of verbs: The study indicated that verb usage was similar to this study. In Le Normand et al. (2008),
the mean of verb tokens for 3-year-olds was 123.90, and for 4-year-olds, 153.62. In this study, the mean of verb tokens for 3-year-olds was 122.28, and for 4-year-olds, 152.48. Smith (1926) studied POS percentage in the 1-hr conversation of 101 English-speaking children. The results showed that there were no significant differences from year to year of any POS category; however, there might be a tendency of a greater use of adjectives and pronouns as age increases. In this study, significant differences were shown for children aged 3 and 4 years for 10 POS categories. For adverbs, significant differences were presented year from year from 3 through 6 years old. The different results of these two studies may show that the development of POS usage for Mandarin-speaking children differs from English-speaking children.

**High Frequency Words Produced by Mandarin-Speaking Children of 3, 4, 5, and 6 Years Individually and the Percentage of POS**

The high frequency words and the percentage of POS were listed above. When looking into the percentage of POS in different age groups, it was noticed that the percentage of nouns seemed to decrease with age. Moreover, other POS, such as adverbs, adjectives, prepositions, classifiers, and conjunctions, seemed to increase after age 3 years. This was similar to the results of Yang (2015). Yang conducted a corpus-based study and analyzed the POS of Mandarin-speaking children aged between 19 and 48 months. The percentage of POS tokens for each age stage showed a decrease in noun and verb usage and an increase in other categories such as adverb, conjunction, and preposition. Because Mandarin possesses very little inflectional and derivational morphology, Mandarin-speaking children do not acquire inflectional morphemes such as past tense (-ed) and third-person singular (-s) to make sentences grammatical: They acquire different types of words and word order to make sentences grammatical. Some studies suggested that children with language delays and disorders often have difficulty learning certain types of words, such as classifiers and aspect markers (Law et al., 2009). It is important for Mandarin-speaking children to learn words from the different POS (H. M. Liu & Lin, 2017), especially function words to generate grammatical sentences.

When selecting a target word in vocabulary intervention for preschoolers, different POS may be the focus according to the age of the child. For example, for 3-year-olds, nouns and verbs may be dominant for their target words. However, for 6-year-olds, adverbs, classifiers, and conjunctions may be important to add to children’s lexicon as their sentences become longer and more complex. Beukelman et al. (1989) listed 250 high frequency words of preschoolers, and it was noticed that no nouns appeared in the most frequently occurring 25 words. Similar to Beukelman, Jones, and Rowan’s study, only one noun (māmā/mother) appeared in the list of 25 most frequently used words for the age 3 group in this study. Pronouns, verbs, and adverbs were dominant in the list of 25 most frequently used words. This might give educators, clinicians, and parents some information about what types of words frequently occurred in children’s communication, and these words might be important to facilitate children’s communication efficacy.

**Conclusion and Future Directions**

This is the first study exploring high frequency words and the differences of POS frequency produced by Mandarin-speaking children aged 3 to 6 years. Future studies on word lists should be conducted to provide parents, educators, and clinicians with a reference to utilize when assessing children’s vocabulary performance, and furthermore, to select age-appropriate targets. In this study, we used POS to code words. For further studies, other categories may be used to group words. For example, nouns can be categorized as food, toy, transportation, and so on and verbs can be categorized as perception verb, psychological verb, and so on. These specific categories may help clinicians choose target words for their clients. Future studies can also be conducted applying the high frequency word lists: Studies concerning the development of effective vocabulary intervention programs targeting high frequency words should be explored. The effectiveness of facilitating communication when using the high frequency words as core vocabulary to program AAC for clients should also be studied. Children’s use of adverbs should be examined in future studies to explore its applicability for assessing child developmental language disorders. Subcategories of adverbs produced by children should be coded and analyzed to study the language development of Mandarin-speaking children. How demographic and environmental differences affect the word production of children should also be explored in the future studies.

**Author Contributions**

Shang-Yu Wu helped in conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, validation, visualization, and writing—original draft preparation and review and editing. Shanju Lin helped in conceptualization, formal analysis, investigation, methodology, and writing—original draft preparation. Rei-Jane Huang and I-Fang Tsai helped in methodology, investigation, methodology, and writing—original draft preparation and review and editing.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Ministry of Science and
Technology (MOST), Taiwan [grant number 109-2314-B-715-002] and Mackay Medical College, Taiwan under grant number MMC-RD-109-2B-01.

**ORCID ID**
Shanju Lin https://orcid.org/0000-0002-7199-7181

**Supplemental Material**
Supplemental material for this article is available online.

**References**
Academia Sinica Taiwan. (2014). *CKIP Chinese word segmentation system*. Academia Sinica, National Digital Archives Program.
Anglin, J. M. (1993). Vocabulary development: A morphological analysis. *Monographs of the Society for Research in Child Development, 58*(8), 238.
Beukelman, D., Jones, R., & Rowan, M. (1989). Frequency of word usage by nondisabled peers in integrated preschool classrooms. *Augmentative and Alternative Communication, 5*, 243–248.
Biemiller, A. (2010). *Words worth teaching: Closing the vocabulary gap*. McGraw-Hill SRA.
Bloom, L., Tinker, E., & Margulis, C. (1993). The words children learn: Evidence against a noun bias in early vocabularies. *Cognitive Development, 8*(4), 431–450.
Carey, S. (1978). The child as word learner. In M. Halle, J. Bresnan, & G. A. Miller (Eds.), *Linguistic theory and psychological reality* (pp. 264–293). MIT Press.
Clark, E. V., & Sengul, C. J. (1978). Strategies in the acquisition of deixis. *Journal of Child Language, 5*, 457–475.
Cox, M. V., & Richardson, T. R. (1985). How do children describe spatial relationships? *Journal of Child Language, 12*, 611–620.
Dang, T. N. Y., Webb, S., & Coxhead, A. (2020). Evaluating lists of high-frequency words: Teachers’ and learners’ perspectives. *Language Teaching Research, 1*–25. https://doi.org/10.1177/1362168820911189
Davies, M., & Gardner, D. (2013). *Academic vocabulary lists corpus of contemporary American English*. http://www.academicvocabulary.info
Dempsey, K. J. (1956). *A compilation, classification, and comparison of lists of spontaneous speaking vocabulary of children in kindergarten, Grade I, Grade II, and Grade III* [Doctoral dissertation, Boston University]. https://open.bu.edu/handle/2144/23904
Gardner, D., & Davies, M. (2013). A new academic vocabulary list. *Applied Linguistics, 35*, 305–327.
Huang, C. R., Hsieh, S. K., & Chen, K. J. (2017). *Mandarin Chinese words and parts of speech: A corpus-based study*. Taylor & Francis.
Huang, C.-T. J., Li, Y., & Li, Y. (2009). *The syntax of Chinese*. Cambridge University Press.
Johns, J. L., & Wilke, K. H. (2018). High-frequency words: Some ways to teach and help students practice and learn them. *Texas Journal of Literacy Education, 6*(1), 3–13.
Kilgarriff, A. (1997, August). *Using word frequency lists to measure corpus homogeneity and similarity between corpora* [Conference session]. Proceedings 5th ACL Workshop on Very Large Corpora, Beijing and Hong Kong. https://kilgarriff.co.uk/Publications/1997-Using_Word_Frequency.pdf
Law, S. P., Weekes, B., & Wong, A. M. (Eds.). (2009). *Language disorders in speakers of Chinese*. Multilingual Matters.
Lee, T., & Wong, C. (1998). *CANCORP: The Hong Kong Cantonese child language corpus. Cahiers de Linguistique Asie Orientale, 27*, 211–228.
Le Normand, M. T., Parisse, C., & Cohen, H. (2008). Lexical diversity and productivity in French preschoolers: Developmental, gender, and sociocultural factors. *Clinical Linguistics & Phonetics, 22*(1), 47–58.
Lin, B. G., Huang, Y. Z., Huang, G. J., & Xuan, C. H. (2008). *The Revised Language Disorder Scale for school-aged children*. National Taiwan Normal University Special Education Center.
Liu, H. M., & Chen, Y. C. (2015). Developmental changes in the content and composition of early expressive vocabulary in Mandarin-speaking infants and toddlers. *Bulletin of Educational Psychology, 47*(2), 217–242.
Liu, H. M., & Lin, J. Y. (2017). Development of expressive vocabulary of Mandarin-speaking late-takers and typically developing children. *Bulletin of Special Education, 42*, 27–50.
Liu, H. M., & Tsao, F. M. (2013). Mandarin-Chinese communicative developmental inventory (Taiwan). Psychological Publishing.
Liu, Y. H., Pan, W. Y., & Gu, H. (1996). *Modern Chinese grammar for teachers of Chinese as a second language & advanced learners of Chinese*. Shida Shuyuan.
Loftus, S. M., Coyne, M. D., McCough, D. B., Zipoli, R., & Pullen, P. C. (2010). Effects of a supplemental vocabulary intervention on the word knowledge of kindergarten students at risk for language and literacy difficulties. *Learning Disabilities Research & Practice, 3*, 124–136.
Ma, W. Y., & Chen, K. J. (2003). Introduction to CKIP Chinese word segmentation system for the first International Chinese word segmentation bakeoff. In *Proceedings of ACL, Second SIGHAN Workshop on Chinese Language Processing* (pp. 168–171). https://www.aclweb.org/anthology/W03-1726.pdf
Masrai, A. (2019). Vocabulary and reading comprehension revisited: Evidence for high-, mid-, and low-frequency vocabulary knowledge. *SAGE Open, 9*(2), 1–13. https://doi.org/10.1177/215824019845182
Nation, I. S. P. (2001). *Learning vocabulary in another language*. Ernst Klett Sprachen.
Nation, I. S. P. (2016). *Making and using word lists for language learning and testing*. John Benjamins Publishing.
Nation, I. S. P., & Webb, S. (2011). *Researching and analyzing vocabulary*. Cengage Learning.
Nelson, K. (1973). Structure and strategy in learning to talk. *Monographs of the Society for Research in Child Development, 38*, 1–35.
Owens, R. E. (1996). *Language development: An introduction*. Allyn & Bacon.
Smith, M. E. (1926). *An investigation of the development of the sentence and the extent of vocabulary in young children* [Doctoral dissertation, University of Iowa]. https://pure.mpg.de/rest/items/item_2385505/component/file_2464108/content
Stahl, S. A., & Nagy, W. (2006). *Teaching word meanings*. Lawrence Erlbaum.

Very Large Corpora, Beijing and Hong Kong. https://kilgarriff.co.uk/Publications/1997-Using_Word_Frequency.pdf

Supplemental material for this article is available online.
Tardif, T. (1996). Nouns are not always learned before verbs: Evidence from Mandarin speakers’ early vocabularies. *Developmental Psychology, 32*, 492–504.

Tardif, T., Shatz, M., & Naigles, L. (1997). Caregiver speech and children’s use of nouns versus verbs: A comparison of English, Italian, and Mandarin. *Journal of Child Language, 24*, 535–565.

Townsend, D. A., Filippini, P. C., & Biancarosa, G. (2012). Evidence for the importance of academic word knowledge for the academic achievement of diverse middle school students. *Elementary School Journal, 112*, 497–518.

West, M. A. (1953). *General service list of English words*. Longman, Green.

Wu, S. Y., Huang, R. J., & Tsai, I. F. (2019). The applicability of D, MTLD, and MATTR in Mandarin–speaking children. *Journal of Communication Disorders, 77*, 71–79.

Yang, J. C. (2015). Measuring early vocabulary growth in Mandarin-speaking children: A corpus-based study [Unpublished master’s thesis, National Taiwan University]. http://www.airitilibrary.com/Publication/alDetailedMesh?DocID=U0001-1908201522133300