

## **LT 2204 Language and Mind**

### **Word Association and Word Games**

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#### **Introduction**

Word association, according to *Longman Dictionary of Language Teaching and Applied Linguistics*, is ‘the ways in which words come to be associated with each other and influence the learning and remembering of words’ (Richards, Platt & Platt, 2002:510). As word association would affect the learning process of words and word generation is the basis of sentence generation, it implies that word association plays a very important role in our language development. We would like to investigate this essential linguistic phenomenon. In our study, an experiment of word association was conducted and two word games were created with the word responses obtained from the experiment.

#### **Aims of the Word Association Experiment**

Words in our mind are actually stored with connections to each other. They could be either associated by meaning or by form (Field, 2003). Furthermore, with different types of words, their connections might vary. Therefore, by gathering realistic data of word association in this experiment, our main aim is to investigate the frequency of semantic relationships of word association.

In the light of the above mentioned, this experiment aims at answering the following questions:

1. What sense relationship most frequently appears in word association?
2. Whether there are variations of word association relationships among words of different parts of speech? If yes, what are the variations? Why do they appear? What is the significance of variations?

## **Methods of the Experiment**

First, 15 frequently used words including 5 nouns, 5 verbs and 5 adjectives were chosen randomly. A word list of these 15 words with a random order was then made. These 15 words are listed below:

<b>Nouns:</b>	<b>Verbs:</b>	<b>Adjectives:</b>
1. Clock	1. Climb	1. Blue
2. Scissors	2. Sit	2. Pretty
3. Bread	3. Read	3. Angry
4. Fan	4. Drink	4. Old
5. Doll	5. Move	5. Cold

We read along the same word list to all the subjects one by one, and record the first word that came into their mind after listening to each word. Then, we compiled a list of the words given by all the subject for each word stimulus.

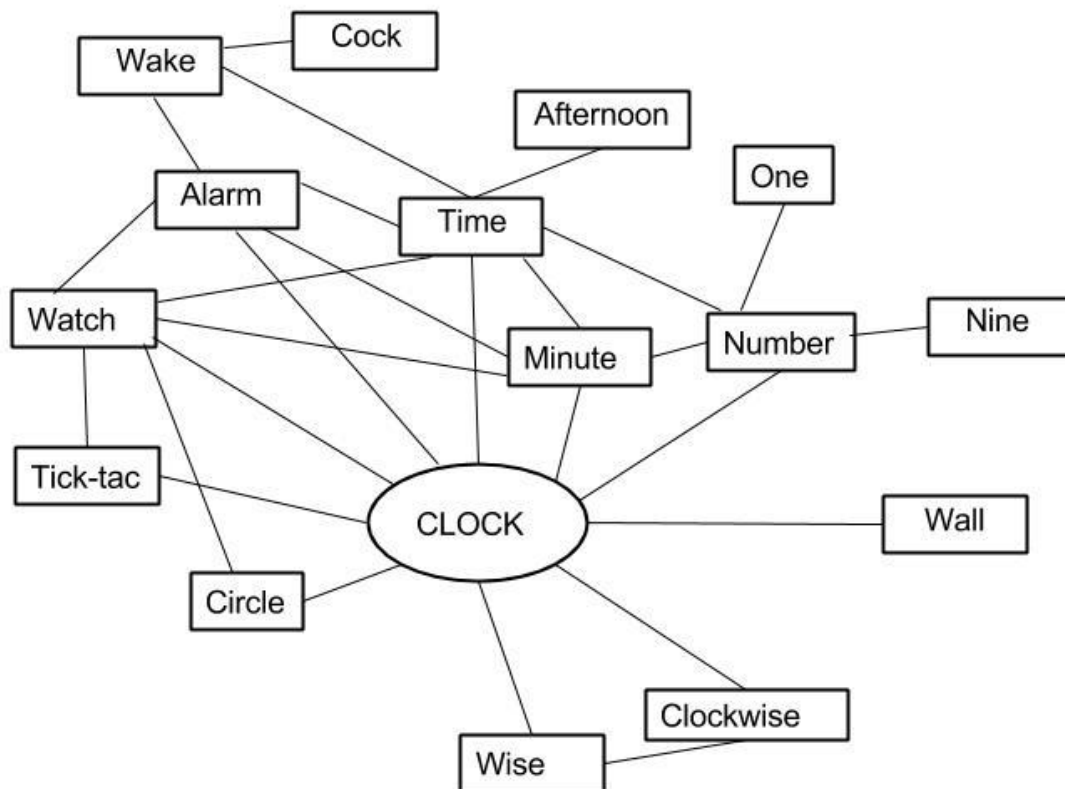
The target subjects of our experiment were young adults aged 18 to 30. We successfully conducted the experiments with 60 subjects for our analysis.

## **Results and Discussion**

In this section, the sense relationships of the words given by the subjects for each word stimulus are analysed, and the lists are given in Appendix 1. The word association network for each word stimulus is presented below.

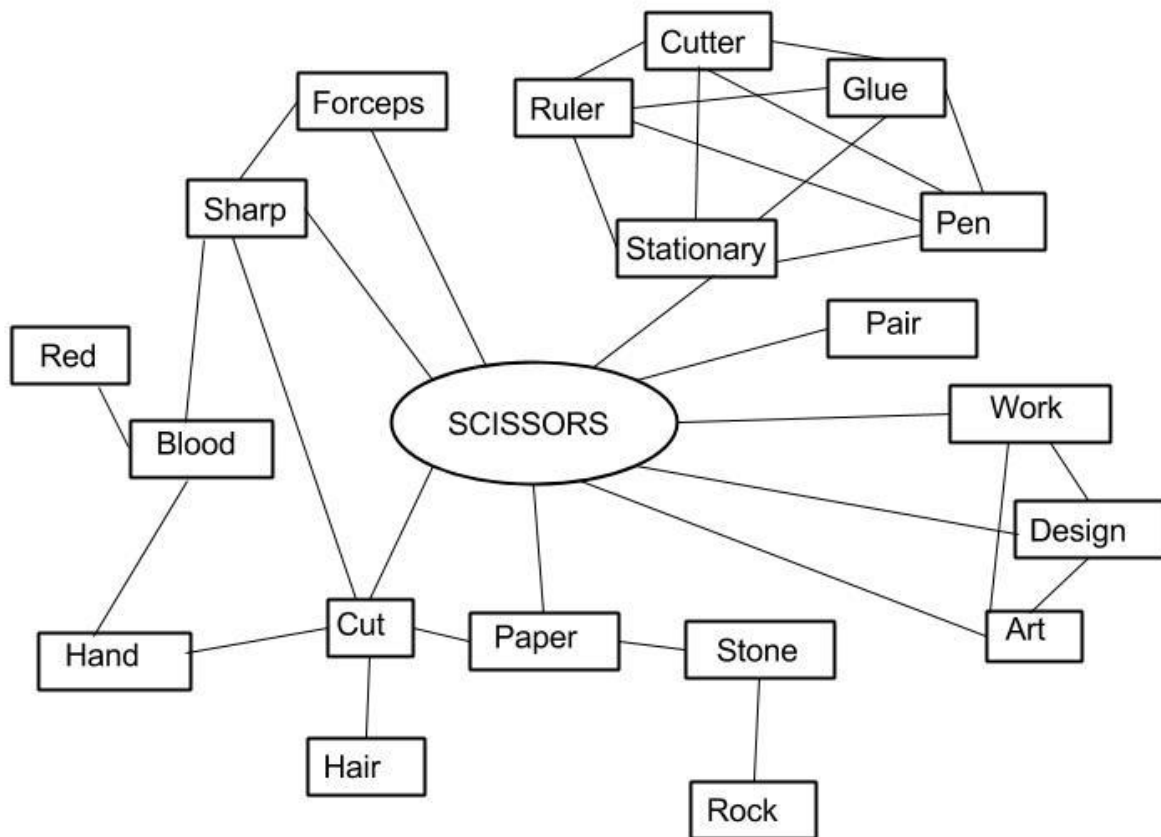
## Nouns

### 1. Clock



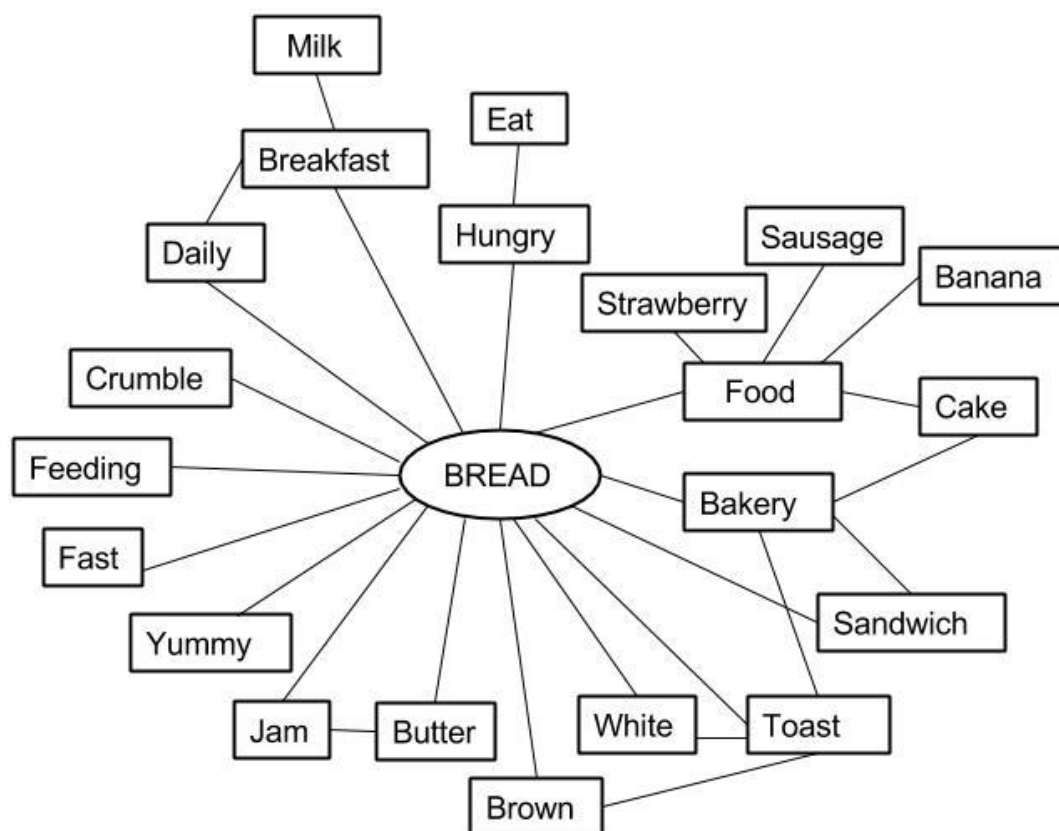
The most frequent relationship was *collocation*, with a frequency of 52. *Functional* and *attributive* relationships only appeared 3 times. *Part-whole* relationship and *synonym* were the least frequent relationships, with only one occurrence each.

## 2. Scissors



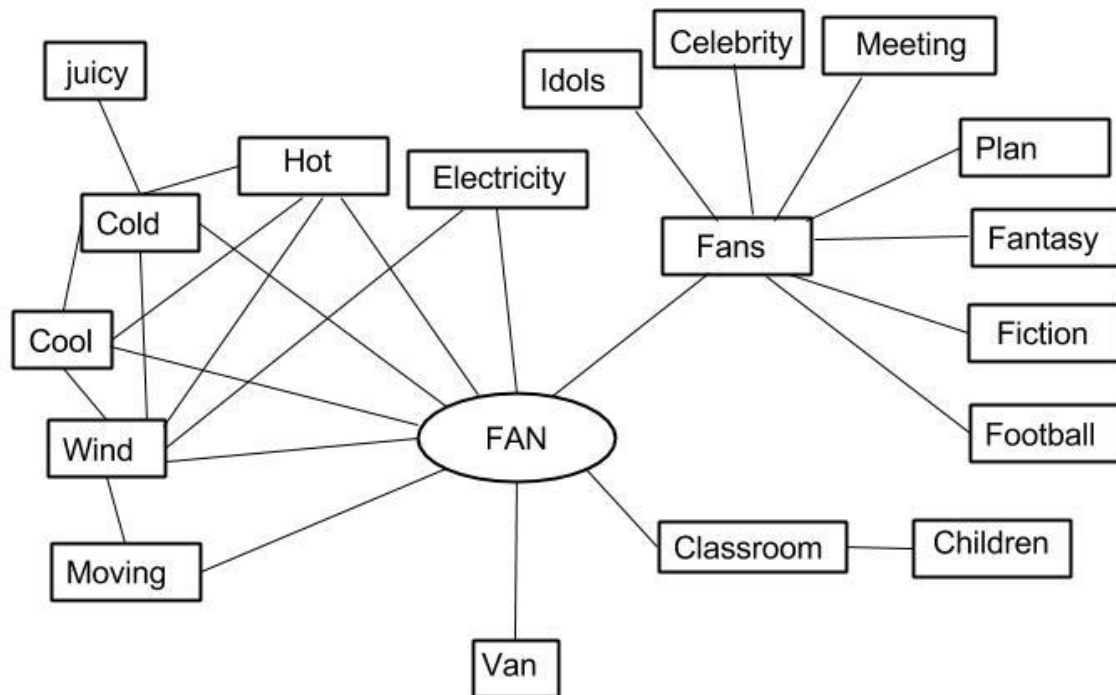
The most frequent semantic relationship was *collocation*, with 24 occurrences. *Functional*, *coordinate*, and *attributive relationships*, with frequencies 17, 13 and 4 respectively, less frequently appeared. The least frequent relationships were *superordinate* and *phonological relation*, which appeared once.

### 3. Bread



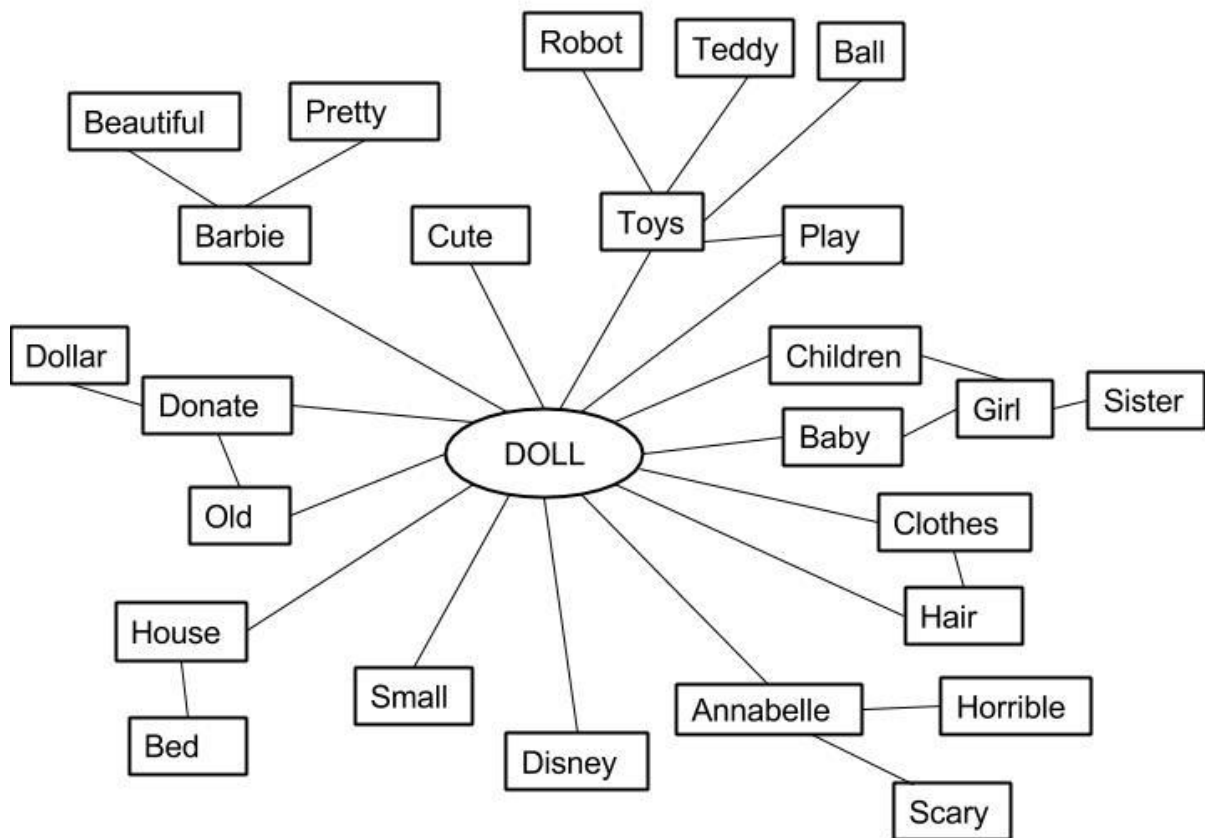
Again, *collocation* was the most frequent relationship with a repetition up to 46 times. Three types of sense relations, namely *part-whole*, *attributive*, and *coordinate* appeared less frequently, with respectively 6, 4, and 2 occurrences. *Functional* and *superordinate relations*, which repeated once, were considered as the least frequent relationships for this word.

#### 4. Fan



The most frequent relationship was again *collocation*, which occurred 18 times. For the four less frequent relations, *attributive*, *functional*, *homophone*, and *phonological relation*, had 15, 8, 4, 12 occurrences respectively. *Part-whole*, which repeated 3 times, was the least frequent relationship.

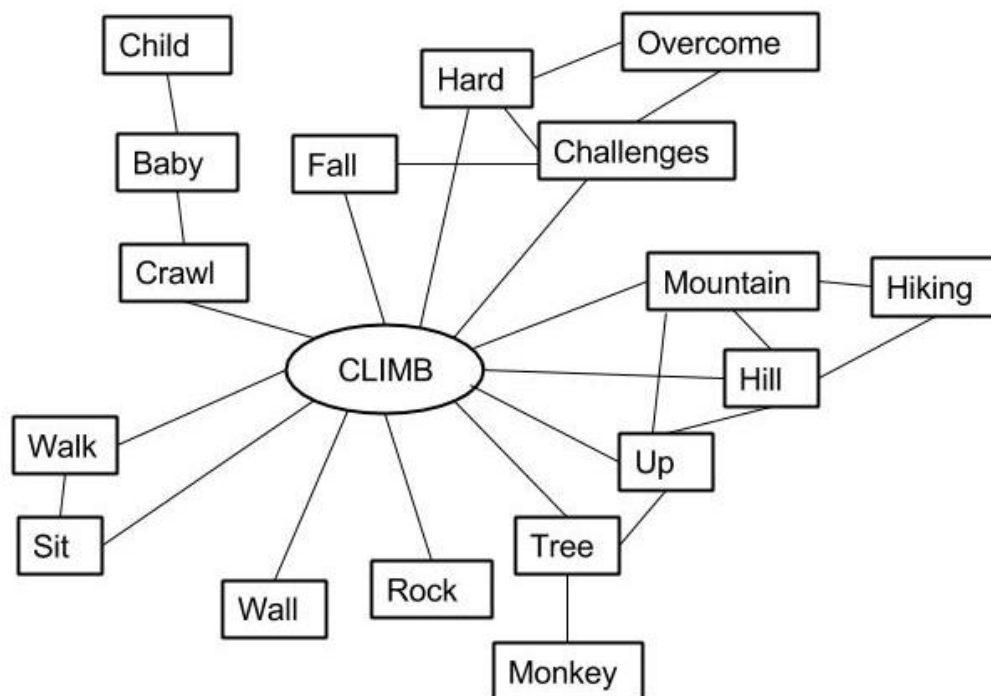
## 5. Doll



The most frequent relationship was *collocation* with 25 times of repetitions. Four sense relations: *attributive*, *subordinate*, *superordinate* and *part-whole*, and *phonological relation* were regarded as less frequent relationships, with 13, 8, 5, 4, and 3 times occurrences respectively. Lastly, *coordinate* repeated twice is considered as the least frequent relation.

## Verbs

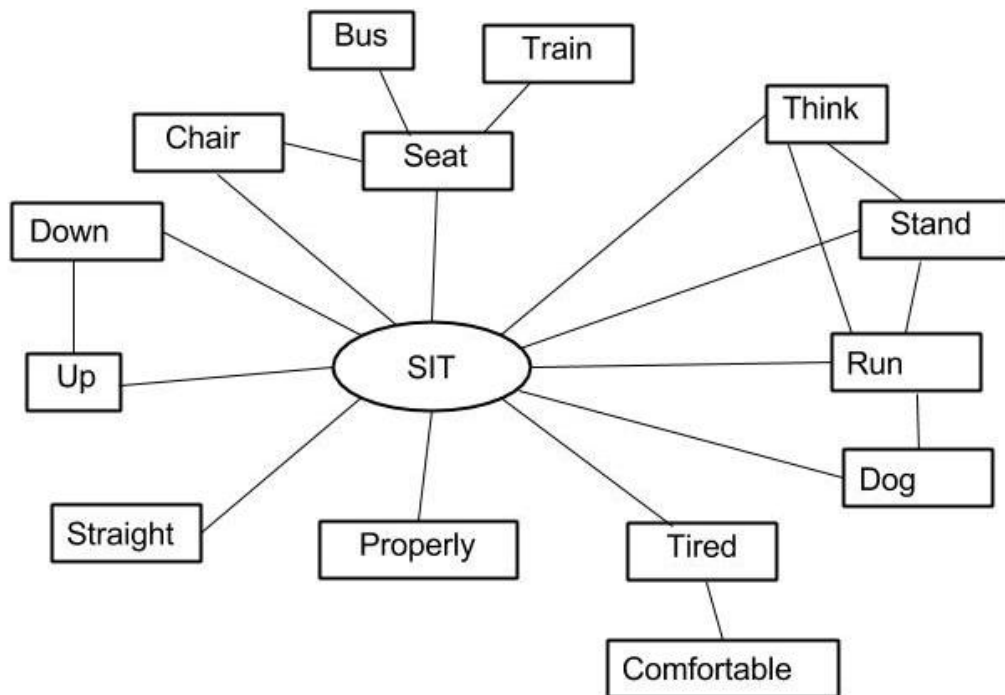
### 1. Climb



The most frequent relationship was also *collocation* with 47 times of occurrences. Then the less frequent relationships were *attributive*, *coordinate*, and *synonym*, repeated 6, 4, 2 times respectively. The least frequent relationship was *antonym*, with only one occurrence.

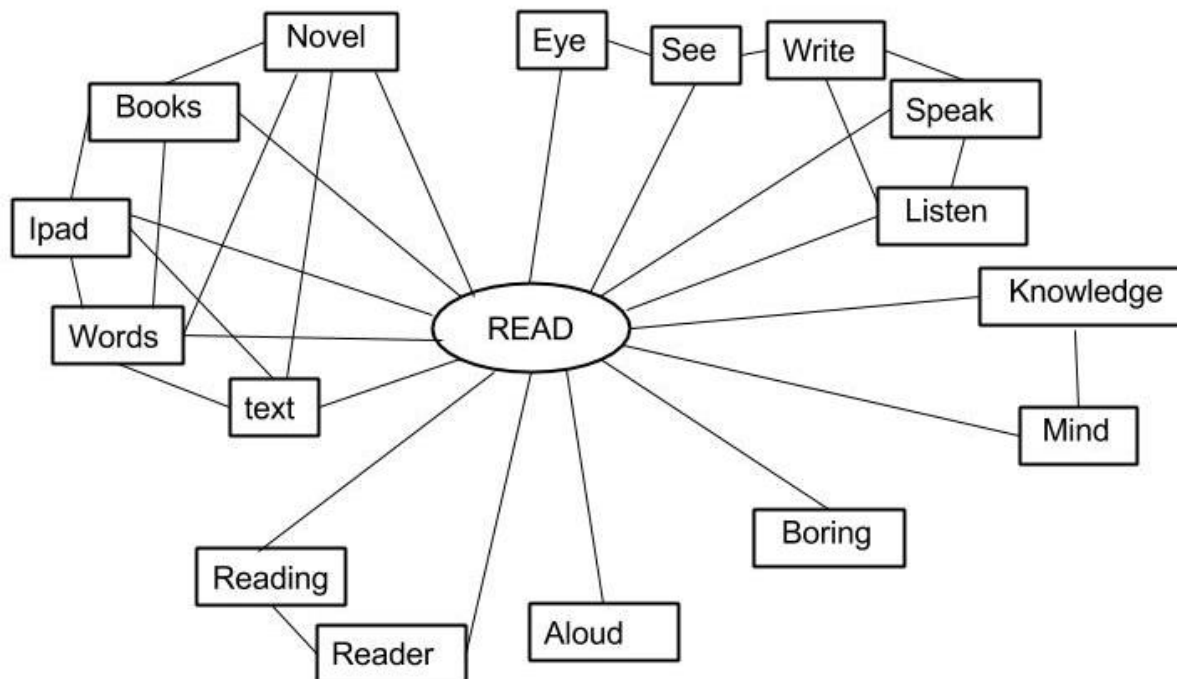


## 2. Sit



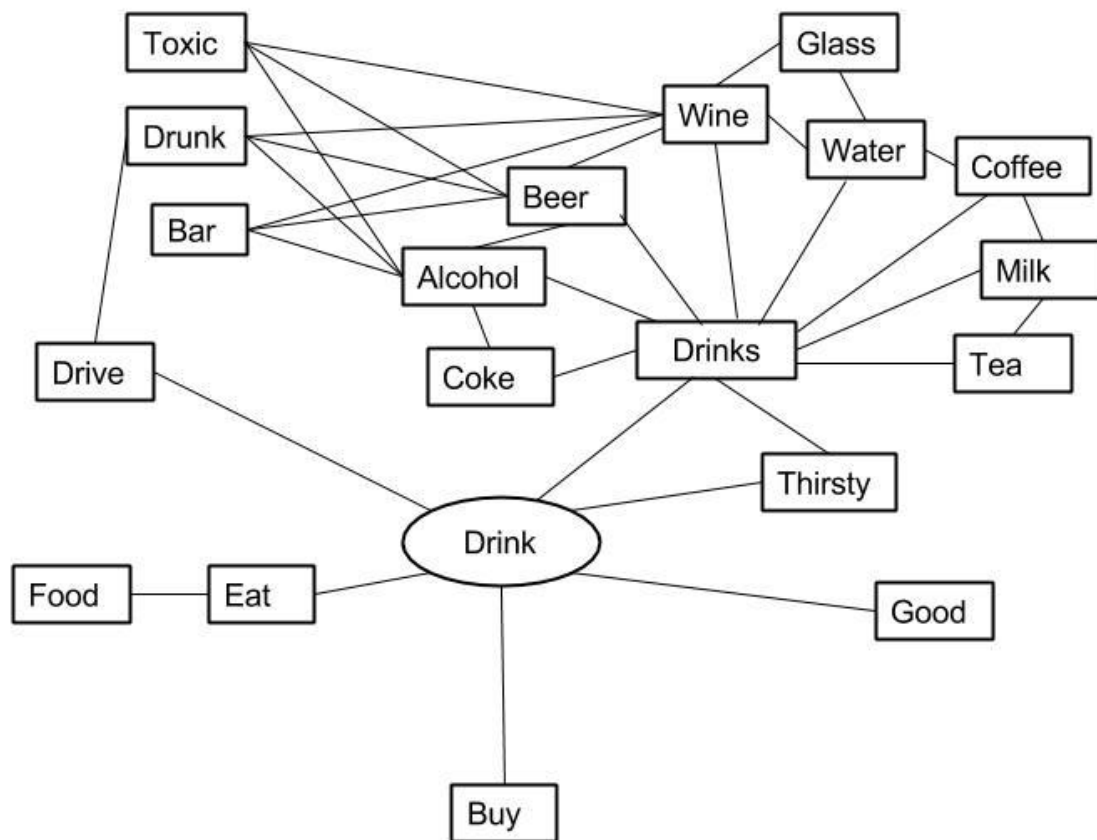
Again, *collocation* was the most frequent relationship, with 44 times of repetitions. *Antonym* and *phonological relation* were the less frequent relationships, occurring 9 and 6 times respectively. *Attributive* was the least frequent relationship for this word stimulus, which appeared once.

### 3. Read



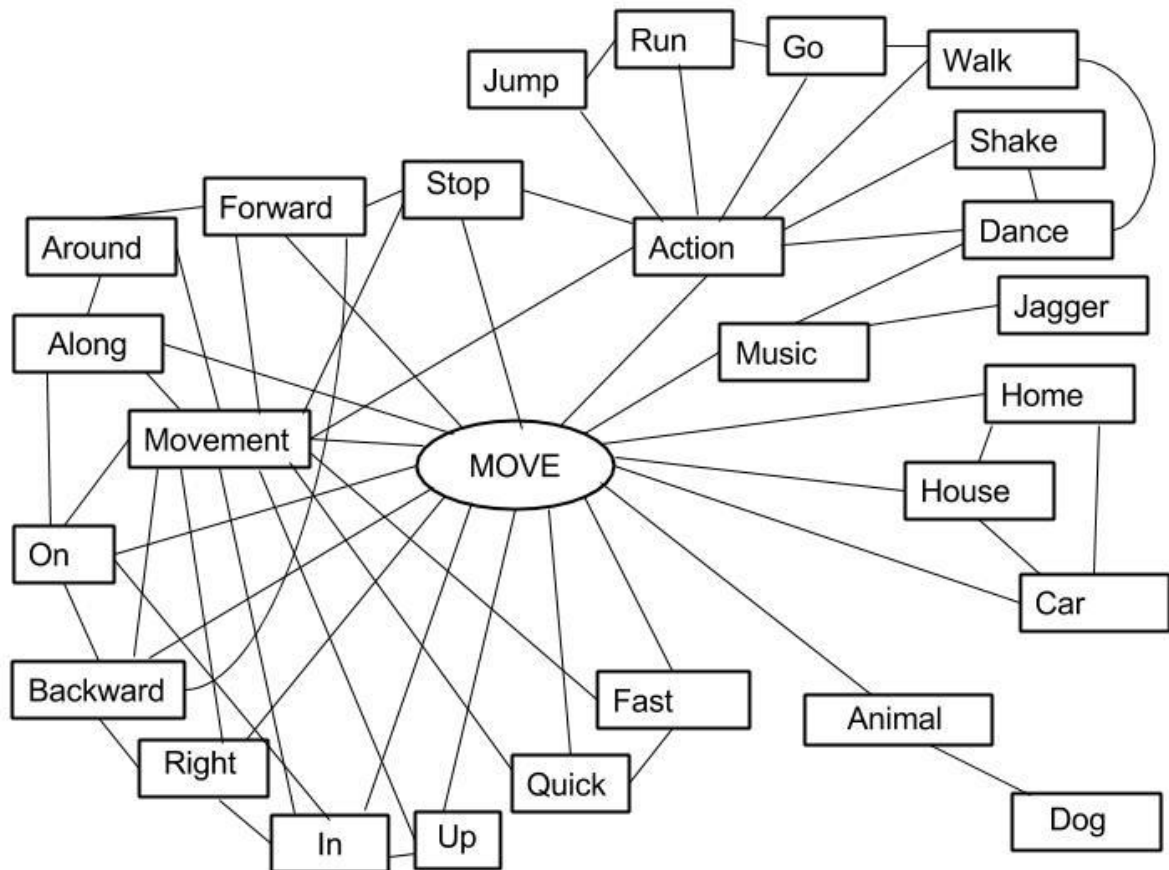
The most frequent relationship was also *collocation* with occurrences up to 51. The less frequent relationships were *coordinate*, and *phonological relation*, respectively repeated 5 and 3 times. Lastly, *functional* was found as the least frequent relationship with only one occurrence.

#### 4. Drink



With a repetition of 56 times, *collocation* was regarded as the most frequent relationship. Followed by *coordinate*, which repeated 3 times, as the less frequent relationship. Finally, *phonological* relation was the least frequent relationship which only occurred once.

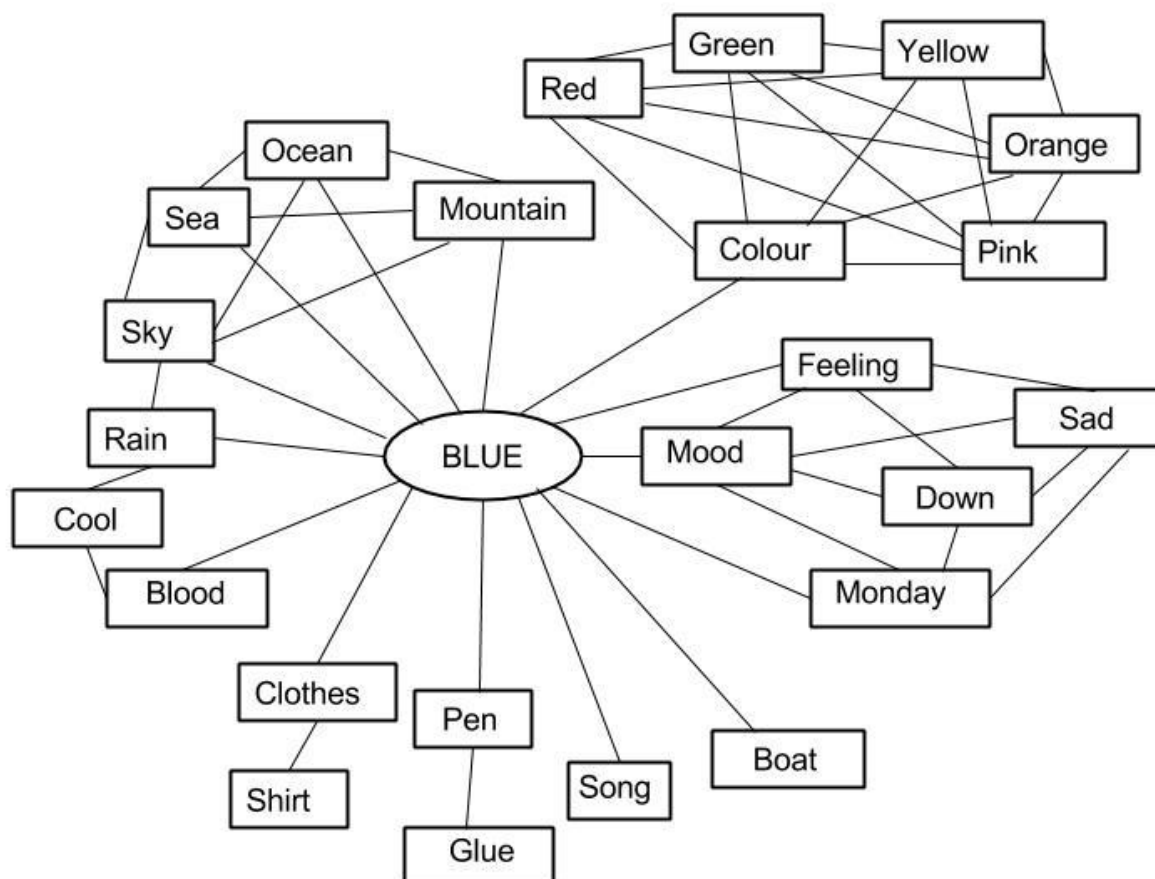
## 5. Move



Obtained a repetition of 26 times, *collocation* is considered as the most frequent relationship. Then, *coordinate*, *attributive*, and *synonym* were regarded as the less frequent relationships with 19, 6, 5 times of occurrences. Lastly, the least frequent relationships were *superordinate*, and *antonym*, which repeated twice.

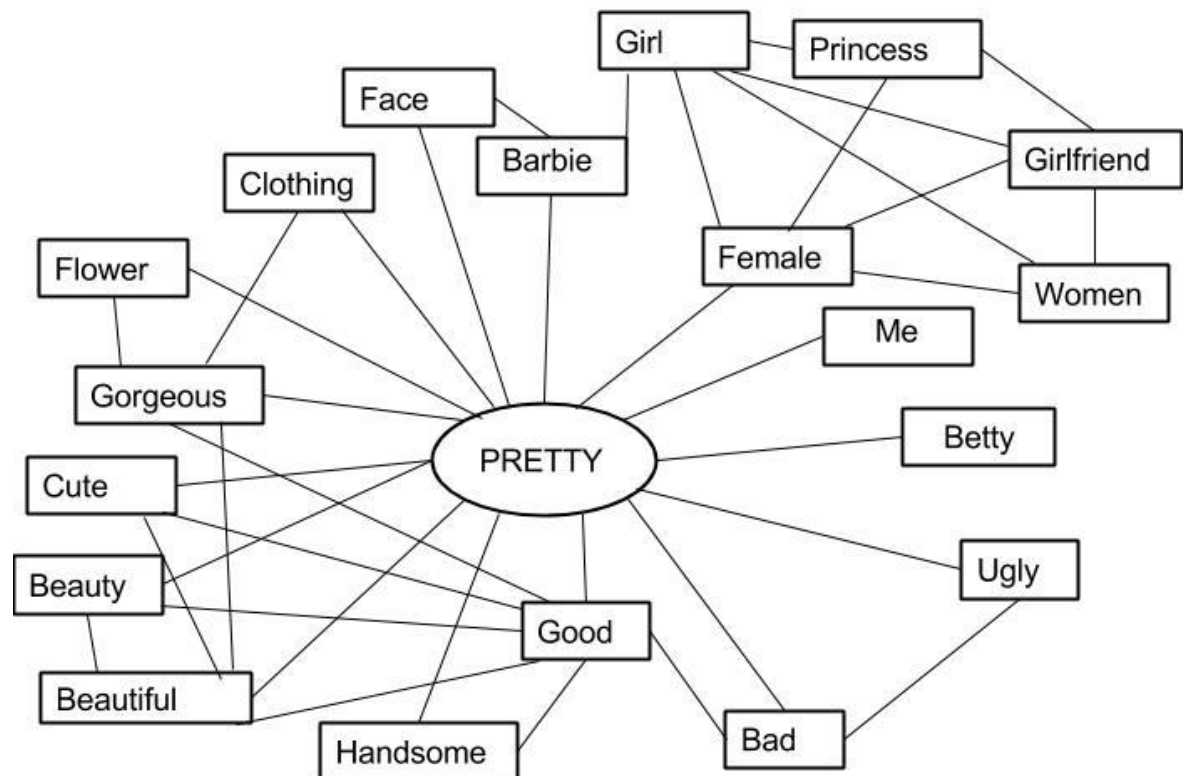
## Adjectives

### 1. Blue



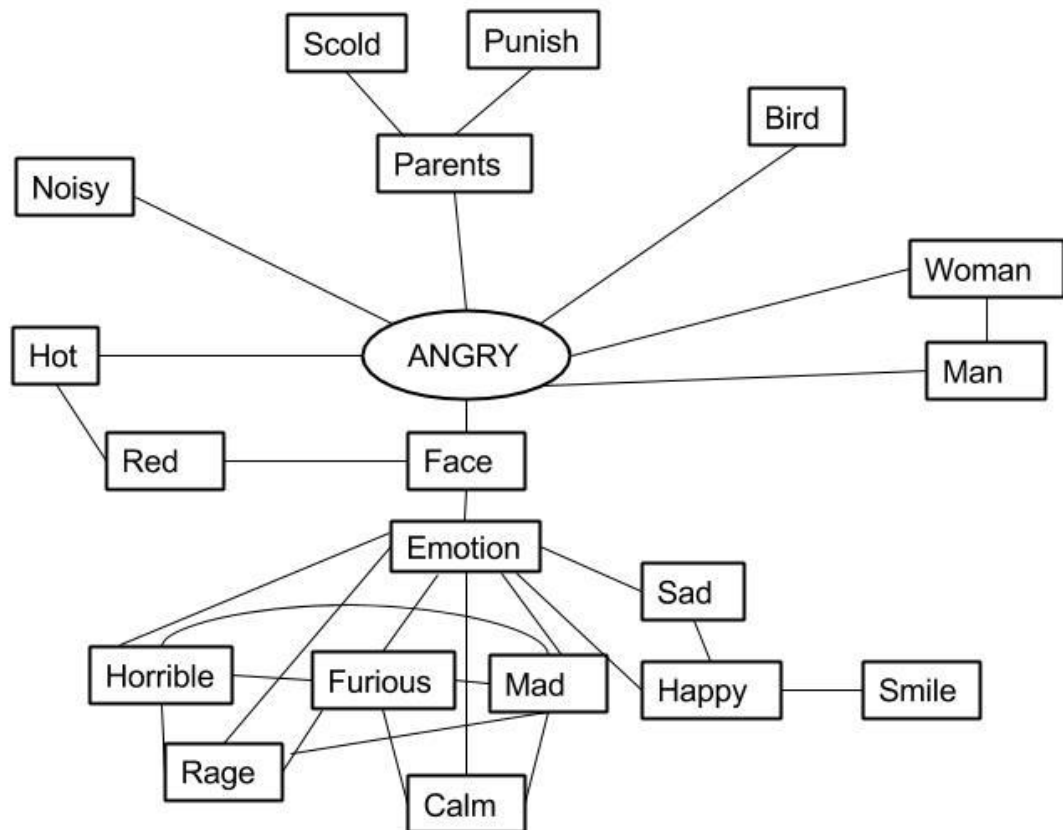
The most frequent relationship was *attributive*, which had a repetition of 26 times. For the less frequent relationships, *coordinate*, *collocation*, *superordinate*, *synonym* were taken into account, with occurrences of 14, 9, 5, 4 times respectively. The least frequent relationship is *phonological reason*, which occurred twice.

## 2. Pretty



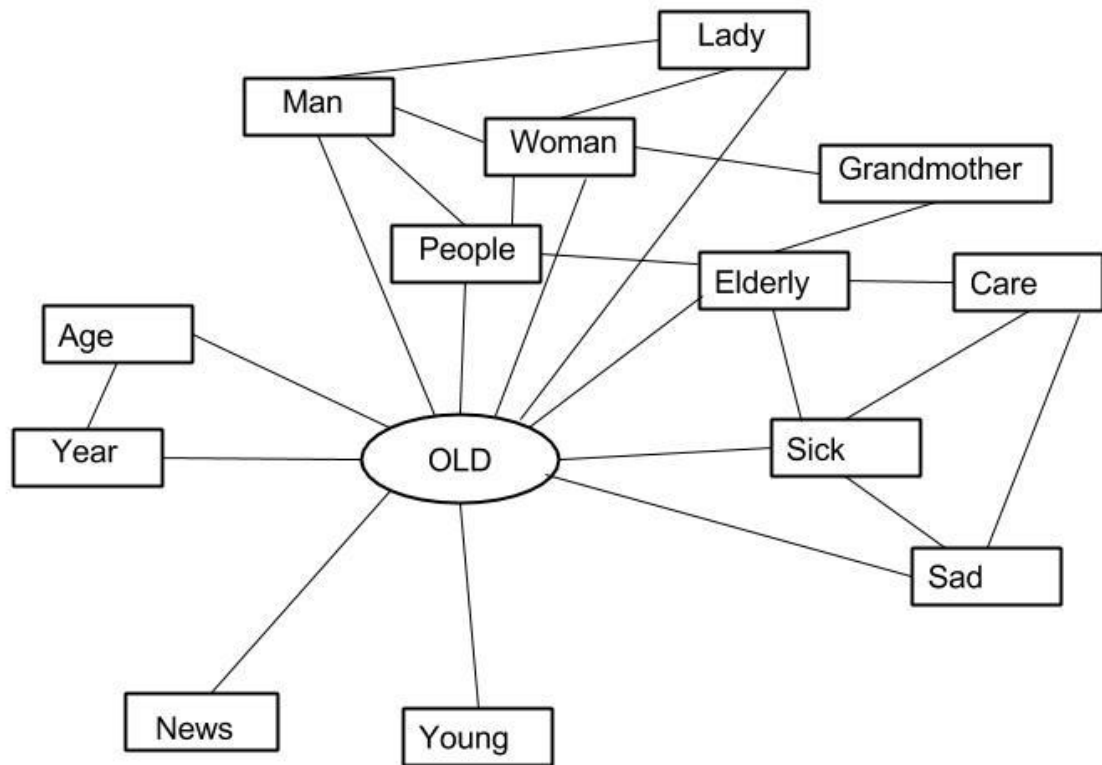
With 41 times of occurrences, *attributive* is the most frequent relationship. The less frequent ones were *synonym*, *collocation*, and *antonym*, which repeated 13 times for *the first* one and twice for the latter two. The least frequent relationships were *coordinate*, and *superordinate*, both with one occurrence.

### 3. Angry



The most frequent relationship was *collocation*, which repeated up to 41 times. *coordinate*, *synonym*, *superordinate*, and *phonological relation* were regarded as the less frequent relationships, with 5 occurrences for *coordinate* and *synonym*, 4 and 3 times for the latter two respectively. The least frequent relationship was *antonym*, appearing twice.

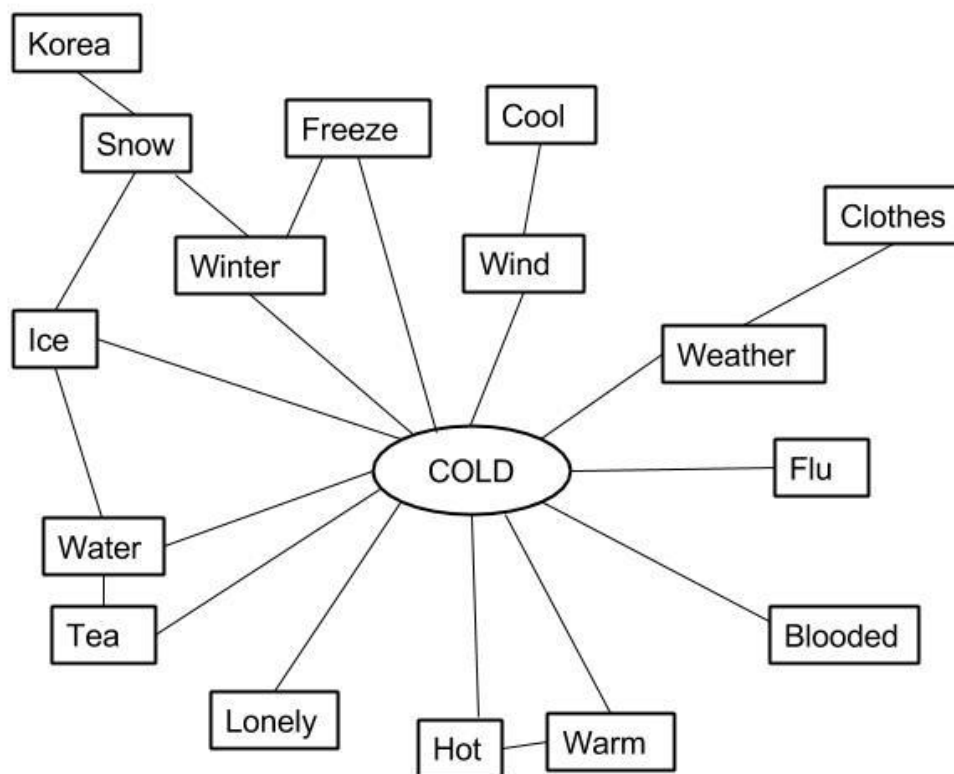
#### 4. Old



The most frequent relationship was *attributive*, with a repetition of 18 times. The less frequent relationships were *collocation*, *antonym*, and *synonym*, which occurred 17, 11, and 8 times respectively. Lastly, *phonological* relation appeared least frequently, with 6 occurrences.



## 5. Cold



*Attributive* was the most frequent relationship which appeared 30 times. Followed by *antonym*, *superordinate*, *collocation*, and *phonological relation* as the less frequent relationships, with 17 times of repetition for the first one, 4 times for *superordinate* and *collocation*, and 3 times for *phonological relation*. The least frequent relationship was *synonym*, with two occurrences.

The above results reveal that *collocation* is the most frequent relationship among the 15 word stimuli of 3 different parts of speech. Focusing on nouns and verbs, we found that only *collocation* occurred most frequently. Since *collocation* is the sense relation representing words associated in a way that they usually co-occur together, these words tended to be frequent words which appear in daily life more often than other words do. Therefore, these words may come into respondents' minds

at faster rates, so that they gave a word linked with *collocation* right after they heard the word stimulus.

For the adjectives, *attributive* is the most frequent relationship for 4 of the adjectives. As *attributive* is used to represent the words associated that one is the feature of another, and adjectives are commonly adopted to modify nouns, which mainly describe the feature of words, there will be a higher tendency to link adjectives and nouns together. Thus, *attributive* becomes the most frequent relationship for adjectives. However, there is a special case discovered among the 5 adjectives. 'Angry' is the only one adjective with *collocation* as the most frequent relationship. This is mostly resulted by the expected high linkage of 'bird' with 'angry'. Since 'angry bird' has been a famous mobile game among young adults, it is easy for them to associate with 'bird' when 'angry' is given, proving that the higher frequency the two words co-occur together in daily life, the faster rate the word comes to our minds.

It is also noticeable that there are less antonyms and synonyms for nouns, while there are more for verbs and adjectives. Usually, nouns refer to real objects and people tend to use the name they have been used to refer to these objects. It may be useless to think of another word to represent the same object. Furthermore, it is hard to relate 2 nouns that are an opposite of each other as they do not have this characteristic normally. Yet, verbs and adjectives are the opposite cases that people can use different words to describe the same action and feeling. Their meaning and usage may slightly vary, but the words can be considered as synonyms. Additionally, it is easy for people to link antonyms together, because opposite words are used to describe opposite actions and feelings.

### **Creation of Word Games**

With the word stimulus and words given by the subjects, we created two word learning games. They both aims at enhancing word association ability of players but are targeted for different age groups.

## **Word Association Card Game**

### 1. Target player

University students

### 2. Number of players

The game requires a minimum of 3 players. The maximum is 7 players.

### 3. Instructions

In total, there are 189 play cards, including 30 prime cards, 9 function cards and 150 response cards. All the prime cards and response cards are divided into 15 sets of cards. For each set, there are 2 identical prime cards and 10 response cards. For 3-5 players, 7 sets of cards would be used. For 6-7 players, all the 15 sets of cards should be used. All the materials are shown in Appendix 2.

### 4. Playing method

Before the game starts, first, all the cards (including prime cards, response cards and function cards) would be mixed together, taking 1 prime card (start card) from them and shuffling the remaining cards. Then, each player is dealt 10 cards from them randomly. The remaining cards are placed face down and form the draw pile. Once the start card is turned over, the game starts.

The first player has to select a response card which has word association with the start card (prime base) from his hand, and this process is called matching. The selected response card is placed next to the start card for the next player to match. The card of the second player would

be placed on top of the first player's response card. The process will then keep repeating for each turn. Any player that cannot play any of his cards has to draw one card from the drawing pile. A player can play the card immediately if it fits, if not, turn passes to the next player.

Players can also play prime cards and function cards during their turn. For prime card, the new prime card would be placed on top of the start card and form a new prime base. The next player's response card would then have to match with the new prime base. For function cards, the function of them are listed below.

- Reverse - The direction of playing would be reversed.
- Stop - The next player would be skipped, losing a turn.
- Draw 1 cards/ - The next player has to draw 1 card or 2 cards from the
- Draw 2 cards draw pile. If the player has another draw card, the effect will be accumulated to the following player. After the player draws the cards, he can play 1 card immediately.

When any player is ridding himself of all the cards in hand, he will be the winner and the game end.

We have demonstrated how to play the game in a video: <https://youtu.be/odTHeG7fgvU>

### **Word Association Response Game**

#### 1. Target player

Secondary school students

## 2. Number of players

A minimum of 2 players, a maximum of 4 players

## 3. Instructions

There are 5 sets of alphabet cards and a set of prime cards. Each alphabet card set includes 26 cards of A-Z. The prime card set includes 50 cards of prime. According to the number of players, the number of sets of alphabet cards used would be the number of players plus 1.

## 4. Playing method

Before the game starts, each player would have a set of alphabet cards in front of them. The remaining set of alphabet card would be placed separately at the center and the prime cards pile would also be placed facing down next to them.

When the game starts, a prime card would be turned over. Within 1 minute, all players have to use their alphabet cards to form a word which has associations with the word on the prime card. If the player requires some extra alphabets, they may get them at the center. However, they must be quick or else the cards would be taken by others. When the time limit is over, players have to calculate their scores for this round by adding up the score of each alphabet card. The score is written on the lower right corner of a card. The scores of both players would be recorded on a paper. Then, another prime card would be turned over and a new round starts. The process would be repeated until a player gets a cumulative score of 70 or above and is the winner. The winning score and time limit are flexible, and they can be adjusted by the player.

We have demonstrated how to play this game in a video: <https://youtu.be/chidA9NmErA>

## **Conclusion**

In this experiment, we discovered that the words that usually appear together come into people's mind at a fast speed. Therefore, most of the words given by the subjects in the experiment are of a *collocation* relation with the word stimuli. We also found the effects of parts of speech of word stimuli on the occurrences of different sense relations between stimuli and responses. The results of the experiment let us have a better understanding of how semantic information is stored in memory. In addition, we proposed that the word association ability is required by learners to remember more words, which enhances their language skills, especially writing and speaking skills. In order to boost learners' word association ability, two games are created for players to intensify their word knowledge and learn new words.

## **References**

Field, J. (2003). *Psycholinguistics: A Resource Book for Students*. London: Routledge.

Istifci, I. (2010). Playing with Words: A Study on Word Association Responses. *The Journal of International Social Research*, 3(10), 360. Retrieved November 20, 2015, from [http://www.sosyalarastirmalar.com/cilt3/sayi10pdf/istifci\\_ilknur.pdf](http://www.sosyalarastirmalar.com/cilt3/sayi10pdf/istifci_ilknur.pdf).

Richards, Jack, C., Platt, J. & Platt, Heidi (2002). *Longman Dictionary of Language Teaching and Applied Linguistics*. (English-Chinese Edition). Beijing: Foreign Language and Research & Longman.

## Appendix

### Appendix 1: Response Data

<b>Clock</b>		
<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Time	35	Collocation
Cock	6	Collocation
Wise	3	Collocation
Clockwise	2	Collocation
Alarm	2	Functional
Circle	2	Attributive
Minute	2	Collocation
Nine	1	Collocation
Afternoon	1	Collocation
Number	1	Part-whole relation
One	1	Collocation
Tick-tac	1	Attributive
Wake	1	Functional
Watch	1	Synonym
Wall	1	Collocation

<b>Old</b>		
<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Man	13	Attributive
Young	11	Antonym
Elderly	8	Synonym
Grandmother	5	Attributive
Age	3	Collocation
Lady	3	Collocation
Women(woman)	3	Collocation
Bold	2	Phonological reason
News	2	Collocation
Odd	2	Phonological reason
Oh	2	Phonological reason
People	2	Collocation
Care	1	Collocation
Sad	1	Collocation



Sick	1	Collocation
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<b>Pretty</b>		
<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Girl	23	Attributive
Beautiful	9	Synonym
Woman	6	Attributive
Beauty	2	Synonym
Me	2	Attributive
Betty	2	Collocation
Cute	2	Synonym
Princess	2	Attributive
Ugly	2	Antonym
Bad	1	Coordinate
Barbie	1	Attributive
Clothing	1	Attributive
Face	1	Attributive
Flower	1	Attributive
Girlfriend	1	Attributive
Good	1	Superordinate
Gorgeous	1	Synonym
Handsome	1	Synonym
Female	1	Attributive

## Move

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Run	7	Coordinate
Movement	5	Synonym
Go	4	Coordinate
Car	3	Attributive
Fast	3	Collocation
Forward	3	Collocation
House	3	Collocation
Walk	3	Coordinate
Music	2	Collocation
Action	2	Superordinate
Dance	2	Coordinate
In	2	Collocation
On	2	Collocation
Quick	2	Collocation
Stop	2	Antonym
Around	2	Collocation
Along	2	Collocation
Shake	2	Coordinate
Backward	2	Collocation
Jagger	1	Attributive
Jump	1	Coordinate
Right	1	Collocation
Dog	1	Attributive
Home	1	Collocation
Animal	1	Attributive
Up	1	Collocation

## Fan

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Wind	13	Attributive
Hot	9	Collocation
Cool	7	Functional
Fanny	4	Phonological reason
Fans	4	Homophone
Fantastic	2	Phonological reason
Idols	2	Collocation
Juicy	2	Collocation
Moving	2	Attributive
Celebrity	1	Collocation
Children	1	Collocation
Classroom	1	Part-whole relation
Cold	1	Functional
Electricity	1	Part-whole relation
Fantasy	1	Phonological reason
Fiction	1	Collocation
Football	1	Collocation
Fun	1	Phonological reason
Funny	1	Phonological reason
man	1	Phonological reason
Meeting	1	Collocation
Plan	1	Phonological reason
Tan	1	Phonological reason
Van	1	Part-whole relation

## Read

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Book(s)	35	Collocation
Reading	5	Collocation
Red	3	Phonological reason
Aloud	2	Collocation
reader	2	Collocation
write	2	Coordinate
Boring	1	Collocation
Eye	1	Functional
ipad	1	Collocation
Knowledge	1	Collocation
Listen	1	Coordinate
Mind	1	Collocation
novel	1	Collocation
See	1	Coordinate
Speak	1	Coordinate
text	1	Collocation
Words	1	Collocation

## Scissors

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Cut	17	Functional
Paper	12	Collocation
Ruler	5	Coordinate
Cutter	4	Coordinate
Art	2	Collocation
Blood	2	Collocation
Glue	2	Coordinate
Red	2	Attributive
Rock	2	Collocation
Stone	2	Collocation
Design	1	Collocation
Forceps	1	Coordinate
Hair	1	Collocation
Hand	1	Collocation
Pair	1	Attributive
Pen	1	Coordinate
Sharp	1	Attributive
Sisters	1	Phonological reason
Stationary	1	Superordinate
Work	1	Collocation

## Blue

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Sky	20	Attributive
Red	8	Coordinate
Sad	3	Synonym
Blood	2	Attributive
Color (colour)	2	Superordinate
Glue	2	Phonological reason
Green	2	Coordinate
Monday	2	Collocation
Mood	2	Superordinate
Mountain	2	Collocation
Yellow	2	Coordinate
Boat	1	Collocation
Clothes	1	Collocation
Cool	1	Collocation
Down	1	Synonym
Feeling	1	Superordinate
Ocean	1	Attributive
Orange	1	Coordinate
Pen	1	Attributive
Pink	1	Coordinate
Rain	1	Attributive
Sea	1	Attributive
Shirt	1	Collocation
Song	1	Collocation(a song named 'Blue')

## Drink

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Water	10	Collocation
alcohol	9	Collocation
Beer(s)	9	Collocation
Wine	6	Collocation
Drunk	5	Collocation
Eat	3	Coordinate
Tea	3	Collocation
Coffee	2	Collocation
Food	2	Collocation
Bar	1	Collocation
Buy	1	Collocation
Coke	1	Collocation
Drinks	1	Collocation
Drive	1	Collocation
Glass	1	Collocation
Good	1	Collocation
Milk	1	Collocation
Thirsty	1	Collocation
Toxic	1	Collocation
Wink	1	Phonological reason

## Bread

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Breakfast	16	Collocation
Butter	13	Collocation
Eat	7	Collocation
Milk	4	Collocation
Bakery	3	Part-whole relation
Brown	2	Attributive
Banana	1	Coordinate
Cake	1	Coordinate
Crumble	1	Part-whole relation
Daily	1	Collocation
Fast	1	Collocation
Feeding	1	Functional
Food	1	Superordinate
Hungry	1	Collocation
Jam	1	Collocation
Sandwich	1	Part-whole relation
Sausage	1	Collocation
Strawberry	1	Collocation
Toast	1	Part-whole relation
White	1	Attributive
Yummy	1	Attributive



## Bread

Response	Frequency	Relation
Tree(s)	16	Collocation
Mountain	14	Collocation
Hill	5	Collocation
Rock(s)	4	Collocation
Up	3	Collocation
Baby(bb)	3	Attributive
Crawl	2	Synonym
Hiking	2	Coordinate
Monkey	2	Attributive
Wall	2	Collocation
Challenges	1	Collocation
Child	1	Attributive
Fall	1	Antonym
Hard	1	Collocation
Overcome	1	Collocation
Sit	1	Coordinate
Walk	1	Coordinate

## Cold

Response	Frequency	Relation
Hot	13	Antonym
Winter	12	Attributive
Ice	6	Attributive
snow	5	Attributive
Warm	4	Antonym
weather	4	Superordinate
Water	3	Attributive
clothes	2	Phonological reason
Tea	2	Attributive
wind	2	Attributive
Blooded	1	Collocation
Cool	1	Synonym
Flu	1	Synonym
Freeze	1	Collocation
korea	1	Collocation

lonely	1	Collocation
Old	1	Phonological reason

<b>Sit</b>		
<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Down	21	Collocation
Chair	10	Collocation
Stand	8	Antonym
Dog	5	Collocation
Seat	5	Phonological reason
Up	2	Collocation
Bus	1	Collocation
Comfortable	1	Attributive
Properly	1	Collocation
Run	1	Antonym
Seed	1	Phonological reason
Straight	1	Collocation
Think	1	Collocation
Tired	1	Collocation
Train	1	Collocation, Part-whole relation

## Doll

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Barbie	7	Subordinate
Girl	6	Collocation
Play	6	Collocation
Toy(s)	5	Superordinate
Cute	4	Attributive
Horrible	4	Attributive
Dollar	3	Collocation
Bed	2	Collocation
Children	2	Collocation
Clothes	2	Part-whole relation
Hair	2	Part-whole relation
Scary	2	Attributive
Annabelle	1	Subordinate
Baby	1	Collocation
Ball	1	Phonological reason
Beautiful	1	Attributive
Disney	1	Collocation
Donate	1	Collocation
Door	1	Phonological reason
House	1	Collocation
Old	1	Collocation
Pretty	1	Attributive
Robot	1	Coordinate
Roll	1	Phonological reason
Sister	1	Collocation
Small	1	Attributive
Teddy	1	Coordinate

## **Angry**

<b>Response</b>	<b>Frequency</b>	<b>Relation</b>
Bird(s)	25	Collocation
Red	5	Collocation
Emotion	4	Superordinate
Happy	3	Coordinate
Mad	3	Synonym
Man	3	Collocation
Face	2	Collocation
Hungry	2	Phonological reason
Angie	1	Phonological reason
Calm	1	Antonym
Furious	1	Synonym
Horrible	1	Coordinate
Hot	1	Collocation
Noisy	1	Collocation
Parents	1	Collocation
punish	1	Collocation
Rage	1	Synonym
Sad	1	Coordinate
Scold	1	Collocation
Smile	1	Antonym
Women	1	Collocation

Appendix 2: Word Association Card Game



**CLOCK**



**CLOCK**



**PRETTY**



**PRETTY**



**MOVE**



**MOVE**



**OLD**



**OLD**



**FAN**



**FAN**



**READ**



**READ**



**SCISSORS**



**SCISSORS**



**BLUE**



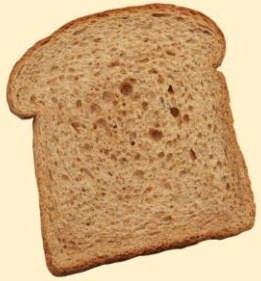
**BLUE**



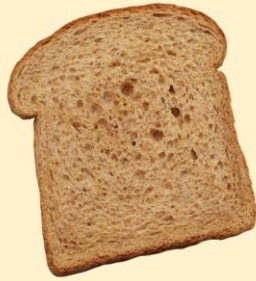
**DRINK**



**DRINK**



**BREAD**



**BREAD**



**CLIMB**



**CLIMB**



**COLD**



**COLD**



**SIT**



**SIT**



**DOLL**



**DOLL**



**ANGRY**

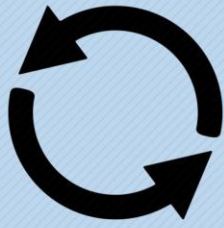


**ANGRY**





**REVERSE**



**REVERSE**



**REVERSE**



**STOP**



**STOP**



**STOP**



**DRAW 1 CARDS**



**DRAW 1 CARDS**



**DRAW 2 CARDS**

**TIME**

**COCK**

**WISE**

**ALARM**

**CIRCLE**

**NINE**

**MINUTE**

**NUMBER**

**Tick-tac**

**BAD**

**BEAUTIFUL**

**BEAUTY**

**CUTE**

**FLOWER**

**GIRL**

**HANDSOME**

**PRINCESS**

**UGLY**

**WOMAN**

**ACTION**

**CAR**

**DANCE**

**FAST**

**FORWARD**

**GO**

**HOUSE**

**STOP**

**RUN**

**WALK**

**MAN**

**LADY**

**YOUNG**

**AGE**

**ELDERLY**

**PEOPLE**

**GRANDMOTHER**

**NEWS**

**BOLD**

**OH**

**WIND**

**HOT**

**COOL**

**CLASSROOM**

**MOVING**

**IDOLS**

**COLD**

**ELECTRICITY**

**BOOK**

**ALOUD**

**WRITE**

**EYE**

**READING**

**RED**

**KNOWLEDGE**

**SEE**

**NOVEL**

**LISTEN**

**CUT**

**STONE**

**PAPER**



**CUTTER**

**ART**

**RULER**

**DESIGN**

**FORCEPS**

**HAIR**

**PAIR**

**SKY**

**SAD**

**COLOUR**

**GLUE**

**GREEN**

**MONDAY**

**MOOD**

**SEA**

**YELLOW**

**MOUNTAIN**

**TEA**

**ALCOHOL**

**BEER**

**COFFEE**

**BAR**

**MILK**

**FOOD**

**DRUNK**

**EAT**

**WATER**

**BREAKFAST**

**BUTTER**

**BAKERY**

**BROWN**

**JAM**

**BANANA**

**DAILY**

**HUNGRY**

**CAKE**

**SANDWICH**

**ROCK**

**UP**

**TREE**

**HILL**

**CRAWL**

**BABY**

**HIKING**

**MONKEY**

**FALL**

**WALL**

**CLOTHES**

**ICE**

**SNOW**

**HOT**

**WARM**

**WEATHER**

**WATER**

**BLOODED**

**FLU**

**WINTER**

**DOWN**

**CHAIR**

**DOG**

**COMFORTABLE**

**PROPERLY**

**SEED**

**SEAT**

**BUS**

**STAND**

**STRAIGHT**

**BARBIE**

**PLAY**

**HORRIBLE**

**DOLLAR**

**BALL**



**BED**

**CHILDREN**

**CUTE**

**TOYS**

**ROBOT**

**BIRD**

**FACE**

**CALM**

**EMOTION**

**HAPPY**

**MAD**

**FURIOUS**

**RAGE**

**SAD**

**NOISY**

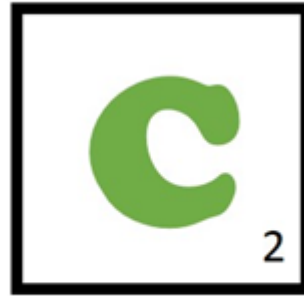
**AFTERNOON**

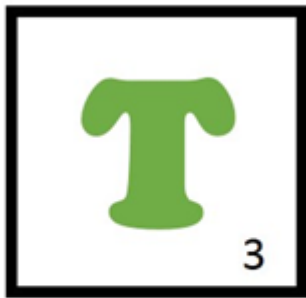
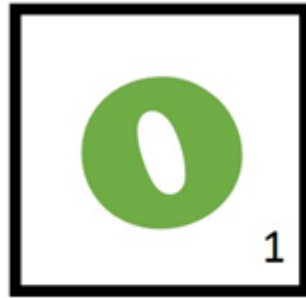
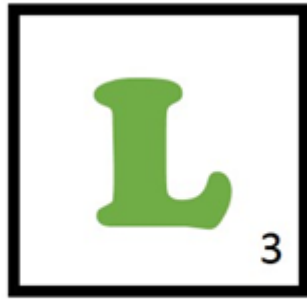
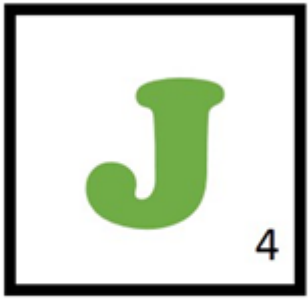
**FANTASTIC**

**CELEBRITY**



Appendix 3: Word Association Response Game







**TIME**

**CIRCLE**

**BEAUTIFUL**

**FLOWER**

**GIRL**

**DANCE**

**FAST**

**ELDERLY**

**YOUNG**

**NEWS**

**WIND**

**HOT**

**EYE**

**READING**

**RED**



**CUT**

**STONE**

**PAPER**

**SKY**

**SAD**

**TEA**

**FOOD**

**BAKERY**

**HILL**

**DAILY**

**HUNGRY**

**CRAWL**

**ICE**

**WARM**

**WINTER**

**DOG**

**BALL**

**CHILDREN**

**EMOTION**

**HAPPY**

**ANGRY**

**BLUE**

**BREAD**

**CLIMB**

**CLOCK**

**COLD**

**DOLL**

**DRINK**

**FAN**

**MOVE**

**OLD**

**PRETTY**

**READ**

**SCISSORS**

**SIT**