

## PLAYING WITH WORDS: A STUDY ON WORD ASSOCIATION RESPONSES\*

### KELİMELERLE OYNAMA: KELİMELER ARASI ÇAĞRIŞIM KURMA ÜZERİNE BİR ÇALIŞMA

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#### Abstract

Word association is one of the major subjects studied in linguistics, psychology and psycholinguistics. According to Richards et al. (1985) word association is a way in which words come to be associated with each other and which influence the learning and remembering of words. The aim of this study is to investigate word associations of elementary and advanced level EFL learners through a 20-item Word Association Test in order to see whether there are differences or similarities between the results of the students in these groups. The results of the study suggested that EFL learners try to use a wide range of word association techniques and the proficiency level of the students have partial effect on their use of word associations.

**Key Words:** vocabulary knowledge, word association, learning words.

#### Özet

Kelimeler arası çağrışım kurma dilbilim, psikoloji ve psikodilbilim alanlarında çalışılan konulardan biridir. Richards ve arkadaşlarına göre (1985) kelimeler arası çağrışım kurma kelimeler arasında ilişki kurmanın bir yoludur ve kelime öğrenimini ve hatırlamayı etkiler. Bu çalışmanın amacı, İngilizce öğreniminde temel düzeyde ve ileri düzeyde yer alan öğrencilerin kelimeler arası çağrışım kurmalarında farklılık ve benzerlik olup olmadığını 20 maddelik bir Kelimeler Arası Çağrışım Kurma Testi ile incelemektir. Çalışmanın sonuçları İngilizce öğrenen öğrencilerin bir dizi kelimeler arası çağrışım kurma tekniği kullandıklarını ve yeterli seviyelerinin öğrencilerin kelimeler arası çağrışım kurmalarında biraz etkisi olduğunu göstermektedir.

**Anahtar Kelimeler:** kelime bilgisi, kelimeler arası çağrışım kurma, kelime öğrenimi.

## INTRODUCTION

As Sinopalnikova (2003) states, the term association is used in psycholinguistics to refer to the connection or relation between ideas, concepts, or words, which exists in the human mind and manifests in a following way: an appearance of one entity entails the appearance of the other in the mind.

For Miller (1996) word associations show the familiarity effect: responses are faster to familiar words and if a word has been presented before, it takes a shorter time to respond to that word. According to Kess (1992), context is an important factor in giving responses: if subjects must respond quickly, clang responses are common, if there is no time limitation more idiosyncratic responses occur.

### Word Association Tests

According to Sinopalnikova (2003), the simplest experimental technique to reveal the association mechanism is a free association test (FAT). In FATs, a list of words (stimuli) is presented to subjects (either writing or orally), which are asked to respond with the first word that comes into their mind (responses), and FAT gives the broadest information on the way knowledge is structured in the human mind. The results of FAT series carried out with several hundreds stimuli and a few thousand subjects, reported in a form of tables, was given the name Word Association Norms (WAN). Word Association Thesaurus (WAT) is a more developed form of WAN because it includes several thousands of stimuli.

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Some researchers such as Randal (1980), den Dulk (1985) and Kruse et al. (1987) (all cited in Wolter, 2002) tried to demonstrate a link between proficiency and responses on a multiple response word association test. They claimed that WAT could function as a means of assessing proficiency. However, there appeared some problems with these studies and they were criticized because they used words from Kent-Rosanoff (1910) list. This study, therefore, tried to not to use words from the Kent-Rosanoff list. Instead, the words from the Edinburgh Associative Thesaurus (EAT; available online at <http://www.cis.rl.ac.uk/proj/psych/eat/eat/>) were used in the test.

Wolter's (2002) study revealed that word associations in a foreign language are not clearly linked to proficiency. Read (1993) carried out a study with university students of English and tested their knowledge of "academic" words. Read's test consisted of a target word followed by eight other words, four of which are semantically related to the target word, and four of which are not. Read's test aimed to assess receptive word knowledge and knowledge about the meaning of a word, the words with which it is associated, and the collocations in which it occurs. Read (1993) distinguished three types associations on the basis of "preliminary drafting of items": (a) paradigmatic ("The two words are synonyms or at least similar in meaning, perhaps with one being more general than the other"); (b) syntagmatic ("The two words are collocates that often occur together in a sentence"); (c) ("The associate represents one aspect, or component, of the meaning of the stimulus word and is likely to form part of its dictionary definition"[p.359;]).

One of the most striking results of word association studies was summarized by Read (1993) as follows:

One of the basic findings is that native speakers have remarkably stable patterns of word association, which can be taken to reflect the sophisticated lexical and semantic networks that they have developed through their acquisition of the language. On the other hand, second language learners produce associations that are much more diverse and unstable; often their responses are based on purely phonological, rather than semantic, links with the stimulus words. (p.358).

As Schmitt (1998) states the elicitation of word associations is a relatively simple procedure, which is one of its attractions. Traditionally subjects are given a stimulus word and asked to produce the first response which comes to mind. According to him, the use of word associations holds a great deal of promise in the areas of L2 vocabulary research and measurement. He further claims that word association procedures can be used as an alternative way to test vocabulary.

For Kess (1992), an association theory looks for latent relationships, the covert links that words have with other words, images and thoughts. For Kess, word association system is like a spiderweb in which words in the mental network are related to other words.

"Word Association Test", which was invented by F. Galton, is a technique in order to test associations people make and it was widely used in psychology by psychiatrists such as C. Jung, G. H. Kent and A. J. Rosanoff. Kent & Rosanoff's study was the first large scale study which was carried out in English with 1,000 men and women. They used 100 probe words and read one word at a time to a person who was to give the first word that came into his/her mind. After analysing the data, they claimed that there was uniformity in the organization of associations and people shared stable networks of connections among words.

According to Bahar and Hansell (2000), word association test is one of the commonest and oldest methods for investigating cognitive structure and has been used by several researchers. The underlying assumption in a word association test is that the order of the response retrieval from long-term memory reflects at least a significant part of the structure within and between concepts. In a word association test, the degree of overlap of response hierarchies is a measure of the semantic proximity of the stimulus words.

As Wolter (2002) states devising a word association test (WAT) as a means of assessing proficiency in a foreign language has always had something of an inherent appeal to it. For Wolter (ibid.) when developing a WAT, it should be kept in mind that 1) WAT would be relatively quick and easy both to administer and to score, 2) be a nice complement to other methods of assessing learner performance and 3) tend to suggest that there may be something of a connection between psycholinguistic knowledge and more general proficiency in a foreign language. In respect to this last point, Wolter (ibid.) states that the underlying argument is that we would expect learners of higher proficiency to have more highly developed semantic networks in the L2 mental lexicon. However, his study with a group of language

learners and native speakers did not support his views since he could not find any evidence that word associations in a foreign language are linked to proficiency.

According to Richards (1991), the responses to free association tests give much information about the psychological structuring of vocabulary in an individual and offer a way of investigating the syntactic and semantic relationships among words.

In classifying word associations, different classification systems which have some common characteristics were applied by different researchers. Kess (1992) divided word associations into 3 types:

1. Members of the same part of speech class
  - a) paradigmatic responses (responses which fall in the same syntactic category such as synonyms or antonyms such as thin-skinny, black-white)
  - b) syntagmatic responses (responses which fall into other categories such as dig/hole)
2. Members of the same taxonomy
  - a) Subordinate (dog/retriever)
  - b) Superordinate (dog/animal)
3. Rhyming or clang responses (sister/blister, yellow/fellow)

Miller (1996; *ibid*) reports that associative responses of adults can be investigated by using four types of semantic relations which were found to be salient in the lexical organization of most speakers of English:

1. superordinate, coordinate and subordinate terms
2. attributive terms
3. part-whole relations
4. functional terms.

### **AIM OF THE STUDY**

This study aims at investigating word associations of elementary and advanced level students at Preparatory School of Anadolu University in order to find the type of associations students make in each level and if there are any similarities and differences between their associations.

After reviewing the related literature, it has been found that word association studies have generally been carried out in first language acquisition situation with children and in second language acquisition situations with both children and adults. Most studies in SLA situations have examined the word associations of bilinguals. Therefore, this study aims at finding out the associations of Turkish EFL learners.

In the light of above mentioned reasons, this study aims at answering the following research questions:

1. What are the responses of the students in elementary and advanced levels to free association test?
2. Are there any similarities and differences between the responses of the students in each level?

### **METHODOLOGY**

This study was carried out in an EFL situation with 50 students in order to examine the word associations of EFL students in elementary and advanced levels. Students in two different levels for chosen for this study in order to make comparisons between the students in two groups and to find if the proficiency level has an effect on associating words.

#### **Instrument**

In order to examine the word associations of the students in each level, a questionnaire which includes 20 words was designed by the researcher. Of the 20 words, 10 words were abstract and 10 words were concrete nouns. The nouns were randomly selected among the words that students mostly use in their English courses. Since the aim of this study was to get an idea of EFL learners' responses to the words, the questionnaire was written in English. Scientific and culture-specific words were not included in the questionnaire (see Appendix A).

## Subjects

25 students in elementary and 25 students in advanced levels (between the ages of 18- 20) participated in the study. In advanced group there were 18 female, 7 male and in elementary group there were 17 male, 8 female students. The students in each group were in the same class; elementary level students were exposed to English 28 lesson-hours and advanced level students 20 lesson-hours a week. Because of time limitation, the responses of only 50 students were gathered.

## Data Collection

The data were collected from the students in their usual class hours by their teachers. The students were given the questionnaires and were wanted to write the first word that comes into their minds. They did not have time limitation but they completed the questionnaire in 15 minutes.

## Data Analysis

The data were analysed according to Kess' classification with one modification. In the second type (members of the same taxonomy) 'coordinates' was added as the third type. All responses were counted and ranked according to their frequencies (see Appendix B). As there is a large body of data, the most frequent responses, which were thought to be significant, were taken into consideration in classifying the data. The response types of the students in each level were classified separately in order to get information about the students in each level, then the response types that each group employs were compared.

In order to provide intra-rater reliability, responses to word association questionnaire were checked again by the researcher one week after the first check. Then, two English teachers checked the responses and the agreement on the classification was 95%.

## RESULTS AND DISCUSSION

When we look at the results generally, it is seen that the students in elementary and advanced levels used a variety of responses which were more or less similar. However, it was observed that the students in elementary level preferred using simple adjectives such as love-necessary, harmful, mother-friendly, life-good, beautiful whereas the students in advanced level used more complex and derived words such as love-affection, romanticism, mother-confidence, safety, beauty, life-expectancy, responsibility. This difference might be due to their levels since the students in advanced level were exposed to more complex vocabulary and they may have kept it in their memory.

Another finding is that students in elementary level made personal attributions in their responses more than the students in advanced level (e.g. love-Ezgi, death-my grandfather, home-my family, beauty-Deniz Akkaya, freedom-Atatürk, Mel Gibson, peace- Manço, music-Lorena Mc Kennett) (see Appendix B).

A total of 500 responses were gathered in the study. Of these 500 responses, the most frequent and significant responses were taken into account and these responses were classified. The number of responses in each category were as follows:

TABLE 1. The Frequency Distribution of the Most Frequent Responses

	Elementary	Advanced
1. a) Paradigmatic responses		
Antonyms	20	17
Synonyms	4	3
b) Syntagmatic responses	42	42
2. Members of the same taxonomy		
a) superordinates	16	27
b) subordinates	110	124
c) coordinates	17	16
3. Rhyming or clang responses	4	—

In terms of the use of antonyms, the students in elementary and advanced levels used same words such as father-mother, peace-war. This finding is consistent with the study of Deese who found

that antonyms are the most frequent types in paradigmatic responses (Deese 1964; cited in Clark 1970: 275). According to Clark (1970) the minimal-contrast rule accounts for a large number of the commonest responses in paradigmatic word associations. In terms of synonyms, the responses of the students in two levels seem similar, but they are not used as commonly as antonyms. "The minimal contrast rule has priority if the stimulus has a full antonym, it is always more frequently given as a response than is a partial synonym" (Clark 1970:275).

In terms of the syntagmatic responses, the frequency of the responses in two groups were same. Since all the words in the questionnaire were nouns, nouns elicited adjectives such as comfortable or verbs such as sit and relax for the word chair.

Superordinates is the category which was used by the students in advanced group more than the students in elementary group (27 responses in advanced group, 16 responses in elementary group). This finding is consistent with Lambert's (1972) findings who found that native American speakers mostly employ superordinate category. So, it can be said that students in advanced level approximate the native speaker norms in using superordinates.

Subordinates are the type of responses which accounted for most of the data in the study (110 responses in elementary group, 124 responses in advanced group). The responses of the students in two groups were exactly the same for some words such as chair-wood, rain-wet, umbrella, cloud, fear-death, home-family, crime-jail, exam-TOEFL, horse-freedom, father-money, sleep-bed, peace-happiness, knife-bread, blood, sharp.

In terms of coordinates, the responses of the two groups were similar such as, chair-table, music-dance. It is worth mentioning that only one student in elementary level used rhyming or clang responses such as chair-cherry, tree-free, rain-train, crime-climb. This finding can be explained by the storage of words in the memory. As Henning (1973) states, low-proficiency language learners encode words in their memory according to acoustic similarities rather than by association of meaning whereas learners at a high level encode vocabulary according to meanings.

Henning (1973, cited in White, 1988) finds that advanced students remember words that are stored in semantic clusters, while low-proficiency learners tend to recall words on the basis of their sounds. Khairi (1993) states that good readers "store" their knowledge of vocabulary in semantically related networks; the activation of a word in a network will automatically "activate" other related words, which will then aid comprehension.

The results obtained in this study suggest that the students gave responses to word association questionnaire using words which rank highly in their lives and which reflect their psychological state. No significant difference has been found between the two levels in other categories except the use of 'superordinates' and 'subordinates'. It can be said that proficiency in English might effect word associations and competent speakers can make generalizations about the occurrence of a word and can find associated words easily. Students in advanced level used 'superordinates' and 'subordinates' more than the students in elementary level because they must have connected the words in their minds more easily by establishing a network of associations than the students in elementary level.

### **Implications for Foreign Language Learning/Teaching**

In my opinion, vocabulary teaching has not received much emphasis as grammar, listening, reading and writing skills in foreign language learning. Instead, it has been taught as part of reading syllabus. Since vocabulary is crucial in learning a language, it cannot be ignored. Language learners who have the basic knowledge of vocabulary can make associations of the words such as knowing different meanings associated with the word, semantic value of the word and underlying form of the words. The students who can associate the words with each other can expand their vocabulary and choose the right word for the right context. As Richards (1991) claims "stored words come to mind according to associative bonds and learning may be facilitated when such bonds are established".

In first language acquisition and second language acquisition situations, it might be easier for people to remember and associate the words with each other since first or second language is used and heard everytime. However, in foreign language learning situation, the learners are exposed to foreign language only in classroom settings. Thus, establishing associative bonds might be difficult for them because a word may be linked to different words by using different associative networks. If they are

provided with the knowledge of associating words with each other, learners can choose the right words for the right context. Foreign language teaching programs might be designed to expand vocabulary by employing activities and exercises of direct vocabulary teaching.

As Henning (1973) states “learners might benefit from synonym and antonym games and exercises, paired-associate compositions in which lists of related words are given the learner from which he is to prepare written or oral compositions. Through these types of exercises, the language learner will begin to recognize not only a larger inventory of lexical items encountered, but be able to identify the acoustic and semantic families from which they come, and thus more efficiently progress in language proficiency”.

As Bahar, Johnstone and Sutcliffe (1999) state teachers can use the word association test before a teaching session, to elicit the prior concepts in students’ minds, as well as after the teaching session, and the two results can be compared to see the changes in students’ learning. The teacher can also encourage students to compare their own responses with those of other students, in order to show them that there is more than one way of seeing things, and they can recognize that learning is individual and involves individual construction of meaning. This comparison of the responses may lead to a discussion which can broaden their understanding. They further claim that word association tests can be used as an educational tool for ‘seeing inside students’ heads’, both individually and as a group.

Abdullah (1993) advises the teachers to adopt activities that will help reinforce and recycle vocabulary to facilitate automatic lexical access; to help students organize information or words according to concepts or topics. He suggests that activities in the classroom should help learners build up new networks or maintain, refine, and expand existing networks. Suggested activities are:

1. Narrow reading activities
2. Word prediction (predicting vocabulary from a given topic)
3. Word prediction (predicting topic from given vocabulary)
4. The odd man out
5. Vocabulary map

### **Limitations and Suggestions for Further Research**

This study was limited to 25 elementary level students and 25 advanced level students. Therefore, we cannot make generalizations. It would be better if more subjects from different levels were used in the study. This study might also be carried out by children and adults of different age groups. 20 stimulus words were used in this study. In a further study, this number can be increased. Sex differences were not taken into account in this study but in another research word associations of males and females can be investigated.

The subjects were asked to write the first word that came to their minds. Instead, they could have been asked to produce two or three responses and this format would have been differentiate between learners at elementary and advanced levels of proficiency. As Schmitt (1998) states, asking for multiple responses gives the subjects additional chances to supply these more typical associations, and thus may well be a fairere measure. Providing multiple typical responses would supply a more convincing illustration that the stimulus word is incorporated into s subject’s lexicon in a way similar to a native speaker.

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## APPENDIX A

### WORD ASSOCIATION TEST

Please write the first word that immediately comes to your mind for the following words:

- |                    |                   |
|--------------------|-------------------|
| 1. chair: .....    | 2. love: .....    |
| 3. mother: .....   | 4. death: .....   |
| 5. tree: .....     | 6. life: .....    |
| 7. rain: .....     | 8. fear .....     |
| 9. home: .....     | 10. crime: .....  |
| 11. beauty:.....   | 12. exam: .....   |
| 13. horse: .....   | 14. father: ..... |
| 15. freedom:.....  | 16. sleep: .....  |
| 17. children:..... | 18. peace: .....  |
| 19. knife: .....   | 20. music: .....  |

## APPENDIX B

### The most frequent responses

#### A. Members of the same part of speech class

##### 1. Paradigmatic responses

###### a) antonyms

	elementary		advanced	
Word	response	frequency	response	frequency
<b>mother</b>	father	6	father	4
<b>Death</b>	Life	3	birth	2
<b>Father</b>	mother	5	mother	7
<b>Peace</b>	War	6	war	4

###### b) synonyms

<b>Love</b>	Like	2		
<b>Home</b>	house	2	house	2

##### 2. Syntagmatic responses

<b>chair</b>	comfortable	2		
	Sit	5	sit	3
	Relax	2		
<b>mother</b>			nice	2
<b>death</b>			black	2
<b>tree</b>	Green	9	green	7
<b>Life</b>	Good	3	difficult	3
<b>Home</b>	Miss	2	sweet	3
			relax	2
<b>Crime</b>	Bad	3	guilty	2

<b>Exam</b>	difficult	3	stressful	2
<b>Horse</b>	ride	3	ride	2
	fast	2	run	2
<b>freedom</b>	necessary	2	fly	2
<b>sleep</b>	unnecessary	2	relax	4
<b>children</b>			naughty	3
<b>Knife</b>	cut	2	cut	2
	kill	2	dangerous	2
<b>Music</b>			relax	3

#### B. Members of the same taxonomy

	<b>elementary</b>		<b>advanced</b>	
<b>Word</b>	<b>response</b>	<b>frequency</b>	<b>response</b>	<b>frequency</b>
<b>1. Subordinates</b>				
<b>Chair</b>	wood	2	wood	3
<b>Love</b>	girlfriend	2	darling	4
	darling	2	happiness	4
	boyfriend	3	pain	2
	live	2		
<b>mother</b>			affection	2
<b>Death</b>	cemetery	2	fear	6
<b>Tree</b>	leaves	3	fruit	2
			apple	2
<b>Life</b>	money	2	happiness	2
			enjoyment	2
<b>Rain</b>	wet	4	wet	3
	umbrella	2	umbrella	4
	clouds	4	clouds	3
			water	2
<b>Fear</b>	dark	4	loneliness	4
	death	3	death	2
	thunder	2		
	cry	2		
<b>Home</b>	TV	2	family	4
	family	3		
<b>Crime</b>	jail	6	punishment	4
	kill	4	death	3
			jail	2
			prison	2
<b>Beauty</b>	girl	2	girl	4
	mother	3	eyes	2
	nature	2	nature	2
<b>Exam</b>	TOEFL	6	stress	5
			fear	2
			stressful	2
			TOEFL	2
			questions	2
<b>Horse</b>	speed	2	horse race	4
	freedom	3	freedom	2

<b>Father</b>	money	5	money	2
	respect	3	respect	2
	guard	2		
<b>Sleep</b>	bed	5	bed	5
	dream	3	night	2
<b>children</b>	voice	2	noise	2
	future	2	future	2
	noise	2		
	problems	2		
<b>Peace</b>	happiness	3	happiness	3
			freedom	3
<b>Knife</b>	bread	4	bread	4
	blood	3	blood	6
	sharp	2	sharp	2

	elementary		advanced	
Word	response	frequency	response	frequency
<b>2. Superordinates</b>				
<b>Chair</b>			class	9
<b>mother</b>	love	4	love	4
	family	2	home	2
	everything	2	life	2
<b>Tree</b>	jungle	2	forest	4
<b>Life</b>	world	2		
<b>freedom</b>	life	2	peace	2
			birds	2
<b>Death</b>	worry	2		
<b>Sleep</b>		death	2	