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ACQUISITION OF REFERENTIAL MEANING OF WORDS IN A SECOND LANGUAGE

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ABSTRACT

The present study aims to search how L2 learners learn words. In particular, the acquisition of referential meaning of an L2 word, chair, was investigated in this study. The variables of the study were L2, L1 and prototypicality.

The study was carried out in the Faculty of Education, Uludağ University, Turkey. Two different groups of subjects were used in the study. One group was the group of EFL learner subjects who helped to determine the second language "chair" category. The EFL learners were of different proficiency levels which was tested by a cloze test. The other group was the group of Turkish Native Speaker subjects. The Turkish Native Speakers' data were used to determine Turkish "sandalye" and "koltuk" categories. A picture test was used to test L2 category membership, L1 influence and prototypicality.

Analysis of the results showed that as the proficiency increased, there occurred a tendency for more native like categorisation. The other results was that subjects were more accurate on non-chair items than chair items. Another result was that the performance of the subjects increased as the prototypicality of the items increased. A final result was that L1 has an influence on the referential range of L2 words.

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1.0 INTRODUCTION

In the field of second language acquisition research little attention was paid to how L2 learners learn words. Meara (1980) considered vocabulary as 'a neglected aspect of language learning'. The few researches, which were done so far in vocabulary acquisition, focused on the following aspects. Some of these researches were about the strategies employed by the learner when they were intentionally learning words. Other researches were about learners' incidental vocabulary learning as they were trying to understand written texts. Finally, some researches dealt with the effect of word factors on acquisition. These factors were the length of the word, word frequency, range, and lexical density.

Vocabulary acquisition was very complex. Snow (1988) likened vocabulary acquisition to 'a rope consisting of several strands.' The following quotation emphasises the multiplicity of aspects in vocabulary acquisition.

> ... In addition to word meaning, vocabulary acquisition involves discovering the frequency with which an item is used in speech and in writing, the situational and functional uses of the item, its syntactic behaviour, its underlying form and the forms that can be derived from it, the network of paradigmatic associations between the item and other items, the collocations into which the item may enter, the connotative meanings of the item....
>
> [Richards 1976, cited in Ellis 1995]

Word meaning acquisition was one of the most important aspects of vocabulary development in a second language. A word was not considered learnt unless its meaning was learnt. However, learning the lexical meaning of a word was not a simple one-off act. It was a process that includes many aspects. One possible aspect was the establishment of meaning relations among words in the target language in the same way as native speakers do. Words in the mental lexicons of native speakers were not isolated units but formed networks of a semantic kind. These semantic links were called sense relations.

Among these sense relations were homonymy, synonymy, antonymy, hyponymy, meronymy and polysemy. *Homonymy* was the relation of unrelated senses of the same phonological word. An example for homonymy could be *lap,* meaning 'circuit of a course' and *lap*, as 'part of body when sitting down' or the verbs *ring* and *wring* or the verb *keep* and the noun *keep* (Saeed, 1997:63). *Synonymy* was the relation of different phonological words that have the same or very similar meanings such as *cease* and *stop, murder* and *kill* (Hatch and Brown, 1995:19). *Antonymy* was the relations of words opposite in meaning. Examples for antonymys might be *hot/ cold* or *short/ long* or *north/ south* (Hatch and Brown, 1995:20). Another sense relation was *hyponymy* in which a hyponym included the meaning of a more general word. For instance, *tulip* and *rose* were included in *flower* (Saeed, 1997:68). *Meronymy* was part –whole relationship between lexical items. *Cover* and *page* were meronyms of *book* (Saeed,1997:70).

Another sense relation, which existed among the multiple senses of the same phonological word, was polysemy. A lexical item was polysemous if different uses of that lexical item required reference to two different domains or two different sets of domains. The word "pig" could provide a clear example for polysemy. Some uses of "pig" were about the classification of animals and some uses of it were about the eating habits of humans. Therefore polysemy of a lexical item could affect the interpretation of a sentence in many different ways. The polysemous word "pig" in the sentence "I don't want to have a pig in the house" could be interpreted in two ways and thus gave rise to ambiguity (Taylor 1995:101). It either referred to a certain kind of animal or a person with gluttonous eating habits. In the case of polysemous words a research issue involved the order of acquisition of senses for a given word. Some senses of a word might be learnt before others or there might be some hierarchy that put one of the senses in the place of being more important or central and others less important.

Kellerman (1978) in a research about polysemous words found the effect of coreness. The effect of markedness (coreness) for Dutch learners of English on the use of an English word in a given context was dealt with in Kellerman's study (1978). The English verb 'break' and the Dutch verb 'breken' were used for investigation. The meaning of *break* in "He broke his leg." might be an example of a core one but the meaning of *break* in "He broke a record." may an example of a less core meaning of the word. Kellerman tried to find the relationship between coreness and transferability. The results showed that the more unmarked (core) a word was, the more transferable it was.

Another aspect in word meaning acquisition was the acquisition of referential meaning of L2 words. Referential meaning of words referred to the application of words to instances in the world. As words stood in a relationship to the world the meanings of words described parts of the world and thus allowed us identify those parts of the world. This meant that words referred to a set of real world instances. When the word "cup" was considered, for instance, it referred to a set of objects that were called "cup". One difficulty in the acquisition of referential meaning of words involved lexical boundaries, that is, when an object was no longer, for instance, called a cup but called a bowl. Another difficulty concerned co-reference, which was when, for example, two expressions referred to the same instance. "The morning star" and "the evening star" referred to the same sightings of Venus.

Acquisition of referential meaning by language learners was scarcely researched in either first or second language acquisition. Within the field of first language acquisition researches (Barrett, 1982, Carey, 1978, 1986, Clark, 1973, 1993, Fremgen & Fay 1978, Nelson et.al, 1978) were done on the comparison and contrast of children's referential meaning and adults'. A child's reference was not the same as the adult's. For example a child might use "doggie" for all four-legged animals or he might use the word "dog" for any kinds of dogs but not for a Chihuahua or a Pekingese. This reflected that the child's lexical entry is incomplete. It was hypothesised that the child acquired the meaning of the word by gradually acquiring semantic features and adding them to his lexical entry. Consequently, the referential range of the word shrank to the adult standard.

There was a remarkable lack of research about referential meaning in second language acquisition. In the same way as children learning their first language had difficulties in acquiring the referential meanings of words, learners of a second language might also have problems with referential meanings. What instances a second language learner referred to when using a lexical item might possibly be different from what instances a native speaker of that language referred by using the same lexical item.

Evidence for this came from errors made by second language learners in applying second language words to real world instances. For instance, Turkish learners of English might tend to use the word "table" for both "kitchen table" and "desk". Another example included a comparison of English "sheep" and French "mouton" (Saeed, 1997:12-13). In some cases they could be used in the same way but they differed in the referential range. In French the same word was used both for the animal and the meat. In English there was an extra term that was used for the "meat" sense which was the word *mutton*. Thus it was possible that a French learner of English might tend to use the word "mutton" for both the "animal" and the "meat". Another example could be the word "open" which had many uses such as "open the office", "open the door", "open a zip", "open an exhibition", "open a discussion" (Taylor, 1995:287-288). But the translation equivalents of the word "open" in many other languages might be more restricted or extended. Italian "aprire" could probably be used in all circumstances in which English "open" was used. But additionally, "aprire" could be used in contexts in which "open" could not be used: "aprire la radio" which was translated to English as "turn on

the radio" or "aprire la luce" which was " turn on the light" in English. Thus, Italian learners of English might extend the usage of the verb "open" in English. What affected the way second language learners referred to instances by using L2 words and how they developed native speakers' way of referring were questions that had to be discussed in the acquisition of referential meaning in second language.

As mentioned above there was a lack of research in acquisition of referential meaning in a second language and thus there was the need for research in this area. The present study aimed to fill this gap in the literature.

2.0 LITERATURE REVIEW

In this chapter, semantic theories of referential meaning are explained first. These theories are *classical view* and *prototype view*. Then, research on the acquisition of referential meaning is discussed from two different perspectives, namely, referential meaning in first language acquisition and referential meaning in second language acquisition. While discussing the referential meaning in second language acquisition, factors that can influence acquisition are taken into account. These possible factors are mother tongue and prototypicality of the items in the L2. Then the questions that motivated this research are stated.

2.1 Semantic Theories of Referential Meaning

There were two semantic theories of referential meaning: Classical view and prototype view.

2.1.1 Classical View

The most important principles of classical view were having criterial features (necessary and sufficient conditions), equal membership status and clear boundaries.

One of the basic assumptions of the classical view (Taylor, 1994:23) was that ' categories are defined in terms of a conjunction of necessary and sufficient features.' According to Taylor (1995:23), these 'features are binary'. A category was defined by

including a feature or not by including it and an entity either possessed it or not. So a feature was either present or not; thus it took one of the two values, either (+) or (-). Every category had its own membership criteria that defined the attributes of the category and these features were all necessary and sufficient in order for an item to be a member of that category. Eileen (1997:730) explained these necessary and sufficient conditions as 'they allow us to test for membership of a concept by testing for the presence or absence of the necessary and sufficient features.' The classical category "bachelor" could be an example for this. There were four necessary and sufficient features for an item to be put in the category "bachelor". These were "+ adult", "+ male", "+ human", "- married". Someone could not be a bachelor if married or female. Each of these four conditions were *necessary* to make someone "bachelor" and they were also *sufficient* to distinguish the category "bachelor" from other categories.

The defining features all had equal weight in determining concept membership and all instances with these features were equally members of the concept. ' An entity which exhibits all the defining features of a category is a full member of that category; an entity which doesn't exhibit all the defining features is not a member. There are no degrees of membership in a category....' (Taylor, 1994:24) This showed that classical view ignored that there were better members of a category than others. Lakoff (1987:17) mentioned the uniform structure of classical categories as ' ...according to the classical theory, categories are uniform in the following respect; they are defined by a collection of properties that the category members share. Thus no members should be more central than other members should.' As the members of a

category had the same status because they had all the necessary and sufficient conditions, there was no rank order within categories. Aitchison (1992:71) pointed this out as ' ...category members have equal status since they all possess the criterial features, there is no reason to rank the members in any way within the category' and added that ' buns, apples and roast beef are equally foods'.

Another basic assumption of the classical view (Taylor, 1995:23) was that 'categories have clear boundaries.' The establishment of a category resulted with the division of the universe into two sets of entities. One set included those that were members of the category, the other ones that were not. The classical view, thus, rejected the ambiguous cases in which an entity 'in a way' or 'to some extent' belonged to a category.

Cruse (1990) summarised the principles of classical view in the following quotation.

> ... Every category is associated with a set of membership criteria, or defining attributes, which are both necessary and sufficient. Every entity, which satisfies all the criteria, is a member of the category, and has the same membership status as all other members; anything, which fails to satisfy any of the criteria, is excluded from the category....
>
> [Cruse, 1990: 383]

2.1.2 Prototype Theory

Another theory of referential meaning was the prototype theory. Eleanor Rosch developed the prototype theory. The theory claimed that in every category there was a prototype that was the best example of the category in question or the most prototypic instance for that category. For most Americans, for instance, the most prototypic *bird* was *robin*. *Pea* was the most prototypic example of *vegetable*. *Chair* was the most prototypic example of *furniture*. Car was the most prototypic example of vehicle. (Rosch 1975).

Prototype theory also suggested that some members of a category were more central than others. For example, *robins* and *sparrows* were better birds than *ostriches* or *penguins*, *cars* and *lorries* were better vehicles than *scooters* or *bicycles* and *apples* and *oranges* were better fruits than *figs* (Cruse 1990:384). Thus with the existence of prototype theory the notion of better or central examples was introduced. Aitchison (1994) expressed how items were ranked into categories around a prototype in the following quotation.

> .... Prototype theorists suggest that when humans group objects into categories, they set up a prototype- the most typical example. And they subconsciously rank all other items in the category in relation to the prototype. Consequently, when they grasp the meaning of a word, they automatically activate their subconscious ranking system. According to this view, concepts and words are inextricably linked, and can not be disentangled.
>
> [Aitchison 1994:87]

Cruse (1990:384) expressed the use of prototype theory as '... perhaps the most valuable contribution of prototype theory to the cognitive sciences is the way it has focused attention on the internal structure of categories, on the fact that they have a *core* and a *periphery.*'

Another important principle of the prototype theory was the notion of fuzziness, that is, the unclear nature of a category boundary and prototype theory suggested that problematic cases were simply not very good examples of that category. ' It shows how tigers can lack stripiness and still be tigers; they are just not very good examples of tigers' (Aitchison 1994:87).

According to the prototype theory, all members of a category did not necessarily have the same properties. The characteristics of the prototype were analysed and the other members of that category were ranked in relation to the prototype. Thus members of a category needed to share only some characteristics of the prototype. Rosch and Lloyd (1978) noted that ' speakers of a language deal with category members by analysing the characteristics of its most prototypical exemplar, known as the prototype, and matching the others against it'. (cited in Aitchison,1992:72)

Wittgenstein (1978) explained the relation among members of a category with 'family resemblance'. The following quotation explained the term family resemblance.

Consider for example the proceedings that we call 'games'. I mean board games, card-games, ball games, Olympic games, and so on. What is common to them all?. –don't say: ' There must be something common, or they would not be called "games"' –but look and see whether there is anything common to all. –For if you look at them you will not see something that is common to all, but similarities, relationships and a whole series of them at that. To repeat: don't think, but look! – For example at board games, with their multifarious relationships. No pass to card- games; here you find many correspondences with the first group, but many common features drop out. And others appear. When we pass next to ball games, much that is common is retained, but much is lost. -Are they all 'amusing'? Compare chess with noughts and crosses. Or is there always winning or losing, or competition between players? Think of patience. In ball games there is winning and losing; but when a child throws his ball at the ball and catches it again this feature has disappeared. Look at the parts played with skill and luck; And at the difference between skill in chess and skill in tennis. Think now of games like ring-a-ring a –roses; here is the element of amusement, but how many other characteristic features have disappeared! And we can go through the many, many other groups of games in the same way; we see how similarities crop up and disappear.

[Wittgenstein, 1978 cited in Taylor 1995:39]

As suggested in the quotation a category could be explained as a network of similarities, some of them overlapped while some others criss-cross. When teaching a category, Wittgenstein claimed, the category could not be learnt on the basis of the principles of classical theory. He discussed how the category *game* could be learnt. *Game* was not structured according to the principles of classical view so it could not be learnt as a 'conjunction of those criterial features, which uniquely distinguish games from non-games.... How should we explain to someone what a game is? I imagine that we should describe games to him,

and we might add: "This and similar things are called games" ' (Wittgenstein, 1978 cited in Taylor 1995).

The claims of the prototype theory were also supported by research evidence. Hatch and Brown (1995) offered some evidence about the psychological reality of prototypes. First, when people were asked to give examples of a category the prototype was named first. For example, Rosch (1975) found that focal colours were named first when the subjects were asked to give an example of a colour.

Second, typical members of a category, those that were more like the prototype, were more efficiently categorised than atypical ones. For example, Rosch (1975) found out that subjects were consistent in choosing "robin" as the best example of the category " bird". Besides, the results "sparrow", "canary", "blackbird", "dove", and "lark" were also surprisingly consistent among the subjects. That is, it was generally easier to put central members in a category than deciding whether the non- central members belonged to a category. Berlin and Kay (1969) did the first experiments on prototype categorisation with colour categories. Their experiments with colour chips were done with speakers of twenty different languages. The study showed that focal colours were shared by the speakers of the same language and were consistent across different languages. ' So instead of being arbitrary, focal colours are shared by different speakers and even different language communities but the colour category boundaries vary between languages and even between speakers of one language' (Berlin and Kay, 1969 cited in Ungerer and Schmid 1996). The

experiment' results showed that focal colours, which were central members of colour category, were more efficiently categorised (Heider, 1971 cited in Ungerer and Schmid 1996).

Third, children learned typical members of a category before less typical ones. Rosch (1975) showed that focal colours were learnt before non-focal ones. Rosch's experiments also showed that focal colours were perceptually more salient than non-focal colours (Heider, 1971 cited in Ungerer and Schmid, 1996). The subjects were three- year- old children and they were told to show the researcher a colour. The results showed that focal colour chips were more frequently picked out then non-focal ones. Rosch's second experiment (Heider, 1972 cited in Ungerer and Schmid,1996) was colour- matching task. The results showed that focal colour chips were matched more accurately than non-focal ones.

Rosch (1975) searched for the answer to the question ' Are focal colours more salient in the memory because they are learned more easily and recalled more readily than other colours?' The experiments were done with Dani speakers and English speakers. As the Dani language had two basic colour terms they were taught additional ones in controlled conditions. The results showed that prototypical instances of a category were learnt better than non-prototypical ones because focal colours were matched more accurately than non-focal ones by speakers of Dani language. This showed that focal colours were more accurately remembered in short term memory and more easily retained in long term memory.

One important question about prototypes concerned their origins. Rosch's experiments with colour categories showed that the prototypes of some categories came from human perception. The prototypicality of focal colours were 'consequences of inherent properties of human perception' (Taylor,1995:52). Focal colours acquired prototype status because they were perceptually more salient than deviations from these forms (Taylor 1995.)

But the explanation of perception was true for only a limited number of categories. The prototype structure in some categories like cups or furniture, which were artificial categories, should be related to some other explanation. One explanation could be the frequency of the prototypical examples. Thus, "apple" was the prototype of fruit because it was more common. Prototypes were encountered more frequently.

Another explanation about prototypes was that they were not only psychological but also cultural constructs. The best example of a concept might depend on where one lives. The most prototypic bird for an American was probably robin, but for a person living in South Pole the most prototypic bird was probably a penguin. Hatch and Brown (1995:53) pointed out that ' Thus some prototypes are based in the human perceptual system while others depend on the location and cultural norms'. The role of culture in deciding the prototype of a concept was also the subject for research by Wierzbicka (1985) who 'accounts for the characteristics of prototypical cups in terms of norms of social tea drinking (cited in Taylor 1995).

Labov (1973) investigated fuzzy category boundaries empirically. In Labov's first experiment, subjects were shown line drawings of cups and other vessels one by one and were asked to name them (cited in Ungerer and Schmid, 1996). The results were analysed by looking at the consistency and were presented in consistency profiles. The consistency profile for "cup" dropped down as the line drawings proceeded to vessel. It emerged that in everyday categorising a division between the two categories as "X" and "not X" were not made. 'Therefore it is more realistic to think of fuzzy category boundaries as fringe area between adjacent categories than transitions to a conceptual vacuum.' (Ungerer & Schmid, 1996:18) The dropping down of the consistency value of "cup" for vessel and the use of "bowl" proved the fuzzy boundaries. One result that emerged from this study was that boundaries of cognitive categories were fuzzy. Next, these drawings were introduced in three scenes such as 'a coffee table situation, dinner table situation with the object filled with mashed potatoes and objects on a shelf with cut flowers in them' (Ungerer and Schimid 1996:18). The results showed that category boundaries were context dependent because, for instance, in food context, a cup was not called a cup anymore but called a bowl.

2.1.3 A Comparison of Classical View and Prototype View

The classical view oversimplified the process of referential meaning and it was criticised in a number of ways and was contrasted with prototype theory in some ways. First, prototype

categories had fuzzy boundaries. Second, members of prototype categories did not necessarily share the same features. Third, members of prototype categories were not fixed, new members could enter to these categories. Forth, members of prototype categories did not have equal status. These four points are explained in the following sections.

The first difference between prototype theory and classical view was that according to the former categories had fuzzy boundaries. ' The Classical theory fails to predict referential range of at least some words.' Taylor (1995:40). Taylor (1995) pointed out that classical theory, as proven by Wittgenstein's example of game, was unable to explain members of a category that were less good examples of periphery members of a category. As expressed before, classical categories were clear-cut because an item was either a member of that category or not. Therefore the boundaries of classical categories were very clear. That is why the classical view failed to explain how albino tigers, though they lacked stripiness, were still tigers and how cats that had only three legs were still called cats.

On the other hand, prototype categories had fuzzy boundaries. The studies showed that people sometimes had 'two minds' whether an item belonged to one category or the other. Labov's experiments mentioned before helped to show this. The experiments with cups, mugs, bowls, and vases showed that there were no clear boundaries between cup and bowl. An item was called a cup in a tea- drinking situation but the same item was called a bowl in a dinner table situation. Thus it could be concluded that the category boundaries were not clear-cut, and

instead as prototype theory suggested, one category merged into other.

Second difference between the prototype theory and the classical view was that according to the prototype theory it was impossible to find a definition for all the members of a category because the members did not necessarily share all the features. Cruse (1990) pointed out that classical view was challenged because 'it is impossible to draw up a set of necessary and sufficient criteria.' This was best proved by the famous example of Wittgenstein (1978) about *games*. Wittgenstein pointed out that the category game did not fit to the structure of a category defined by the classical view. There were no properties shared by all games. Some games involved amusement like children's street games while others involved luck like card games and others involved skill like chess. Lakoff (1987:16) pointed out that ' though there is no single collection of properties that all games share, the category of game is united by what Wittgenstein calls *family resemblance*.' Category members were likened to members in a family: they did not have to possess all the same features but only resembled each other in some ways. Games like family members were similar to one another in various ways but they did not have all their properties in common. So one could not define the category game with a single definition that included all the shared properties of games.

Prototype theory suggested contrary to the expectations of classical theory, the categories were not structured in terms of shared criterial features. In a study about 'the categorisation of ceramic vessels in rural varieties of Mexican Spanish, Kempton

categories were associated with typical attributes. Some members of the category shared some of these features but others did not. Not all the attributes were necessarily shared by all members. But this was not the case in classical categories whose members shared all the necessary and sufficient features.

The prototype theory and the classical view were also contrasted in the way that classical categories had fixed members. But prototype categories allowed for new members and they could be enlarged. Wittgenstein (1978) also observed that new kinds of games could be introduced and thus the category game could be expanded by the inclusion of new kinds of games. The categories were flexible in nature because they allowed for new members.

The forth contrasting point between the prototype theory and the classical view was that the classical category members had equal status in these categories. But according to prototype theory there was a graded membership in the internal structure of the categories. Rosch (1975) pointed out that 'category members do not have equal status in the minds of the speakers. Native speakers are often able to grade items within categories. For example, Americans from different areas regard robin as a very good example of a bird, a canary as a less good example, and a penguin as a bad example.' (Rosch, 1975 cited in Aitchison 1992:72) Cruse (1990:383) also claimed that 'members of a category do not all have equal status; certain members – prototypical members-have a privileged status.' Wittgenstein (1978) also stated that some members of a category were more

central than others. He suggested that this could also be exemplified by games. He said ' someone says to me 'show the children a game' and I show them dice. The others say 'I didn't mean that sort of game.''. And thus he claimed that 'dice is just not a very good example of a game. The fact that there could be good and bad examples of a category did not follow from the classical theory.'

In this section the two theories of referential meaning in the literature are discussed. The principles of each and what lacks in them are discussed. They are compared and contrasted in order to show that referential meaning is much more than as explained by the classical view. How problematic cases are solved by the prototype view was presented.

2.2 Referential Meaning in First Language Acquisition

2.2.1 Overextension and Underextension

There were two notions that should be dealt with in the acquisition of referential meaning in first language acquisition: overextension and underextension.

Clark (1993) explained overextension as the application of a word to 'members of other categories that are perceptually similar.' Clark (1973) explained the nature of overextensions in the following quotation.

> The child's early overextensions show, first that children use certain kinds of features criterially; second, these criterial features are derived from the child's percepts of objects and events; thirdly, the domain of the overextention of a word can be used to infer which features are being used.
>
> [Clark, 1973: 101]

Another phenomenon in the acquisition of object names was *underextension*. Underextension generally occurred in the situation–bound uses. Bloom (1973) found out that ' children may also underextend a word by using a category label, for instance, for only a subset of the members of the adult category.' (cited in Clark, 1993:33).

Kay and Anglin (1982) observed that more peripheral members of a category were usually underextended more than the less peripheral ones. '....Children are more likely to agree that a horse is an animal than that a butterfly is an animal.' (Anglin, 1978: 970)

Occasionally the children might both overextend and underextend the same word. Clark (1993) stated that the word 'dog' was underextended by the child when used to refer to all dogs but not small ones and was overextended by the child when used to refer to sheep, calves, goats and cows.

2.2.2 Theories in the acquisition of object names

Research on the acquisition of referential meaning in first language acquisition involved mainly object names. Barrett (1982) stated that there were four theories in the acquisition of the meaning of object names. These four theories were semantic feature hypothesis, functional core hypothesis, prototype hypothesis, and contrastive hypothesis.

Semantic Feature Hypothesis was put forward by Clark (1973). The hypothesis argued that when the child began to learn the meaning of a word he did not know its full meaning or adult's meaning. It was hypothesised that the meaning of a word was composed of semantic features. The word 'dog', for instance, was composed of semantic features such as 'four-legged' or 'barks'. The child acquired these semantic features one by one and added them to the lexical entry for that word. Therefore in the early stages of acquisition the lexical entry for a word was partially developed and the adding of new features would go on until the child's lexical entry corresponded to the adult's. 'The principal difference between child and adult categories at the early stage of acquisition will be that the child's are generally larger since he will use only one or two features criterially instead of a whole combination of features.' (Clark, 1973:72).

Clark (1973) proposed that these semantic features were organised hierarchically. They were organised from general to specific. More general features were acquired earlier and this results with *overextention*. For the lexical entry of the word 'dog', for instance, the more general semantic feature 'four-legged' was acquired earlier than 'barks'. Thus, the child called all the four-legged animals 'dog' until he added, for example, 'barks' semantic feature to his lexical entry.

The second hypothesis in the acquisition of the meaning of object names was *functional-core hypothesis* proposed by Nelson (1974). It was maintained that 'the acquisition of word meaning is initially dependant upon functional as opposed to formal or perceptual information.'(Smith,1978:951) It stated that the child assigned an object to a concept on the basis of the object's functional relationships. In Barrett's (1983) study, the 12-month-old child, Adam used the word "dut" (duck) only when he, himself knocked the duck off the edge of the bathtub. He never called this toy duck as "dut" when the duck was swimming in the bath. (cited in Aitchison, 1987). According to this hypothesis there was a *functional relationships hierarchy* which was necessary for the identification of new instances of the concept. 'At the top of the hierarchy is a functional core that defines the functional relationships into which an object must be able to enter in order to be included as an instance of that concept. The features that describe the perceptual attributes of concept instances are represented lower down in the hierarchy.' (Barrett, 1982: 314-315) It was hypothesised that children earliest acquire object names that possessed mobility such as animals or vehicles and the objects upon which the child acted in some way.

It was hypothesised that children earliest acquire object names that possessed mobility such as animals or vehicles and the objects upon which the child acted in some way.

The functional core hypothesis was criticised in two ways. First, it ignored overextention. The objects labelled by a particular word would certainly have functional relationships in common with other objects labelled with the same word. But the results of some studies (Barrett, 1979; Bowerman, 1978) showed that the child totally ignored the functional differences between objects and some overextensions were based upon a single perceptual feature. For instance, the child used the word "ball" to label an "observatory dome" which showed an overextension of ignorance of functional information about balls. Second, it did not explain systematic development within semantic fields. For example, the child who initially used 'cookie' for cookies, crackers and cakes then learned to use the word 'cracker' for crackers and the word 'cake' for cakes in which there was a systematic development. The functional core hypothesis failed to provide any explanation of these systematic developments within semantic fields.

The third hypothesis in the acquisition of meaning of object names was *prototype hypothesis* which was put forward by Bowerman (1978). It was hypothesised that children applied a word to a particular referent (prototype) or a group of very similar referents. It was argued that the child would underextend the word by using it only in connection with the prototype. At later stages the use of these words were extended by the application of them to novel referents that share one or two features with the prototype.

stages of language development the child added the use of bird for less prototypical instances such as "ostrich" or "penguin". Bowerman (1978) described a variety of overextensions to show that the objects that were labelled with a word were only linked by a family resemblance and not by criterial features.

The fourth hypothesis in the acquisition of meaning of object names was *contrastive hypothesis* which was put forward by Barrett (1978). According to this hypothesis the child first assigned the word to a semantic field on the basis of general invariant attributes shared by the referents of the word. The child then compared the referents of the word with the referents of other words in the same semantic field. It was also claimed that overextension should only occur in cases where the appropriate name for the object was not yet acquired. The child, for instance, first assigned the word "cat" to the semantic field of "animal". He, then, compared the referents of "cat" with the referents of "dog" which was a word in the same semantic field "animal". Overextension occurred when the appropriate name for "cat" was not acquired. In these cases the child might overextend "cat" for "dogs" or "cows" etc.

Barrett (1982) reconsidered his data (Barrett,1978) and modified the contrastive hypothesis by integrating it with the prototype hypothesis. The modification of the original theory showed that there were two types of prototypical referents. The ones in the first group encoded perceptual information about referents such as the overextension of the word 'book' to label a videotape box. The ones in the second group encoded functional information about referents such as the overextension of "chair" to

label "floor cushion". The second point that emerged from the analysis of the data was that it was not necessary for an object to possess all the features of the prototype in order to be labelled with a word. Barrett (1982) gave the example "ball". The word "ball", which had the semantic features of "spherical" and "used for throwing", was applied to instances such as "an observatory dome" or "a crumpled piece of tin foil" that did not have all these semantic features. The third point that emerged was that the child could change the prototypical referent of a word. The initial use of "tick-tock" to refer to a square watch was changed later by using it to refer to round objects such as "the fire hose wound on a spool" and "eraser".(Barrett, 1982) The final point that emerged concerned the systematic development within a semantic field. The child initially used of [ti:] for "cats", "small dogs", "cows" and "horses". With the acquisition of [gogi] to label "small dogs", the child no longer called small dogs as [ti:].

From Barrett's study (1982) a new theory emerged that included four important considerations. First, object names were acquired in the form of a prototypical referent. Second, identification of features (functional or perceptual) characterised the prototypical referent. Third, on the basis of initial features each word was assigned to a semantic field. Fourth, the child, later, learnt other semantic features that differentiated the prototypical referent from the other prototypical referents in the same semantic field.

Bernstein (1983) provided support for both the prototype hypothesis and the functional core hypothesis in his study about

the prototype structure of adults' compared to pre-school children's in the category 'chair'. The subjects in the study were asked to make a judgement about the members of the category 'chair' and other seat like objects. Adult native speaker subjects were asked to sort 25 cards of pictures of seat-like objects into two piles; the ones that were named "chair" and the ones that were not. Child subjects were asked to help the experimenter sort a pack of pictures that were mixed. Half of the subjects received cards that included only the line drawings of seat-like objects (Condition A) and the other half of the subjects received cards that included people sitting on those seat-like objects (Condition B). The items which were put in the category chair by at least 75% of the subjects (15 items) were used in the second part of the study which consisted of a paired comparison rank ordering procedure. For the second part of the study, all possible pairs of 15 objects in the category chair were formed and the subjects judged which of the two objects was a prototypical example of "chair". The rank orders obtained from the adult data showed that the chair category was structured and it consisted of a prototype and peripheral members. The adult category was stable and consistent answers emerged in both parts of the study. The rank orders in children's data showed inconsistency and this suggested that the child category was not structured. The results in Condition B (with function cues) were less consistent. The results showed that in the internal structure of the category chair ' form appears to be a more salient factor than function in deciding about the prototypicality.' (Bernstein, 1983: 395).

2.3 Referential Meaning in Second Language Acquisition

The acquisition of referential meaning in a second language was a subject that was not studied much. A few studies (Strick, 1980; Graham and Belnap, 1988; Ijaz, 1986) dealt with the effect of native language and prototypicality in referring to instances of a word in a second language.

Strick (1980) examined the acquisition of forms of address in ESL by speakers of Farsi. In American English, in the power dimension there was an asymmetrical relationship between the addresser and addressee; a superior used first name addressing his subordinate and a subordinate used a title plus last name addressing a superior. The relationship was symmetrical in solidarity dimension. Two friends or persons of same profession exchanged first names and two persons having same power but who were not friends exchanged titles plus last names. On the contrary, there were differences in the Farsi language about the referential meaning of address terms. The society norms that existed for centuries formed complex hierarchical structures. Iranians were aware of the differences, paid attention to the differences in social status, and the titles which marked these differences. The hypothesis was structured on the basis of these differences in the use of address terms. It was claimed that culture affected the use of address terms. The address terms which Farsi L2 learners used 'would be marked by a more salient power or status dimension than for Americans.' (Strick, 1980:158). The results showed that American native speakers of English tended to use address terms with respect to intimacy rather than status. The

native speakers of Farsi used the address terms with respect to status rather than intimacy. Finally Farsi learners of English used the address terms as Farsi native speakers.

Graham and Belnap (1988) researched referential range of lexical items in L2 English, which were represented by pictures of objects that varied along height and width dimensions. The aim of the study was to investigate how referential meaning was acquired in an L2 and how it was influenced by the L1. Pictures of referents varying along a certain dimension from one category to another were presented to the subjects. For example, in the height dimension pictures of referents varied from the category "shoe" to the category "boot". The subjects were shown these pictures and were asked to name them. The data were analysed by plotting the number of times a picture was called with a lexical item. The data gathered from native speakers of the L2 showed L2 boundaries and the data gathered from L2 learners showed L1 as well as interlanguage boundaries, which were analysed in terms of L1 interference. The ESL data for the sets "chair", "bench", "stool" showed striking resemblance to the native Spanish data and there were no strict boundaries among these three categories. On the contrary, native English data show clear boundaries. Finally, we could conclude that 'the results of the Spanish data suggest a rather consistent effect of L1 on the acquisition of lexical boundaries of L2.' (Graham and Belnap, 1988:278)

Ijaz (1986) compared the way adult native speakers and L2 learners ascribed meaning to words and explored the influence of prototypicality on the acquisition of word meaning by second

language learners. English spatial prepositions *on, upon, onto, on top of, above, over* were selected in order to compare L2 learner's interpretation to English native speakers'. It was hypothesised that, first, ESL learners and native speakers would ascribe different semantic boundaries to English words. Second, ESL learners' and native speakers' ascription of meaning to typical or central members of semantic categories would correspond more than the meaning to less typical members. Third, native language influence was expected in ESL learner data of the semantic boundaries ascribed to English words.

There were two tasks in Ijaz's study. One was semantic relatedness test for which word pairs of six prepositions were formed. On one side of a 12-cm. line, there was a preposition and above the line there was the other preposition of the word pair. The subjects were asked to judge about the semantic similarity of the preposition above the line with the one on the other side of the line and the subjects put an X to the right place along the line according to this similarity. The other task was a sentence completion test, which consisted of 28 sentences, which required 28 insertions. These sentences contained different meaning features of "on" and "over". The different contexts in some of these sentences involved typical or central meanings of terms while others involved non-central ones. All the sentences were simple with a subject and predicate. The first eight of them were about a picture. The rest were context independent.

The results in Ijaz's study showed that in semantic relatedness test, L2 learners differed from native English speakers in the semantic relations they ascribed to words, which was calculated by analysis of variance. It was found that German

learners of English equated the meaning they ascribed to target words with lexical structures in their mother tongue. For instance, they associated the use of "on top of" and "on" with the corresponding German word "auf". But the most typical meaning of "auf" more closely approximated that of "on top of" than that of "on". The overuse of "on top of" in certain contexts in which "on" and "on top of" were acceptable as responses reflected native language transfer.

The results in the sentence completion test showed that both L2 learners and native English speakers equated the use of "on" and "over" with typical or central meanings of the preposition in question. Ijaz (1986) pointed out that 'our findings support that ESL learners would approximate native speakers more closely in the meaning they ascribe to typical or central instances of semantic categories than in the meaning ascribed to non-central ones.'

Another point that emerged was that although all the L2 learners were advanced ESL learners, ' the meaning they ascribed to words remained strongly shaped by the native language conceptual patterns.' (Ijaz, 1986:447). The results also showed that 'non-typical meaning features of close translation equivalents to "on" in the subject's native language were not transferred to the L2, although such transfer would have resulted in the use of an appropriate response term in English' (Ijaz, 1986: 439). So it could be concluded as a final remark that the less prototypical the word was the less transferable it was.

The researches about the acquisition of referential meaning dealt mostly with first language acquisition. In these researches, the child's development of the referential range of L1 words and

the comparison of child and adult referential range were studied. The few researches about the acquisition of referential meaning in second language acquisition dealt with the influence of native language and prototypicality on the acquisition of referential range of L2 words.

The present study investigates the influence of native language and prototypicality on the acquisition of referential meaning of L2 words. In addition to these, this study deals with the effect of the proficiency of second language learners on their acquisition of referential meaning of L2 words.

In this study, the referential range of "chair" category in the L2 English is investigated and how the category "chair" is compared to Turkish is explained.

The present study investigates the answers to the following questions.

1-Do EFL learners have greater difficulty with non-members of lexical categories in the L2 than they have with category members?

2-Do EFL learners develop more native-like categories in the L2 as they become more proficient?

3-Does the formation of L2 lexical categories progress from more prototypical to less prototypical examples?

4-Do EFL learners map onto the L2 word that L1 category which has the same prototype as the L2 word?

5- Are there any differences among proficiency groups in transfer from L1 categories?

3.0 METHODOLOGY

3.1 Subjects

Two different groups of Turkish native speaker (TNS) subjects were used in this research. The TNS groups were used in this study as informants in order to establish Turkish categories of "sandalye" and "koltuk". The first group consisted of 29 subjects. All were students at the Department of Primary School Teacher Education of Uludağ University. They were 19-20 years of age and all were first year students. 7 of them were female and 22 were male. The second group of TNSs consisted of 25 people, 7 of which were male and 18 of which were female. They were also first year students at Uludağ University, at the Department of Primary School Teacher Education. They were 19-20 years of age.

The other group of subjects was the one made up of learners of English as a Foreign Language (EFL learners). The EFL group consisted of 81 subjects. 60 of them were undergraduate students at Uludağ University, at the Department of English Language Teacher Education. 16 of them were first year students, 44 of them were third year students. They were between 19-23 years of age. 13 of them were male and 47 of them were female. The rest of the subjects were 21 instructors who taught at the same department as the EFL subjects. The instructors' group was the proficient one. Some of them have been to England or the U.S.A and some did their M.A or PhD in these countries. There were three other groups than the proficient group. These corresponded to three different proficiency levels labelled as high, intermediate

and low. Learners' proficiency was measured by a cloze test (see below for a description of the cloze test.)

3.2 Materials

3.2.1 Cloze Test

Learners' proficiency was measured by a cloze test (cf. Appendix A). The passage for the cloze test was taken from Frank Chaplen's book of *Communication Practice in Written English* (1977) published by Oxford University Press. This was a book for students preparing for Cambridge First Certificate examination. It was for intermediate and post-intermediate students.The passage for the cloze test contained 460 words. An every 7^{th} word deletion procedure was used in making the cloze test. There were 50 blanks. The first and last sentences of the passage were left intact without any deletion.

3.2.2 Pictures and Picture Test

3.2.2.1 Pictures

Pictures of seat-like objects were used in this study. These pictures were taken from Bernstein's (1983) study. Bernstein used 25 pictures of different seat-like objects. One of these, however, was dropped from the present study and 24 pictures were used (cf. Appendix B) The one that was dropped was a bean-bag. It was not a good item, as it did not look like anything familiar to Turkish people.

The pictures were coded according to the variables of the study.

The first variable was second language (L2) which was English. In this category each picture was coded either as chair or non-chair. The criteria were taken from adult native speaker data in Bernstein's study. Bernstein's subjects were 74 native English speaking college students and there was an equal number of males and females. The large majority of the subjects were of middle and upper-middle-class homes. Bernstein established the "chair" category by taking those pictures which 75% of adult native speaker subjects called chair. The objects which were in the chair category established by Bernstein were coded in the present study as "chair" and the ones which were not were coded as "non-chair."

Ten pictures were coded as "chair" and fourteen pictures as "non-chair." These are shown in Figure 1 and Figure 2 respectively.

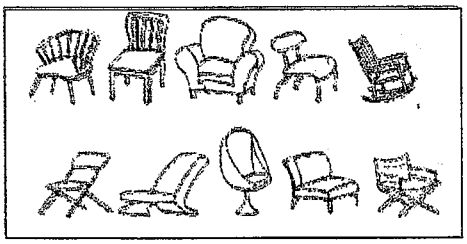


Figure 3.1: 'Chair' Category

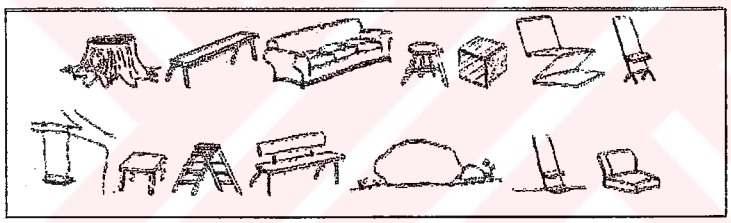


Figure 3.2: 'Non-chair' Category

The second variable was first language (L1) which was Turkish. According to this variable pictures were coded as 'sandalye', 'koltuk' and 'diger'. Turkish native speakers were used to establish these categories. Two different groups of Turkish native speaker subjects were used for each of the Turkish categories corresponding to "chair". The first group was screened for the category 'sandalye' and the second for 'koltuk'. The task for the subjects in the first group was to identify a picture as 'sandalye' or 'non- sandalye' while the second group decided if a picture depicted a 'koltuk' or 'non-koltuk.' Judgements were taken

for all of the 24 pictures in the set. The test used was the Turkish version of the picture test which will be described later in section 3.2.2. The pictures which were identified as 'sandalye' by at least 75% of the subjects in the first group and 'koltuk' in the second group were coded as ' sandalye' and 'koltuk' respectively. The rest were coded as 'diger'. These were objects which were not identified either as 'sandalye' or 'koltuk' by any of the subjects in the two groups.

Analysis of the results revealed 6 objects in the 'sandalye' category. Pictures of those objects are shown in Figure 3.3 below:

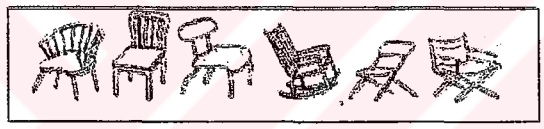


Figure 3.3: 'Sandalye' Category

As seen in Figure 3.1 and Figure 3.3, "chair" category is a bigger category and involves more objects than the Turkish 'sandalye' category (10 vs. 6 items). Interestingly, the "chair" category includes all the objects in the 'sandalye' category.

Only 4 items were in the 'koltuk' category of Turkish native speakers and these are shown in figure 3.4 below. Only the last item in Figure 3.4 were not included in the English category "chair."

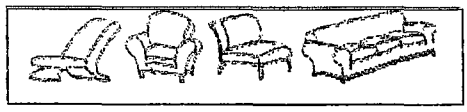
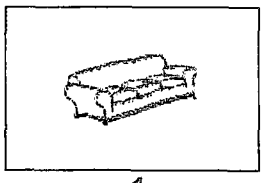


Figure 3.4: 'Koltuk' Category

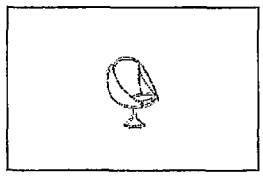
The following figure (figure 3.5) shows 14 'diger' items which were not put either in the 'sandalye'or 'koltuk' category by TNS subjects.

Figure 3.5: 'Diger' Category

Figures 3.1, 3.3, 3.4 show that "chair" category includes both of the "sandalye" and "koltuk" categories except for one item. Thus we could say that the word "chair" in English corresponded to two different categories in Turkish. The non-examples of English and Turkish categories also largely overlapped. Figures 3.2 and 3.5 shows that the fourteen items in "non chair" category and the fourteen items in "diger" category are the same except for one item. The item in non-chair category seen in box 1 below was not included in "diger" category. The item in diger category seen in box 2 below was not included in non-chair category.



1



2

The third variable was prototypicality. Each picture was coded for this variable on the basis of the prototypicality ratings in Bernstein's study (1983). Bernstein used paired judgements task in the second part of his study in order to put the pictures into a prototypicality rank order. 'Sets of 105 cards each were prepared containing all possible pairs of 15 selected objects. The subjects were to judge, for each pair on a card, which of the two objects was a more prototypical example of a chair.' (Bernstein, 1983). Adult English native speaker subjects were instructed that they were to design a picture dictionary of English language for the Martians who were visiting the earth and they were asked to decide which of the two pictures they would use for the word *chair*. From these results emerged a prototypicality rank order which was used to analyse the prototypicality variable in the present study.

The table below summarises the coding of the pictures according to the variables of the study. Thus each picture was coded three times once for each of the variables of L2, L1, and prototypicality. The first column shows the numbers of the pictures and the second one shows the pictures of the items themselves. The third one shows the coding of items for L2 categrorisation indicating whether that item is a chair or non chair. The fourth one is for L1 categorisation in which the items are described either as sandalye or koltuk or diger. The fifth column is for prototypicality: the items are given a number indicating their rank order on the scale of prototypicality in Bernstein (1983). The prototypicality of items varies from 1 to 14. (1) indicates the most prototypical example (item 11) and (14) the least prototypical example (item 14). The rest of the items are non-examples and have no place in the prototypicality scale.

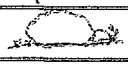
	Pictures	L2	L1	Prototypicality
1		non-chair	diger	12
2		chair	sandalye	2
3		chair	diger	9
4		non-chair	diger	14
5		non-chair	diger	11
6		chair	koltuk	10
7		chair	koltuk	7
8		chair	sandalye	4
9		chair	sandalye	3
10		chair	sandalye	8
11		chair	sandalye	1
12		chair	koltuk	5
13		non-chair	diger	13
14		chair	sandalye	6
15		non-chair	diger	-
16		non-chair	diger	-
17		non-chair	koltuk	-
18		non-chair	diger	-
19		non-chair	diger	-
20		non-chair	diger	-
21		non-chair	diger	-
22		non-chair	diger	-
23		non-chair	diger	-
24		non-chair	diger	-

Table 3.1 The coding of the pictures according to L2, L1 and prototypicality variables

3.2.2.2 Picture Test

The picture test consisted of the 24 pictures described in 3.2.2.1. These pictures were scanned and enlarged. Then they were photocopied in such a way that there would be one picture per page. The order of presentation of the pictures was randomised on Excel twice. That gave two different orders of the test: Form A and Form B. Pictures were then numbered to reflect that order and numbers for each picture were printed at the bottom of the page. Both forms were used with each of the three groups of subjects (1 group of EFL learners and 2 groups of TNSs, "sandalye" group and "koltuk" group); only the instructions were different for these groups (cf. Appendix C): half of the subjects in each group answered Form A and the other half Form B.

An answer sheet was attached to the picture test. Two forms of the answer sheet corresponding to each form of the picture test were used. On the answer sheet there were picture numbers corrresponding to the given order in the picture test. Opposite each picture number two choices such as 'chair' or 'non-chair' were printed. These choices on the answer sheet were different for different groups of subjects. (cf. Appendix D)

There were three different instructions for the three different groups of subjects. EFL learners were instructed to decide whether they would use a given picture to teach the word 'chair' to their

students if they were a teacher. They marked their answers as chair or non-chair on the answer sheet.

The TNS sandalye group were given the same set of pictures. They were asked whether they would use a given picture if they were to teach Turkish to a non-native speaker when they were teaching the word 'sandalye'. They marked their answers as 'sandalye' or 'not sandalye' on the answer sheet.

The third group which is TNS koltuk group were asked to assume that they were to teach the word 'koltuk' to a non native speaker of Turkish. They marked their answers as 'koltuk' or 'not koltuk' on the answer sheet.

3.3 Procedure

3.3.1 Cloze Test

The Cloze test was given only to EFL learner subjects with the exception of teachers. These subjects were not given the cloze test because they were lecturers in the English Language Teacher Education Department, so there was no need to measure their proficiency and such a testing would be face- threatening.

Students were given half an hour for the cloze test and were able to complete the test comfortably in the time given. The subjects received the test in their usual class hour. Cloze test data were collected in three different sessions as subjects were drawn from three different groups.

Subjects were instructed to fill in all blanks and guess if necessary. They were reminded that any words including grammar words such as *the, a/an, in /on* could go into the blanks. Still some learners were unable to guess and they didn't fill in some of the blanks.

3.3.2 Picture Test

All groups received the relevant version of the picture test. It was completed in no more than 5 minutes by each subject. The test was given to each group in their usual class hour. Only the proficiency group did the test in their own time.

All subjects were instructed to look at each picture once, decide what their answer would be and circle the appropriate choice on the answer sheet. They were reminded not to look back.

All groups of subjects including the proficient group thought the picture test was fun.

3.4 Scoring

3.4.1 Cloze Test

Cloze test was scored by using the exact word method. According to this scoring method answers were regarded as correct only if they were identical to the words in the original text. This method was criticised for being rigorous but the results it yielded were not different from the results when other methods like synonyms were used. 'Correlation as high as .99 have been observed between exact word scores and scores that allowed synonyms for the exact words as correct answers.' (Miller and Coleman, cited in Oller, 1989) Because of the fact that cloze test in this study was used to divide students to proficiency groups and not to measure absolute proficiency, which method was used for scoring wouldn't make much difference for the results. Since the exact word method was the most practical one, it was also preferred in this study as in many other researches.

As there were 50 blanks for the subjects to fill in, each subject was given a score out of 50.

3.4.2. Picture Test

The picture test data of EFL learners were scored three times for each of the variables. The first scoring was according to L2 categorisation. Each EFL subject had one score for "chair" and

one score for "non-chair". The score for chair was the proportion of correct responses of each subject to items in the chair category. Subjects scored correct responses if they marked the items in English native speakers' chair category as chair. As there were 10 items in the English native speakers' chair category, the subjects' scores were computed as a proportion of 10. (cf. figure 3.1 for "chair" items.)

The subjects were also given a score for the non-chair category which was the proportion of correct responses to non-chair items. Subjects were correct if they marked the items which English native speakers put in the category non-chair as non-chair. There were 14 items, thus the subjects received scores over 14.

The second scoring was related to the prototypicality variable. In this part of scoring each picture was given a score which was the proportion of subjects in a group who judged that item to be a chair. There were 4 scores for each picture because there were four groups of subjects.

The third scoring was according to L1 categorisation. Here each subject was given three scores. The first was for 'sandalye' which was the proportion of items in the 'sandalye' category judged to be a chair by each subject. There were 6 items in the 'sandalye' category of Turkish native speakers and the scores were a proportion of 6 (cf. figure 3.3 for "sandalye" items.)

The second score in L1 categorisation was for 'koltuk' category. This was the proportion of items in the 'koltuk' category judged to be a chair by each subject. There were 4 items in the 'koltuk' category determined according to the judgements of Turkish native speakers as described in 3.2.2 (cf. figure 3.4 for "koltuk" items.)

The third score in L1 categorisation was for the items which existed neither in 'sandalye' nor in 'koltuk' category. There were 14 items and a subject's score was the proportion of 'diger' items judged to be a chair by the subject (cf. figure 3.5 for "diger" items).

4.0 RESULTS

4.1 Research Question 1

The following table presents the means, standard deviations, t and p values for chair and non-chair scores for each of the four proficiency groups and the overall group.

	CHAIR		NON-CHAIR		t	p
	M.	SD.	M.	SD.		
Proficient (N=21)	.752381	.180607	.800952	.207266	-.695628	.494666
Advanced (N=19)	.752632	.186692	.841053	.111150	-1.41162	.175116
Intermediate (N=22)	.722727	.206863	.852273	.106857	-2.31023	.031127*
Elementary (N=19)	.715789	.203479	.800000	.212158	-1.08677	.291480
Overall (N=81)	.735802	.191904	.824074	.164953	-2.69215	.008644*

Table 4.2 T-test results for chair & non-chair categories of proficiency groups

In general, the subjects performed better on non-chair items than chair items. The overall mean for chair scores (.73) was less than the mean for non-chair scores (.82). As suggested in table 4.2 above, the overall result of the t-test for dependant samples shows that the difference between these means is significant. ($t_{.05} = -2.69$, $p < .008644$)

The subjects received better scores on non-chair items in all groups but there is a significant difference between chair and non-chair scores only in the intermediate group. The t-test results of the proficient, advanced and elementary groups showed that there was not a significant difference between the chair and non-chair scores in each group. Among the groups, the results of the proficient one showed the least difference. The t-test results of the intermediate group showed significant difference between chair and non-chair scores. (t .05 = -2.31023, p< .031127) The mean for chair scores (.72) was less than the mean for non-chair scores (.85). The standard deviation of chair scores (.20) was greater than the standard deviation of non-chair scores (.10). Smaller standard deviation and greater mean suggested a better performance. This meant that subjects performed better on non-chair items.

4.2 Research Question 2

Figure 4.6 below is based on overall means of correct answers computed as chair plus non-chair scores of different proficiency level groups. In general there was an increase in scores with proficiency, except for the fact that intermediate group broke the pattern. The intermediate group had the highest mean for the overall scores. So the intermediate group performed best on the test. The least mean was the mean of elementary group.

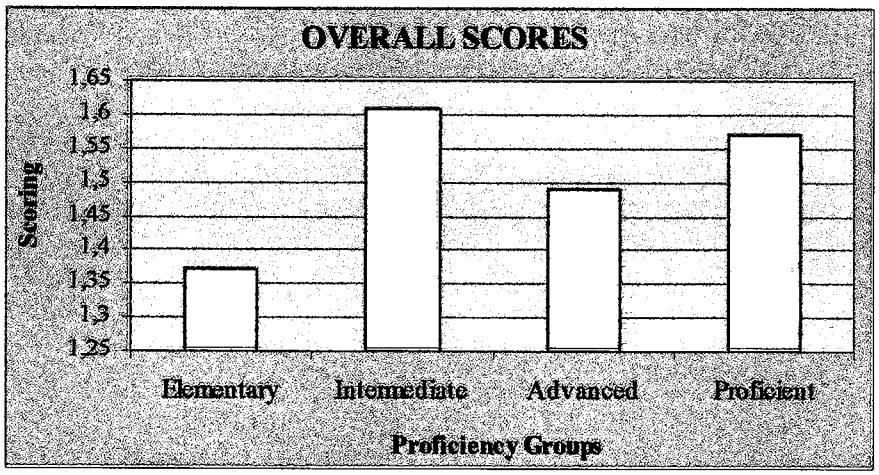


Figure 4.6 Overall scores for all proficiency groups

The difference in overall scores among four different proficiency groups was tested by ANOVA. Table 4.3 below shows one way ANOVA results of the overall scores.

Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	P
TOTAL	.064577	3	.021526	3.214722	77	.0417550	.515588	.672770

Table 4.3 Analysis of variance on overall scores

The scores of one way ANOVA show that there is no significant difference among proficiency groups in overall scores of chair and non-chair. (F = .515588, P< 672770)

Figure 4.7 below is based on the means of chair scores only for all proficiency groups. Elementary group performed worst while intermediate and advanced groups did best. There was not a pattern in chair scores with proficiency, which meant that the scores did not increase or fall with proficiency.

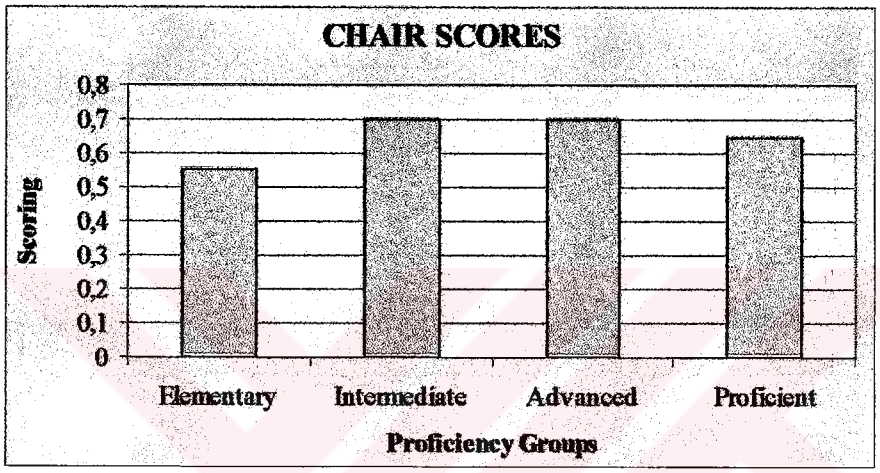


Figure 4.7 Chair scores for all proficiency groups

Chair scores of proficiency groups were statistically analysed. ANOVA was used to test whether there was any difference among different proficiency groups for chair scores. 4 sets of scores, a set for elementary, intermediate, advanced and proficient group were used in order to test it. Table 4.4 below is for the one way ANOVA results. It shows that there is not a significant difference among proficiency groups for chair scores. ($F.05\ (3,77)= .1977$, $p.< .8976$)

Variable	ss Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
CHAIR	.022524	3	.007508	2.923649	77	.037969	.197737	.897633

Table 4.4 Analysis of variance on chair scores

Figure 4.8 is based on the means of non-chair scores for different proficiency groups. The intermediate group performed best in non-chair scores and the advanced group performed worst.

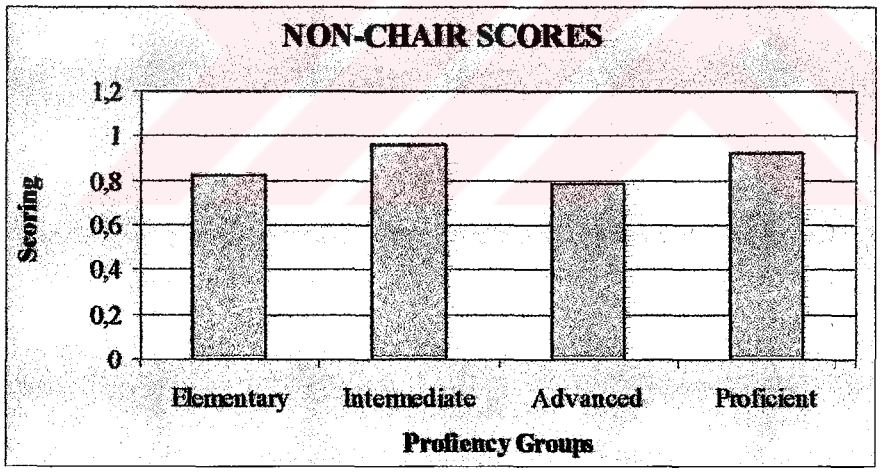


Figure 4.8 Non-chair scores for all proficiency groups

The following table (Table 4.5) is for one way ANOVA results of non-chair scores. The results showed no significant difference among proficiency groups on non-chair scores. (F.05 (3,77) = .5443, p.< . 6534)

Variable	ss Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Non-Chair	.045209	3	.015070	2.131546	77	.027682	.544380	.653400

Table 4.5 Analysis of variance on non-chair scores

4.3 Research Question 3

The following table (Table 4.6) shows group mean scores on each chair item. Items were sequenced from the most prototypical to the least. Table 4.6 shows the proportions of subjects in each group who put a given picture in chair category.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14
Prof. (N=21)	.904	.714	.952	.761	.238	.952	.523	.666	.619	.333	.666	.047	.380	.238
Adv. (N=19)	1.00	.947	.947	.947	.210	.947	.473	.789	.684	.368	.736	.052	.315	.052
Inter. (N=22)	1.00	.818	.909	.954	.136	.954	.500	.818	.545	.409	.681	.136	.272	.136
Elem. (N=19)	.947	.894	.894	.842	.210	.894	.473	.894	.526	.368	.473	.157	.263	.157
Overall (N=81)	3.851	3.373	3.702	3.504	.794	3.747	1.969	3.167	2.374	1.478	2.556	.392	1.230	.583

Table 4.6 Group scores for 14 items of decreasing prototypicality

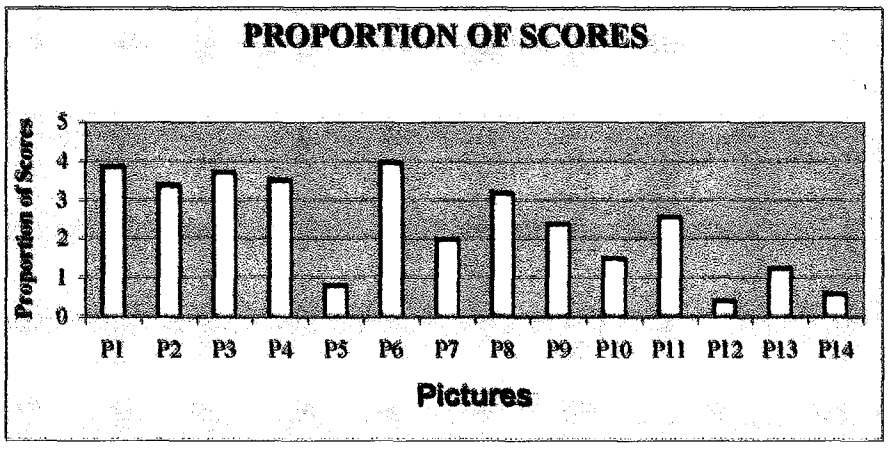


Figure 4.9 Proportion of scores for all groups

The figure 4.9 above is the graph all subjects' scores of 14 pictures from most prototypical to the least. The graph shows that more people put pictures that are more prototypical in the category chair. The proportion of chair scores increased as the prototypicality of the pictures increase. There was a sharp decline in the proportion of scores for pictures 5, 7, 10 and 12. These pictures are shown in figure 4.10 below.

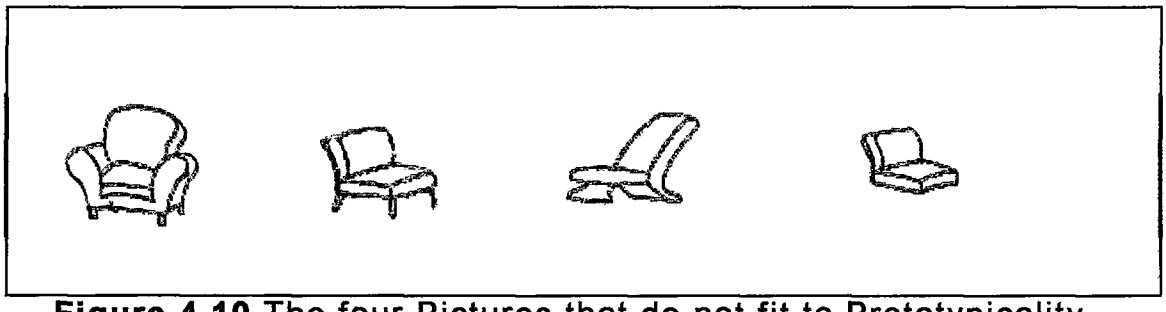


Figure 4.10 The four Pictures that do not fit to Prototypicality Pattern

If we looked at each proficiency group separately the same pattern emerged. Figures 4.11, 4.12, 4.13 and 4.14 below show

the proportion of scores of 14 pictures for the proficient group, advanced group, intermediate group and elementary group. All figures show that there is decline in the proportion of scores for the pictures 5,7,10, and 12. Also, in all figures it is clear that prototypicality of the pictures decrease as proportion of scores decrease.

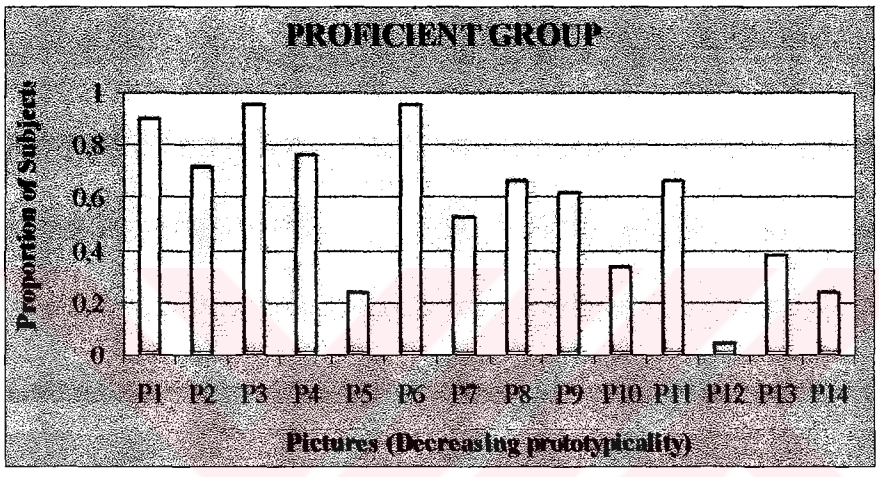


Figure 4.11 Proportion of scores for proficient group

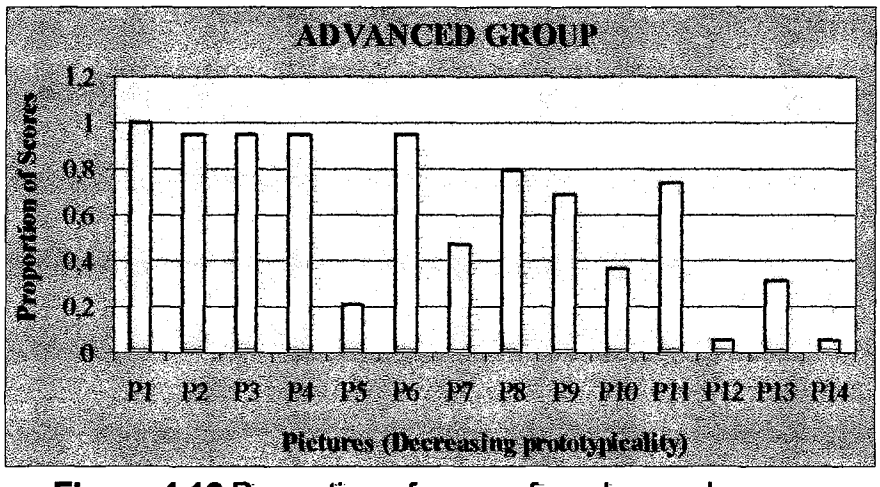


Figure 4.12 Proportion of scores for advanced group

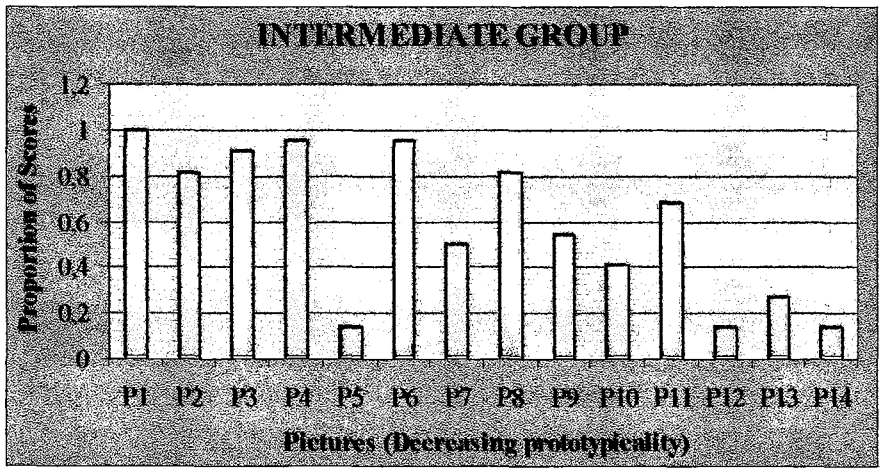


Figure 4.13 Proportion of scores for intermediate group

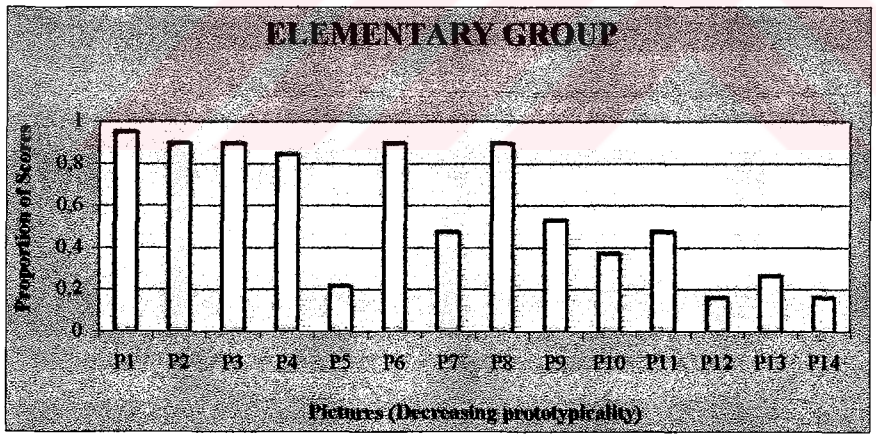


Figure 4.14 Proportion of scores for elementary group

4.4. Research Question 4

The following table (table 4.7) shows the means and standard deviations for *sandalye*, *koltuk* and *diger* categories for different proficiency groups.

		SANDALYE		KOLTUK		DİGER	
		M	SD	M	SD	M	SD
Proficient	(N=21)	.75	.353553	.5	.707107	.105	.049497
Advanced	(N=19)	.83	.240416	.25	.353553	.14	.098995
Intermediate	(N=22)	.83	0	.375	.53033	.14	.098995
Elementary	(N=19)	.83	.240416	.25	.353553	.21	.296985
Overall	(N=81)	.81	.353553	.34	.707107	.14	.247487

Table 4.7 Means & Standard Deviations for sandalye, koltuk and diger scores

One way ANOVA test was used to measure whether there was any difference in sandalye, koltuk and diger scores of overall group. The following table (Table 4.8) shows one way Repeated measures ANOVA results on overall sandalye, koltuk and diger scores. The results showed that there was a significant difference among L1 categories. The subjects' responses showed difference in sandalye, koltuk and diger scores. ($F.05\ (2,160) = 43.79$, $p. < .0000$)

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	2	10.02633	160	.228931	43.79635	.000000*

Table 4.8 One way repeated measures ANOVA on sandalye, koltuk and diger scores for overall group

Since the ANOVA result in table 4.8 showed significant difference, Tukey honest significant difference (HSD) test was applied to see which scores are significantly different. Table 4.9 below is HSD test on overall scores. The table shows that sandalye scores are significantly different from both of the koltuk and diger scores. *Koltuk* and *diger* scores are not significantly different from each other. Subjects responded to sandalye items more as chairs than they did to koltuk and diger items.

	Sandalye .8918518	Koltuk .2716049	Diger .2939506
1 sandalye	—	.000022*	.000022*
2 koltuk		—	.952475
3 diger			—

Table 4.9 Tukey honest significant difference test on overall scores

The differences among L1 categories were significant for all groups except the elementary group. The following table (table

4.10) is one way Repeated Measures ANOVA test results for the proficient group. Table 4.11 is the ANOVA test result for the advanced group, table 4.12 is for intermediate group and table 4.13 is for the elementary group. The test results of all groups except the elementary group showed that there was a significant difference among sandalye, koltuk and diger scores.

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	2	2.307871	40	.035723	65.60446	.000000*

Table 4.10 One way Repeated Measures ANOVA on sandalye, koltuk and diger scores for proficient group

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	2*	3.004863*	36*	.021104*	142.3843*	.000000*

Table 4.11 One Way Repeated Measures ANOVA on sandalye, koltuk, and diger scores for advanced group

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	2	3.432111	42	.032971	104.0951	.000000*

Table 4.12 One Way Repeated Measures ANOVA on sandalye, koltuk, and diger scores for intermediate group

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	2	1.871402	36	.885435	2.113539	.135554

Table 4.13 One Way Repeated Measures ANOVA on sandalye, koltuk, and diger scores for elementary group

In order to test which scores were significantly different, Tukey honest significant difference test was used. The following table is for proficient group, table 4.15 is for the advanced group, and table 4.16 is for the intermediate group. Results for all individual groups showed that "sandalye" scores were significantly higher from both of the "koltuk" and "diger" scores.

	sandalye	koltuk	diger
	.8319048	.2976190	.2247619
1 sandalye	—	.000122*	000122*
2 koltuk		—	.431990
3 diger			—

Table 4.14 Tukey honest significant difference test on proficient group scores

	sandalye	koltuk	diger
	.9200000	.2631579	.2031579
1 sandalye	—	.000127*	.000127*
2 koltuk		—	.419400
3 diger			—

Table 4.15 Tukey honest significant difference test on advanced group scores

	sandalye	koltuk	diger
	.9154546	.2500000	.2140909
1 sandalye	—	.000118*	.000118*
2 koltuk		—	.790163
3 diger			—

Table 4.16 Tukey honest significant difference test on intermediate group scores

4.5 Research Question 5

In this part each of the sandalye, koltuk and diger scores are looked at separately in order to examine the differences among proficiency groups.

The figure 4.15 below is based on the different proficiency groups' means in "sandalye" category. All groups except the

proficient one received similar scores. The proficient group had the lowest mean (.75) among all.

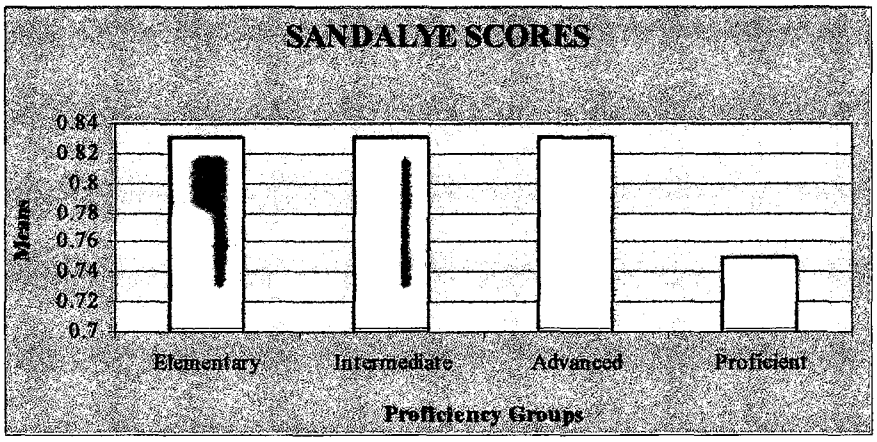


Figure 4.15 Sandalye scores of proficiency groups

However, ANOVA test results indicated that the differences among proficiency groups were not significant. (F.05 (3,77) = 1.1027, p. < .3532) The following table (Table 4.17) shows one way ANOVA results for sandalye scores.

Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Sandalye	.104985	3	.034995	2.443638	77	.031736	1.102702	.353269

Table 4.17 Analysis of Variance on Sandalye scores

Koltuk scores for different proficiency groups are shown in figure 4.16. As seen in figure 4.16, elementary and advanced level groups performed equally and the intermediate group performed better than the elementary and advanced group. It is the proficient group whose members responded to koltuk items as chair most.

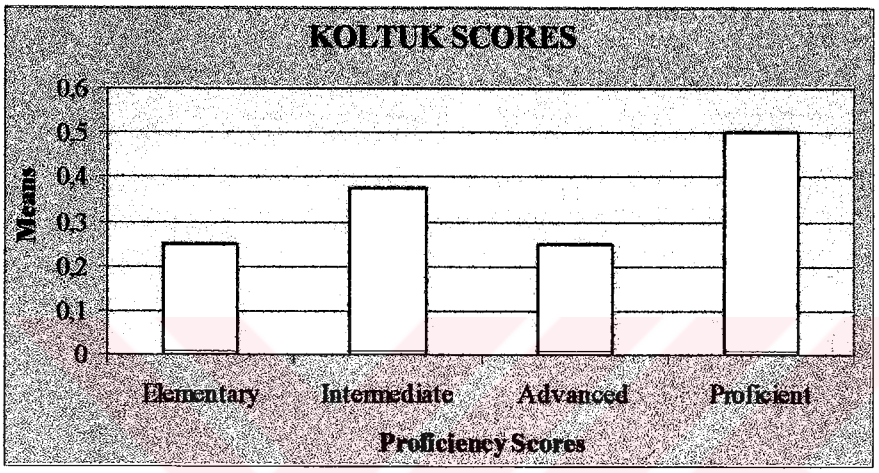


Figure 4.16 Koltuk scores of proficiency groups

These differences were tested by one way ANOVA test. The following table (table 4.18) shows one way ANOVA test results for koltuk scores. The results showed that there was no significant difference among proficiency groups on koltuk scores. (F.05 (3,77) =.1147, p.< .9512)

Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Koltuk	.026258	3	.008753	5.873434	77	.076278	.114745	.951219

Table 4.18 Analysis of Variance on koltuk scores

Diger scores for different proficiency groups are shown in figure 4.17 below. Elementary group performed best among the other groups. Advanced and intermediate groups performed equally. Both means were .14. It was the proficient group that performed worst. The mean of the proficient group was .10.

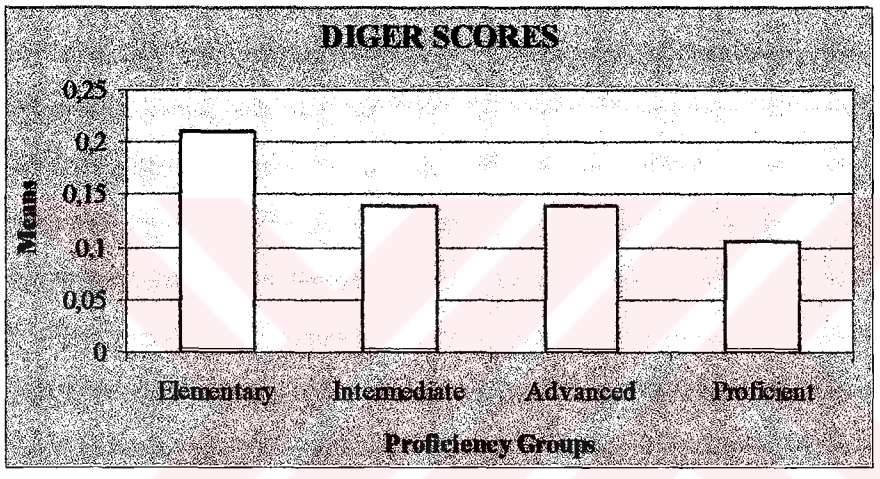


Figure 4.17 (Diger scores of proficiency groups)

The following table (table 4.19) shows one way ANOVA results for diger category. The results showed no significant difference. (F.05 (3,77) =.9312, p.< .4298)

Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Diger	1.679228	3	.559743	46.28171	77	.601061	.931257	.429801

Table 4.19 Analysis of Variance on diger scores

5.0 DISCUSSION

In this chapter, results of the study are discussed in three sub-sections. First, L2 categorisation results are explained from the perspective of proficiency. In the second part, prototypicality results are discussed. How prototypicality of the items affects the performance of learners is explained. In the third part L1 influence is discussed. In what ways learners' native language plays a role in the performance of learners are explained.

5.1 L2 Categorisation

The first research question of the present study is that 'Do EFL learners have greater difficulty with non-members of lexical categories in the L2 than they have with category members?' The results of the present study showed that learners tended to be more accurate on non-chair than chair items. This difference was best observed in the scores of the intermediate group. Greater accuracy on non-chair scores could be explained by the fact that non-chair items were "prototypical" items of these categories therefore they might not have posed any great difficulty. One of the items in non-chair category, for instance, belonged clearly to 'stool' category and was also the prototypical example of that category; therefore learners should not have had much difficulty in putting it in non-chair category in the test. There were also other items that were the prototypical examples of their respective categories such as 'stone' and 'swing'.

On the other hand, among chair items, the ones that were less good examples might have induced difficulty. The results of the present study already indicated that less prototypical examples of a category were more difficult to put in that category. The results on prototypicality also supported that items that were less prototypical were put in the category chair by less people. This might be why learners were less successful in categorising chair items.

The second research question of the present study is ' Do EFL learners develop more native like categories in the L2 as they become more proficient?' Although the results did not reach statistical significance, they suggested that as proficiency of the subjects increased, there occurred a tendency for more native-like categorisation. In overall scoring of proficiency groups, better performance was observed as proficiency increased. As learners became more proficient they recognised chair as well as non-chair items more successfully. However, when we compared the four proficiency groups, intermediate group seemed to be more native-like than all other groups in overall categorisation.

"Transfer" might explain the reason for why the intermediate group did best and other groups not so well. Corder (1997) described the mother tongue as the starting point for the acquisition of the second language. Learners transferred from their knowledge of the mother tongue to the developing knowledge of the target language. Corder (1997) emphasised that in the earlier stages of second language acquisition there was more language transfer than the later stages. As learners increased

their knowledge of the target language, there existed less need to transfer. Depending on the correspondence between the L1 and the L2, either transfer or non-transfer might lead to correct as well as incorrect performance in the L2. Kellerman (1985) identified three developmental stages in transfer when the L1 corresponded to the L2, which resulted in U-shaped.

The U-shaped behaviour emphasised the three stages in which a learner started with stage one that referred to targetlike and error-free performance due to positive transfer. In this stage learner's output was successful from both a linguistic and situational point of view. Then the learner moved to the second stage that referred to deviant performance due to non-transfer. The learner was in a suspicious phase and started to organise his mental representations of the structures into a system within the relevant linguistic subdomain. Then as the learner's knowledge of L2 increased he moved to the third stage in which the learner again performed in a targetlike manner and his performance was free from any errors.

The results of the present study showed some similarity to Kellerman's U-shaped behaviour. It was mentioned before that the intermediate group performed better than the other proficiency groups in recognising chair as well as non-chair items. There was a decrease in the scores of the advanced group as the second stage of U-shaped behaviour predicted. As the L2 knowledge of the subjects of the present study increased the scores of chair and non-chair scores increased as well. Thus there was a rise again in

the scores of the proficient group as suggested by the third stage of Kellerman's U-shaped behaviour.

In another study by Tanaka et. al. (1990) results that were similar to Kellerman's U-shaped behaviour were found. Tanaka et. al. (1990) searched for how EFL learners acquired different senses (or the meaning potential) of the word *make.* They used three groups of Japanese learners of English at different stages of language development. The three groups were referred to as level 1, level 2, and level 3 from the least proficient to the most. 50 native speakers of English also made up the control group. The test for the subjects consisted of 24 short sentences with the lexeme 'make'. Each four sentence belonged to one of the five categories: The first category was "prototype" that referred to concrete, small size and transferable exemplars of the lexical category "make" such as " make a cake", "make a doll". The second category was "large" that referred to concrete, large size and transferable (from L1) exemplars such as "make a road". The third category was "nouny-tr" that referred to abstract and transferable exemplars such as "make an atmosphere". The fourth category was "nouny-nontr" that referred to abstract and non-transferable exemplars such as "make an appearance". The last category was "verby" that referred to abstract and non-transferable exemplars such as "make a turn". Below each sentence numbers from 1 to 5 form a scale as in the following example.

The boys are making swords in the field.
(least acceptable) 1 2 3 4 5 (most acceptable)

The subjects' task was to judge the acceptability of each sentence. The results showed that 'large' category's acceptance rate was higher among level 1 students than among level 2 and 3. Level 1 group resembled the native group much more than the higher proficiency groups. The learners in level 1 displayed error-free performance, then deviant performance in level 2 and finally again error-free performance in level 3.

5.2 Prototypicality

The third research question of the present study is 'Does the formation of L2 lexical categories progress from more prototypical to less prototypical examples?' In general, subjects did better on more prototypical items. Their performance worsened as prototypicality decreased. Prototypical items were probably acquired earlier and this might explain why prototypical items were more successfully recognised by the subjects.

One reason why prototypical items would be early in acquisition was that they might be more frequent in the input to learners. For instance, dictionaries were one of the most commonly used input sources for learning the meaning of a word. When the meaning of a word was expressed in a dictionary, more prototypical examples were introduced rather than less prototypical ones, or prototypical examples were introduced *before* less prototypical ones. The meaning of the word "chair", for instance, was stated in Webster's dictionary as follows ' a seat especially for

one person usually having four legs for support and a rest for the back, often having rests for the arms'. In Oxford dictionary, chair was defined as "separate movable seat for one person, usually with a back and in some cases with arms." In these dictionary entries, the attributes of more prototypical chairs were used for defining the word "chair" as non- prototypical chairs did not always have four legs (i.e. they may have one) and did not always have rests for the arms.

Besides dictionaries, there might also be more frequent input of prototypical examples in teaching. When an item was first taught, it was usually defined by using the attributes of the prototypical examples or taught through a picture of the prototype or by providing L1 equivalents which share the same prototype. Once the prototype was taught the word was considered known and teaching was not followed up with less prototypical examples.

Another reason why prototypical items might be earlier in acquisition was that more prototypical examples fitted better to the category definition. They shared more of the criterial features of the prototype and might therefore be learned more easily. Some of the criterial features of the category chair, for instance, were having four legs and a back. Thus a seat-like item, which had these criterial features, was more likely to be acquired earlier.

On the other hand some more prototypical items in the data were not responded as accurately as expected. These were mostly

"koltuk" items and the unsuccessful performance with these items is explained on the basis of L1 influence in the next section.

5.3 L1 Influence

The fourth research question of the present study is 'Do EFL learners map onto the L2 word that L1 category which has the same prototype as the L2 word?' The fifth research question of this study is ' Are there any differences among proficiency groups in transfer from L1 categories?' On the whole, subjects admitted "sandalye" items more as chair than "koltuk" items. This might show that they equated "chair" with "sandalye". The results of Turkish "sandalye" data showed that the prototype of "sandalye" category and the prototype of "chair" category were identical. The reason for learners' equating these two categories might be because that their prototypes were the same. As a result, they undergeneralised the L2 category as the L1 category was smaller. Therefore, the interlanguage category of chair was smaller than it actually was for native speakers.

On the other hand, although "koltuk" items were among the good examples of the chair category in English, they were not put in the category chair by most of the subjects. This might be because for the subjects these items belonged to a different category like armchair as in the L1 and not to "chair" category. This might have two reasons: First, it might be due to the teaching effect. Learners might have been wrongly taught that these items belonged to another category. This wrong teaching might be

because teachers themselves were non-native speakers of that language, who might incorrectly categorise the word chair and they might be transfering their incorrect categorisations to their learners. Second, L1 influence might override prototypicality. Working on an assumption of one to one correspondence between L1 and L2 items, learners might incorrectly believe that in English there existed two different categories because their native language, Turkish, had two categories as koltuk and sandalye. They probably equated "koltuk" category with "armchair" and "sandalye" category with "chair". This might be why the learners performed unsuccessfully with "koltuk" items.

There was other evidence in the literature that learners of L2 might sometimes tend to seek one to one equivalence with the L2. The study of Tanaka and Abe (1984) dealt with the conditions of transferability in lexico-semantic development of adult second language learners. According to the study, interlingual semantic mapping involved two components: the search for translation equivalent and the search for collocation equivalent. The former dealt with learners' search of L1 translation for a newly perceived L2 item. The latter was about the transfer of the range of L1 word usage to the use of the L2 word. Both strategies operated in Tanaka and Abe's Semantic Transfer Hypothesis. The learner searched for a translation and a collocation equivalent in the L1 for a new L2 word and formulated an *item specific hypothesis* about an L2 word (W2). The hypothesis was W1=W2 and it meant that an L1 word was most strongly associated with W2 in learner's semantic schemata. But *occurrence- specific analysis* showed that W1 did not always accord with W2. This meant that when W1 was analysed in more than one situation it was possible that in some of

those instances W1 did not equal to W2 (W1≠W2). Then the learner reformulated the initial hypothesis by the help of new occurrences.

This study helped to explain why the subjects of the present study might refuse to put "koltuk" items in the category chair. They probably searched for a translation equivalent for the word "chair" which resulted in item specific hypothesis. In this case the subjects might look for one to one correspondence for chair with an L1 word and thus probably equated it with the word "sandalye". They might also assume collocational equivalence and transfer L1 category items to the L2. This explained the higher acceptance of "sandalye" items in intermediate and advanced groups. As the learners moved to later stages in L2 development *occurrence specific analysis* might cause them to experience negative evidence that "chair" was not always equated with "sandalye". Therefore, they might become more doubtful about sandalye items. Their hypothesis that L1 had one-to-one equivalence with L2 might fall short, as they experienced more negative evidence. In the light of new evidence they would see what they hypothesised was wrong. They might have more doubts when giving decisions and they, thus, might try to be more careful when deciding to what category an item belonged. They might reconsider their hypothesis and reconstruct the category in the light of new evidence. This explained why the proficient group put less sandalye items in the chair category.

The proficient group also had a tendency to admit more "koltuk" items into the category than other proficiency groups.

Subjects in the proficient group might lead to believe, after repeated encounters with examples of the chair category, that chair items might include other items than "sandalye" items. Thus as the proficiency of the subjects in the L2 increased and they became more native like, they put more "koltuk" items in the category chair. The increase in "koltuk" items together with the increase in "sandalye" items suggested that in this proficiency level, the one-to-one equivalence assumption might be changing.

Finally the elementary group admitted "diger" category items as chair more often than other groups. There was no difference, either, between the two L1 categories (sandalye and koltuk) in the elementary group. This suggested that they might not use L1 as a guide in L2 categorisation and not transfer from either of the L1 categories. On the other hand, elementary group subjects would have little evidence about L2 chair category because they were exposed to less input of the L2. As their interlanguage L2 categories were based neither on the L1 nor the L2 chaotic answers emerged.

6.0 CONCLUSION

6.1 Conclusions

In the present study, Turkish EFL learners' performance did not show difference in the identification of the instances of the chair category and the instances of other seat categories like sofa, bench etc. They performed on members and non-members equally well. This suggested that L2 learners had no difficulty in distinguishing the instances that L2 words applied to from those that they did not.

The result that emerged from the chair category might not be generalisable to all word categories. The referential meaning of chair differed from other words in the same domain in terms of semantic features. The chair category members were put in that category by identifying the semantic features required in order to be a member of that category such as 'having legs' or 'having a back'. The category 'cat' could be another example of such categories whose membership depended on semantic features. The members of 'cat' category required the semantic features such as 'having four legs' or 'having a tail' etc. On the other hand, there were categories whose members differed in spatial dimensions like size, length etc from members of other categories in the same domain. In such cases, it was more difficult to distinguish between members and non-members. The category 'cup' could be an example. It would probably be more difficult to identify *cups* from

non-cups like *mugs* or *bowls*. These categories had fuzzy boundaries and the critical size, width, length etc. Where a cup seized to be a cup was not clear-cut. Therefore, L2 learners might have difficulty in distinguishing the members and non-members of such categories.

This finding was not generalisable to all proficiency levels, either. Lower proficiency learners seemed to have more difficulties with identification of category members and non-members. The difficulty of the lower proficiency subjects with non-members could be explained by their limited vocabulary in the L2. It was possible that the other words in the domain were not encountered yet. As many seat- like items could not be recognised as members of other categories, they might not be rejected as non-members of the chair category, either.

The results of prototypicality suggested that acquisition of referential range of an L2 word proceeded from more to less prototypical instances. Prototypical instances were judged more consistently to be members of the chair category, but fewer people were sure about the membership of less prototypical instances. This meant that prototypical instances were learnt first, were learnt better and more firmly fixed as members.

Another thing that emerged was that the referential range of L1 words had an influence on the acquisition of L2 words. The effect of the L1 on the L2 might be of two kinds; one was facilitative and the other was debilitative. When the L1 and the L2

overlapped, L1 words facilitated the acquisition of the L2 words. Thus, the effect was positive. In cases where the L1 and the L2 did not overlap, the influence was debilitative. Thus, the effect was negative. The effect of Turkish on the acquisition of chair was debilitative for some members of the category. Although the prototype of *chair* and *sandalye* category was the same, there was an additional category in Turkish as *koltuk.* The Turkish category *koltuk* was included in the English *chair* category. Thus Turkish learners tended to put only the *sandalye* items in the chair category and omitted *koltuk* items as members of another category.

Another finding about L1 influence was that learners tended to transfer onto L2 words the referential range of L1 words, which shared the same prototype as the L2 word. When learners began to learn a second language, in cases where the prototype of the L1 and L2 categories were the same, they transferred from the L1 by using the L2 word for all those instances for which the L1 word was used.

It has also been found that in the early stages of L2 development, learners assumed one-to-one correspondence between L1 and L2 words and transferred only from one of the L1 words when there were two corresponding words in the L1. In the later stages of second language development, learners tended to be more tentative. They seemed to be more aware of the differences in the referential range of L1 and L2 words. Thus they transferred less and they became capable of more native like L2 categorisation. More proficient L2 learners no longer assumed one to one correspondence between L1 and L2 words. The lower

proficiency group subjects of the present study assumed one-to-one correspondence between "chair" and Turkish "sandalye" category. But more proficient subjects put less "sandalye" items in the chair category.

6.2 Implications for Teaching

As the L2 learners were found to have more difficulty with less prototypical instances, when teaching the members of a category less prototypical members needed to be taught as well. Special care had to be given to bad examples of categories and not only the prototypical instances but also the less prototypical ones should be given as examples of those categories that were being taught. Learning the meaning of a word did not get completed until the full referential range of that word was taught.

Awareness raising in learners about referential range of L2 words including the less prototypical instances was another point that had to be considered within the field of L2 teaching. Learners should be informed about the internal structure of categories and they should be made aware that there were less good examples as well as good examples of categories.

The results also showed that there was an important influence of the referential range of L1 words on the acquisition of the referential range of L2 words. Therefore, it would be more useful and helpful if learners knew how the referential range of the word in the L1 and the words in the L2 were different. Thus, a

comparison and contrast of the referential range of the words in both languages might work better in teaching the meaning of a word.

A final implication of the present study for teaching was that giving translation equivalents should be avoided so as not to foster the setting of one to one correspondences. It emerged that L2 learners assumed that the translation equivalent of "chair" was "sandalye". So they developed one-to-one correspondence between "chair" and "sandalye". It was pointed out that in cases where an L2 word had more than one L1 equivalent, learners chose only one of them and transferred it. Thus, in such cases here there were more than one L1 equivalent for an L2 word, there was a possibility of a learner's transferring the wrong equivalent.

6.3 Further Research

It was already mentioned that the present study dealt with a single category and that studies with other words might give different results. Therefore, further research could be done with more words other than chair.

The present study included the analysis of a word belonging to noun grammatical category. Further research could be done with words in other grammatical categories such as verbs, adjectives or adverbs. Different results might emerge by such words. The word "chair" referred to real world objects. Therefore, the referential range of such a category was different from the referential range of the words that belonged to other grammatical

categories. The words that belonged to verb, adjective and adverb categories did not refer to real world objects and therefore might be more abstract.

The subjects of this study were L2 learners who came from the same language background. Their native language was Turkish. Additional studies could be done with the data received from learners of other language backgrounds. It was mentioned before that when the L1 and L2 overlapped, the effect of the L1 on L2 was facilitative. When L1 and L2 did not overlap, the effect was debilitative. Thus, different learners from different language backgrounds might arrive at different conclusions.

For further research longitudinal case studies could be done in order to see how the range of interlanguage words developed over time, that is how they shrank or how they expanded. Such longitudinal case studies could also help to identify which hypotheses L2 learners worked on when applying L2 words and how they changed these hypotheses.

Finally it can be concluded that the acquisition of the full range of L2 words is a process that may never get completed for certain words to a native like standard.

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Aşağıdaki parçanın içinden 50 kelime çıkarıldı ve yerlerine boşluk bırakıldı. Bu parçayı **okuyunuz**. Boşluklara hangi kelimelerin gelmesi gerektiğini bulup boşluklara o kelimeleri **yazınız**. Her boşluğa sadece **bir** kelime yazabilirsiniz.**Tüm** boşlukları doldurun, cevabı bilmiyorsanız tahmin etmeye çalışın.

THE PYRAMIDS

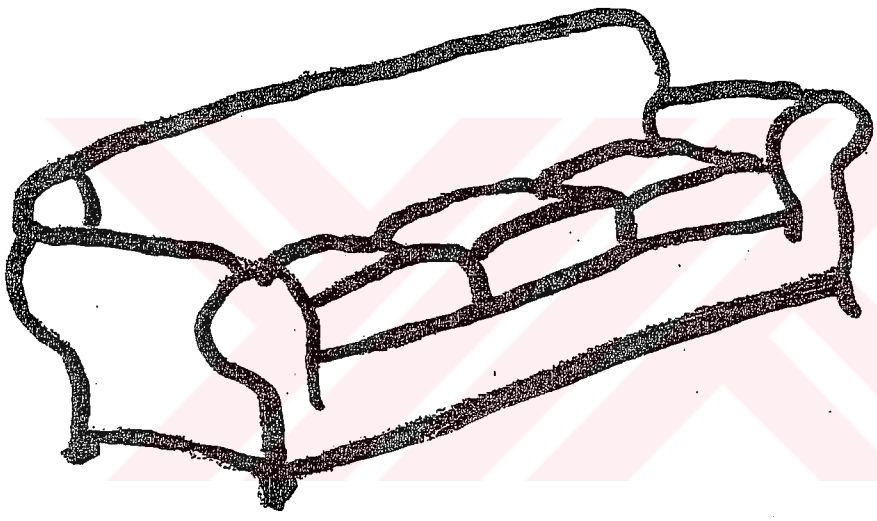
The oldest stone buildings in the world are the pyramids. They have stood there for nearly 5000 years, (1)_____ it seems likely that they will continue (2)_____stand for thousands of years yet. There (3)_____over eighty of them scattered along the (4) _____ of the Nile, some of which are (5) _____in shape from the true pyramids. The most famous of these are the 'Step' pyramid (6)_____the 'Bent' pyramid.

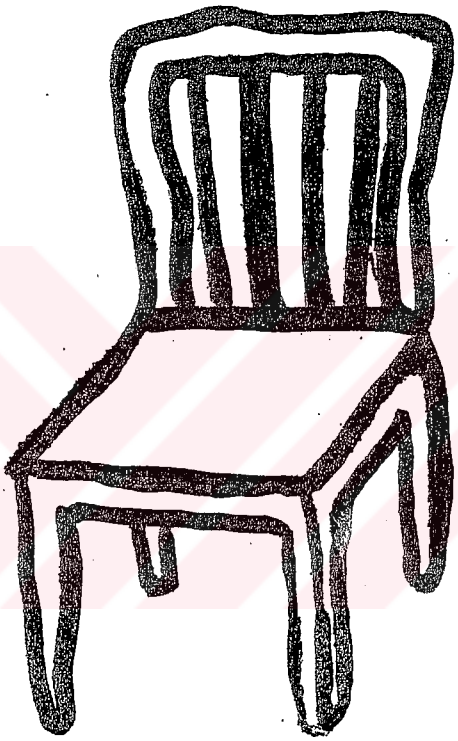
Some of the pyramids (7)_____ look much as they must have done (8)_____they were built thousands of years ago. (9)_____ of the damage suffered by the others (10)_____ been at the hands of men who (11)_____ looking for treasure or, more often, for (12) _____to use in modern buildings. The dry(13) _____of Egypt has helped to preserve the (14)_____,and their very shape has made them(15)_____likely to fall into ruin. These are (16)_____reasons why they can still be seen (17)_____ , but perhaps the most important is that (18)_____were planned to last forever.

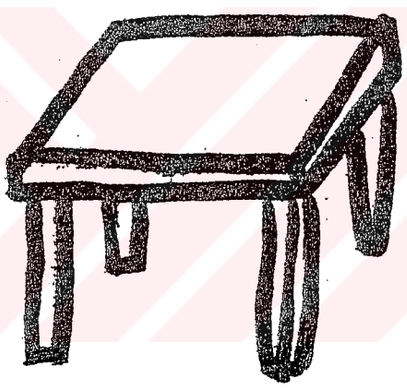
It (19)_____ practically certain that plans were made for (20)_____ building of the pyramids because the plans (21)_____other large works have fortunately been preserved.(22)_____, there are no writings or pictures to (23)_____ us how the Egyptians planned or built (24)_____ pyramids themselves. Consequently, we are only able (25)_____ guess at the methods used. Nevertheless by (26)____ the actual pyramids and various tools which (27)_____ been found, archaeologists have formed a fairly (28)_____ picture of them.

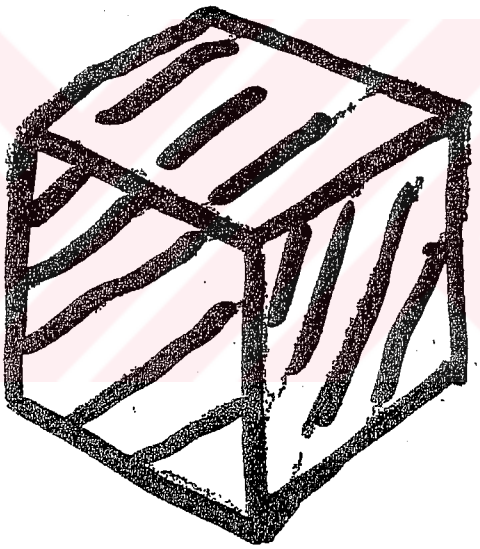
One thing is certain: (29)_____ must have been months of careful planning (30)_____ they could begin to build. The first (31) _____they had to do was to choose (32)_____suitable place. You may think this would (33)_____ been easy with miles and miles of (34)_____desert around, but a pyramid couldn't (35)_____ built just anywhere. Certain rules had to (36)_____followed, and certain problems had to be (37)_____.

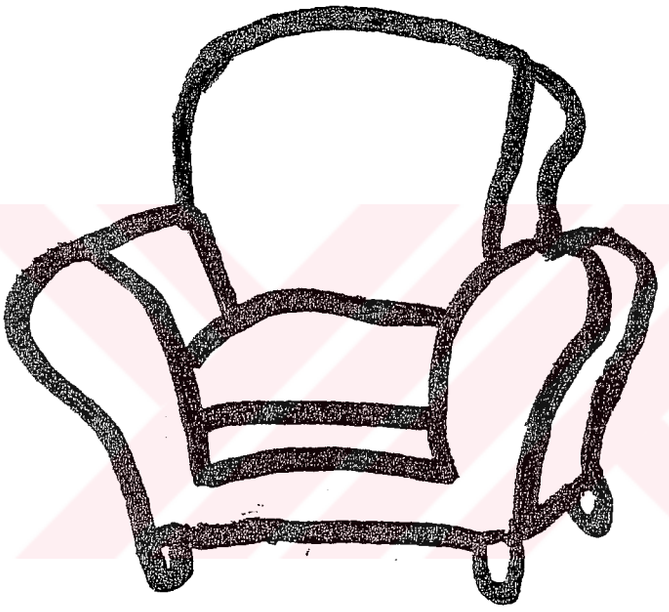
The pyramid had to be on the (38)_____ side of the Nile; the side on (39)_____ the sun set. This was for religious(40)_____. The pyramid also had to stand well (41) _____the level of the river to protect (42)_____ against the regular floods. The pyramid could (43)_____ be too far from the Nile, however, (44) _____ the stones to build it needed to (45)_____ carried in boats down the river to (46) _____nearest point. Water transport was, of course, (47)_____easier than land transport. The builders also (48) _____to find a rock base which was (49) _____likely to crack under the great weight (50)_____ the pyramid.Finally, the pyramid had to be near the capital, or better still, near the king's palace so that he could visit it easily and personally check the progress being made on the final resting place for his body.

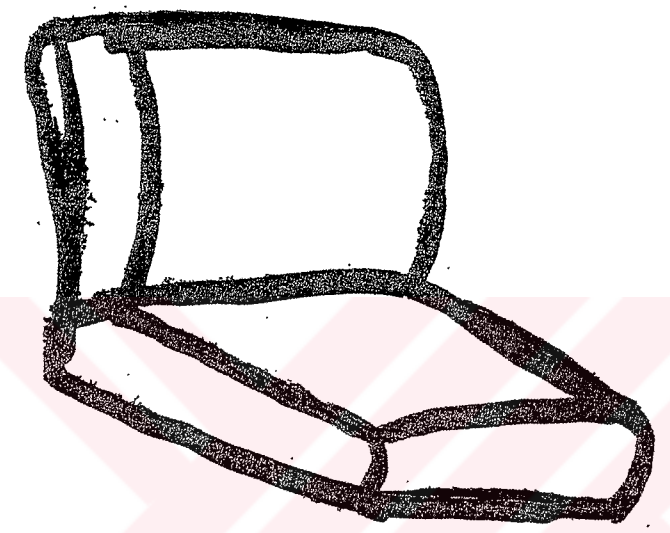


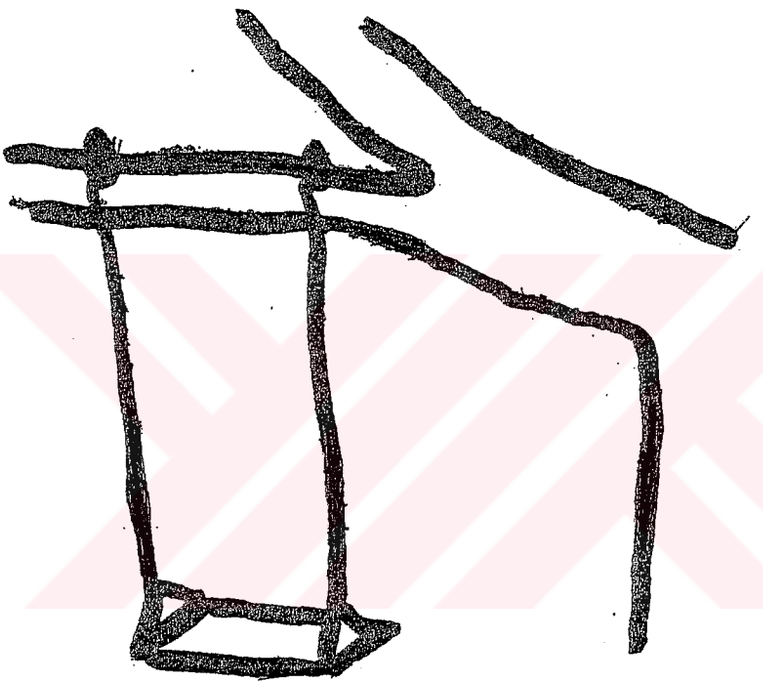


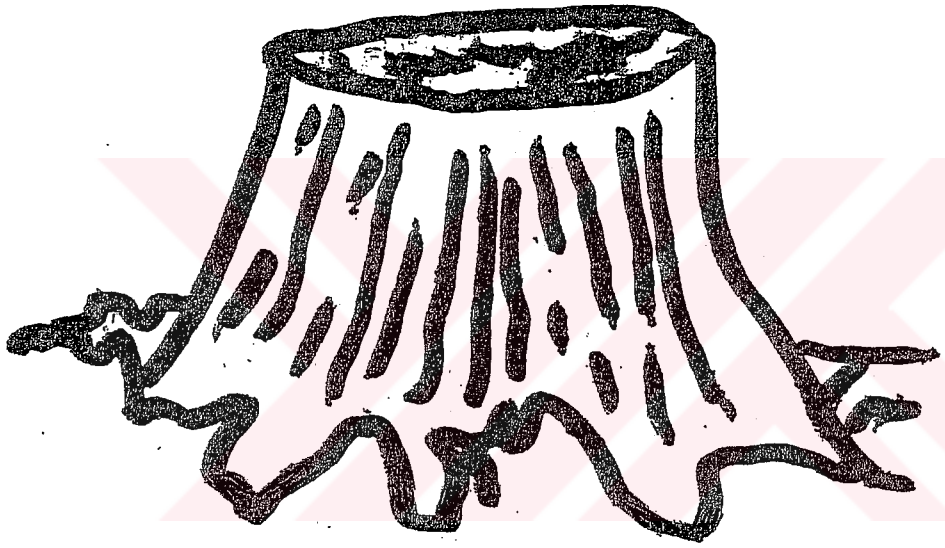


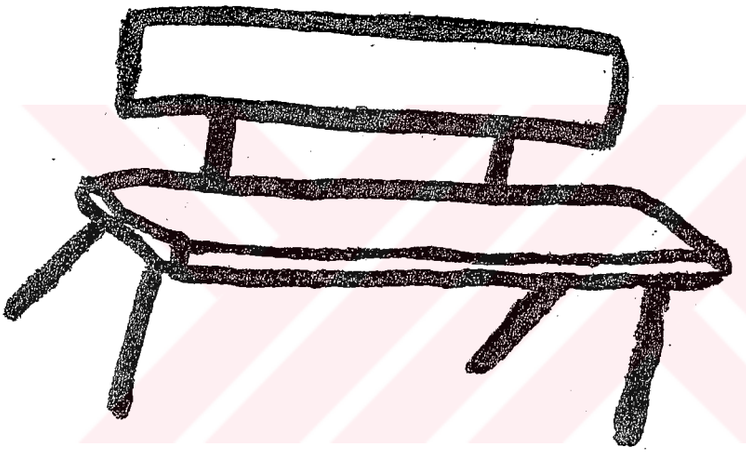


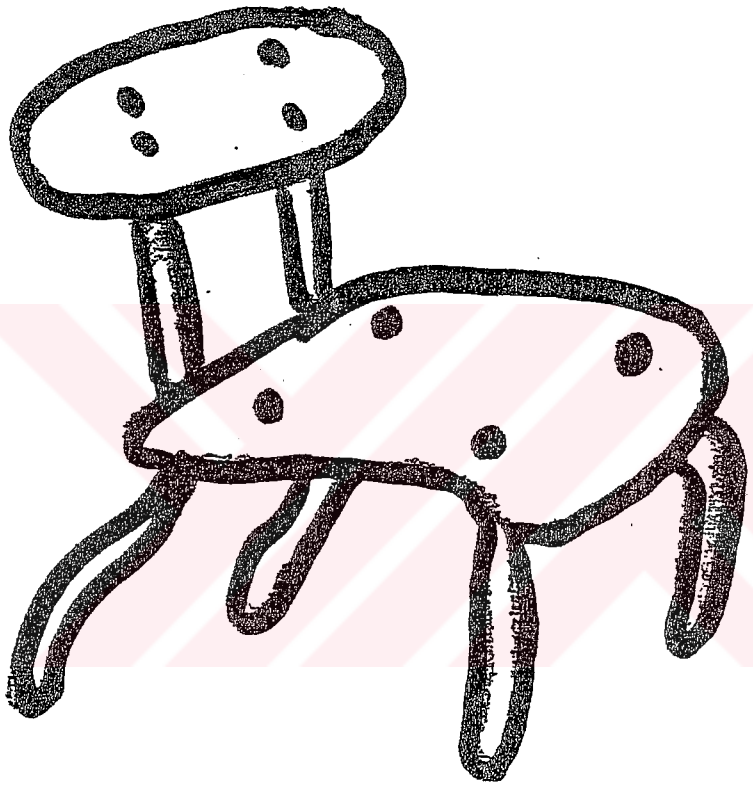


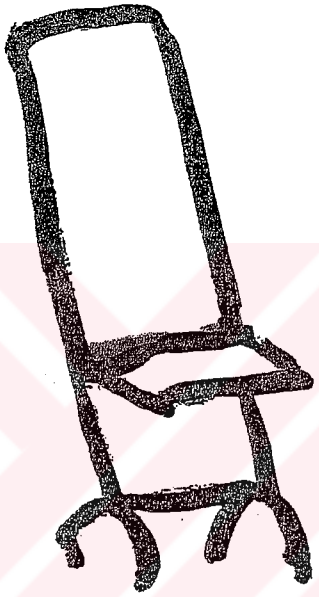


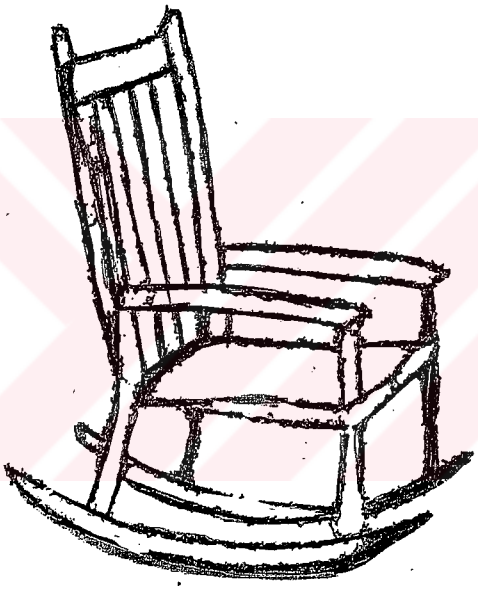


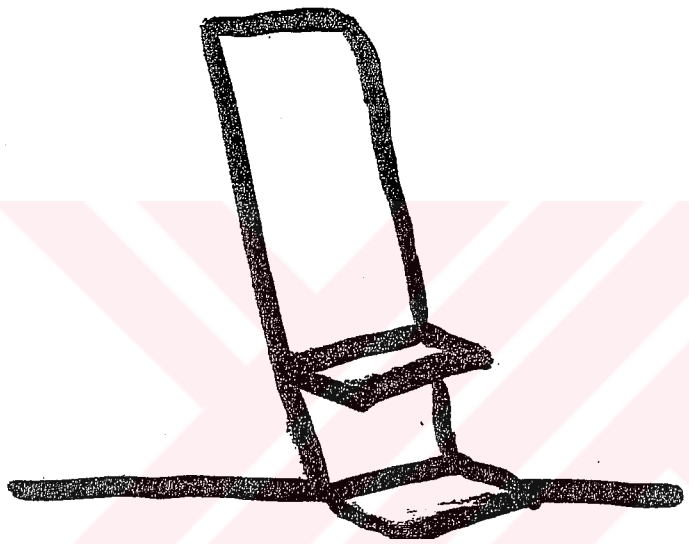


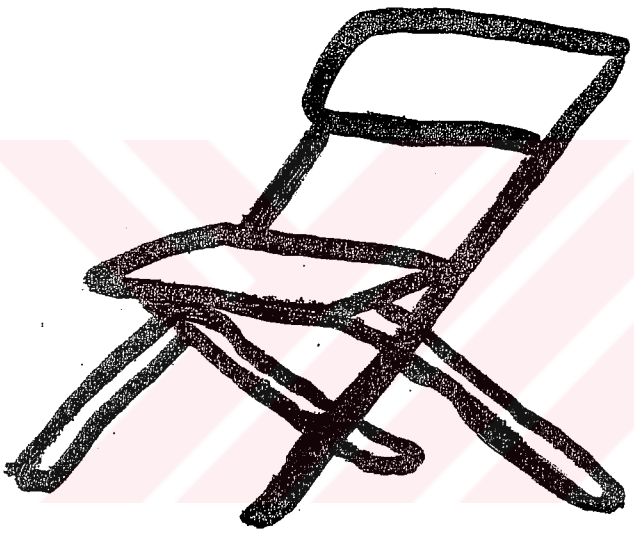


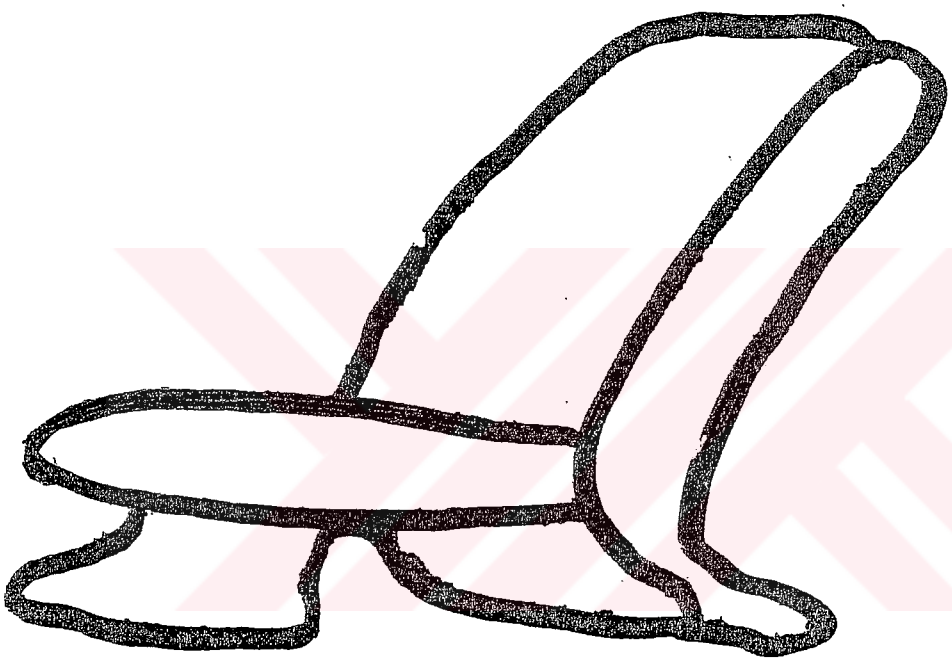


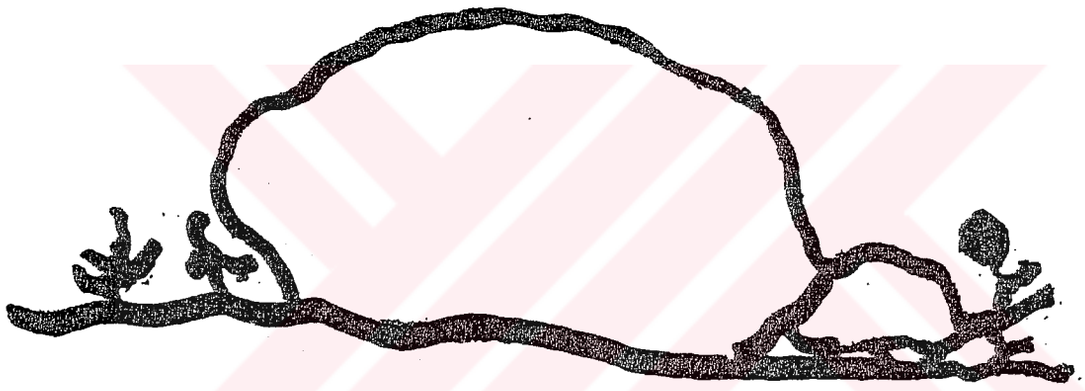


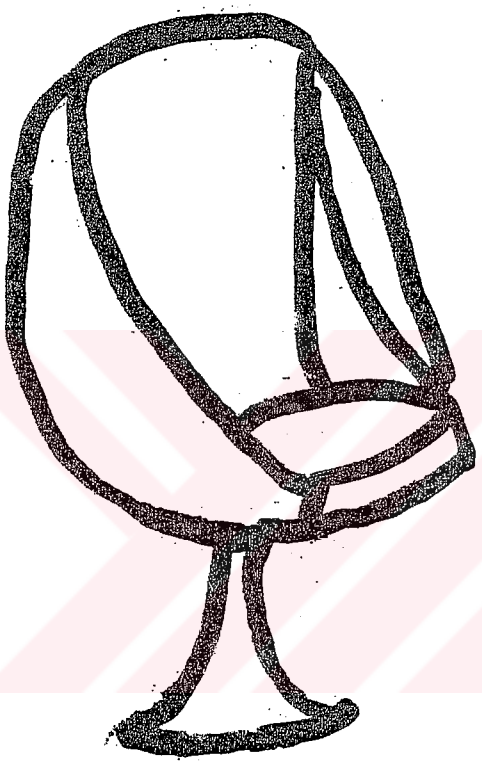


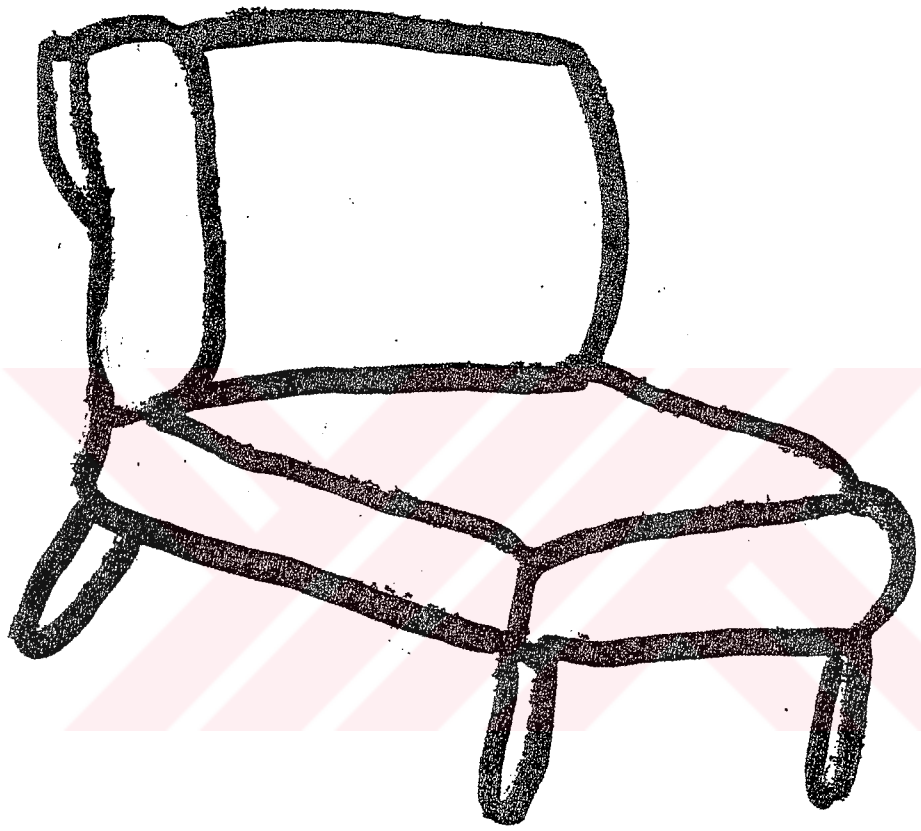


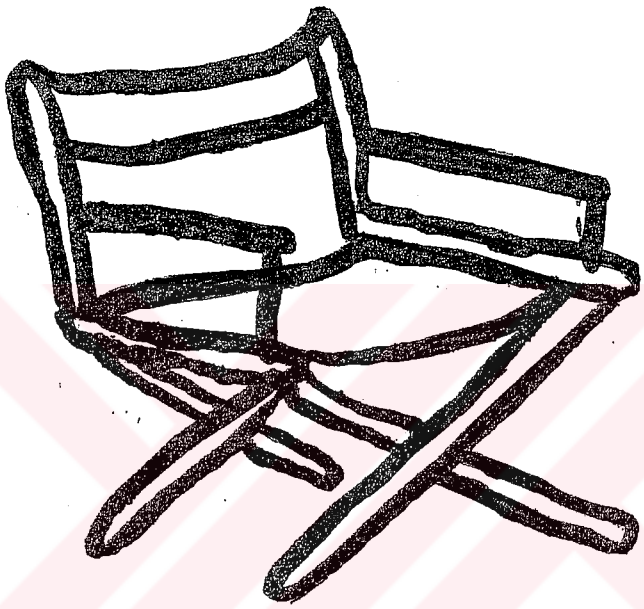












Bu kitapcıkda 24 adet resim var. Öğretmen olduğunuzda 'chair' kelimesini öğretirken bu 24 resimden hangilerini öğrencilerinize örnek olarak gösterirdiniz? Örnek vermek için **KULLANABİLECEĞİNİZ** resimleri cevap kağıtlarınızda **'chair'**olarak,örnek vermek için **KULLANMAYACAĞINIZ** resimleri cevap kağıtlarınızda **'non-chair'** olarak işaretleyiniz.

UYARILAR

1- Her sayfada sadece bir resim var. O sayfadaki resme baktıktan hemen sonra cevap kağıdına işaretlemelerinizi yapınız.

2- Kesinlikle bir önceki sayfaya geri **dönmeyiniz.**

3- Resimli kitapcığa işaretleme yapmayınız.

Bu kitapcıkta 24 adet resim var. Bir yabancıya Türkçe öğretmeniz gerekse bu 24 resimden hangilerini ' sandalye' kelimesini öğretirken örnek olarak gösterirdiniz? Örnek vermek için **KULLANABİLECEĞİNİZ** resimleri cevap kağıtlarınızda **'sandalye'** seçeneğine, örnek vermek için **KULLANMAYACAĞINIZ** resimleri cevap kağıtlarınızda **' sandalye değil'** seçeneğine işaretleyiniz.

UYARILAR

1- Her sayfada sadece bir resim var. O sayfadaki resme baktıktan hemen sonra cevap kağıdına işaretlemelerinizi yapınız.

2- Kesinlikle bir önceki sayfaya geri **dönmeyiniz.**

3- Resimli kitapcığa işaretleme yapmayınız.

Bu kitapcıkta 24 adet resim var. Bir yabancıya Türkçe öğretmeniz gerekse bu 24 resimden hangilerini ' koltuk' kelimesini öğretirken örnek olarak gösterirdiniz? Örnek vermek için **KULLANABİLECEĞİNİZ** resimleri cevap kağıtlarınızda **'koltuk'** seçeneğine, örnek vermek için **KULLANMAYACAĞINIZ** resimleri cevap kağıtlarınızda **' koltuk değil'** seçeneğine işaretleyiniz.

UYARILAR

1- Her sayfada sadece bir resim var. O sayfadaki resme baktıktan hemen sonra cevap kağıdına işaretlemelerinizi yapınız.

2- Kesinlikle bir önceki sayfaya geri **dönmeyiniz.**

3- Resimli kitapcığa işaretleme yapmayınız.

Name& Surname:

ANSWER SHEET

Picture 1	a) chair	b) non-chair
Picture 2	a) chair	b) non-chair
Picture 3	a) chair	b) non-chair
Picture 4	a) chair	b) non-chair
Picture 5	a) chair	b) non-chair
Picture 6	a) chair	b) non-chair
Picture 7	a) chair	b) non-chair
Picture 8	a) chair	b) non-chair
Picture 9	a) chair	b) non-chair
Picture 10	a) chair	b) non-chair
Picture 11	a) chair	b) non-chair
Picture 12	a) chair	b) non-chair
Picture 13	a) chair	b) non-chair
Picture 14	a) chair	b) non-chair
Picture 15	a) chair	b) non-chair
Picture 16	a) chair	b) non-chair
Picture 17	a) chair	b) non-chair
Picture 18	a) chair	b) non-chair
Picture 19	a) chair	b) non-chair
Picture 20	a) chair	b) non-chair
Picture 21	a) chair	b) non-chair
Picture 22	a) chair	b) non-chair
Picture 23	a) chair	b) non-chair
Picture 24	a) chair	b) non-chair

Adı ve soyadı:

CEVAP KAĞIDI

Resim 1	a) sandalye	b) sandalye değil
Resim 2	a) sandalye	b) sandalye değil
Resim 3	a) sandalye	b) sandalye değil
Resim 4	a) sandalye	b) sandalye değil
Resim 5	a) sandalye	b) sandalye değil
Resim 6	a) sandalye	b) sandalye değil
Resim 7	a) sandalye	b) sandalye değil
Resim 8	a) sandalye	b) sandalye değil
Resim 9	a) sandalye	b) sandalye değil
Resim 10	a) sandalye	b) sandalye değil
Resim 11	a) sandalye	b) sandalye değil
Resim 12	a) sandalye	b) sandalye değil
Resim 13	a) sandalye	b) sandalye değil
Resim 14	a) sandalye	b) sandalye değil
Resim 15	a) sandalye	b) sandalye değil
Resim 16	a) sandalye	b) sandalye değil
Resim 17	a) sandalye	b) sandalye değil
Resim 18	a) sandalye	b) sandalye değil
Resim 19	a) sandalye	b) sandalye değil
Resim 20	a) sandalye	b) sandalye değil
Resim 21	a) sandalye	b) sandalye değil
Resim 22	a) sandalye	b) sandalye değil
Resim 23	a) sandalye	b) sandalye değil
Resim 24	a) sandalye	b) sandalye değil

Adı ve soyadı:

CEVAP KAĞIDI

Resim 1	a) koltuk	b) koltuk değil
Resim 2	a) koltuk	b) koltuk değil
Resim 3	a) koltuk	b) koltuk değil
Resim 4	a) koltuk	b) koltuk değil
Resim 5	a) koltuk	b) koltuk değil
Resim 6	a) koltuk	b) koltuk değil
Resim 7	a) koltuk	b) koltuk değil
Resim 8	a) koltuk	b) koltuk değil
Resim 9	a) koltuk	b) koltuk değil
Resim 10	a) koltuk	b) koltuk değil
Resim 11	a) koltuk	b) koltuk değil
Resim 12	a) koltuk	b) koltuk değil
Resim 13	a) koltuk	b) koltuk değil
Resim 14	a) koltuk	b) koltuk değil
Resim 15	a) koltuk	b) koltuk değil
Resim 16	a) koltuk	b) koltuk değil
Resim 17	a) koltuk	b) koltuk değil
Resim 18	a) koltuk	b) koltuk değil
Resim 19	a) koltuk	b) koltuk değil
Resim 20	a) koltuk	b) koltuk değil
Resim 21	a) koltuk	b) koltuk değil
Resim 22	a) koltuk	b) koltuk değil
Resim 23	a) koltuk	b) koltuk değil
Resim 24	a) koltuk	b) koltuk değil