

An evaluation of collocations used by children between 4.0 and 6.0 years old[#]

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ABSTRACT

The purpose of this work is to determine how widely and in which semantic and morphologic categories, word associations are used by children. There is no study about word associations children use in the acquisition of Turkish as their mother tongue. Participants of the current research consisted of a total of 90 kids between 4.0 and 6.0 years of age in 3 different cities in Turkey based on easy accessibility. The data obtained by transferring oral language texts produced by children in their natural habitat to the computer environment was analyzed by evaluating according to their age brackets. Semantic categories are free-combinations, collocations (sub-categories; semi-restricted collocations, restricted collocations, figurative idioms and pure idioms) and co-creations. Morphologic categories are determined as rigid noun phrases, predicative relations, and phrasal templates. As a result, it was seen that the production of children in the participation group increases as age increases. Generally, it is seen that children in the 6.0 age group produce more complete word associations compared to lower age groups. Word association productions of 6.0-year-old children are more than the total word association productions of children in 4.0 and 5.0. It was determined that children perform productions in the free-combination category the most between semantic categories, and they make up predicative relations the most between morphologic categories. This result matches theories of development and acquisition and the characteristics of Turkish.

Keywords: Language acquisition, mother tongue, vocabulary, collocation, word associations.

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INTRODUCTION

Word associations that create the vocabulary of a language happen with meaning connections. Words creating the lexicon of individuals are also stored in memory along with conditions of co-occurrence as well as semantic, morphologic, sequential and syntagmatic characteristics. The fact that word associations with semantic arbitrariness are accepted as conventional and that they carry stereotypes to an extent shows that these word associations are not only gathered sequentially and that they need to be handled within the concept of collocation for arbitrary association in their collations. Collocations as associations that have broad usage areas create a big part of a statement (Schmitt and Carter, 2004: 1). As they have common usage in the

speech area of language, it is expected that children acquire semantic and pragmatic characteristics of these associations they often encounter until the end of the language acquisition period.

It is stated in the related literature (Fraser, 1970; Ferguson, 1976; Wong Fillmore, 1976; Wray and Perkins, 2000; Wray, 2002) that children acquire words as chunks, not single. Works researching the acquisition of Turkish as a mother tongue have generally approached single-word structures produced by children. This situation causes the research about language acquisition to be evaluated via a mono-perspective and contradicts the literature. This research, however, aims to describe word association conditions as series, chunks or groups to

supply a prototype for educational research in Turkish. Among the subjects that need to be researched is: how often and in which semantic and morphologic categories do word associations in Turkish are used by children? This study aims to determine word associations used by children in the language acquisition period. It is expected to contribute to works about the acquisition of Turkish as a mother language.

Language acquisition period and collocations

Language acquisition requires a certain period like other cognitive and developmental actions. In the telegraphic speech period (18 to 24 months) children start to produce utterances with two words (Steinberg, 1993). In Turkish, the most significant example of collocations used by both children and adults aimed at children in this period are productions suitable for child language such as "*adda gitmek*" ("going for a walk" in child language). The vocabulary of children rapidly expands after a two-words-period. In the 4.0-year-old stage, they start to form long and complex sentences, and active use in morphologic and syntactic structure is present. Children complete almost all of the language grammar at 5.0 to 6.0 years old. Acquisition period stages may differ based on personal differences.

In literature, particularly the works of researchers such as Brown (1973), Clark (1974, 1977), MacWhinney (1974) and Wong Fillmore (1976) can be listed how children acquire and use these structures. Starting to use adult-like word associations during the acquisition period has been addressed by various research from different points of view (lexical development) (Leopold, 1939; Nelson, 1973); morphologic development (Berko, 1958; Brown, 1973); syntactic development (Bloom, 1970); acquisition of utterances with single and plural words (Bloom, 1973; Scollon, 1976; Tomasello, 1992; 2009; Steinberg, 1993; Wood, 2002). Children's acquisition of two or plural words was researched in the mentioned studies, however, their collocation acquisitions and productions were not elaborated on.

Word associations can be groups or clauses conceptualized like one word in the lexicon via social interactions or personal development. They are contingent as well as being constant or semi-constant units. These are fixed statements stored in children's memories as a whole just like the alphabet, numbers, rhymes, and songs that range from *curse statements* ("*Allah kahretsin*"(God damn), "*lanet olsun*"(damn it)) to *exclamations* ("*hay Allah*"(oh my God), "*çok yaşa*"(god bless)), *greetings* and *farewells* ("*memnun oldum*"(nice to meet you), "*görüşmek üzere*"(see you)), *social control statements* ("*kendine iyi bak*"(take care), "*kapa çeneni*"(shut up)), *idioms* ("*göz kulak olmak*"(watch over), "*etekleri zil çalmak*"(in a hurry) and *short speeches* ("*ne güzel bir gün*"(what a beautiful day)) in a large scale (for

more detailed discussions; Wong Fillmore, 1976; Ferguson, 1976; Fraser, 1970). These plural word structures perceived as integrated contribute to language development by forming conceptual diagrams in a cognitive platform. Apart from this, they ensure the receiver gets the whole meaning without processing every word one by one; so, they support perception (Nesselhauf, 2005: 2).

There are studies with different points of view related to wholistic understanding and the use of word associations. Becker (1975), Bolinger (1976), Coulmas (1979, 1994), Cowie (1992, 1994a,b, 1998), Hatch et al. (1979), Howarth (1998), Lattey (1986), Moon (1992, 1998), Van Lancker (1987) and Yorio, (1980) on adults' usage of mother tongue; Hakuta (1974), Bates et al. (1988), Brown (1973), Clark (1974, 1977), Garvey (1977), Nelson (1981), Peters (1977, 1983) and Hickey (1993) on early language acquisition; Wong Fillmore (1976), Ellis (1994), Weinert (1995), Granger (1998) and Howarth (1998) on second language learners are primary researchers in the area. For more information, Wray (1999), Wray and Perkins (2000) and Wood (2002).

It is seen that the term collocation is approached from basically two different points of view in mother language and foreign language: Statistically-oriented approach (frequency-based approach) and significance-oriented approach (phraseological approach) (for detailed information about approaches related to the classification of word associations and collocation (Eken, 2016). The present study is based on a phraseological approach. One of the most important representatives of the semantic-based approach is Cowie. Cowie (1994) distinguishes word associations primarily as *composites* and *formulae*. *Formulae* are clausal associations that have pragmatical functions such as "*ne haber?*"(what's up?), "*günaydın!*"(good morning!), "*geçmiş olsun!*" (get well!). *Composites* are units described by their syntactic functions and processed as phrase structures. According to Cowie (1981), *collocations* are sub-types of *compounds*, and they are categorized according to *transparency* and *commutability/substitutability* criteria. *Transparency* means if the units are forming the compound and the compound itself carries literal or non-literal meaning; *commutability/substitutability* means if the units in a compound can be changed with other units or not (1981: 224). Cowie argues that collocations are transparent and commutable; however, commutability is determined by one or more limitations. Cowie (1994) separates word associations into four types: *Free-combinations*, *restricted-collocations*, *figurative-idioms* and *pure-idioms*. Cowie emphasizes that drawing a definite limit between these groups is hard; some restricted-collocations can be close to idiom-like combinations. To separate word associations, many researchers (Arnold, 1986; Hausmann, 1989; Aisenstadt, 1981; Mel'čuk, 1998; Fernando, 1996; Cruse, 1986; Howarth, 1996) use *opacity and commutability* criteria by

expanding or restricting them, like Cowie.

In accordance with this, the research questions of the study are:

1. In which age group and in which semantic and morphologic categories are word associations used?
2. What are the similarities and differences age groups have in terms of using word associations in the language acquisition process?

METHOD

Participants

In the present study, cluster and random sampling methods of probability sampling methods were used together. The target population of the study was children in the language acquisition process in the preoperational stage. As a sample, 121 children between ages 4.0 and 6.0 continuing in 5 different pre-school institutions were randomly selected from three different easily accessible cities. However, as no data could be received from some of the participants, they were removed from the sample group, and the number was limited to 90 participants. For the participants to be represented with balance, 30 participants were chosen from each age group. Using the participant observation method, the natural speech texts of subjects were recorded by video cameras and voice recorders for a total of 60 hours (15 hours per age group). Acquired oral language data was analyzed, and the detected word associations were listed in Microsoft Excel. Children were observed as they talked with each other, teachers, parents and researchers; the context was taken into consideration in discourse analysis.

Categories and procedure

In this study, word associations are categorized as semantic and morphologic. Firstly, data acquired from participants were separated into 3 categories according to semantic *transparency* and *commutability/substitutability* criteria: *Free combinations* (Sinclair, 1991; Cowie, 1994), *collocations* (Cowie, 1994) (*semi-restricted collocations, restricted collocations, figurative idioms, pure idioms*) and *co-creations* (Hausmann, 1984).

Free-combinations have words that have unlimited *commutability/substitutability* in semantic restrictions that carry the information inherently as to which words they can be associated. As they are *transparent* (all of the units are used with their literal meaning), the meaning of these words gives the meaning of the compound.

Semi-restricted collocations are associations closer to restricted collocations in *commutability/substitutability* criteria but seem like free-combinations in *transparency*;

all of the units are used with their literal meaning; they have more restricted *commutability/substitutability* options than free-combinations in line with semantic restrictions. The meaning of association can often be inferred from the meaning of the units.

Restricted collocations are formed by words that come together with *syntactic* rules with the framework of selection restrictions. The meaning of association shows a degree of transparency even though it is not as transparent as *free-combinations*. The meaning of association can often be inferred from the meaning of units. However, *commutability/substitutability* of units is not as free as in free-combinations. At least one of the units is used in its literal meaning; one is used in non-literal meaning.

Figurative idioms are between *restricted collocations* and *pure idioms*. They are word associations that show similar metaphorical characteristics even though they have transparent meanings formed by free-combinations. It is closer to *idioms* in that it is not *commutable/substitutable*; it is closer to *free-combinations* and *collocations* in transparency.

Pure idioms are the most fixed and stereotyped word associations that are not *transparent* and *commutable/substitutable* in any condition, and they have fully non-literal meanings. Therefore, the meaning of association definitely cannot be conferred from the meaning of units.

Co-creations are uncommon associations that are not reflected in the vocabulary of the language. Units in these types of word associations are combined with aesthetic concerns by using creation strategies; the formation of association is intentionally interrupted or units are used together unconsciously depending on word and rule deficiency. It is foreseen that both types of co-creations are seen in child language.

Secondly, word associations are categorized morphologically as *rigid noun phrases, predicative relations, and phrasal templates* (Smadja; 1993). *RNP* involves collocations in a sequence that has no word in between (*kara borsa (black market)*). *RNP* as the strongest collocation usually cannot be separated without losing its meaning. They usually correspond to important concepts in an area and can be used to describe the same concept. *RNP* involves compounds formed with nouns and noun-based words, such as adjectives, prepositions, etc. The possibility to use some word types together is only syntactic. For example, as adjectives take on the task of the names they describe, adjectives can be used with nouns in linguistic, lexical or syntactic aspects. However, some adjectives are especially used with some nouns and do not form collocations with other synonyms. For example in "*kara gözlü*" (*dark-eyed*) associations, when "*siyah*" (*black*) is changed with "*kara*" (*dark*), it is seen that the fixation of the word group loses its strength.

Predicative relations involve the use of two words in a

similar syntactic relation. PR is the most flexible association type. However, they are hard to spot as they let word sequences go between the corpus. For example, *noun+verb* or *adverb+verb* associations that are often used in a corpus are considered in this corpus. PR involves structures such as serial verb constructions, raising verbs ("*güzel görünmek*"(look beautiful), "*çabılıyor görün-*"(look to be using effort), restructuring predicates ("*gülmek istemek*"(want to laugh), "*boğmaya gel-*"(come to strangle)), light verb constructions ("*mutlu kıl-*" (make happy), "*cevap ver-*" (give answer), "*fotoğraf çek-*" (take photograph)).

Phrasal templates include idioms that involve one or no gap. *PT* indicates collocations that continue for the length of a phrase, which are fixed expressions that rarely allow a change, making it the association type with the highest restriction degree. Phrased templated proverbs, slogans, and social routines are considered in this category.

Data analysis

The present study is conducted as an unstructured field study which is designed as a case study with descriptive and relational models. Descriptive analysis, content analysis, category and frequency analysis are used to determine collocations in the study.

Data validity is provided by applying *data acquisition with depth focus, long-duration interaction and expertization*. The credibility of the study is provided with

consistency and verification inspections with feedback from different experts in the data analysis stage.

RESULTS

In the database of the research, 5212 words were produced by 4.0-year-olds, 8183 words produced by 5.0-year-olds, and 11854 words produced by 6.0-year-olds, leading to the collection of about (+/-) 25.249-word linguistic input in total. 4.0-year-olds produced 261 types 611 tokens; 5.0-year-olds produced 415 types 1291 tokens; 6.0-year-olds produced 678 types 2269 tokens to the total of 1354 word associations as types and 4171-word associations as a token. Word associations are categorized semantically and pragmatically, and they are evaluated individually according to the age groups.

Collocation categories

Word associations are separated into categories and sub-categories semantically as *free-combinations, collocations (semi-restricted collocations, restricted collocations, figurative idioms, pure idioms)* and *co-creations*, and morphologically as *rigid noun phrases, predicative relations*, and *phrasal templates*. Table 1 represents the distribution of word associations produced by 4.0, 5.0 and 6.0-year-old participants according to their semantic and morphologic characteristics.

Table 1. The distribution of word associations produced by 4.0, 5.0 and 6.0 year-olds according to semantic and morphologic characteristics.

Semantic categories	4.0				5.0				6.0			
	Morphologic categories											
	RNP	PT	PR	Total	RNP	PT	PR	Total	RNP	PT	PR	Total
Free-combination	16		108	124	22		203	225	15		325	340
Semi-restricted collocation	9	AA	61	70	17		83	100	30		139	169
Collocation	7	3	26	36	13	6	32	51	19	14	64	97
Figurative idiom	2		15	17	1	1	22	24	6		41	47
Pure idiom	2	1		3	1	2		3	3	2		5
Co-creation	5		6	11	9		3	12	10		10	20
Total	41	4	216	261	63	9	343	415	83	16	579	678

According to the table, in all age groups, the most production is in free combination category (124 in 4.0-year-olds, 225 in 5.0-year-olds and 340 in 6.0-year-olds), the fewest production is in co-creation category (11 in 4.0-year-olds, 12 in 5.0-year-olds and 20 in 6.0-year-olds). In the collocation category, it is seen that the semi-restricted collocation sub-category is used more often than other sub-categories (70 in 4.0-year-olds, 100 in 5.0-year-olds and 169 in 6.0-year-olds) and pure idioms are

used least (3 in 4.0 and 5.0 year-olds, 5 in 6.0-year-olds). According to the table, it is determined that all age groups produce in all categories.

It is seen that PR are formed the most (216 in 4.0-year-olds, 343 in 5.0-year-olds and 579 in 6.0-year-olds) and PT the least (4 in 4.0-year-olds, 9 in 5.0-year-olds and 16 in 6.0-year-olds) in morphologic categories. It is determined that except for pure idioms, the participants in all age groups associate words the most in PR and the

least in PT (phrasal templates are not even present in some semantic categories) morphologically. By the very nature of free collocations and semi-restricted collocations (semantic *transparency* and *commutability/substitutability*), PT were not observed in these categories. And the reason for PT not being used in co-creations can be explained by the fact that there is no fixed formation.

Participants generally associate words as NOUN+NOUN ("*su balesi*" (*water ballet*)), NOUN+VERB ("*iğne yap-*" (*give injection*)), ADVERB+VERB ("*yanlışlıkla dök-*" (*pour accidentally*)), ADVERB+ADJECTIVE ("*daha fazla*" (*even more*)), VERB+VERB ("*çıkmaya çalış-*" (*try to get out*)), and ADJECTIVE+NOUN ("*pembe mum*" (*pink candle*)). It is observed that all participants (4.0, 5.0, 6.0) form word associations with N+V the most. It is determined that 4.0-year-olds form associations the least with V+V and ADV+ADJ; 5.0 and 6.0 year-olds form

associations the least with ADV+ADJ.

Common uses in word associations according to age level

In this section, associated uses in the same style in all age groups are discussed. 39 word-association were detected that are used in all age groups. These word associations are shown in Table 2.

It is determined that the use of the same type of word associations increases in three age groups depending on frequency and productions decrease depending on the increase in semantic restrictions. In Table 1, it is seen that use frequency decreases according to restriction degree. Common uses a decrease in parallel with this decrease. In the co-creation category, no common use is observed related to age groups.

Table 2. Word associations detected to be used in common by 4.0, 5.0 and 6.0 year-olds.

Association type	Example
Free-combination	<i>su iç-, öğretmene sor-, yemek iste-, ekmek ye-, kitap oku-, süt dök-, süt iç-, ağzını aç-, su ver-, su dök-, yemek hazırla-</i> (<i>drink water, ask the teacher, ask for food, eat bread, read books, spill milk, drink milk, open your mouth, give water, spill water, prepare meal</i>)
Semi-restricted collocation	<i>resim yap-, oyun oyna-, yere düş-, yemek yap- yemek ye-, kahvaltı yap-, şaka yap-</i> (<i>draw picture-, play games-, fall down-, make dinner, eat dinner, have breakfast, make jokes</i>)
Restricted collocation	<i>kutlu ol-, teşekkür et-, kavga et-, mutlu ol-, yardım et-, afiyet ol-, çizgi film, örümcek adam</i> (<i>be blessed, thank, fight, be happy, help-, enjoy meal-, cartoon movie, spider man</i>)
Figurative idiom	<i>tuvalete git-, abi/abla ol-, ne olur, adam ol-, bebek ol-, çocuk ol-, geri dön-</i> (<i>go to the toilet, be brother/sister, please, be a man, be a baby, be a child, come back</i>)
Pure idiom	<i>bana ne, sana ne</i> (<i>none of my business, none of your business</i>)
Co-creation	-

Characteristics of age level significantly affect the production of word associations by participants. As the age group increased in participants, it was observed that they started to form word associations conforming to both morphologic and semantic rules as well as the rules of language. These word associations also vary depending on the expansion of vocabulary as age increases. Uses in Table 3 can be given as examples of word associations used by only 4.0-year-olds.

Free-combinations used by 4.0-year-olds consist of word associations regularly seen in adult language. The use of word associations reflects the cognitive characteristics of the age group. For example, *baby group* associations are considered within semi-restricted collocations in 4.0-year-olds; these associations are not seen in higher age groups. Superiority feeling children

have for other children can be understood from the word associations they produce. Also, it can be seen that associations with reflection noises are formed in this age group ("*namnam ye-*"(*eat nomnom*), "*naninani yap-*"(*do naninani*)).

It is seen that in 4.0-year-olds over-generalizations and over-customizations are reflected in the collocations of children. Associations such as "*anneanne içeceği*" (*grandma drink*), "*babaanne yemeği*" (*grandma dinner*), "*elma dede*"(*apple papa*) that are categorized in co-creations are considered samples of over-customizations. The fruit juice that grandma usually makes is considered and used as "*anneanne içeceği*" (*grandma drink*) regardless of who made it. Another over-customization example "*elma dede*" (*apple papa*) is formed as a moon figure is likened to an apple slice. A child who uses

Table 3. Examples of word associations used by 4.0-year-olds.

Association type	Example
Free-combination	<i>palyaçodan kork-, pasta ye-, hızlı dön-, motora bin-, balon ver-, bilgisayarı kapat-, kukla al-, minik araba, hikaye dinle-, sarı mum (fear from the clown, eat cake, turn fast, get on motorbike, give balloon, shut-off computer, get puppet, small car, listen to story, yellow candle)</i>
Semi-restricted collocation	<i>burnu ak-, araba sür-, makyaj yap-, oyun boz-, doğum günü, iğne yap-, şapka tak-, çiši gel-, çöp at-, kaka yap-, üstünü deęiştir-, bale yap-, dilek dile-, kuma gömül-, kutu kola, su balesi (runny nose, drive car, do makeup, ruin game, birthday, give injection, put on hat, need a pee, throw thrash, poop, change clothes, do ballet, wish, bury sand, coke can, water ballet)</i>
Restricted collocation	<i>karşı gel-, pamuk prenses, park et-, dans et-, örümcek adam, rahatsız ol-, söz ver-, barbi bebek, çarşıya çık-, dalga geç-, kamera/video çek-, karnı acık-, kitap yazarı, satın al-, havuç tut- (oruç tut-), (object, snow white, park, dance, spider man, being disturbed, promise, barbie doll, go shopping, mock, shoot camera/video, become hungry, book writer, purchase, hold carrot (fasting))</i>
Figurative idiom	<i>maymun ol-, karnı şiş-, karnı şişik, namnam de-, naninani yap-, namnam ye-, önüne gel-, tabaęı dökül- (be monkey, full stomach, stomach full, do naninani [child game], eat nomnom, come to front, spill plate)</i>
Pure idiom	<i>gününü gör-, canıma deę-, size ne (be in for, serves you, none of your business)</i>
Co-creation	<i>anneanne içeceęi, babaanne yemeęi, çişemeye git-, içecek iç-, kız keçi, satın ver-, süpermen motoru, yüzünü havlula-, çorba ye-, fişkirik tut-, elma dede, atış burculuk (grandma drink, grandma dinner, go pee, drink drink, girl goat, give buy, superman bike, towel your face, eat soup, hold sprinkler, apple papa, junk snacks)</i>

“Süpermen motoru” (superman bike) association uses this association as an over-customization example by naming all blue and red bikes as “Süpermen motoru”.

In restricted collocations produced by 4.0-year-olds, story and movie heroes and toy names like “*pamuk prenses*”(snow white), “*örümcek adam*” (spider man), “*barbi bebek*”(barbie doll) were encountered. Besides, pronunciation errors exclusive to the age group also draw attention (for example in the “*havuç tut-*”(hold carrot) association used instead of *oruç tut- (fast)*). These productions can be characterized as examples of individual differences as well as collocation mistakes related to characteristics of the age group.

It is seen that 4.0-year-olds especially play with words, form associations and derivations (“**çişemeye git-*” (çiş yapmaya+işemeye git-) (go pee), “**yüzünü havlula-*” (towel your face), “**içecek iç-*” (drink drinks), “**atış burculuk*” (abur cubur+atıştırmalık) (junk food + snacks = junk snacks)). For example, the child who formed the “**kız keçi*” (girl goat instead of a female goat) formed a collocation structure not present in the adult language. Such formations are related to the fact that vocabulary is limited; the child does not know one of the words in the usual association. It was detected that children break collocational structures in this period with trial and error, they play with word associations. Below, these trial and error types are illustrated. In Example 1, the child talks

with an adult; in example 2, the child talks with a peer.

Example 1:

- Mağazada amca bana oyuncak verdi... (The uncle in the store gave me a toy...)
- Amca vermedi oyuncuęı, biz aldık. (He didn't give the toy, we bought it.)
- Tamam işte amca verdi, biz aldık. (Yes, uncle gave, we bought.)
- Hayır tatlım, biz onu satın aldık, yani parayla aldık. (No sweetie, we bought it, meaning we purchased it.)
- Biz satın aldıysak o da satın verdi! (If we purchased with money, he gave buy!)

In Turkish vocabulary, there is no use as “**satın ver-*” (give buy). However, it is seen that the child derives from contrast structure and tries word change.

In the acquisition period faulty/wrong collocation productions are often seen, especially in the 4.0 age group. As can be seen from example 2, 4.0-year-old participants tend to correct each other's mistakes.

Example 2:

- Bartu sus! (Bartu hush!) Sen daha çorbanı yememişsin! (You haven't eaten your soup yet!)
- Çorba yenmez içilir! (Soup isn't eaten, it's drunk.)
- İşte çorbanı içmemişsin! (You haven't drunk your soup!)

Yemeğini yememişsin! (You haven't eaten your meal!)

In example 3, it is seen that the child makes a collocation mistake as a result of disrupting the structure of collocation and choosing the wrong words. It was observed that the same child made the right use structurally after some time. However, achieving the right use vocally requires a certain process.

Example 3:

- Hıç! (Hiccup noise)
- Ne oldu tatlım hıçkırık mı tuttu? (What happened sweetie, do you have the hiccups?) Su iç de geçsin... (Drink some water so it passes...)
- Evet teyze fişkırık tuttum! (Yes auntie, I got hillups!)
- Sen fişkırık tutmadın, "seni hıçkırık tuttu"... (You did not get hillups, "you have the hiccups"...))

Beni fişkırık tuttu. (I have the hillups.)

Word associations used by 5.0-year-olds are illustrated in Table 4.

It was detected that the collocation production of children in this group is varied when compared to 4.0-year-olds. The most basic difference in use between 5.0 and 4.0 year-olds is seen in co-creations. At this age, a large decrease in collocation errors by trial and error is detected. In this period, children now form co-creations with collocation structures they break intentionally (for example, uncommon associations such as "teyzeler günü"(aunts day), "dedeler günü- (grandpa day) they achieve these by breaking the structure of "anneler günü"(mothers day). In example 4, "ezilmiş peynir" (crushed cheese) and "üzülmüş peynir" (sad cheese) associations are co-creations used by 5.0-year-olds.

Table 4. Examples of word associations used by 5.0-year-olds.

Association type	Example
Free-combination	<i>öğretmene söyle-, ağızını aç-, elini koy-, suya düş-, araba al-, balık ye-, dondurma yap-, limonata iç-, oyuncakları topla-, balık kok-, burnu kana-, koluna vur- (tell the teacher, open your mouth, put your hand, fall into water, buy car, eat fish, make icecream, drink lemonade, gather toys, smell fish, nose bleed, hit arm)</i>
Semi-restricted collocation	<i>piyano çal-, bilek güreşi, geri ver-, hasta ol-, kahvaltı saati, oyun boz-, saç tara-, toka tak-, çak yap-, çiş yap-, film izle-, gözünü aç-, içeri gir-, kaza yap-, kötü adam, saç topla-, ses yap-, sinir et-, şarkı söyle- (play piano, arm wrestling, give back, be sick, breakfast time, disrupt game, brush hair, put on hairpin, make high five, go pee, watch movie, open eye, go in, make accident, bad man, tie hair, make noise, annoy, sing song)</i>
Restricted collocation	<i>örümcek adam, anneler günü, balık tut-, lastik patla-, kobra yılanı, Ninja kaplumbağa, takla at-, rica et-, özür dile-, el sallama-, sörf yap-, ağızına at-, barbi bebek, iğne batır-, kafasına takıl-, kameraya çek-, karnı doy-, şakacık yap-, takım tut-, yazı yaz-, yunus balığı, zarar ver- (spider man, mother's day, fishing, tire blow, cobra snake, Ninja turtle, tumble, be satisfied, ask for, apologize, wave hand, surf, put into mouth, barbie doll, prick, obsess, shoot camera, be full, make jokesy, support team, write text, dolphin fish, hurt)</i>
Figurative idiom	<i>bir şey söyle-, karşısına çık-, canını acıt-, sokakta kal-, bir şey değil, canı iste-, denize git-, derisini yüz-, dişini çıkart-, elini kır-, okulu yak-, tuvalet yap-, yıldız al-, yıldız yap-, yukarı fırlat-, el öp- (tell something, confront, hurt, stay on street, no sweat, want it, go to sea, skin it, pull teeth, break hand, burn school, do toilet, get star, make star, jump up, kiss hand)</i>
Pure idiom	<i>bana ne, canı yan-, ne ayıp (none of my business, hurt, shame)</i>
Co-creation	<i>dedeler günü, amcalar günü, topuk kafa, ezilmiş peynir, üzülmüş peynir, kaplumbağa kılıcı, teyzeler günü, takla aç- (grandpa day, uncles day, heel head, crushed cheese, sad cheese, turtle blade, aunts day, open tumble)</i>

Example 4:

- Öğretmenim krem peynir alabilir miyim? (Teacher, can I get cream cheese?)
- Ben de ezilmiş peynir... (Me too, crushed cheese...)
- Ne? (What?) Üzülmüş peynir mi?! (Sad cheese?!)

Hahahaha!

- Üzülmüş değil, ezilmiş, ezmişler peyniri, ezilmiş peynir! (Not sad, crushed, they crushed cheese, crushed cheese!)

In this group, the most striking co-creation type that can

be categorised as wrong use is “**takla aç-*” (open tumble) association that is a collocation error related to regional/dialect characteristics. “*takla at-*” (tumble) in a standard language is changed with a syntagmatic error. The wrong use of the collocation by the teacher causes children to continue using the mistake. Mentioned collocation error is observed in more than one child; however, after the researcher corrected this mistake, it was detected that it was changed with correct collocational use (*takla at-* [tumble]) in the next interviews.

Word associations used by 6.0-year-olds are illustrated in Table 5.

It is observed that the production of idioms and co-creations increase as well as collocations in 6.0-year-

olds. It is seen in the table that children in this period obtain social rules and their productions are in this direction different from other age groups (collocations like “*izin al-*”(get permission), “*teşekkür et-*”(say thanks), “*özür dile-*” (say sorry) show this). Besides, the increase in figurative idioms draws attention. 6.0-year-olds have a wider vocabulary than 4.0 and 5.0 year-olds and they mostly obtain rules; therefore, they can reflect figurative meaning and meaning transfer to their words and word associations (“*ağzının fermuarını çek-*” (zip up your mouth)). It is seen that in this age group, pure idioms also increase compared to other age groups.

The context in Example 5 can be an example of co-creation in this group. The child, with help of the teacher, realizes the collocation error and corrects it.

Table 5. Examples of word associations used by 6.0-year-olds.

Association type	Example
Free-combination	<i>okula gel-, kapıyı kapat-, öğretmene söyle-, araba al-, atlet giy-, ayı yavrusu, bal sev-, bardak kır-, çabuk ol-, doktor ol-, feribota bin-, gemi yap-, geri dön-, makarna ye-</i> (come to school, close the door, tell teacher, buy car, wear athlete, bear baby, like honey, break glass, hurry, be doctor, get on ferry, make ship, turn back, eat pasta)
Semi-restricted collocation	<i>oyuncak müzesi, oyun kur-, geri gel-, kamera şakası, şarkı söyle-, yalnız kal-, ateş yak-, ayağa kalk-, dışarı çık-, kör göz, hazırlık yap-, kavgaya karış-, ses duy-, şapka tak-, şarkı çal-, yalan söyle-</i> (toy museum, create game, come back, camera prank, sing song, be alone, light fire, stand up, get out, blind eye, make preparation, get into fight, hear noise, put on hat, play song, tell a lie)
Restricted collocation	<i>pembe panter, sigara iç-, dalga geç-, eşek şakası, parende at-, merak et-, özür dile-, ad koy-, fermuar çek-, ıslık çal-, izin ver-, kameraya al-, kavgaya et-, koku al-, millet meclisi, para bozdur-, selam ver-, soru sor-, tekme at-</i> (pink panther, smoke cigarette, ridicule, prank, do sommersault, be curious, say sorry, give name, fasten zip, whistle, grant permission, take into camera, fight, smell, national assembly, change money, greet, ask question, throw kick)
Figurative idiom	<i>geriye git-, kırmızı alarm, tuzağa düş-, arkasına bak-, gözünü aç-, kuş beyinli, suratına yapıştır-, ağzının fermuarını çek-, burama geldi, havaya uç-, içinde kal-, kıyamet kopar-, leş gibi kok-, yere yat-, yerine geç-</i> (go back, red alarm, fall into trap, look back, open eye, feather brain, slap the face, zip the mouth, had enough, blow up, stay inside, break loose, smell like carrion, lay down, replace)
Pure idiom	<i>nasıl olsa, ne biçim, elinden çek-, hava at-, ödü patla-</i> (somehow, what kind, pull hand, show off, get scared)
Co-creation	<i>anne fare, tavuk dansı, yere fırla-, süt ye-, can kılıcı, gece sütü, hayvan mağazası, kafası tavana çakıl-, kafaya vur-, kurbağaca konuş-, mikrop oyuncuğu, sörf sür-, tatlı çorba, tavana çakıl-</i> (mother mouse, chicken dance, rush to ground, eat milk, life sword, night milk, animal store, head smash ceiling, hit head, speak frog, microbe toy, ride surf, sweet soup, smash ceiling)

Example 5:

- Öğretmenim ben sütümü yemeyebilir miyim? (Teacher may I not eat my milk?)
- Sütünü yemeyebilirsin tabii, içebilirsin! (Of course, you

may not eat your milk, you can drink it!)

- İşte... (Well...) Kurabiyemi yemeyebilir, sütümü içmeyebilir miyim? (May I not eat my cookie, not drink my milk?)
- Kurabiyeni yemeyebilir ama sütünü içebilirsin! (You may

not eat your cookie, but you may drink your milk!) Süt içmelisin! (You should drink milk!)

As age range increases, co-creations with errors decrease; the fact that co-creations by 6.0-year-olds are usually formed by creative strategies draws attention. According to the systematics of language, words form associations by coming together under certain conditions. It is seen that sometimes words are associated according to selection and combination principles depending on member structure, semantic, paradigmatic and syntagmatic characteristics; sometimes these principles are broken consciously or unconsciously by a text producer; these principles are played with while words are joined. It was observed that 4.0 and 5.0 year-olds played with word associations and made tests; 6.0-year-olds performed more conscious productions.

DISCUSSION

This study was performed to detect what kind of word associations are produced by 4.0 to 6.0-year-old children. The aim is to make descriptions of the kind of changes in collocation use according to age levels of children among participants, in accordance with findings acquired by the study. The use of findings reached in this chapter was assessed according to association categories, age range, and context.

Collocation categories

Participants produced word associations in all semantic association categories. Associations produced by participants increase from *free-combinations* to *pure idioms*. This situation coincides with, from easy to hard, concrete to abstract in acquisition hierarchy. The difficulty level of collocations increases directly proportional to the restriction level. The most used association type in all age groups is free-combinations. This situation can be explained by the possibility to produce infinitely by using a limited number of units with semantic and syntactic conditions by the productive structure of language, which means that it can be seen as a result of productive transformational grammar (Chomsky, 1965). At the same time, it shows parallelism with the open-choice principle of Sinclair (1991). In this context, it is seen that word association production in 4.0 to 6.0 year-olds is done within semantic restrictions.

The most commonly used category after free-combinations is collocations. It is seen that within collocations, *semi-restricted collocations*, *restricted collocations*, and *figurative idioms* are used respectively. This result acquired from oral language data is in the same alignment with the findings acquired from Turkish written language (Eken, 2015). When restriction and

difficult levels of collocations are considered, these results should be considered normal. Because difficulty rating in the gradation scale offered by Cowie (1994: 3168) about word associations is: *free-combinations*, *collocations*, *figurative* and *pure idioms*. According to Howart (1998: 27-28), transparency criteria include a ranking from non-idiomatic to idiomatic. This approach makes the discrimination between *free-combinations* (for example *masanın altında* (under the table)), *restricted collocations* (for example *saldırı altında* (under attack)), *figurative idioms* (for example *mikroskop altında* (under microscope)), and *pure idioms* (for example *yastık altında* (under pillow)) (Howart, 1998: 27-28).

The least used association type in all age groups is *idioms* that show the least transparency semantically. This situation can be explained by the cognitive characteristics of the age range. Children in these age groups use words with concrete meaning more than abstract meaning. As words forming idioms have abstract meanings, it should be considered normal that these word associations are used less by the participants. Not all but most of the formic sequences abolished word meanings to gain an integrated meaning (Nattinger and DeCarrico, 1992: 32-33). Formulaic sequences carry metaphorical meaning, and in some cases, they are impossible to understand without pragmatic or semantic content (Gibbs, 1991). Therefore, the acquisition process of these structures by young children may spread over time.

It was detected that children in the participation group produced general word associations with *predicative relations* among morphologic categories. This result matches with the morphological findings related to word associations commonly used in Turkish narrative texts by Eken (2015). Therefore, it can be said that children are more exposed to verbs from the premise that frequently used word association types in written language are also used frequently in the oral language in Turkish. Also, it can be suggested that it arises from the fact that Turkish is an agglutinative language and affixes to verb bases are also used in other tasks. By definition of language; even though verbs are less than nouns in the vocabulary, this situation can change regarding production. It was detected that generally, children in all age groups produce associations with noun+verb and noun+noun. There are two different opinions in the literature; one states that primarily nouns are acquired and used intensively (Nelson, 1973; Halliday, 1966; Hudson, 1980; Gentner, 2006; Goldfield and Reznick, 1990; Clark 1995; Caselli et al., 1995; Sofu, 2016), the other states that verbs are produced primarily (Brown, 1973; Slobin, 1973; Aksu-Koç and Slobin, 1985; Tomasello, 1992; Küntay and Slobin, 1996). The results of this study show parallelism with the views of researchers who argue verb production is more intense. Türkay (2005) states that dominant noun use gives way to verbs at about three years old as the nature of Turkish, information load is more in verbs,

causes verbs to stand out in the language directed at the child. Sofu and Türkay (2006) also emphasize that verb use gains importance compared to noun use from 2 years onwards. In our study, it is seen that associations formed with verbs are more in number and this use increases as the age range increases.

It is detected that among morphologic categories, the least production is made with phrasal templates. Phrasal templates generally involve stereotyped structures such as proverbs, idioms, and slogans. As these structures are acquired in later stages than the acquisition period, this situation is seen as an expected result. As phrasal templates involve restricted uses, it is only used in restricted collocations, figurative idioms, and pure idioms; this situation is seen as natural in the structure of Turkish and the difficulty level of associations.

The increase in restriction levels of collocations and therefore difficulty levels as age range increases support the views of researchers that argue lexical acquisition increases with age range such as Cole and Morgan (1985), Sandström (1971), Papalia and Olds (1982), Lewis (1982), Paul et al. (1996), Bzoch and League (1991), Şener et al. (1995), Savaşır et al. (1993) and Vaugan and Litt (1990). Word association production increase parallel to the increase and variation in word production. In our study, it is seen that children in 6.0-year-olds produce more and varied word associations than smaller age groups in all categories. The fact that word association used by 6.0-year-olds is more advanced than 4.0 and 5.0 year-olds can be explained by lexical development and experience.

Common and different uses in word associations according to age level

The highest frequency in common use is in the free-combination type. Common uses in this category are associations produced commonly in daily language also by adults for requests and needs (*su iç- (drink water), yemek iste- (want to eat), bir şey al- (take something)*). In the co-creation category, no common use is observed related to age groups. This situation is not against the nature of co-creation. As they are specific associations particular to individuals, this can be interpreted as an expected situation.

It is seen that cognitive and affective characteristics of age group are reflected in vocabulary, and therefore word association use. The increase in figurative idioms as the age range increases draws attention. It is seen that especially children aged 5.0 and 6.0 can reflect symbolic meaning and meaning transfers to their word associations. It is seen that word associations used in all age groups show parallelism to the cognitive development of children, their needs and the effects of the socio-cultural structure they are in. Children fully grasp abstract and transferal meaning only in the abstract

operations period according to phases in cognitive development theory (Piaget, 2000). According to this, as the 4.0 and 6.0-year-old periods are considered a preoperational stage, children can reach the meaning of association only with concrete conceptual meanings. Grasping the abstract meanings and using them in association with children can only take place as the age range increases. It is seen that 6.0-year-olds perceive and reflect on their productions' abstract meanings, therefore they use pure idioms and figurative idioms more when compared to the other two age groups. In this context, it is foreseen that these associations, which are the most restricted structures, will be used more commonly and correctly in the latest phase of the concrete operational stage and the abstract operations stage.

As a result of studies on syntax-semantics intersection (Brown, 1973; Slobin, 1973) associations in forming word combinations between children in different linguistic communities were detected. This situation supports Chomsky's universal grammar theory. However, as Slobin (1973) states, the differences between languages are also present in word development. Bloom (1970) researched individual differences in language development; he obtained findings that support Chomsky's universal grammar theory, also he stated that different grammatical findings showed up in different children. Findings from our study can also be considered as supporting Bloom's study. Regional even individual uses are reflected in children's collocation productions. This situation was also emphasized by Coulmas (1979) and Wood (2002). It is foreseen that this situation, which is associated with language acquisition context and social conditions, will change for the better in the school period with education.

Children in the participation group usually feature characteristics of the age group, and they can produce frequently used word associations in rules and meaning. It was detected that children in all age groups acquired word associations they were exposed to and that they use mentioned associations in a manner that is suitable to the context. However, it was observed that they made some mistakes, particularly in co-creations, and these mistakes disappeared as the age range increased, and the mistake was corrected. Clark (1974) who worked on collocation mistakes of children argues that they do not acquire units by analyzing them one by one, but rather they acquire some units collocationally and conceptualize them. According to Clark, the acquisition of word associations (formulas) should take shape with learning, social contexts that realize learning and the use in these contexts. This situation explains observed collocation mistakes related to regional uses and correction of these mistakes with time and education. A similar situation to collocation mistakes also happens for foreign language students. Altıkulaçoğlu (2010) detected that collocation mistakes are connected to culture and vocabulary

deficiency in foreign language students. Within our study, it can be said that collocation mistakes in the mother language acquisition period also result from a lack of lexicology. While forming word associations children can choose as much as their vocabulary permits. Not knowing one of the words in the usual association causes them to form unusual associations. For example, the child does not know the word *dışı* (*female*) and chooses another word with an overlapping meaning and forms *kız keçi* (*girl goat*) association. This situation is inversely proportional to an increase in linguistic competence level. The fact that such wrong productions are not seen in older age groups shows this. De Cock (2000) states that when compared to mother language findings, foreign language students overused some sequences, underused some and simply misused others. Irujo (1986, 1993) also concluded that such errors in foreign language (L2) learners are caused by the lack of input. In the present study, it was seen that 4.0 and 5.0 year-olds made some mistakes while forming word associations and these mistakes decreased for 6.0-year-olds. It can be said that these mistakes about word selection of children in the acquisition period arise from lack/deficiency of vocabulary just like in L2 learning or from productions exclusive to child languages such as over-generalization and over-customizations. This situation can change with cognitive development and education. Sofu (2016: 97) states in his work that one of the children did not know the word "çakmak" (lighter) and produced "ciss yak-" (light ouch) association. Similar examples show that mistakes arising from a lack of vocabulary are often reflected in the production of children during the language acquisition period. It is observed that as the age increases of children in our participant group, they use suitable word associations regarding rules and meaning. In this respect, making similar detections for school-aged children may be beneficial to offering comparison opportunities.

Age range and individual differences carry variable values especially the production of collocations and co-creations. In the participant group, co-creations were used more than pure idioms, which can be linked to the fact that word games are usually carried out in child language. Children in the language acquisition period make some experiments in combining words of their mother language paradigmatically and syntagmatically, which can be characterized as over customization or overgeneralizations, and in some cases, they even play with words. Altıkulaçoğlu (2010) states that overgeneralization affects collocational word use in L2 learners. This situation shows that factors like over-generalization and over-customization in collocation formation are not only exclusive to child language. According to Chomsky (1988), in language acquisition individuals firstly try to grasp the structures of language, then start to form new structures by trying to change these structures into other structures. Children in the

acquisition period may form associations never heard before by changing and transforming word associations by trial and error. In accordance with the findings of our study, particularly the word association productions in collocation category by children in lower age groups (such as *babaanne yemeği* (*grandma dinner*), *anneanne içeceği* (*grandma drink*), *elma dede* (*apple papa*), *Süpermen motoru* (*Supermen bike*)) support this assumption. Co-creations include word games, especially for children around 4.0 years. 4.0-year-old participants are also seen to try derivation possibilities of the language (*yüzünü havlula-* (*towel your face*), *çişemeye git-* (*go pee*), *atış burculuk* (*junk snacks*), *satın ver-* (*give buy*)) As age increases, these productions transform into associations formed by creative strategies. This situation shows that linguistic competence increases parallel to an increase in age; therefore, the structure of associations is broken intentionally.

Characteristics of cognitive development periods are reflected in the word associations of participants. For example, 4.0-year-olds see themselves as superior and emphasize their superiority to others. In the current study, this feeling of superiority is clearly seen in word associations used by children in 4.0 year-olds. The heavy use of reflection noises by 4.0-year-olds also shows this (*namnam ye-* (*eat nomnom*), *naninani yap-* (*do naninani*)). In addition, the fact that the associations related to names of story-movie characters, games and toys are used more frequently by 4.0-year-olds compared to 5.0 and 6.0-year-olds is considered to be a result of the fact that the 4.0-year-olds give such concepts the prominence in their lives. Bahns, Burmeister, and Vogel (1986) state that children choose a game or play formulas at the start of second language acquisition; these productions can be expanded to mother language-like choices through pragmatic awareness and growth in language abilities. Results of our study also reveal children progress towards adult-like use in mother language acquisition. In the word associations of 5.0-year-olds, they start to produce adult-like statements just like 6.0-year-olds as well as play-related statements exclusive to child language just like 4.0-year-olds. In this context, regarding the language acquisition process, 5.0-year-olds show a transformation process between 4.0 and 6.0 year-olds. In the evaluation of word associations, characteristics of age group and uses within context were considered.

CONCLUSION

4.0 to 6.0-year-old children make correct productions in all association categories in the right context parallel to word acquisition. Thereby, it is seen that just like in other languages, collocation production is in the early period of language acquisition period in Turkish. Children exposed to associations formed with frequently used words (particularly free-combinations) include associations

formed with frequently used words with concrete meaning in their natural talks. Besides, they used word associations that they came across in their social environments and mass media appealing to them. They made productions suitable for adult language and child language characteristics. However, it was observed that they used some faulty associations in the first stages of the acquisition period. It was observed that these were corrected with the effects of exposition, experience, and education.

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