

# In Turkish: Sentence Structure and Possible Sentences According to the Sequence of Elements

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Received: August 17, 2016

Accepted: August 30, 2016

Online Published: September 14, 2016

doi:10.11114/jets.v4i10.1880

URL: <http://dx.doi.org/10.11114/jets.v4i10.1880>

## Abstract

This study aims to investigate the structure according to the order of the elements in the Turkish sentence and to determine the possible sentences that are produced according to this structure. In order to examine the possible sentences, the question raised is: "How many possible canonical clauses (regular), inverted sentences (irregular) and elliptical (incomplete) sentences in Turkish can be created?" There are 24 possible sentences in canonical structure in which the position of the verb is fixed and other elements change positions. Inverted sentences are grouped under four groups: hence, there are 96 sentences. Elliptical sentence is formed with the reduction of one or more elements from the sentence and there are 205 possible sentences in elliptical sentence structure. No structural changes or affixes occur in the words that form the sentence. The same words are used in the same structure. As a conclusion, it is found out that the total number of possible canonical and inverted sentences are  $24+24+24+24+24=120$  and the number of elliptical sentences are  $5+20+60+120=205$ . This indicates that we can form  $(24+96+205=325)$  325 possible sentences in Turkish.

**Keywords:** sentence structure, canonical clauses sentence, inverted sentence, elliptical sentence

## 1. Introduction

### 1.1 The General Characteristics of Turkish

The number of languages that have been spoken and used in the world up to the present day is 7000 according to the linguists (Cengiz, 2011). Each language has similarities and differences with its own unique system. However, Sir William Jones spotted the affinity among Indo-European languages for the first time in 1786 after examining the origins of languages (Arikoğlu, 2009) and by this way, it was realized that languages could be classified based on their origins. According to the studies conducted so far, languages are classified into language families as follows:

1. Afro-Asiatic Languages
2. Indo-European Languages
3. Sino-Tibetan Languages
4. Niger-Congo Languages
5. Ural-Altaic Languages

Turkish language belongs to Ural-Altaic language family's Altaic group (Sarı, 2011), which include languages where there is affinity among them in terms of their origins. German Schleicher (Onan, 2009) classified languages as radical languages, agglutinating languages and fusional or inflected languages. Accordingly, languages are classified as follows based on the similarities on their grammatical structures:

1. Radical World Languages (Formless, Isolating)
2. Fusional or Inflected Languages (Conjugated))
3. Agglutinating Languages (Linked, Coherent)

Turkish takes place in agglutinative language group where inflection is performed by adding suffixes to the root-words. Ercilasun (2013) states that world languages are classified into six groups according to the sequence of sentence elements. The word-order groups are as follows:

1. Subject Verb Object

2. Subject Object Verb
3. Verb Subject Object
4. Verb Object Subject
5. Object Verb Subject
6. Object Subject Verb

Turkish falls into the second group “Subject- Object- Verb” according to the sequence of word order.

### 1.2 Sentence Elements in Turkish Sentence Structure

The verb and other components that accompany the verb in terms of function and meaning are the elements of a sentence. These elements could be just one word or groups of words (phrases). These components make it possible to form accurate and meaningful sentences. There are 5 elements that make a sentence:

- Verb
- Subject
- Object
- Indirect Object
- Adverbial Clause

Sentence is a group of words that are put together to express a complete thought, action, emotion and incident (event). It is necessary that at least a transitive verb (verbal sentences) or a noun with a complementary verb (noun clauses) must function as the verb to be able to form a sentence. For example, the word “Götürdüm.” in Turkish is a sentence all alone. The other elements in the sentence complement the verb in terms of meaning and function. Verb and subject are the basic elements, the other are complementary elements of the sentence (Ergin, 2009).

There are three groups of complementary elements in Turkish sentence structure:

- Object
- Indirect Object
- Adverbial Clause

Turkish sentences can be put into three main groups according to the sequence of sentence elements: canonical clauses (regular sentences), inverted clauses (irregular sentences) and elliptical (incomplete) sentences. Language rules are derived from the structure of the language and its historical background and these rules are not unchangeable, strict, and certain vice versa flexible (Vural and B öder, 2012).

### 1.3 Purpose of this Study

The aim of this study is to investigate the structure according to the order of the elements in the Turkish sentence and to determine the possible sentences that are produced in accordance with this structure. In this context, the research problem of this research is: “What are the possible sentences, according to the order of the elements?”.

In order to examine research question, these sub research questions are asked: In Turkish;

1. How many possible *canonical clauses (regular)* sentences can be created?
2. How many possible *inverted sentence (irregular)* sentences can be created?
3. How many possible *elliptical (incomplete)* sentences can be created?

## 2. Method

A sample sentence is selected to study in Turkish that includes all the elements (main elements and auxiliary elements). “Ben kedimi bugün okula götürdüm. (I took my cat to school today.) ” is the sample sentence. Words and tasks of the words in the sentence are given in the following table.

Table 1. Sentence elements and words used in the study

verb	subject	indirect object	adverbial clause	object
g ö t ü r d ü m	ben	okula	bug ün	kedimi

Possible sentences are created by using the same words as in the sample sentence. There are changes neither in the roots nor in the supplements of the words.

### 3. Results

#### 3.1 Canonical Clauses

According to canonical sentence structure, the verb must come at the end of the sentence

(1) The verb signals an action, occurrence or a state of being which expresses an activity and it is the finite component that completes a sentence. It is the main element of a sentence. The verb could be one word or a group of words. Other elements exist in the sentence to complete the meaning of the verb.

(2) The subject is the element that fulfills the action or occurrence signaled by the verb or it is the element, about which information is given by means of the verb, and it answers the questions “who” or “what”, which are asked to the verb.

(3) Indirect object is the element that complements the meaning of the verb in terms of place, being present and movement. It usually takes –e, –de, and –den suffixes and answers the questions “where to, where from, who, what, why” that are asked to the verb.

(4) Adverbial clause expresses when, why, how, how much/many and in what way the action and occurrence signaled by the verb takes place. Prepositional clauses are also accepted as adverbial clauses.

(5) The object is the entity or concept, which is acted upon by the subject and affected by the action or occurrence signaled by the verb. The questions “who and what” are asked to the verb to find out direct object whereas the indirect object precedes the direct object and identified by asking questions “who or what receives the direct object”.

The questions (who/what), which are mentioned in the explanations above, are used to determine the elements of a sentence. When we consider the sentence, “Ben bugün kedimi okula götürdüm.”, if we address the elements of a sentence as: 1=the verb, 2=the subject, 3=indirect object, 4=adverbial clause, 5=the object, the sequence of sentence elements could be given as follows; 2(ben) – 4 (bug ün) – 5(kedimi) – 3 (okula) – 1(g öt ürd üm)

In regular sentence structure, the verb must be placed at the end of sentence. As a mathematical term, “permutation” indicates the arrangement or the sequence of different elements in various forms. In this context, when a sentence is formed on condition that the verb is at the end position, the question of how many different forms could 4 out of 5 elements be arranged is answered by permutation. Hence, the number of regular sentences formed with 4 elements on condition that the verb is at the end, equals to the permutation of 4.

$$4! = 4.3.2.1 = 24.$$

In this way, based upon the given example, we will have 24 possible regular sentences in which there are 5 elements. While only one element (the verb) is fixed, other elements change their positions.

1. Ben bug ün kedimi okula g öt ürd üm	13. Bug ün kedimi ben okula g öt ürd üm
2. Ben bug ün okula kedimi g öt ürd üm	14. Bug ün kedimi okula ben g öt ürd üm
3. Ben okula kedimi bug ün g öt ürd üm	15. Bug ün ben kedimi okula g öt ürd üm
4. Ben okula bug ün kedimi g öt ürd üm	16. Bug ün ben okula kedimi g öt ürd üm
5. Ben kedimi okula bug ün g öt ürd üm	17. Bug ün okula ben kedimi g öt ürd üm
6. Ben kedimi bug ün okula g öt ürd üm	18. Bug ün okula kedimi ben g öt ürd üm
7. Okula ben bug ün kedimi g öt ürd üm	19. Kedimi bug ün okula ben g öt ürd üm
8. Okula ben kedimi bug ün g öt ürd üm	20. Kedimi bug ün ben okula g öt ürd üm
9. Okula kedimi bug ün ben g öt ürd üm	21. Kedimi ben okula bug ün g öt ürd üm
10. Okula kedimi ben bug ün g öt ürd üm	22. Kedimi ben bug ün okula g öt ürd üm
11. Okula bug ün kedimi ben g öt ürd üm	23. Kedimi okula ben bug ün g öt ürd üm
12. Okula bug ün ben kedimi g öt ürd üm	24. Kedimi okula bug ün ben g öt ürd üm

When we group the possible regular sentences according to elements positioned at the beginning of the sentence on condition that the verb is at the end of sentence, there will be 4 groups:

- The sentences beginning with the subject and ending with the verb.
- The sentences beginning with an indirect object and ending with the verb.
- The sentences beginning with an adverbial clause and ending with the verb.
- The sentences beginning with the object and ending with the verb.

Table 2. Possible sentences in canonical clauses

A	B	C	D
1.Ben bug ün kedimi okula g öt ürd üm.	1.Okula ben bug ün kedimi g öt ürd üm.	1.Bug ün kedimi ben okula g öt ürd üm.	1.Kedimi bug ün okula ben g öt ürd üm.
2.Ben bug ün okula kedimi g öt ürd üm.	2.Okula ben kedimi bug ün g öt ürd üm.	2.Bug ün kedimi okula ben g öt ürd üm.	2. Kedimi bug ün ben okula g öt ürd üm.
3.Ben okula kedimi bug ün g öt ürd üm.	3.Okula kedimi bug ün ben g öt ürd üm.	3.Bug ün ben kedimi okula g öt ürd üm.	3.Kedimi ben okulabug ün g öt ürd üm.
4.Ben okula bug ün kedimi g öt ürd üm.	4.Okula kedimi ben bug ün g öt ürd üm.	4.Bug ün ben okula kedimi g öt ürd üm.	4.Kedimi ben bug ün okula g öt ürd üm.
5.Ben kedimi okula bug ün g öt ürd üm.	5.Okula bug ün kedimi ben g öt ürd üm.	5.Bug ün okula ben kedimi g öt ürd üm.	5.Kedimi okula ben bug ün g öt ürd üm.
6.Ben kedimi bug ün okula g öt ürd üm.	6.Okula bug ün ben kedimi g öt ürd üm.	6.Bug ün okula kedimi ben g öt ürd üm.	6.Kedimi okula bug ün ben g öt ürd üm.

It is seen that there could be 6 sentences with the subject at the beginning and the verb at the end; 6 sentences where indirect object at the beginning and the verb is at the end. 6 sentences with an adverbial clause at the beginning and the verb is at the end; and finally, 6 sentences with the object at the beginning and the verb is at the end of sentence.

Thus, there will be 6 sentences in each group in canonical sentence structure in which one element (the verb) is at the end and one element is fixed at the beginning of sentence.

On the other hand, on condition that the verb is at the end and one of 4 sentence elements is fixed at the beginning, the question of how many different positions can remaining three elements be arranged will be answered by permutation. This number will be equal to the permutation we get when we exclude the elements at the beginning and at the end of the sentence.  $3! = 3 \cdot 2 \cdot 1 = 6$  as is seen, by arranging 3 different sentence elements in 6 different ways/forms, we can get 6 different sentence structures where one element is at the beginning and one element at the end.

The structure of the words in all sentences is the same. However, when the positions of the words are changed, the meaning of the sentence changes because the significance of the elements is determined according to their proximity to the verb. The importance is hinted with stress in spoken language (Demir, Yılmaz, 2012). On condition that the verb is at the end, the most stressed element in possible sentences formed by changing the positions of elements is the element, which is the nearest to the verb. In this context, the message can vary because it is determined by the nearest element to the verb. The most stressed element in possible sentences is indicated by this sequence:

**1→ the verb, 2→ the subject, 3→ indirect object, 4→ adverbial clause, 5→ the object**

Table 3. Different meanings according to the place of the words

My cat is taken to the school <b>by me</b> , not someone else.	I take my cat to <b>the school</b> , not to other places.	I take my cat <b>today</b> , not other days.	I take my <b>cat</b> , not other things.
Okula kedimi bug ün 2 g öt ürd üm	Ben bug ün kedimi 3 g öt ürd üm	Ben okula kedimi 4 g öt ürd üm	Ben bug ün okula 5 g öt ürd üm
Okula bug ün kedimi 2 g öt ürd üm	Ben kedimi bug ün 3 g öt ürd üm	Ben kedimi okula 4 g öt ürd üm	Ben okula bug ün 5 g öt ürd üm
Bug ün kedimi okula 2 g öt ürd üm	Bug ün kedimi ben 3 g öt ürd üm	Okula ben kedimi 4 g öt ürd üm	Okula ben bug ün 5 g öt ürd üm
Bug ün okula kedimi 2 g öt ürd üm	Bug ün ben kedimi 3 g öt ürd üm	Okula kedimi ben 4 g öt ürd üm	Okula bug ün ben 5 g öt ürd üm
Kedimi bug ün okula 2 g öt ürd üm	Kedimi bug ün ben 3 g öt ürd üm	Kedimi ben okula 4 g öt ürd üm	Bug ün ben okula 5 g öt ürd üm
Kedimi okula bug ün 2 g öt ürd üm	Kedimi ben bug ün 3 g öt ürd üm	Kedimi okula ben 4 g öt ürd üm	Bug ün okula ben 5 g öt ürd üm

As is seen, on condition that the verb is at the end of sentence, 4 different elements are stressed and the message varies according to the element. In this context, it is possible to say that although the structure of the words does not change and on condition that the verb is at the end, there will be four messages because of changing positions of sentence elements. The power of expression and the richness of Turkish language can be seen in its structural features.

### 3.2 Inverted Sentences

According to the word sequence of Turkish language, the verb must be placed at the end of a canonical (regular) sentence. However, Turkish language has a rich and mathematical structure and other elements could be placed at the end of a sentence in inverted sentence structures. In this study, inverted sentences can be classified under four groups.

A: Sentences ending with the subject,

B: Sentences ending with the object,

C: Sentences ending with the indirect object,

D: Inverted sentences ending with the adverbial clauses

Only one example sentence is used for each type of sentence. The sequence of sentence elements is given in the table below. Considering “Ben bugün kedimi okula götürdüm.”, if the order is given as;

**1=the verb, 2= the subject, 3= the indirect object, 4=the adverbial clause, 5=the object**, the sequence of the elements could be shown as **2ben → 4bugün → 5kedimi → 3okula → 1götürdüm**.

*Group A: Sentences ending with the subject*

When sentences are formed based on inverted sentence structure on condition that the subject is at the end, we can answer the question of how many different forms are possible with 4 elements out of 5 by using permutation. As a mathematical term, “permutation” indicates the arrangement and the order of different elements in various forms.

Thus, the number of inverted sentences formed with 4 remaining elements out of 5 on condition that the subject is at the end equals to the permutation of 4.  $4! = 4.3.2.1 = 24$

Six sentences in which the verb is at the beginning and the subject is at the end; six sentences starting with indirect object and ending with the subject; six sentences starting with adverbial clause and ending with the subject and finally six sentences starting with the object and ending with the subject are possible arrangements.

Hence, there will be six sentences in each group of inverted sentence structure where there are 5 elements and the subject (2) is at the end and one element is fixed at the beginning of the sentence.

On the other hand, we can answer the question of how many different variations can be used to arrange remaining 3 elements by permutation on condition that the subject is at the end and any of four elements is fixed at the beginning. This number will be equal to permutation of  $3.3! = 3.2.1 = 6$  that we can get when we exclude sentence elements at the beginning and at the end of a sentence. As it could be seen, three different sentence elements can be arranged in 6 different ways and 6 different sentence structures could be formed with one element at the beginning and one element at the end. In this way, the total number of sentences will be 24. Based on the example sentence, there will be 24 possible sentences in an inverted sentence structure where there are 5 elements and the subject’s position is fixed but the other elements change positions.

1. Götürdüm okula kedimi bugün ben	13. Bugün götürdüm kedimi okula ben
2. Götürdüm okula bugün kedimi ben	14. Bugün götürdüm okula kedimi ben
3. Götürdüm kedimi bugün okula ben	15. Bugün kedimi götürdüm okula ben
4. Götürdüm kedimi okula bugün ben	16. Bugün kedimi okula götürdüm ben
5. Götürdüm bugün kedimi okula ben	17. Bugün okula kedimi götürdüm ben
6. Götürdüm bugün okula kedimi ben	18. Bugün okula götürdüm kedimi ben
7. Okula götürdüm kedimi bugün ben	19. Kedimi götürdüm bugün okula ben
8. Okula götürdüm bugün kedimi ben	20. Kedimi götürdüm okula bugün ben
9. Okula kedimi götürdüm bugün ben	21. Kedimi bugün götürdüm okula ben
10. Okula kedimi bugün götürdüm ben	22. Kedimi bugün okula götürdüm ben
11. Okula bugün kedimi götürdüm ben	23. Kedimi okula götürdüm bugün ben
12. Okula bugün götürdüm kedimi ben	24. Kedimi okula bugün götürdüm ben

We will have 4 groups when we classify possible inverted sentences on condition that the subject is at the end according to elements at the beginning position

A. Sentences starting with the verb and ending with the subject

B. Sentences starting with the indirect object and ending with the subject

C. Sentences starting with the adverbial clause and ending with the subject

D. Sentences starting with the object and ending with the subject

Table 4. Possible sentences in inverted sentence

A	B	C	D
1. G       okula kedimi bug   ben	1. Okula g       kedimi bug   ben	1. Bug   g       kedimi okula ben	1. Kedimi g       bug   okula ben
2. G       okula bug   kedimi ben	2. Okula g       bug   kedimi ben	2. Bug   g       okula kedimi ben	2. Kedimi g       okula bug   ben
3. G       kedimi bug   okula ben	3. Okula kedimi g       bug   ben	3. Bug   kedimi g       okula ben	3. Kedimi bug   g       okula ben
4. G       kedimi okula bug   ben	4. Okula kedimi bug   g       ben	4. Bug   kedimi okula g       ben	4. Kedimi bug   okula g       ben
5. G       bug   kedimi okula ben	5. Okula bug   kedimi g       ben	5. Bug   okula kedimi g       ben	5. Kedimi okula g       bug   ben
6. G       bug   okula kedimi ben	6. Okula bug   g       ben	6. Bug   okula g       ben	6. Kedimi okula bug   g       ben

*Group B: Sentences ending with the indirect object*

The number of inverted sentences formed with remaining 4 elements out of 5 on condition that indirect object is at the end will be equal to the permutation of  $4.4! = 4.3.2.1 = 24$

We can form six sentences with the verb at the beginning position and the indirect object at the end, six sentences with the object at the beginning position and the indirect object at the end, six sentences with the adverbial clause at the beginning position and the indirect object at the end, and six sentences with the object at the beginning position and the adverbial clause at the end. Hence, there will be six inverted sentences in each group with the indirect object at the end position and one element is fixed at the beginning position.

On the other hand, the questions of how many different ways could the remaining 3 elements be arranged could be answered by permutation on condition that indirect object is at the end and any of the remaining 4 elements is fixed at the beginning. This number will be equal to permutation of  $3.3! = 3.2.1 = 6$  that we get when we exclude elements at the beginning and at the end. As it is seen, 3 different elements could be arranged in 6 different ways and 6 different sentence structures could be formed where one element is at the beginning and indirect object is at the end. The total number of sentences will be 24.

Based on the example sentence, there will be 24 sentences in inverted sentence structure in which there are 5 elements and indirect object's (3) position is fixed and other elements can change positions.

1. G       ben kedimi bug   okula	13. Bug   g       ben kedimi okula
2. G       ben bug   kedimi okula	14. Bug   g       kedimi ben okula
3. G       ben bug   ben kedimi okula	15. Bug   kedimi g       ben okula
4. G       bug   kedimi ben okula	16. Bug   kedimi ben g       okula
5. G       kedimi ben bug   okula	17. Bug   ben g       kedimi okula
6. G       kedimi bug   ben okula	18. Bug   ben kedimi g       okula
7. Ben g       kedimi bug   okula	19. Kedimi g       ben bug   okula
8. Ben g       bug   kedimi okula	20. Kedimi g       bug   ben okula
9. Ben kedimi g       bug   okula	21. Kedimi ben g       bug   okula
10. Ben kedimi bug   g       okula	22. Kedimi ben bug   g       okula
11. Ben bug   g       kedimi okula	23. Kedimi bug   g       ben okula
12. Ben bug   kedimi g       okula	24. Kedimi bug   ben g       okula

Table 5. Possible sentences in inverted sentence

A	B	C	D
1. G       ben kedimi bug   okula	1. Ben g       kedimi bug   okula	1. Bug   g       ben kedimi okula	1. Kedimi g       ben bug   okula
2. G       ben bug   kedimi okula	2. Ben g       bug   kedimi okula	2. Bug   g       kedimi ben okula	2. Kedimi g       bug   ben okula
3. G       bug   ben kedimi okula	3. Ben kedimi g       bug   okula	3. Bug   kedimi g       ben okula	3. Kedimi ben g       bug   okula
4. G       bug   kedimi ben okula	4. Ben kedimi bug   g       okula	4. Bug   kedimi ben g       okula	4. Kedimi ben bug   g       okula
5. G       kedimi ben bug   okula	5. Ben bug   g       kedimi okula	5. Bug   ben g       kedimi okula	5. Kedimi bug   g       ben okula
6. G       kedimi bug   ben okula	6. Ben bug   kedimi g       okula	6. Bug   ben kedimi g       okula	6. Kedimi bug   ben g       okula

*Group C: Sentences ending with the adverbial clause*

Consequently, the number of inverted sentences formed with the remaining four elements on condition that adverbial clause is at the end will be equal to the permutation of  $4.4! = 4.3.2.1 = 24$

It is noticed that we can form six sentences with the verb at the beginning and adverbial clause at the end and six sentences with indirect object at the beginning and adverbial clause at the end. In addition, six sentences with the subject at the beginning and adverbial clause at the end and six sentences with the object at the beginning and adverbial clause at the end are possible.

Hence, there will be 6 sentences in each group in inverted sentence structure where adverbial clause (4) is at the end and one element is fixed at the beginning.

On the other hand, on condition that adverbial clause is at the end and any of the four elements is fixed at the beginning, the question of how many different ways could the remaining three elements be arranged is answered by permutation. This number will be equal to permutation of  $3.3! = 3.2.1 = 6$  that we could get when we exclude elements at the beginning and at the end. As such, three different sentence elements are arranged in six different ways and 6 different sentence structures in which one element is at the beginning and adverbial clause is at the end could be formed. In this way, the number of sentences will be 24.

Based on the example sentence, we will form 24 possible sentences in inverted structure where the position of adverbial clause is fixed and other 4 elements change positions.

1. G  t  r d  m ben kedimi okula bug  n	13. Okula g  t  r d  m ben kedimi bug  n
2. G  t  r d  m ben okula kedimi bug  n	14. Okula g  t  r d  m kedimi ben bug  n
3. G  t  r d  m okula ben kedimi bug  n	15. Okula ben g  t  r d  m kedimi bug  n
4. G  t  r d  m okula kedimi ben bug  n	16. Okula ben kedimi g  t  r d  m bug  n
5. G  t  r d  m kedimi ben okula bug  n	17. Okula kedimi g  t  r d  m ben bug  n
6. G  t  r d  m kedimi okula ben bug  n	18. Okula kedimi ben g  t  r d  m bug  n
7. Ben g  t  r d  m kedimi okula bug  n	19. Kedimi g  t  r d  m ben okula bug  n
8. Ben g  t  r d  m okula kedimi bug  n	20. Kedimi g  t  r d  m okula ben bug  n
9. Ben kedimi g  t  r d  m okula bug  n	21. Kedimi ben g  t  r d  m okula bug  n
10. Ben kedimi okula g  t  r d  m bug  n	22. Kedimi ben okula g  t  r d  m bug  n
11. Ben okula g  t  r d  m kedimi bug  n	23. Kedimi okula g  t  r d  m ben bug  n
12. Ben okula kedimi g  t  r d  m bug  n	24. Kedimi okula ben g  t  r d  m bug  n

Table 6. Possible sentences in inverted sentence

A	B	C	D
1. G  t  r d  m ben kedimi okula bug  n	1. Ben g  t  r d  m kedimi okula bug  n	1. Okula g  t  r d  m ben kedimi bug  n	1. Kedimi g  t  r d  m ben okula bug  n
2. G  t  r d  m ben okula kedimi bug  n	2. Ben g  t  r d  m okula kedimi bug  n	2. Okula g  t  r d  m kedimi ben bug  n	2. Kedimi g  t  r d  m okula ben bug  n
3. G  t  r d  m okula ben kedimi bug  n	3. Ben kedimi g  t  r d  m okula bug  n	3. Okula ben g  t  r d  m kedimi bug  n	3. Kedimi ben g  t  r d  m okula bug  n
4. G  t  r d  m okula kedimi ben bug  n	4. Ben kedimi okula g  t  r d  m bug  n	4. Okula ben kedimi g  t  r d  m bug  n	4. Kedimi ben okula g  t  r d  m bug  n
5. G  t  r d  m kedimi ben okula bug  n	5. Ben okula g  t  r d  m kedimi bug  n	5. Okula kedimi g  t  r d  m ben bug  n	5. Kedimi okula g  t  r d  m ben bug  n
6. G  t  r d  m kedimi okula ben bug  n	6. Ben okula kedimi g  t  r d  m bug  n	6. Okula kedimi ben g  t  r d  m bug  n	6. Kedimi okula ben g  t  r d  m bug  n

*Group D: Sentences ending with the object*

Thereby, the number of inverted sentences formed with remaining 4 elements out of 5 on condition that the object is at the end will be equal to the permutation of four.  $4.4! = 4.3.2.1 = 24$

We can say that six sentences with the verb at the beginning and the object at the end; six sentences with indirect object at the beginning and the object at the end could be formed. We could form other six sentences with adverbial clause at the beginning, the object at the end and finally six sentences with the subject at the beginning, and the object at the end.

Hence, there will be 6 sentences in each group in inverted structure where the object is at the end and one element is fixed at the beginning.

On the other hand, the question of how many ways can remaining 3 elements be arranged on condition that the object is at the end and any of remaining 4 elements is fixed at the beginning could be answered by permutation. This number will be equal to the permutation  $3.3!=3.2.1=6$  that we get when we exclude the elements at the beginning and at the end of sentence. As is seen, 3 difference sentence elements could be arranged in 6 different ways and we form 6 different sentence structures in which the object is at the end and one of the elements is at the beginning. In this way, we can get 24 different sentences.

Based on the example sentence, there will be 24 possible inverted sentences where the position of the object (5) is fixed and other elements change positions.

1. G öt ürd üm ben okula bug ün kedimi	13. Okula g öt ürd üm ben bug ün kedimi
2. G öt ürd üm ben bug ün okula kedimi	14. Okula g öt ürd üm bug ün ben kedimi
3. G öt ürd üm okula ben bug ün kedimi	15. Okula ben g öt ürd üm bug ün kedimi
4. G öt ürd üm okula bug ün ben kedimi	16. Okula ben bug ün g öt ürd üm kedimi
5. G öt ürd üm bug ün ben okula kedimi	17. Okula bug ün g öt ürd üm ben kedimi
6. G öt ürd üm bug ün okula ben kedimi	18. Okula bug ün ben g öt ürd üm kedimi
7. Ben g öt ürd üm okula bug ün kedimi	19. Bug ün g öt ürd üm ben okula kedimi
8. Ben g öt ürd üm bug ün okula kedimi	20. Bug ün g öt ürd üm okula ben kedimi
9. Ben okula g öt ürd üm bug ün kedimi	21. Bug ün ben okula g öt ürd üm kedimi
10. Ben okula bug ün g öt ürd üm kedimi	22. Bug ün ben g öt ürd üm okula kedimi
11. Ben bug ün g öt ürd üm okula kedimi	23. Bug ün okula ben g öt ürd üm kedimi
12. Ben bug ün okula g öt ürd üm kedimi	24. Bug ün okula g öt ürd üm ben kedimi

Table 7. Possible sentences in inverted sentence

A	B	C	D
1. G öt ürd üm ben okula bug ün kedimi	1. Ben g öt ürd üm okula bug ün kedimi	1. Okula g öt ürd üm ben bug ün kedimi	1. Bug ün g öt ürd üm ben okula kedimi
2. G öt ürd üm ben bug ün okula kedimi	2. Ben g öt ürd üm bug ün okula kedimi	2. Okula g öt ürd üm bug ün ben kedimi	2. Bug ün g öt ürd üm okula ben kedimi
3. G öt ürd üm okula ben bug ün kedimi	3. Ben okula g öt ürd üm bug ün kedimi	3. Okula ben g öt ürd üm bug ün kedimi	3. Bug ün ben okula g öt ürd üm kedimi
4. G öt ürd üm okula bug ün ben kedimi	4. Ben okula bug ün g öt ürd üm kedimi	4. Okula ben bug ün g öt ürd üm kedimi	4. Bug ün ben g öt ürd üm okula kedimi
5. G öt ürd üm bug ün ben okula kedimi	5. Ben bug ün g öt ürd üm okula kedimi	5. Okula bug ün g öt ürd üm ben kedimi	5. Bug ün okula ben g öt ürd üm kedimi
6. G öt ürd üm bug ün okula ben kedimi	6. Ben bug ün okula g öt ürd üm kedimi	6. Okula bug ün ben g öt ürd üm kedimi	6. Bug ün okula g öt ürd üm ben kedimi

### 3.3 Elliptical Sentences

A sentence without a verb is called elliptical (incomplete) sentence (Yelten, 2010:304). Actually an elliptical sentence is a shorter form of sentence in which one or more elements are removed or left out in a way that does not cause ambiguity or confusion. Especially, one-word sentences are often used in order not to repeat the question or sentence or give a chance to comment in spoken language. In this study, the language is not to divide in spoken and written language. But to use only the sample sentence is important.

It was determined possible elliptical sentences by using the sample sentence: “Ben kedimi bug ün okula götürdüm”.



Table 8. Possible sentences in elliptical sentences that have four words

<i>subject at the end of sentences</i>	<i>adverbial clause at the end of sentences</i>	<i>the object at the end of sentences</i>	<i>indirect object at the end of sentences</i>	<i>verb at the end of sentences</i>
1.G.ä.tür.üm.okula	1.G.ä.tür.üm.ben	1.G.ä.tür.üm.ben	1.G.ä.tür.üm.ben	1.Ben.okula
kedimi.ben	okula.bug.ün	okula.kedimi	kedimi.okula	kedimi.g.ä.tür.üm
2.G.ä.tür.üm.okula	2.G.ä.tür.üm.ben	2.G.ä.tür.üm.ben	2.G.ä.tür.üm.ben	2.Ben.okula
bug.ün.ben	kedimi.bug.ün	bug.ün.kedimi	bug.ün.okula	bug.ün.g.ä.tür.üm
3.G.ä.tür.üm.kedimi	3.G.ä.tür.üm.okula	3.G.ä.tür.üm.okula	3.G.ä.tür.üm.bug.ün	3.Ben.bug.ün
bug.ün.ben	ben.bug.ün	ben.kedimi	ben.okula	kedimi.g.ä.tür.üm
4.G.ä.tür.üm.kedimi	4.G.ä.tür.üm.okula	4.G.ä.tür.üm.okula	4.G.ä.tür.üm.bug.ün	4.Ben.bug.ün
okula.ben	kedimi.bug.ün	bug.ün.kedimi	kedimi.okula	okula.g.ä.tür.üm
5.G.ä.tür.üm.bug.ün	5.G.ä.tür.üm.kedimi	5.G.ä.tür.üm.bug.ün	5.G.ä.tür.üm.kedimi	5.Ben.kedimi
kedimi.ben	ben.bug.ün	ben.kedimi	bug.ün.okula	bug.ün.g.ä.tür.üm
6.G.ä.tür.üm.bug.ün	6.G.ä.tür.üm.kedimi	6.G.ä.tür.üm.bug.ün	6.G.ä.tür.üm.kedimi	6.Ben.kedimi
okula.ben	okula.bug.ün	okula.kedimi	ben.okula	okula.g.ä.tür.üm
7.Okula.g.ä.tür.üm	7.Ben.g.ä.tür.üm	7.Ben.g.ä.tür.üm	7.Ben.kedimi	7.Bug.ün.ben
kedimi.ben	okula.bug.ün	okula.kedimi	g.ä.tür.üm.okula	kedimi.g.ä.tür.üm
8.Okula.g.ä.tür.üm	8.Ben.g.ä.tür.üm	8.Ben.g.ä.tür.üm	8.Ben.kedimi	8.Bug.ün.ben
bug.ün.ben	kedimi.bug.ün	bug.ün.kedimi	bug.ün.okula	okula.g.ä.tür.üm
9.Okula.kedimi	9.Ben.kedimi	9.Ben.bug.ün	9.Ben.g.ä.tür.üm	9.Bug.ün.kedimi
g.ä.tür.üm.ben	g.ä.tür.üm.bug.ün	okula.kedimi	kedimi.okula	okula.g.ä.tür.üm
10.Okula.kedimi	10.Ben.kedimi	10.Ben.bug.ün	10.Ben.g.ä.tür.üm	10.Bug.ün.kedimi
bug.ün.ben	okula.bug.ün	g.ä.tür.üm.kedimi	bug.ün.okula	ben.g.ä.tür.üm
11.Okula.bug.ün	11.Ben.okula	11.Ben.okula	11.Ben.bug.ün	11.Bug.ün.okula
g.ä.tür.üm.ben	g.ä.tür.üm.bug.ün	g.ä.tür.üm.kedimi	kedimi.okula	ben.g.ä.tür.üm
12.Okula.bug.ün	12.Ben.okula	12.Ben.okula	12.Ben.bug.ün	12.Bug.ün.okula
kedimi.ben	kedimi.bug.ün	bug.ün.kedimi	g.ä.tür.üm.okula	kedimi.g.ä.tür.üm
13.Kedimi.g.ä.tür.üm	13.Okula.ben	13.Okula.g.ä.tür.üm	13.Kedimi.ben	13.Okula.ben
bug.ün.ben	g.ä.tür.üm.bug.ün	ben.kedimi	g.ä.tür.üm.okula	kedimi.g.ä.tür.üm
14.Kedimi.g.ä.tür.üm	14.Okula.ben	14.Okula.g.ä.tür.üm	14.Kedimi.ben	14.Okula.ben
okula.ben	kedimi.bug.ün	bug.ün.kedimi	bug.ün.okula	bug.ün.g.ä.tür.üm
15.Kedimi.bug.ün	15.Okula.kedimi.g.ä.tür.üm	15.Okula.ben	15.Kedimi.g.ä.tür.üm	15.Okula.kedimi
g.ä.tür.üm.ben	bug.ün	g.ä.tür.üm.kedimi	ben.okula	ben.g.ä.tür.üm
16.Kedimi.bug.ün	16.Okula.kedimi	16.Okula.ben	16.Kedimi.g.ä.tür.üm	16.Okula.kedimi
okula.ben	ben.bug.ün	bug.ün.kedimi	bug.ün.okula	bug.ün.g.ä.tür.üm
17.Kedimi.okula	17.Okula.g.ä.tür.üm	17.Okula.bug.ün	17.Kedimi.bug.ün	17.Okula.bug.ün
g.ä.tür.üm.ben	ben.bug.ün	g.ä.tür.üm.kedimi	g.ä.tür.üm.okula	ben.g.ä.tür.üm
18.Kedimi.okula	18.Okula.g.ä.tür.üm.kedimi	18.Okula.bug.ün	18.Kedimi.bug.ün	18.Okula.bug.ün
bug.ün.ben	bug.ün	ben.kedimi	ben.okula	kedimi.g.ä.tür.üm
19.Bug.ün.g.ä.tür.üm	19.Kedimi.g.ä.tür.üm	19.Bug.ün.g.ä.tür.üm	19.Bug.ün.g.ä.tür.üm	19.Kedimi.ben
okula.ben	ben.bug.ün	ben.kedimi	ben.okula	okula.g.ä.tür.üm
20.Bug.ün.g.ä.tür.üm	20.Kedimi.g.ä.tür.üm.okula	20.Bug.ün.g.ä.tür.üm	20.Bug.ün.g.ä.tür.üm	20.Kedimi.ben
kedimi.ben	bug.ün	okula.kedimi	kedimi.okula	bug.ün.g.ä.tür.üm
21.Bug.ün.kedimi	21.Kedimi.ben	21.Bug.ün.ben	21.Bug.ün.ben	21.Kedimi.bug.ün
g.ä.tür.üm.ben	g.ä.tür.üm.bug.ün	g.ä.tür.üm.kedimi	g.ä.tür.üm.okula	ben.g.ä.tür.üm
22.Bug.ün.kedimi	ben	22.Bug.ün.ben	22.Bug.ün.ben	22.Kedimi.bug.ün
okula.ben	okula.bug.ün	okula.kedimi	kedimi.okula	okula.g.ä.tür.üm
23.Bug.ün.okula	23.Kedimi.okula.g.ä.tür.üm	23.Bug.ün.okula	23.Bug.ün.kedimi	23.Kedimi.okula
g.ä.tür.üm.ben	bug.ün	g.ä.tür.üm.kedimi	g.ä.tür.üm.okula	ben.g.ä.tür.üm
24.Bug.ün.okula	ben.bug.ün	24.Bug.ün.okula	24.Bug.ün.kedimi	24.Kedimi.okula
kedimi.ben		ben.kedimi	ben.okula	bug.ün.g.ä.tür.üm

There will be 24 sentences in which one out of five elements is missing and on condition that the verb is at the end, 24 sentences with the indirect object at the end, 24 sentences with adverbial clause at the end, 24 sentences with the object at the end and finally 24 sentences with the verb at the end. As a result, on condition that one element out of 5 is at the end, the number of elliptical sentences formed with remaining 4 words will be equal to the permutation of 4.  $4! = 4.3.2.1 = 24$ . Hence, there will be total 120 (24x4) elliptical sentences because we will get four groups on condition that one element is missing and one element is at the end position.

Table 9. Possible sentences in elliptical sentences that have three words

1.Bug ün kedimi ben	1.Ben kedimi bug ün	1.Ben bug ün kedimi	1.Ben kedimi okula	1.Ben bug ün g öt ürd üm
2.Bug ün okula ben	2.Ben okula bug ün	2.Ben okula kedimi	2.Ben g öt ürd üm okula	2.Ben kedimi g öt ürd üm
3.Bug ün g öt ürd üm ben	3.Ben g öt ürd üm bug ün	3.Ben g öt ürd üm kedimi	3.Ben bug ün okula	3.Ben okula g öt ürd üm
4.Kedimi okula ben	4.Kedimi ben bug ün	4.Bug ün ben kedimi	4.Bug ün kedimi okula	4.Bug ün ben g öt ürd üm
5.Kedimi bug ün ben	5.Kedimi okula bug ün	5.Bug ün okula kedimi	5.Bug ün ben okula	5.Bug ün okula g öt ürd üm
6.Kedimi g öt ürd üm ben	6.Kedimi g öt ürd üm bug ün	6.Bug ün g öt ürd üm kedimi	6.Bug ün g öt ürd üm okula	6.Bug ün kedimi g öt ürd üm
7.Okula kedimi ben	7.Okula g öt ürd üm bug ün	7.Okula ben kedimi	7.Kedimi ben okula	7.Okula ben g öt ürd üm
8.Okula bug ün ben	8.Okula ben bug ün	8.Okula bug ün kedimi	8.Kedimi bug ün okula	8.Okula kedimi g öt ürd üm
9.Okula g öt ürd üm ben	9.Okula kedimi bug ün	9.Okula g öt ürd üm kedimi	9.Kedimi g öt ürd üm okula	9.Okula bug ün g öt ürd üm
10.G öt ürd üm kedimi ben	10.G öt ürd üm ben bug ün	10.G öt ürd üm ben kedimi	10.G öt ürd üm ben okula	10.Kedimi ben g öt ürd üm
11.G öt ürd üm okula ben	11.G öt ürd üm kedimi bug ün	11.G öt ürd üm bug ün kedimi	11.G öt ürd üm bug ün okula	11.Kedimi bug ün g öt ürd üm
12.G öt ürd üm bug ün ben	12.G öt ürd üm okula bug ün	12.G öt ürd üm okula kedimi	12.G öt ürd üm kedimi okula	12.Kedimi okula g öt ürd üm

There will be 12 sentences formed with three words on condition that the subject is at the end and two of the words out of 5 words that form the sentence are missing. So are, 12 sentences with indirect object at the end; 12 sentences with adverbial clause at the end; 12 sentences with the object at the end; 12 sentences with the verb at the end. Thus, there will be five groups on condition that one element is missing and one element is at the end; consequently, there will be total 60 (12x5) elliptical sentences with three words.

Table 10. Possible sentences in elliptical sentences that have two words

1.G öt ürd üm ben	1.G öt ürd üm bug ün	1.G öt ürd üm kedimi	1.G öt ürd üm okula	1.Ben g öt ürd üm
2.Kedimi ben	2.Kedimi bug ün	2.Okula kedimi	2.Kedimi okula	2.Kedimi g öt ürd üm
3.Okula ben	3.Okula bug ün	3.Ben kedimi	3.Bug ün okula	3.Okula g öt ürd üm
4.Bug ün ben	4.Ben bug ün	4.Bug ün kedimi	4.Ben okula	4.Bug ün g öt ürd üm

There will be 4 sentences with two words on condition that the subject is at the end and three of 5 elements that form the sentence are missing. Also, there will be 4 sentences with two words on condition that indirect object is at the end; 4 sentences with the adverbial clause at the end; 4 sentences with the object at the end and finally 4 sentences with the verb at the end. Thus, as we have five groups on condition that one element is missing and one element is at the end, there will be total 20 (5x4) elliptical sentences with two words.

#### *Elliptical sentences with one word:*

This type of sentence does not include basic elements necessary to form a full sentence. It is largely used with the purpose of not repeating the elements of question in the answer because of the “least effort” principle. When we consider the sentence, “Ben bugün kedimi okula götürdüm.”, the answers of the questions below will be elliptical sentences with one word.

- Kim bug ün okula kedisini g öt ürd ü? (Who took the cat to school today?)  
Ben.
- Sen bug ün neyi okula g öt ürd ün? (What did you take to school today?)  
Kedimi.
- Sen kedini ne zaman okula g öt ürd ün? (When did you take the cat to school?)  
Bug ün.
- Sen bug ün kedini nereye g öt ürd ün? (Where did you take the cat today?)  
Okula.
- Sen bug ün kedini okula g öt ürd ün mü? (Did you take the cat to school today?)  
G öt ürd üm.

In this way, considering the example sentence, “Ben bug ün kedimi okula g ö t ü r d ü m”, there will be 5 elliptical sentences with one word on condition that 4 out of 5 elements are missing. In this context, elliptical sentences with one word are 1/5.

#### 4. Results

The study conducted is based on the example sentence, “Ben kedimi bugün okula götürdüm.” This sentence has 5 elements. Firstly, canonical sentence structure is examined and the number of canonical sentences formed with remaining four elements on condition that the verb is at the end is calculated by a mathematical term, permutation, which indicates various arrangements and the sequence of different elements in a sentence. In this case, the sentences formed based on the example sentence are equal to the permutation of 4 ( $4!=4.3.2.1=24$ ). Thus, there are 24 possible sentences in canonical structure in which the position of the verb is fixed and other elements change positions.

Inverted sentences are classified under four groups: (1) sentences ending with the subject, sentences ending with the object, sentences ending with the indirect object and sentences ending with the adverbial clause. Based on the example sentence, we have 24 possible sentences in inverted structure where the position of the subject is fixed (2) and other elements change positions. Based on the example sentence, we have 24 possible sentences in inverted structure where the position of indirect object is fixed (3) and other elements change positions. Based on the example sentence, we have 24 possible sentences in inverted structure where the position of adverbial clause (4) is fixed and other elements change positions. Based on the example sentence, we have 24 possible sentences in inverted structure where the position of the object is fixed and other elements change positions. Hence, there are 96 sentences.

Elliptical sentence is formed with the reduction of one or more elements from the sentence and there are 5 sentences with one word, 20 sentences with two words, 60 sentences with three words and 120 sentences with four words. We have total 205 possible sentences in elliptical sentence structure.

As a conclusion, it is found out that the total number of possible canonical and inverted sentences are  $24+24+24+24+24=120$  and the number of elliptical sentences are  $5+20+60+120=205$ . No structural changes or affixes occur in the words that form the sentence. The same words are used in the same structure. This indicates that we can form  $(24+96+205=325)$  325 possible sentences in Turkish based on a sentence with 5 words.

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