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A Comparative Study on English and Turkish Syntactic Structures within the Terms of the Minimalist Program

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Abstract

The Minimalist Program with its economy principle highlights common mechanisms or necessary components of natural languages but overlooks linguistic differences or relatively trivial components in order to set universal grammar. In this study, we compared English and Turkish languages in terms of the Minimalist Program. The aim of the study is to represent Turkish language according to the principles of the Minimalist Program and to discuss how Turkish and English behave with regard to this concept. The study tries to introduce sample Turkish and English sentence and phrase structure analysis comparatively in terms of Minimalist Approach and thus suggesting solutions to Turkish particular differences in the scope of the Minimalist Program.

Keywords: Minimalist program, Minimalism, Comperative linguistics, Universal grammar

1. Introduction

Minimalism refers to a program under the Principles and Parameters Theory, which started in 1993 with a paper by Noam Chomsky. The program underlines the Principle of Economy in establishing the necessary elements for a universal grammar in which all representations and processes used to drive them are to be as economical as possible. The MP is based on the assumption that Universal Grammar constitutes a perfect design in the sense that it contains only what is necessary to meet the logical and and phonological needs (Boeckx, 2006).

According to Minimalist Program, Language is combination of sounds and meanings, so only representations of sounds or phonetic form (PF) and representations of meaning or logical form (LF) are really indispensable. All the other unnecessary linguistic structures and the principles are suggested to be eliminated (Chomsky 1995, 2000;Lasnik, 2002). In the MP, the economy of representation and derivation focuses on the common aspects of languages but overlooks language particulars. While the common aspects are categorized and represented in syntactic levels in accordance with the notion that there is no account of free word order phenomena, which is the characteristic of many languages of the world (Culicover, 1999; Pinker, 1984, 1987), the language particulars are illustrated as explanatory brackets. This study compares and contrasts English and Turkish languages in terms of their syntactic structures and principle grammatical features in order to find out the matched and unmatched features of these languages by means of MP. Inasmuch as most of the MP studies so far have been focused on English but relatively few on Turkish, English language is referred as a control language in the study whereas Turkish language is conducted as an experimental language. The principle aim of the study is to conceptualize Turkish grammar in Universal Grammar (UG) terms and to find out how it behaves in the MP. The further and long-term aim of the study, on the other hand, is to discuss whether these common treats between the languages may lead to universal language standards for other natural languages and act as litmus paper to investigate any language in the world.

The study describes the technical innovations and terminology brought up by MP and then compares and contrasts English and Turkish by tree diagram illustrations and brackets. The examples were chosen in order to illustrate the principle functions of the languages bilingually, that is, the examples in both languages are of the same meaning to find out the common and different treats easily.

2. Universal Categories and Local Parameters

According to Chomsky (1972), human beings are biologically equipped with an innate language faculty. Children can in principle acquire any natural language as their native language. For example, an Afgan orphan brought up by English-speaking parents in an English-speaking community acquire English as his or her first language. Therefore, a theory of Universal Grammar (UG) which enables the child to develop a grammar of any natural language comes to the fore. Chomsky (1980, p. 230) claims that if the acquisition of grammatical competence is indeed controlled by genetically equipped language ability, then certain aspects of language competence are known without experience, and thus must be part of genetic information about a language with which we are biologically equipped at birth. If so,

such aspects of language do not have to be learned, because they form the part of the genetic inheritance and thus being universal. On the other hand, if such aspects of language as tenses, auxiliaries, agreement, and syntactical order (movement) are language-particular variations (i.e. local language parameters), then they have to be learned since they are not common in all languages. If all aspects of the natural languages were common, then all of them would be the same and there would be no grammatical learning in language acquisition but lexical learning. However, although there are universal principles, there are also language-particular aspects of grammar. Thus, language acquisition involves not only lexical but also grammatical learning (Radford, 2004).

Universal language incorporates a set of universal principles which guide human being in acquiring a grammar at an early age. Grammatical learning does not involve those aspects of language which are determined by universal grammatical principles (or universal parameters). Instead, grammatical learning will be limited to those parameters of grammar which are subject to language-particular variations. In other words, the parameters vary from one language to another (called local parameters in this study) determine what aspects of a particular natural language have to be learned. And what the MP suggests here is that when combined with finite binary parameters, the existence of common principles valid for all languages may describe the specific properties that characterize the language system (Carnie, 2006).

2.1 Universal Categories and the Categorization of Words

The categories of lexical words such as verbs, nouns, adjectives, adverbs, prepositions, determiners and quantifiers, pronouns, auxiliaries and complementisers are universal categories that exist in almost all languages and differ only at PF. They are the same at LF since all languages contain them, thus they are innate properties and called I-language by Chomsky (1965). Those items of the languages are learned as lexicons. They are labeled and represented in a tree diagram as V (verb), N (noun), A (adjective), ADV (adverb), P (preposition), D (determiners), Q (quantifiers), PRN (pronoun), AUX (auxiliaries) and C (complementiser). These are the nodes which are overtly spelled-out in a given labeled tree diagram (i.e. X-bar). They constitute the head or complement of the phrases. For instance, the phrase *"to play football"* in English is build up from a verb and a noun. In every natural language, you can find a noun and a verb exactly or almost matching this meaning. In Turkish, for example, you can produce this phrase *"futbol oynamak"*. The infinite verb "*to play"* in English matches with *"oynamak"* in Turkish and so does *"football"* with *"futbol"*. As seen in the example above, this is only a dictionary (lexical) matching.

2.2 Local (Language Particular) Parameters and the Categorization of Grammatical Features

The categories in inflection levels such as person, number (singular or plural), gender (masculine or feminine), case, null-subject or non-null subject, head-first or head-last, and wh-movement constitute the mechanization of the languages and perform functional roles rather than lexical properties. Those items differ from one language to another not only at PF but also at LF since they are the external properties called E-language by Chomsky (1965). In other words, whereas the universal parameters can be learned lexically, the language particular parameters which are called local parameters in this study are learned in rules. Similarly, while

the former constitutes the lexicon of a natural language, the latter constitutes the grammar of any natural language. They are not spelled-out in a labeled tree diagram, but instead shown in brackets or as movements. If we use the example in 2.2.1 given to illustrate universal parameters, we can find out that the phrase *"to play football"* in English is composed of three lexical items (*"to", "play",* and *"football")*, while the phrase *"futbol oynamak"* in Turkish is composed of two ("*futbol"* and "*oynamak"*). Why is that difference? Moreover, whereas the noun "*football*" proceeds the verb "*play"* in English, the why does it precede the verb "*oynamak"* in Turkish? These problems result from language-particular grammatical and syntactical features of the so-called languages and can only be produced by constitution of rules in LF rather than by looking at a dictionary and producing them at PF.

3. Minimalist Structure

In this part of the study, we introduce the concept of syntactic structure in MP, determining the combination of words mentioned in 2.2.1 to form larger sets of words called phrases and sentences. Throughout our description, we will explain how phrases and sentences are built up by merger operations from a single word to a pair of words and thus forming a larger constituent. The technical operations and terms are described and then illustrated by bilingual examples from English and Turkish, resulting in how those structures can be represented by means of a tree diagram. We also describe and illustrate how universal and local actors of a natural language act in a syntactic structure of this language.

3.1 Phrase Structure

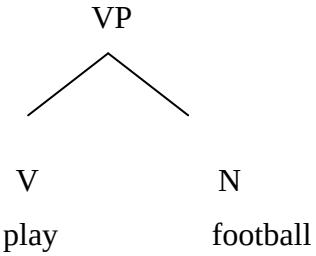
Phrases are the smallest meaningful set of words. The structure of a sentence is described from bottom to up by combining the words in pairs, one of which is complement of the other. This operation of combining the words together is called merging. Merging determines the pairs of lexicons having a kinship relation. This kinship between the words can be described as a complementary relation or the shadow of one word on the other in a meaningful set of words, or it is also described to combine the words with another word being the projection of the other as Radford described (2004, p.72). In all these descriptions, the one to which the complement, projection or shadow is referred or belongs is called the head of the phrase. And the other which complements the head is the projection or complement of the phrase. The operation of merging is illustrated in the following traditional bracketing technique to represent the verb phrase *"play football"* in English and *"futbol oynamak"* in Turkish:

1. [VP [V play] [N football]]

2. [[futbol N] [oynamak V] VP]

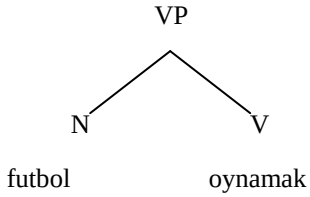
Now, we will show the above phrases in an alternative way of representation via a widely used labeled tree diagram in syntactic display like 3 and 4 below:

3.



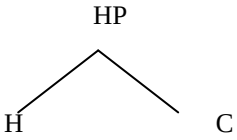
The diagram 3 tells us that the word combination *play football* is a verb phrase, resulting in a binary branching, spelling-out the two constituents of the phrase; the verb *play* and the noun *football*, by which the verb phrase *play football* is merged. The verb *play* is the head of the phrase and settles down the left side of the branch, determining the grammatical and semantic properties of the phrase. The noun *football*, on the other hand, is the complement or projection of the head.

4.



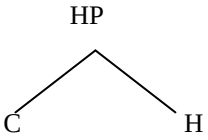
The diagram 4, likewise, tells us that the word combination *futbol oynamak* is a verb phrase, resulting in a binary branching, spelling-out the two constituents of the phrase; the verb *oynamak* and the noun *futbol*, by which the verb phrase *futbol oynamak* is merged. The verb *oynamak* is the head of the phrase, but unlike 3, it settles down the right side of the branch. The noun *futbol*, on the other hand, is the complement or projection of the head. Hence, the merging operations and phrase structures of the languages will be as the following (5, 6) in both languages. H is for Head, C for Complement, and P for Phrase:

5.



An English Phrase structure

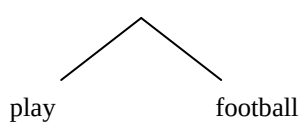
6.

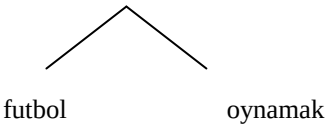


A Turkish Phrase Structure

Indeed, Chomsky (1995b, p.398) suggests an unlabelled tree diagram in MP.

Then:





Unlabelled Diagram Trees

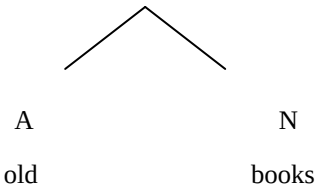
However, in this study, we preferred to use labeled tree diagrams in order to be more explanatory in drawings by using a traditional tree diagram. Below are the examples for noun

phrases in English and Turkish. The noun phrase *"old books"* and *"eski kitaplar"* are spelled-out in brackets (7, 9) and tree diagrams (8,10) below:

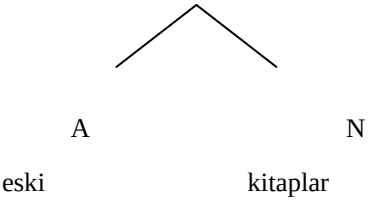
7. [AP [A old] [N books]]

9. [[eski A] [kitaplar N] NP]

8.



10.



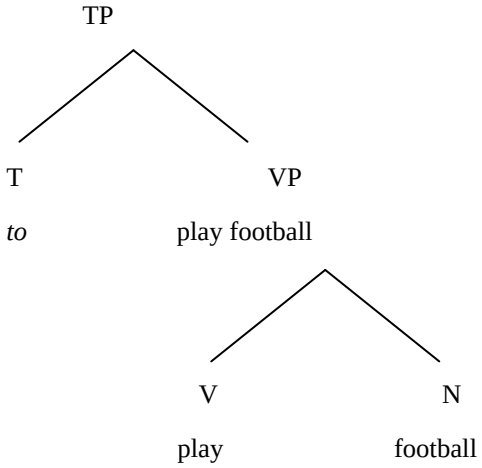
As shown in the diagrams *old* and *yeni* are adjectives (A) and qualify the nouns (N) *books* and *kitaplar*. Adjectives in both languages precede the nouns. However, while the phrase *old books* is an adjective phrase in English syntax, the phrase *eski kitaplar* is a noun phrase in Turkish. This is also due to the head-first and head-last properties of the particular languages.

Other important basic phrase structures are auxiliary (AUX) and tense (T) phrases which are merged with verbs. Chomsky (1981, p.18) suggested that finite *auxiliaries* and infinitival "*to"* be labeled as inflection (INFL). The general idea behind this label is that finite *auxiliaries* are inflected forms and infinitival *to* serves as overtly inflected infinitives. Under the INFL analysis, an auxiliary like *can* is a finite INFL, whereas the particle *to* is an infinitival INFL. However, since Chomsky's Minimalist Program (1993), a different categorization of auxiliaries and infinitival to has been adopted (Radford, 2004). According to this new suggestion, all auxiliaries have tense properties are assigned as the category of Tense (T). While auxiliaries carry finite tense (overtly specified tense value like present/past), infinitival *to* carries non-finite tense (unspecified tense value). In contrast, the notion auxiliary in Turkish does not match with Turkish as a separate constituent of a sentence. They are not elements of a sentence as in English syntax. Therefore, while they are categorized as "lexical" in English, they are categorized as "functional" in Turkish. The counterpart of *will* for example is *–ecek*, which is a suffix added to the end of the verb. The inflectional particle is not a detached word preceding or following a verb in Turkish as is in English. Tenses are unmatched empty category in Turkish language. Therefore, there arises a new problem here. How should we spellout Tense (T) category or merge Tense phrases (TP) in Turkish syntactic structure? Should we spellout the suffixes and the roots as TP? Or is it better to accept that there is no overtly spelled-out T category of words and thereby TP in Turkish syntactic structure but verb phrase (VB)? If there is nothing to merge, then there is nothing to spellout, of course, that is, we can only merge individual constituents not the inflectional categories such as suffixes, affixes or prefixes just as suggested in the MP Principle of Economy stating that we do not need to represent grammatical features (or functional components) in syntactical order as lexicons, but show in brackets instead. According to this principle, it is not plausible to run the former suggestion. Thus, in order to establish universal grammar logic and introduce the linguistic differences between languages in terms of a

universal scale, the latter suggestion is feasible. Instead of spelling-out the grammatical features as T or TP, representation of any inflected verb as V merging with its complement is interpretable and universal in Turkish. The following examples are given to illustrate auxiliary, tense and verb phrases in English and Turkish via brackets (11, 13, and 15) and labeled tree diagrams (12, 14, and 16):

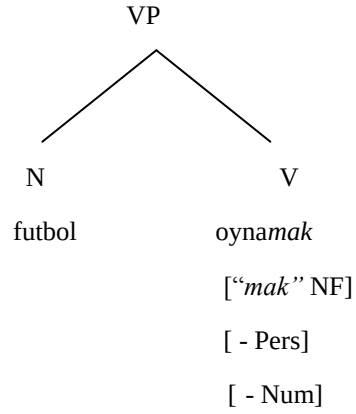
11. [TP [T *to* [VP play [N football]]]

12.



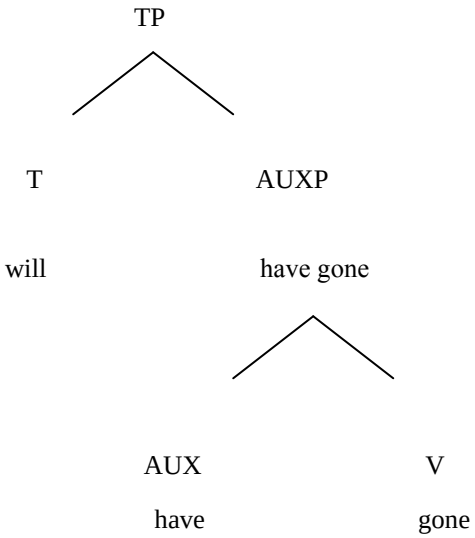
13. [[futbol N] [oyna*mak* V] VP]

14.



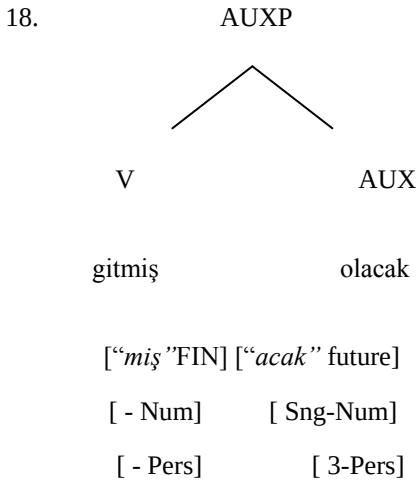
15. [TP will [AUXP have [V gone]]]

16.



17. [[gitmiş V] olacak AUXP]

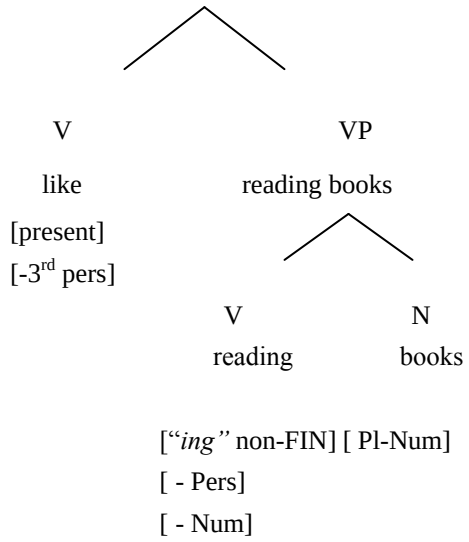
18.



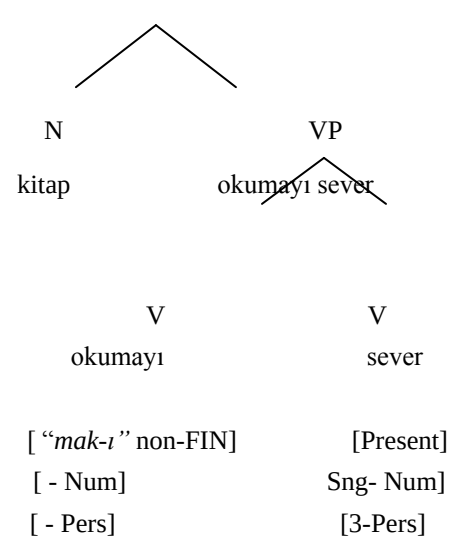
19. [VP like [VP reading [N books]]]

21. [[[kitap N] okumayı VP] sever VP]

20.



22.



["*ing*" non-FIN] [Pl-Num]
[- Pers]
[- Num]

["*mak-ı*" non-FIN]
[- Num]
[- Pers]

[Present]
Sng- Num]
[3-Pers]

3.2 Sentence Structure

A sentence is composed of phrases merged each other in pairs. The following sentences are given as examples from English (23) and Turkish (24):

23. I want to play football

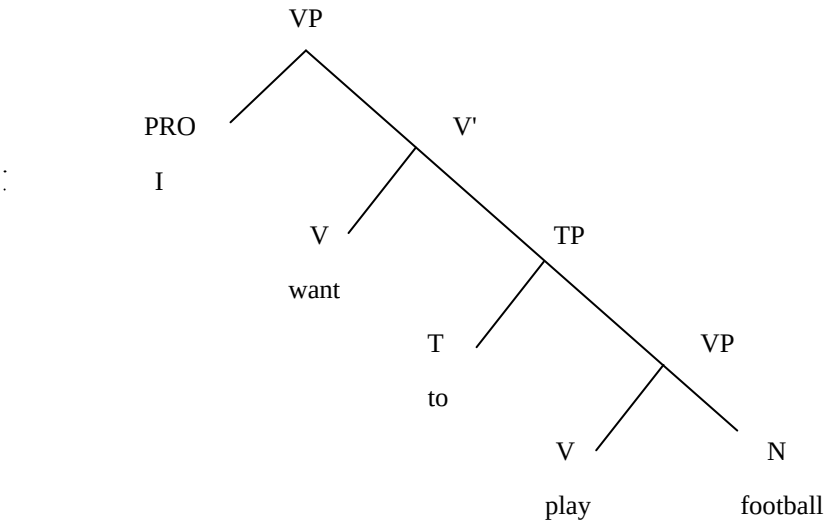
24. Futbol oynamak istiyorum

The problem here is to determine which phrase is the reference point of merging. The answer to this question lies in the projection or complement factor. Which constituent in a syntactic order completes the other? Where does the merging start? Natural languages also vary in the answer to this question. While English behaves as a verb-first and an object-last (i.e. head-first) language as in the phrase "to play football", Turkish behaves vice versa (verb-last and object-first, or head-last) as in the phrase "futbol oynamak". Considering the images of both expressions in the brain of the hearer, we understand that semantically, they mean the same thing and there is no any difference in terms of stress or dominance. It is only a choice of language-particular syntax. In both kinds of languages (head-first or head last), whether they are head-last or head-first, the phrase "play football / futbol oynamak" is an action but not a name for any kind of sports. So the dominant constituent of the phrase is a verb, not a noun, resulting in the label verb phrase (VP) and the noun football/futbol is the complement of the verb play/oynamak. Therefore, the minimal complement football/futbol is the origin for merging to take place. In the Minimalist Program, merging starts as a bottom-up operation. That is to say, in a sentence like 23, football is merged with play and forms the VP play football and then the phrase play football is merged with infinitival part to and forms the infinitival Tense Phrase TP to play football, which is successively merged with the verb want and forms the second VP want to play football. This VP finally merges with the specifier subject pronoun I to form the final VP I want to play football headed by the verb want and

constitutes the largest projection which is called maximal projection of want. The resulting merging is illustrated in brackets (25) and a tree diagram (26) below:

25. [VP I [VP want [TP to [VP [V play] [N football]]]]]

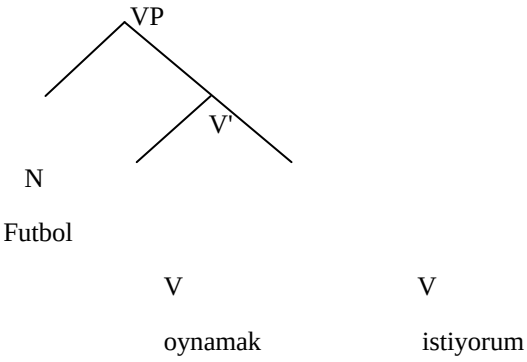
26.



Merging starts from bottom to up, resulting each constituent or phrase to be the complement or projection of the higher constituent. In order to understand the universal validity of the merging operation, we shall also see the operation on the Turkish sentence 24 illustrated in brackets (27) and a tree diagram (28) below:

27. [[[Futbol N][oynamak V] VP][istiyorum V] VP]

28.

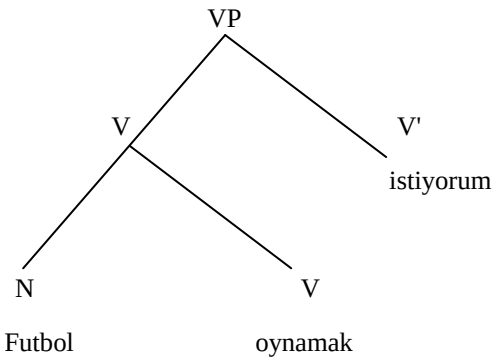


However, the illustrations in 27 and 28 are wrong both semantically and grammatically, considering the complementation and projection operations in merging. The structure illustrated above spells-out the noun football (*futbol*) and the verb play (*oynamak*) in different merging stages, so the phrases above are not appropriate pairs since the head of the phrase is merged with another head, and the complement noun football (*oynamak*) is left behind as the head of the VP. In SVO (or complement-last) languages such as English, bottom-up merging matches with both syntactic and grammatical structure. In contrast, in SOV (or complement-first) languages such as Turkish, bottom-up merging causes problems in that the

complement comes before the head. As a result, merging in Turkish starts from left to right (from beginning to end), whereas in English it does from right to left (from end to beginning). Consequently, instead of bottom-up merging, we will rewrite 27 and 28 by top-down merging, which we introduce as a solution in this study, in brackets (29) and a tree diagram (30):

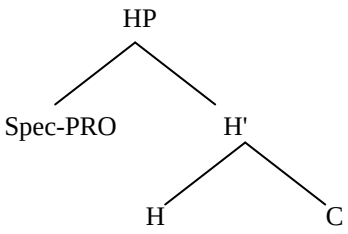
29. [[[futbol N] [oynamak V] VP] istiyorum VP]

30.



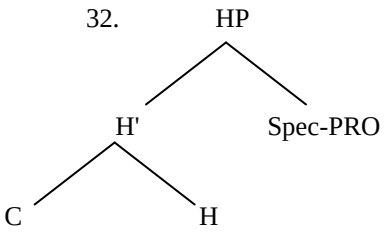
In this case, merging starts with the noun complement *futbol* and the head verb *oynamak*, being the complement of the head verb *istiyorum*. Consequently, the following tree diagrams (31 and 32) show the resulting structures of English and Turkish languages in terms of head (H), specifier pronoun (Spec-PRO), and complement (C):

31.



An English Sentence structure

32.



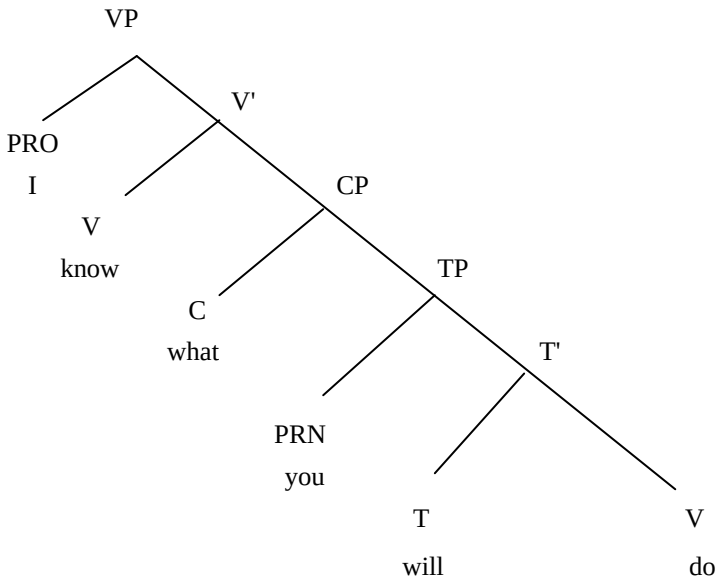
A Turkish Sentence Structure

3.3 Clause Structure

A clause is a part of a sentence, composed of phrases and acts in the sentence as the complement of a verb, a noun or the whole sentence. They are labeled as complement phrases (CP). Clauses in English are established by the complementisers such as that, what, who, how, although, since, because, so that, if, whether etc. In Turkish, on the other hand, they are usually matched with verbals as well as conjunctions like in English. Below are there examples from English and Turkish (33, 34 and 35, 36), illustrating noun clauses:

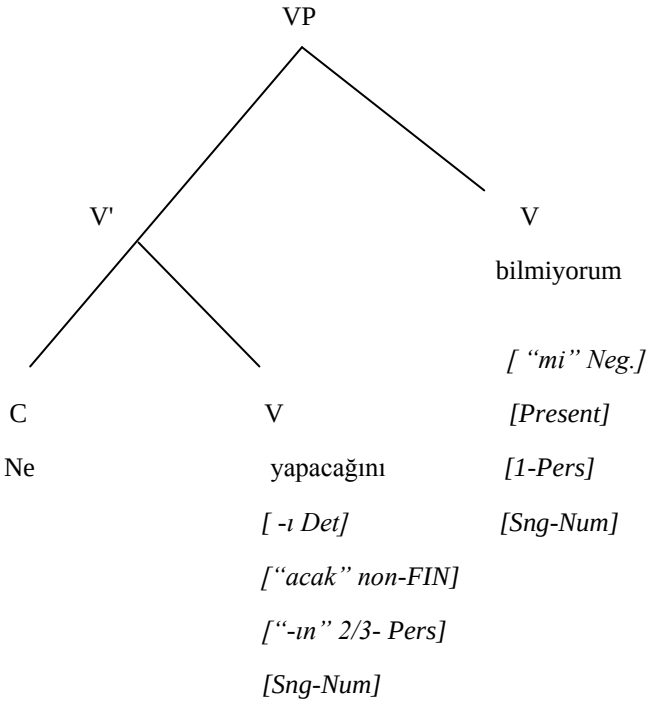
33. [VP I [VP know [CP what [TP you [TP will [Vdo]]]]]].

34.



35. [[[Ne C] [yapacağını V] VP] biliyorum VP]

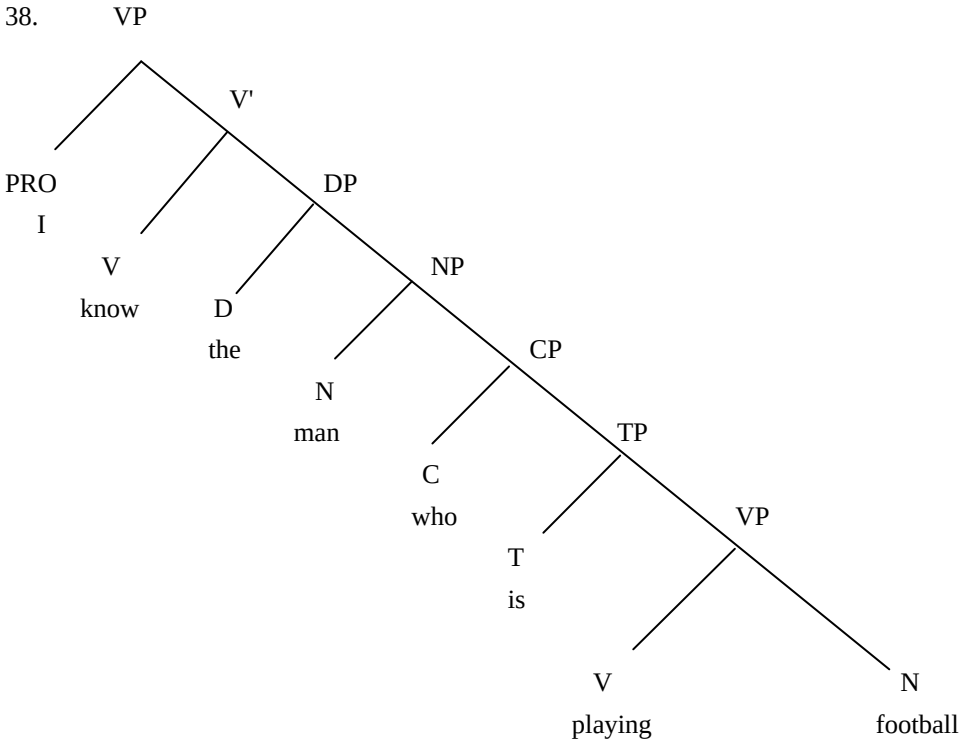
36.



You will also see an adjective clause CP in English (37, 38) below. Note that Turkish matchings (39, 40) of adjective clause is empty category (Ø) since Turkish language does not have any relative pronoun or adjectival complementiser like *who, which, that etc.*

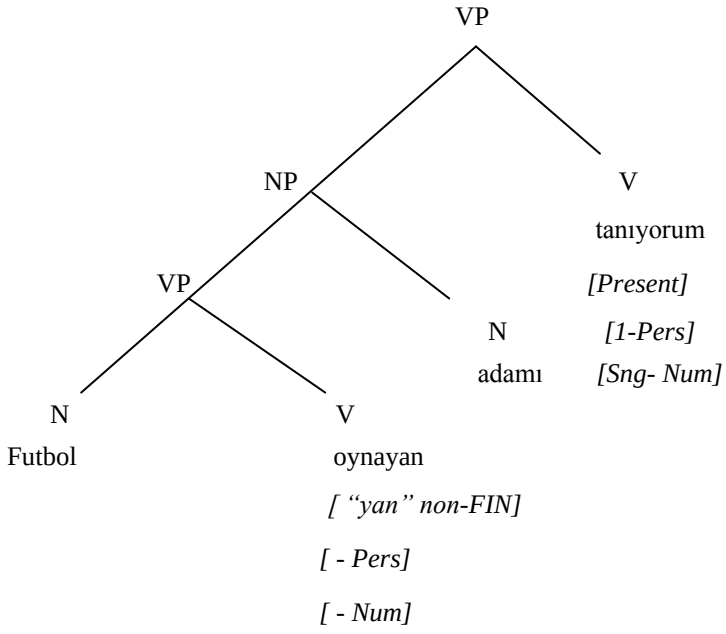
37. [VP I [VP know [DP the [NP man [CP who [TP is [VP playing football]]]]]]].

38.



39. [[[[Futbol N] oynayan VP] adamı NP] tanıyorum VP]

40.

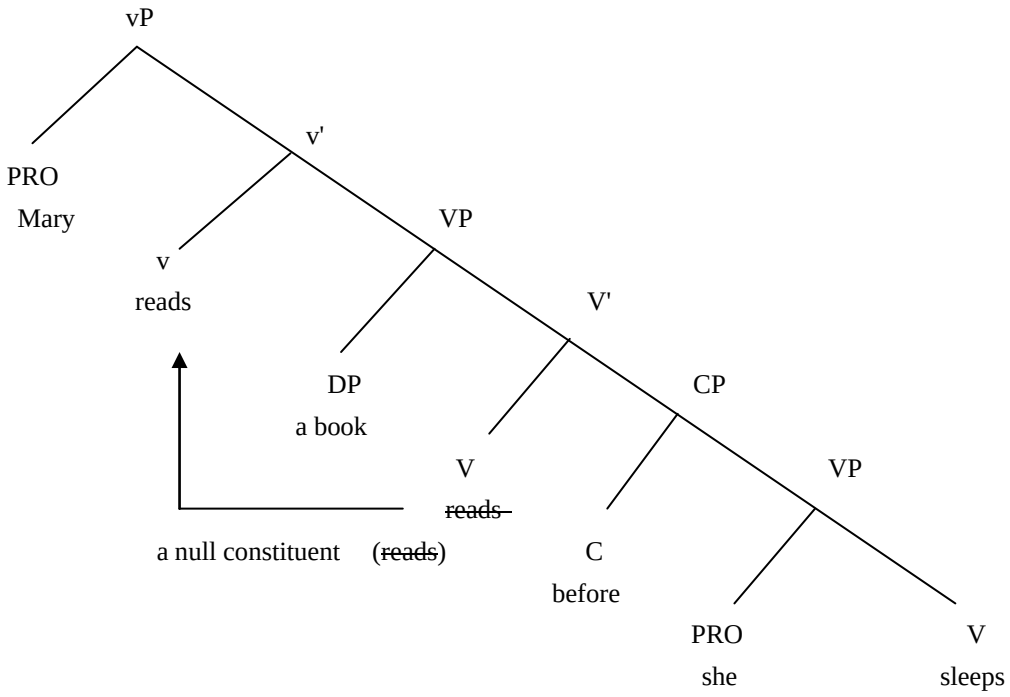


When it comes to the adverbial clauses, there is a problem of merging since they extend the meaning of the sentence but they are not necessary complements of any categories. Therefore, they cannot merge with the categories they follow or precede. Adverb clauses are the intermediate projections of verbs and thus the adverbial conjunctions are the complements of the verb they modify. As Radford (2004, p.112) suggests, we are to spell-out null constituents (or null spell-out), a particular form of ellipsis called gapping, here. This is an operation by

which the phonetic features of the head of a phrase are deleted. The following examples from English (41, 42) and Turkish (43, 44) illustrate the analysis of adverb clauses in the syntactic structure of those languages:

41.[VP Mary [VP reads [N a book] [VP ~~reads~~ [CP before [VP she [V sleeps]]]].

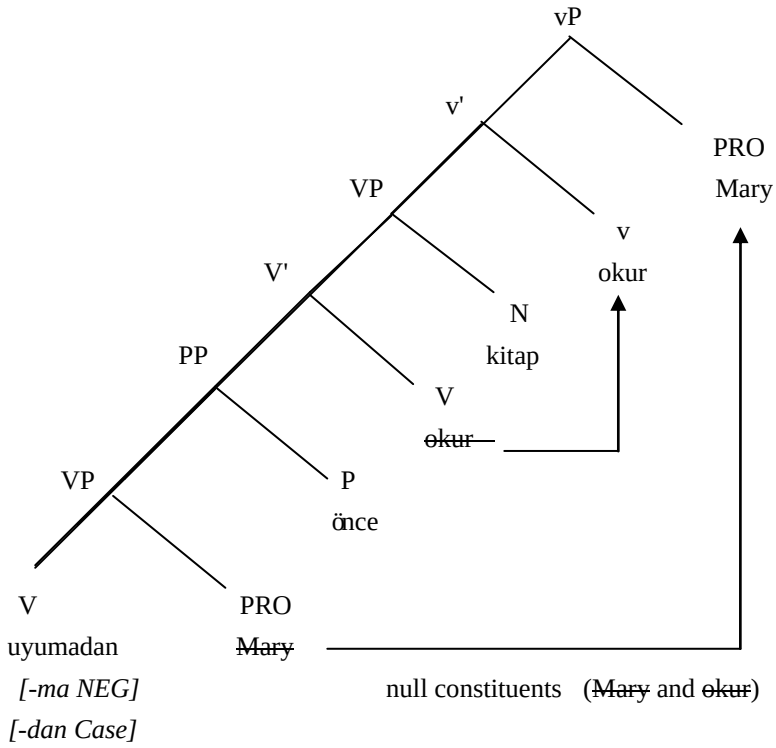
42.



Note that "*before"* is not the complement of book. So we can not merge them. "b*efore"* can only merge with reads since adverbs modify the verbs or adjectives. Therefore, in the deep structure the questions *when Mary reads a book* modifies the verb *read* and the verb *read* is the projection of the specifier prononun *Mary* because we can not merge the object *book* and the verb read like *book read* . In this case, we use the null spell-out operation and give the answer *before she sleeps* and then merge it with the former part *Mary reads a book.* Moreover, two integrated VPs appear here, that is, VPs split into two distinct projections- an outer vP shell and inner VP core (Radford, 2004).

43.[[[[Mary N] [~~Mary~~ N] uyumadan VP] önce PP] ~~okur~~ VP] [kitap N] okur VP].

44.



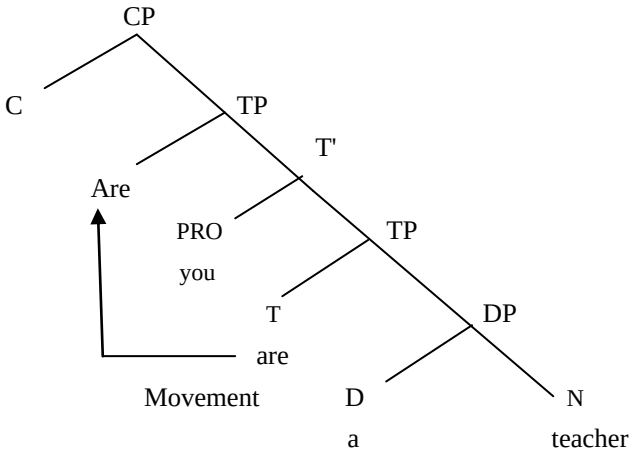
In the Turkish sentence (43), *V uyumadan* has the null subject pronoun ~~*Mary*~~, which is the specifier pronoun of the whole sentence. And the *CP uyumadan önce* modifies the null verb ~~*okur*~~ . In contrast to 41, the null subject ~~*Mary*~~ is written here since unlike the *CP before she sleeps*, the *CP uyumadan önce* does not have an overt pronoun. And note that *önce* is a preposition while *before* is a complement. This is because Turkish does not have adverbial clauses in lexical form, which bind two sentences but have prepositions to give the meaning of adverbial clauses in English.

The following English (45, 46) and Turkish (47, 48) examples are illustrated to show the syntactic structure of the questions which are also operated as CP:

45. [TP Are [TP you [TP ~~are~~ [DP a [N teacher]]]]?

Movement

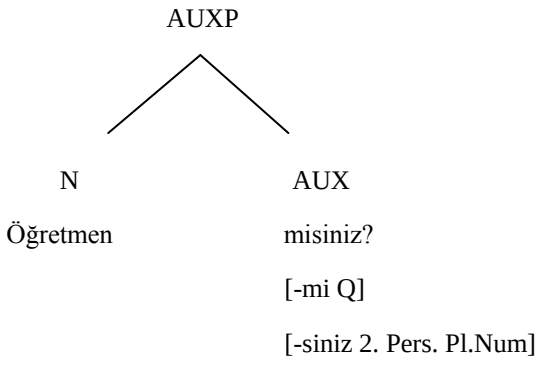
46.



In 45 and 46, we see an auxiliary inversion. As Chomsky (1993) stated, questions carry a strong tense feature and hence attracts the head T constituent of TP to move from T to C. Movements (i.e. transformations) occur in order to match interpretable features with uninterpretable features. On this view, "*are"* moves from the head T position in TP into the head C position in CP.

47. [[Öğretmen N] misiniz AUX]?

48.



However, in 47 and 48, there is no inversion, nor is movement. Auxilary of question "*mi"* is the head of the auxiliary phrase and merges with its complement noun.

4. Conclusion

The differences between the former applications such as government, x-bar theory, deep and surface structure of Principles and Parameters theory and the latter MP introduce that necessary elements are almost common among languages in different forms and thought to constitute the innate language but unnecessary items are the language particulars. These language particulars are the ones not matching with the other languages, however, the innate ones match either one to one or with syntactical differences.

According to the resulting analysis in this study, although English and Turkish are of different language groups in terms of head-last or head-first, SVO or SOV, subject drop or non-drop languages, the MP analysis of these two distinct languages found out that there are still common treats between these languages. Initially, adjective phrases in English treat as the same as in Turkish, in which adjectives preceed nouns such as *old book* and *eski kitap*. Next, Subjects are the spec-Pronouns of the sentences and settles at the beginning of the syntactic order. The principle categories adjectives, adverbs, nouns, verbs, pronouns, auxiliaries and prepositions are interpretable and matching in both languages. In addition, adverbial clauses behave like an intermediate projection of a null spell-out verb as C'. On the other hand, as suggested in the MP, the differences focus on language particulars such as inflections, , tense or verb phrases and technical operations like questions and movements, top-down and bottom-up merging. While English verbs are inflected with a separate lexicon in accordance with tenses and are represented in phonetic from (PF), Turkish verbs are inflected with suffixes following the root of the verb and not represented as a separate entry in the syntactic structure, resulting in an overall VP for all verb rooted phrases whether they are inflected tenses or verbals. Another difference is in the question syntax of the sentences. Whereas English requires head movement of tense, Turkish does not need it since there is an auxiliary *mi/mı*, represented in PF for questions. Finally, the direction of merging in Turkish differs from what suggested in the MP. It starts from left to right in direct contradiction of English. Therefore, instead of calling bottom-up merging, we called it top-down merging as a posible alternative suggestion. The illustrations demonstrated in this study illstrate common and different aspects among English and Turkish languages at the lowest calculation but may reflect all languages at the highest.

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