"Why are Greenberg's findings in 1963 so important even for today's generative grammar?"

Hiroaki Teraoka
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Abstract.

In chapter 1, I briefly summarize what linguists before 1960s believed. In chapter 2, I introduce some of "Greenberg's language universals." In chapter 3, I mention problems with Greenberg's methodology. In chapter 4, I claim that Greenberg's reasonings were not reasonable. In Chapter 5, I introduce generative grammar's approaches to a language analysis. In chapter 6, we see how generative grammar explains common features of human languages.

1 Before Greenberg's (1963) findings.

Linguists before the 1960s did not believe all human languages have universal grammatical features. They thought that every language had its own grammar and that the grammar of a given language was usually unrelated to that of another language. Indeed, linguists at that time already knew that some languages are related because these languages have a common ancestor. For example, German and the English language have a common ancestor—namely, Old High German. Because of this, they show similarities in word order, morphology (the way a word is made) and phonology (pronunciation).

In contrast to the case of English and German, languages such as Italian and Japanese have no such 'language family' relationship. Before Greenberg's findings, linguists believed that such languages' grammars were completely different, and there was no common rule nor pattern in these languages' grammars.

2 Greenberg's (1963) Universals.

Greenberg chose 30 languages almost at random and studied these languages carefully to find some "universals" (i.e. common rules behind all languages) for human languages. His findings are classified in three categories—basic word orders, syntax (the way words are ordered in a sentence) and morphology (the way a word is built). Basic word order seems to belong to syntax. However, we follow Greenberg's categorization.

To study basic word orders, Greenberg identified Subjects (S), Objects (O), and Verbs (V) as fundamental components of a sentence. A simple calculation tells you that you can arrange these 3 categories in 6 different orders—namely, SOV, SVO, OSV, OVS, VSO and VOS. If human languages have no common rules, human languages have these 6 possible word order equally. However, Greenberg found out that only three types of word order out of a possible six were normally used in his 30-language sample. According to him, normal orders of human languages for these elements are VSO, SVO and SOV.

In all of the attested (i.e. found) word orders, subjects (S) preceded objects (O). Based on this finding, Greenberg put forward his first universal for human language.

> *Universal 1*. In declarative sentences with nominal subject and object, the dominant order is almost always one in which subject precedes the object. (Greenberg 1990: 43)

"[D]eclarative sentences" are not question, exclamatory or negative sentences. Greenberg's universal 1 tells us that OS word orders are extremely rare in human languages.

Greenberg also found that although OV languages tended to have postpositions, the majority of VO languages had prepositions. These findings became Greenberg's 3rd and 4th universals.

In basic word order section, Greenberg also talked about alternative word orders. A language with a given basic word order may use other word order without no significant change in meanings. Greenberg found that languages with dominant VSO word order had SVO as an alternative word order. On the other hand, most languages with SOV word order had only OSV as the alternative word order or had no alternative word order. These findings were Greenberg's 6th and 7th universals.

We move on to the syntax section. Greenberg talked about question particles and their positions in sentences. Particles are difficult to define. Particles usually do not change their forms for agreement or case marking. Typical particles lack rich semantic meanings but have grammatical functions. For example, *that* in the following example can be said to be a particle.

1) I know **that** he is guilty.

That in this example has no significant meaning. It only has a grammatical function. Some languages have question particles. English have yes-no question particles in embedded clauses.

2) (a) I do not know [**whether** he is guilty]
   (b) I do not know [**if** he is guilty]

Whether and *if* in (2) seem to act as question particles. Japanese has question particles in both main and embedded clauses.

3) (a) kare-wa kashikoi-no **ka**
   he-TOP clever Question
   'Is he clever?'

   (b) [kare-ga kashikoi-no ka] wakara nai
   he-NOM clever Question know not
   'I do not know whether he is clever.'

Second line in (3ab) are called glosses. A gloss provides us information about unfamiliar languages. This time the glosses for (3) were supplied by me, who has no basic knowledge about Japanese grammar. The reliability of the glosses is very low. Each *ka* in the (3) examples seems to act as a question particle. Each of them is placed at the end of the clause or sentence. Greenberg carefully studied his sample languages and concluded that while prepositional languages tended to put question particles at the front of sentences or clauses, postpositional languages tended to put question particles at the end of sentences or clauses. This is Greenberg's 9th universal.

Japanese examples in (3) are good example. Japanese has postposition constructions like *eki-e* 'station to'. Japanese makes question sentences by adding question particles at the front of the sentences or clauses like (3). In contrast to Japanese, the English language has preposition constructions. English makes embedded question clauses by placing question particles *if* and *whether* at the front of the embedded clauses. If you call wh-words such as *what* and *when* question particles, English places question particles at the front of both main and embedded clauses. English and Japanese follow Greenberg's universal about question particles and their position in sentences.

Other than using question particles (question words or question phrases), present-day English also makes question sentences by subject-verb inversion or do-insertion.

4) (a) He is clever.
(b) Is he clever?
(c) He can read this book.
(d) Can he read this book?
(e) He studies linguistics.
(f) Does he study linguistics?

In (4ab) examples, we make question sentences by inversing a verb and a subject so that a verb precedes a subject. In (4cd), the auxiliary verb *can* is inverted with the subject to form a question sentence. In (4ef), we make a question sentence by inserting *does* at the initial position of the sentence.

Greenberg studied ways in which question sentences are made in his sample languages. He concludes that a language inverts its word order to make a question sentence only if the language normally put a question word or phrase at the initial position of a sentence. This was Greenberg's universal No. 10. English put a question word or question phrase at the front of a sentence.

5) (a) **What** did he read?
(b) **How much money** did he lose by gambling?

In (5), *what* is a question word and *how much money* is a question phrase. Both are placed at the initial position of the sentences. If Greenberg's universal No. 10 is correct, English can make question sentences by inversions of subjects and verbs. As (4) and (5) examples shows, English follows Greenberg's universal No 10. In every question sentence in (4) and (5), the subject and the verb are inverted.

Greenberg put forward several universals in morphology section. He made 45 universals in total.

3 Problems with Greenberg's methodology.

A quick search on the internet shows that there are over 7000 languages in the world. Considering this large number, Greenberg's sample languages, which had only 30 is too small for you to claim 'universals of languages.' Greenberg chose the 30 languages from the languages about which he had available resources. Here, "available resources" mean grammar

books. Because of these limited options to choose from, his conclusions are sometimes biased or simply wrong. For example, he concludes 'prepositions are dominant over postpositions' (Greenberg 1990: 61). However, this is a wrong conclusion. He checked the 30 sample languages and the majority of them had prepositions. This led to the above conclusion. As we see below, prepositional languages and postpositional languages have a different parameter setting. Neither of them is dominant over the other.

Another serious problem with Greenberg's methodology is that he provided almost no examples or glosses. When considering question particles, he wrote as follows: "Zapotec (I/Pr) has either an initial particle alone or this same particle in conjunction with a final particle" (Greenberg 1990: 47). Here (I/Pr) means this language belongs to type 1, which is VOS word order, and has prepositions. Greenberg mentioned the language's name and its word order. However, he did not cite any example of Zapotec. We cannot examine the sentence structure of Zapotec. Linguists usually cite examples of the target language and add glosses to the examples, as I did for (3) above.

If a linguist does not cite examples or provide glosses, other linguists cannot examine the validity of the linguist's claim. As we see below, what a linguist claimed to belong to a category tends to turn out in late years to belong to another category.

Next problematic point with Greenberg's methodology is that he did not use the concept of clauses. Clauses are separated into main clauses and embedded clauses.

6) (a) When will he leave Japan?
   (b) I do not know [when he will leave Japan]

In (6b), bracketed clause *[when he will leave Japan]* is called embedded clause. This clause is embedded in main clause *I do not know [when he will leave Japan].* (6a) *When will he leave Japan?* is itself a main clause. In (6a), main clause itself is a wh-question clause. In (6b), the main clause is declarative but the embedded clause *[when he will leave Japan]* is wh-question clause. When you look carefully at both main and embedded wh-question clauses, you realize that although in the main clause the subject and the auxiliary verb are inverted, in the embedded clause, the auxiliary verb remains in its original position. This means that inversion does not occur in the embedded clause. Examples in (6) show that difference between an embedded and main clause is crucial for syntax (i.e. word order). Despite this difference, Greenberg did not use the term *clauses*. He only used the word *sentences.* When I introduced Greenberg's universals, I used the term *clause* for exposition. No one knows whether Greenberg made distinction between main and embedded clauses. Probably he did not distinguish them.

4 Problems with Greenberg's arguments

Greenberg's arguments were also problematic. He claimed that human languages have universals. I agree with this idea. However, he gave either no explanation or a circular explanation for his universals. For example, he checked his sample 30-languages and found out that the majority of VO languages had prepositions. He just reported this finding as one of 'human language universals.' Thus, readers may wonder why human language has such a universal. Greenberg claimed that VO language was "harmonic" with prepositions. He seems to have used the word *harmonic* to mean "go well with." However, his claim that VO languages were harmonic with prepositions was based on the fact that he found many VO languages which had preposition constructions. According to him, the reason why the majority of VO languages had prepositions is that VO languages went well with prepositions. Greenberg's reasoning is circulatory. He used this "harmonic" argument for most of his universals. This means that he just reported his findings but gave no reasonable explanations.

Other cases where Greenberg did not explain grammatical phenomena are word orders of genitives and modifying adjectives. Genitives are grammatical cases which indicates possessions. *His* and *Tom's* are both genitives. Modifying adjectives can be found in such examples as *a beautiful picture* and *a nice car*. Both *beautiful* and *nice* modify the nouns. The adjectives in the following sentence *the picture is beautiful* is not a modifying adjective. According to Greenberg, genitives and modifying adjectives tended to follow nouns in VO languages. Greenberg claimed that since genitives and adjectives are both modifying elements, they follow modified nouns in VO languages, which placed modifying elements after modified elements. Modified elements are nouns in this case. Greenberg did not explain why modifying elements followed modified elements in VO languages.

Greenberg's findings are important even for today's linguists. Some of Greenberg's universals have been widely accepted by linguists. The task of explaining these phenomena has been left to other linguists.

5 Generative grammar's approach to sentences.

Linguistics have several branches. Generative grammar is one of these branches. A linguist named Noam Chomsky started generative grammar. Generative grammarians study how we generate phrases and sentences out of words. At first, generative grammarians tried

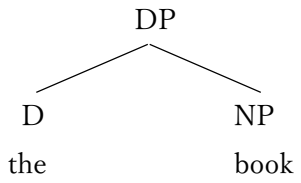
to explain how children acquired their mother tongues. However, they also explained some of Greenberg's universals as a by-product. Many generative grammarians are now studying universals of human languages. We see how generative grammarians analyze sentences.

According to Chomsky (1995) we need a process called **merge** to create phrases and sentences. Merge combines one constituent (such as a word and a phrase) with another to give us a larger constituent. For example, when we merge the determiner *the* and the NP (Noun Phrase) *book*, we get a larger constituent (i.e. a phrase) *the book*. What is the overall grammatical feature of the resulting phrase *[the book]*? Semantically, the phrase seems to have the grammatical feature of a noun. However we concern here the syntactic feature of the phrase. We cannot put the phrase *[the book]* in positions where NPs usually can be placed.

7) (a) I want a [ ].
(b) This [ ] is interesting.

Bracketed places in (7) are places where NPs can be placed. Both follows determiners. We cannot put the phrase *the book* in the bracketed spaces. This means that once a determiner is merged with a NP, the resulting phrase loses the grammatical feature of the NP and gains that of the determiner (D). Thus, the resulting phrase is categorized as a DP (determiner phrase).

8) a



Tree diagram in (8) shows the result of our first merge. This tree diagram shows that the resulting phrase *[the book]* is a DP and the D *the* determines the grammatical feature of the overall phrase. The constituent which determines the overall grammatical feature of the resulting phrase is called the **head** of the phrase. So, the D (determiner) *the* is the head of DP. The NP does not determine the grammatical feature of the DP. Such a constituent is called the **complement** of the phrase (or the complement of the head). A head and a complement are merged to form a phrase.

Another important point is that a head selects its complement. For example, the head D *the* requires a NP as its complement. For example, if you try to merge the head D *the* with a V (verb) *do* as the D's complement, the resulting phrase *[*the do]* is ungrammatical. (*

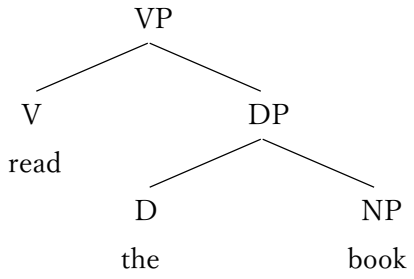
indicates that the phrase or the sentence is ungrammatical.)

The DP *the book* is merged with a V *read* to form a larger phrase *read the book*. This time, the DP is treated as a single constituent. The resulting phrase *read the book* seems to have the behavior of a larger verb. For example, the phrase *read the book* can be placed in bracketed positions in (9a-c).

9) (a) He will [ ].
(b) He can [ ].
(c) He wants to [ ].

The bracketed position in (9) examples are places where VPs (Verb Phrases) can be placed. Thus, the resulting phrase *read the book* has the grammatical features of a verb phrase. We can draw a tree diagram (10) to show the internal structure of VP *read the book*.

10) a



The V *read* determines the grammatical feature of the VP *read the book*. Thus, the V *read* is the head of the VP. The DP *the book* is the complement of the phrase.

Careful readers might have noticed that the head precedes its complement in every merge operation. In the first merge operation, the head D precedes its complement NP. In the second merge operation, the head V precedes its complement DP. These word orders are not by chance. First of all, only two word orders are possible for a head and its complement. The head precedes its complement or the head follows its complement. According to Chomsky (1995), human languages have parameters. Roberts (2007, 2021) claims that the head and complement's word order is one of the most fundamental parameters. Parameters are like switches in your brains. Roberts (2004, 2009, 2016) claims that if your brain has set the head-first parameter as positive value, heads precede their complements in all the phrases you produce. If you have set the head-first parameter as negative value, the head follows its complement in every phrase you utter. The parameters are first thought up to explain children's first language acquisitions. Radford (2016) claims that when a child realizes the

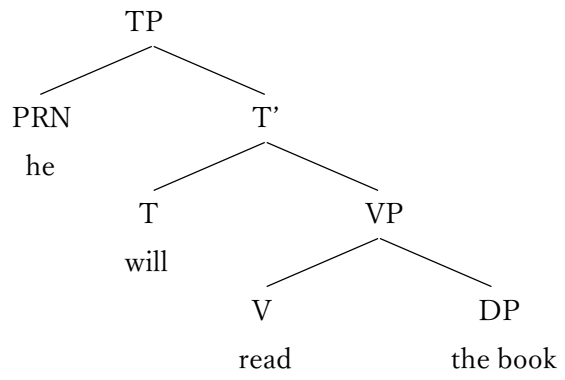
language people around her speak has the head-first parameter value, she sets the head-first parameter in her brain as positive. Once this head-first parameter has been set as positive in her brain, in all the phrase she produces, heads precedes their complements. Some other parameters human languages seem to have are wh-initial parameter, which tells us whether a language moves all the question phrases to the initial position of clauses, and null subject-parameter, which tells us whether a language allows null subjects.

Thus far, we have made VP *read the book*. We need to add tense to this VP. Thus, the VP *read the book* is merged with a T (tense) *will* to form a larger phrase *will read the book*. We would like to call the resulting phrase a TP. However, we cannot do so. *will read the book* is somehow incomplete. This incomplete phrase is called the T' or T-bar (both are pronounced as T-bar). The T-bar is larger than the T *will* but smaller than the full TP. This bar means an **intermediate projection**. (I will explain the technical term below.)

11) (a) *will read the book.
(b) I will read the book.

As the (11) examples show, the attained phrase **will read the book* is unable to be used as an independent phrase. (In a diary style, 11a may be acceptable.) We need a subject. We merge a pronoun *he* with the T-bar *will read the book* to form a complete TP *he will read the book*. This pronoun *he* is the specifier of the TP. A specifier is merged with an intermediate projection to form a complete projection. The tree diagram (12) shows the internal structure of the TP.

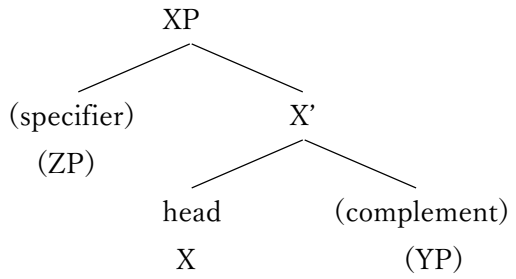
12) A



According to Radford (1988), Ray Jackendoff wrote a book titled *X Syntax: A Study of Phase Structure* in 1977. Jackendoff is the first person to have put forward the idea of **intermediate projections, maximal projections** and **specifiers**. Jackendoff's analysis is called X-

bar theory. Radford (1988, 2004, 2009, 2016) explains the concept of the X-bar theory and it can be diagramed as the below tree diagram.

13) A



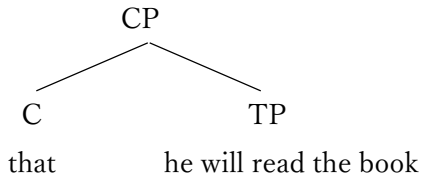
The head X merges with the complement YP to form an intermediate projection X-bar (X'). The grammatical feature of the X-bar is always that of its head X. X-bar merges with the specifier to form a full phrase XP. According to Radford (1988), Ray Jackendoff thought that the grammatical feature of the head X is projected upward through the X-bar to the XP. Thus, Jackendoff called the head X the minimal projection, X-bar the intermediate projection and XP the maximal projection of the head X. Generative grammarians today seldom use the term minimal projection. However, other terms are frequently used.

Keep in mind that the complement and specifier are optional. When the phrase has no specifier, the head and the complement merges to form a maximal projection, namely XP. When the phrase does not have neither specifier nor complement, the head X itself is the maximal projection XP. This means the head X is the maximal projection at the same time it is the minimal projection.

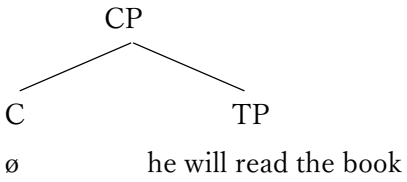
Thus far, we made the TP *he will read the book*. Although this TP seems to be a complete clause (sentence), it is not. According to Chomsky (2021), Radford (1988, 2004, 2009, 2016), Roberts (2007, 2021) and many other researchers, a clause needs a complementizer phrase (CP). In English, overt complementizers appear in embedded clauses. In (14a-d) examples, the embedded clauses are indicated by outer brackets. The heads of CPs are bold faced. The specifiers of CPs are underlined. The tree diagram in (15) show internal structures of the embedded clauses of (14a-c).

14) (a) I know [CP [C **that**] he will read the book]
(b) I know [CP [C **ø**] he will read the book]
(c) I do not know [CP <u>what</u> [C **ø**] he has got in his pocket]
(d) I cannot forget [CP <u>what a great time</u> [C **ø**] I had]

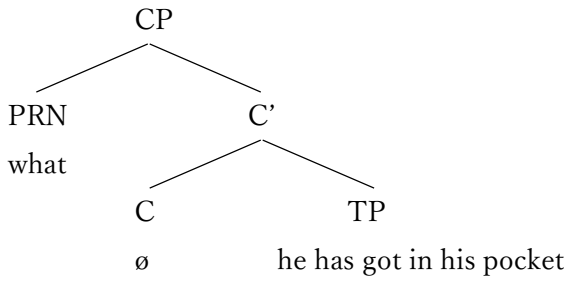
15) (a)



(b)



(c)



We interpret the embedded clause in (14a) *[CP [C **that**] he will read the book]* as a declarative clause because the clause has the declarative complementizer *that* in the head of the CP position. We interpret the embedded clause in (14c) *[CP what [C **ø**] he has got in his pocket]* as a wh-question clause because the embedded clause has a wh-question word *what* in the specifier of the CP position. This wh-question word acts as a wh-question operator. An operator has a function to change the meaning of a clause. Human languages are said to have wh-question operators, yes-no question operators, conditional operators, relative clause operators, negative operators and so on (Radford 2016). Keep in mind that the embedded clause in (14c) has a null complementizer as the head of the CP. A null constituent has no phonological forms, which means the null constituent is not pronounced but has a syntactic function. This null complementiser in (14c) seems to not affect the interpretation of the embedded clause. The embedded clause in (14d) *[CP what a great time [C **ø**] I had]* has an exclamatory phrase *what a great time* in the specifier of the CP position. Since the embedded clause in (14d) has this exclamatory phrase in the specifier of CP position, the embedded clause is interpreted as an exclamatory clause. The null complementiser in (14d) also does not affect the interpretation of the clause. In contrast to (14cd), the embedded clause in (14b) *[CP [C **ø**] he will read the book]* has no specifier in the CP layer. The CP has only the null complementize **ø** as its head. In this case, the embedded clause (14b) is interpreted as a declarative clause. According to Radford (2016), a clause is interpreted as declarative by default when the CP of the clause has no specifier but a null complementizer as the head of the CP.

As the above (14) examples show, we seem to judge the type of a clause by checking the head and the specifier of the clause's CP. The head and the specifier of a phrase are called the edge of the phrase. Thus, as Radford (2016) claims, human language seem to have the following condition for judging the type of a clause.

16) Clause Typing Condition

We judge the type of a clause (i.e. whether it is declarative, wh-question, yes-no question, conditional or exclamatory etc.) by checking the edge of the clause's CP.

The clause typing condition means that every clause is a CP. Even main clauses are CPs. Thus, (12) TP *he will read the book* is incomplete as a clause. We merge the null complementiser *ø* with the TP to form a CP *ø he will read the book.* Since the CP has the null C as its head, we interpret the clause as declarative by default (Radford 2016).

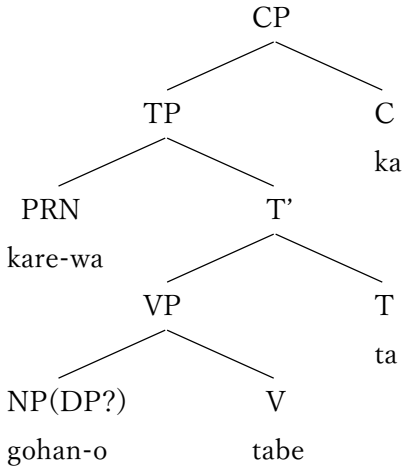
6 How did generative grammarians explain Greenberg's universals?

In the above chapter, we saw how generative grammarians analyze sentences. In this chapter, we see how they explained some of Greenberg's universals. Human language's one of the most fundamental parameter is the head-first parameter. VO type languages has positive value for this head-first parameter setting. In head-first type languages, a head precedes its complement in every phrase. In a DP, the head D precedes its complement, the NP. In a preposition phrase (PP), the head P (preposition) precedes its complement, the DP. If a VP has a complement, the complement is semantically the object of the V. Thus, in a VP, the V precedes its complement, the DP if the VP has the object. In a TP, the head T precedes its complement, the VP. In a CP, the head C precedes its complement, the TP. The P (preposition) precedes the DP. Thus, in a head-first type language, we have the VO word orders and preposition constructions.

Languages with negative value for the head-first parameter has just the opposite word order. In such a language, the head follows its complement in every phrase. In a DP, the head D follows its complement, NP. In a VP, the head follows its complement, the DP. In a TP, the head T also follows its complement, VP. Thus, we have the VT word order for such a language. In such a language, the head C also follows its complement, TP. Thus, we have TP C word order for such a language. Japanese is probably a language which has negative value for the head-first parameter setting. Japanese has word orders in which the head follows its complement in every phrase.

17) kare-wa gohan-o tabe-ta ka
he-NOM. rice-ACC. eat-PAST. Question
'did he eat rice?"

18) a



A Japanese sentence (17) can be analyzed as the tree diagram (18) shows. I partially followed Inoue's (2006) analysis. Inoue analyzed *ta* as the T head and placed a subject in the specifier of T position. Other analysis is my original. The reliability of my analysis is questionable. In every phrase, the head follows its complement. In the VP, the head V *tabe* follows its complement NP *gohan-o*. In the TP, the head T follows its complement VP *gohano-tabe*. In the CP, the head C follows its complement TP *kare-wa gohan-o tabe-ta*. As the tree diagram (18) shows, Japanese, which is a head-final word order type language, has OV word order and the T follows the VP. Following clause typing condition (16), question particle is placed in the CP position. (Whether *ka* is in the head C or the specifier of C position is a mystery for me. I placed it in the head C position by my intuition.)

We can explain some of Greenberg's universals here. VO languages have positive values for the head-first parameters. A head-first type language has preposition constructions and places the T before the VP. The C precedes the TP. Because of clause typing condition (16), operators which affect the type of the clause must be placed at the edge of the CP, which is in the clause initial position.

In contrast to the VO type languages, OV type languages have negative values for the

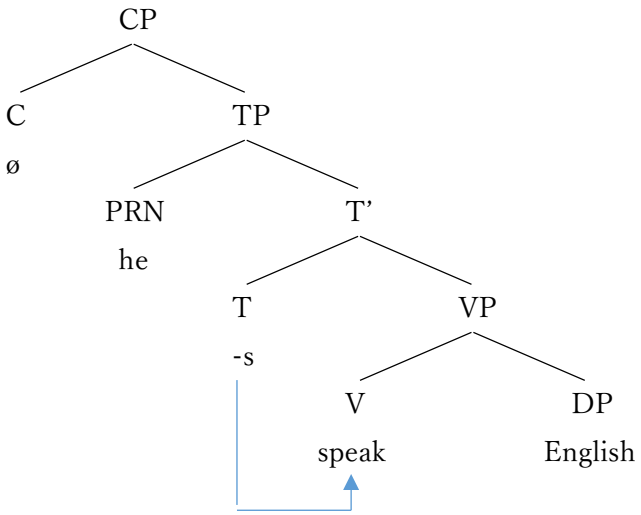
head-first parameters. A head-last languages have postposition constructions. The language places the T after the VP. The C follows the TP. According to the clause typing condition (16), operators which affect the type of the clause must be placed at the edge of the clause, which is at the end of the clause.

We can explain Greenberg's universal on question particles. In VO languages, question particles tended to be placed at the initial position of the clause. This is because the CP is in the initial position of the clause. In contrast to VO languages, in OV languages, question particles such as Japanese *ka* is placed at the end of the clause. This is because the CP is placed at the end of the clause in OV type languages.

In order to explain Greenberg's universals on alternative word orders, I need to introduce a strong T parameter (Roberts 2007 first put forward the idea of strong T).

19) He speaks English.

20) A



The example (19) has the internal structure shown in the tree diagram (20). The verbal suffic -s indicates the present tense of the sentence just as a verbal suffix -ed indicates the past tense. An important point is that verbal suffixes are supposed to be pronounced with the host verbs. In this case, we need to move the V *speak* to the T position or lower the T suffix *-s* to the V position. We cannot decide which operation is adopted in present-day English by examining a declarative sentence like (19) *he speaks English*. However, linguists know that a negative phrase follows the T position and precedes the VP position(Radford 2009, 2016, Roberts 2007, 2021). In other words, a negative projection is sandwiched between the TP and the VP. For

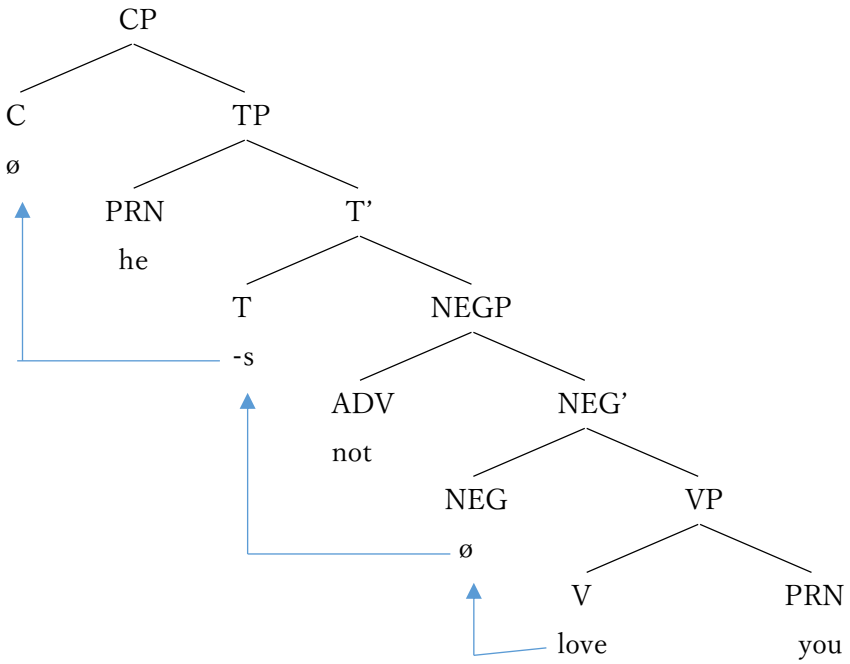
example, in *he will **not** read the book*, T *will* precedes the a negative word *not*. If the T suffix *-s* remains in its original position, the T suffix will precede the negative word when the sentence (19) is negated. The result is crystal clear *he does not read the book*. The T suffix *-s* precedes the negative word (phrase). The T suffix is lowered to the V position in present-day English. In present-day English, the T is a weak head. The verbal suffix in the T position is lowered to the V position when pronounced.

However, the older English had interesting word orders.

21) (a) He loves not you (Shakespeare, Lysander, *Midsummer Night's Dream*, III. ii [Quoted by Radford (2016: 314)])

(b) Speakest thou in sober meaning? (Shakespear, Orlando, As you Like IT, V. ii [Quoted by Radfrod (2016: 271)]) 'Do you speak in sober meaning?'

22) A



The above examples (21) are from Shakespeare. Shakespeare wrote from the end of the 16th century to the beginning of the 17th century. His examples show the syntax (word order) of early modern English, which was spoken from about 1500 to 1700. Roberts (2007, 2021) claims human languages have strong T parameters. If a language has negative value for the strong T parameter setting, like present-day English, the language has morphologically poor verbal suffixes. Present-day English has only two such verbal suffixes—namely, -s and -ed. Verbal suffixes which indicate tenses are originated in the T positions. Since the Ts in the language are weak, they cannot attract Vs to the T positions. Thus, verbal suffixes are lowered

to the V positions when pronounced. On the other hand, if a language has positive value for the strong T parameter setting, the language has morphologically rich verbal suffixes like present-day Italy, German and older English. The Verbal suffixes which indicate tenses of the sentences are generated in the T positions. Since Ts are strong in such a language, the verbal affixes attract the constituent in the head V positions to the T positions. Early modern English clearly had the positive value for the strong T parameter setting. Thus, as the tree diagram in (22) and example (21a) show, the main verb preceded the negative word in early modern English.

Another interesting point in languages which have positive values for strong T parameters is that such a language adopts a word order loke (21b) when it makes a question sentence. Linguists know that a language can move a constituent in the T position to the C position when the language makes a question sentence (Radford 1988, 2004, 2009, 2016, Roberts 2007, 2021 among many others). Present-day English also has this T to C movement. A declarative sentence *he will read the book* can be changed into a question sentence *will he ~~will~~ read the book*. The modal auxiliary verb *will*, which was generated in the T position is moved to the next highest head position C. In early modern English, the main verb was moved to the T position. This verb in the T position was moved to the C position when a question sentence was made. According to Radford (2009, 2016) and Chomsky (1995), a head can be moved to only another head. They also claim that head cannot jump over another head. A head can be moved upward successively infinitively times. However, a head can be moved downward only once. The head movements in (22) do not violate these constraints. In early modern English, only in question sentence are T to C movements allowed. In contrast to the early modern English, old English, which was spoken before 1100, present-day German and Dutch allow T to C movements in declarative sentences. Such languages are said to have positive values for the strong C parameter. Only if V is moved to the T position, this strong C attracts Vs to the C positions. Thus, Greenberg's universal on alternative word order is explained.

6 conclusion

As Greenberg claimed, human languages do have universals. Greenberg explained these common grammatical features by "harmony" arguments. However, Greenberg's "harmony" arguments did not explain anything. Generative grammar's approaches has shed light on some of the mechanisms of the language universals. Generative grammarian suppose that human languages have parameters. These parameter settings correspond to the parameter settings of the speakers of the languages.

Cover Notes

I tried to introduce Greenberg's language universals and criticize weak posits about his reasoning. I only mentioned some of the word order (syntax and basic word order) universals. I skipped all of the morphology (analysis of a word) section. I do not have background knowledge about morphology. I could not evaluate the validity of Greenberg's claims in the morphology section. Generative grammar section seems to be too long. It became the main body of my draft. Generative grammar has its weak points. For example, old English, which was spoken from 5th century to the 11th century, had head-first word order in main clauses but head-last word order in embedded clauses. This contradicts the parameter setting approach to a first language acquisition. This fact casts doubt on the validity of generative grammar itself. Roberts (2021) tackled this problem and partially solved it. Robert's claim also shed light on Greenberg's findings about exceptional languages. Although most languages followed Greenberg's finding, some did not. For example, some VO languages had postpositions. I tried to introduce Robert's claims. However, the draft seems to be too long as it is now. Thus, I gave up the idea. Also, as I wrote longer and longer, I forgot the main point of the draft itself. As you approach the end of the draft, my writing gets more and more vague.

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