

## EXPLORING THE RULES GOVERNING THE CREATION OF INTERROGATIVE SENTENCES IN THE PASHTO LANGUAGE

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### **Abstract**

*This study investigates the syntactic rules governing the formation of interrogative questions in Pashto. Using a qualitative research approach, the researchers conducted a focus group with six participants from various regions of the Malakand Division, along with insights from professors in the Pashto department at the University of Malakand to examine the use of interrogative words such as کله (when), څه (what), چرته (where), and څنگه (how), کوم (which) and څوک (who) in highlighting the syntactic structure of questions in Pashto. It emphasizes the importance of word order in conveying clear meanings and distinguishing between question and statement forms. The findings reveal that while چرته, څوک, څه, کله, څنگه, and کوم primarily function as interrogatives, they do not move to the CP as in English but remain in-situ. In running speech, some Pashtun speakers, for various reasons, may misplace these interrogatives, creating confusion. However, this study confirms the exact location of each of the interrogatives mentioned through a set formula. This study contributes to a deeper understanding of Pashto syntax, especially interrogative question creation and highlights the role of syntax in effective communication in the language. This study will help future researchers of other languages use the formulas developed here to observe how such interrogatives sentences are produced in their languages. This set of formulas will also help computational linguists in designing tools for textual analysis.*

**Keywords:** Pashto Syntax, Interrogative Questions, Syntactic Trees, Language, Wh-Movement.

### **Introduction**

Syntax refers to the arrangement of words to form sentences. It is fundamentally about sentence structure and how words are combined in a specific order to convey clear meanings. According to Radford (2009, p. 18), Syntax is the arrangement of words in sentences and plays a key role in analyzing how messages are constructed in media texts. For example, in social media, television commercials, or newspapers, creators are careful with their word choices. Companies and creators strategically arrange their words to make their messages more persuasive. Chomsky (1957, p. 59) introduced the idea that “syntax follows a set of underlying rules that govern sentence formation”. Additionally, Carnie (2013) explains that syntax helps us understand how the specific order of words can persuasively reflect our messages.

### **The Importance of Syntax in Language**

Syntax refers to the set of rules that govern how words are arranged in a sentence to make it understandable. It is essential because it clarifies each subject's role within a sentence. For

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example, “The mouse chased the cat” conveys a different meaning than “The cat chased the mouse”. This difference in word order highlights how syntax enables clear communication. According to Fromkin et al. (2018, p. 17), “Syntax is essential in understanding how language operates and how thoughts are translated into grammatically correct expressions”. Additionally, Redford (2014) explains that syntax encompasses more than grammar. He further explains:

It investigates how our brains naturally comprehend sentences when we speak or write. For instance, when one hears the phrase “The boy kicked the ball”, his/her brain instantly understands who performed the action and what the action was, thanks to their inherent knowledge of syntax rather than merely memorized grammar rules (p. 121).

### **Syntactic Structure**

Syntactic structure refers to the layered organization of words and phrases in a sentence following the rules of syntax.

#### ***Key Component of Syntactic Structure***

**Constituents.** Constituents form the basis of syntactic structure within sentences. They are groups of words that function together as a single unit. For example, in the sentence “The tall man is running”, the phrase “The tall man” serves as a constituent. Constituents can take various forms, including noun phrases (NP), verb phrases (VP), and adjective phrases, among others.

#### ***Syntactic Structure of the English Language***

The syntax structure is hierarchical, with words grouped into phrases, which in turn form larger constituents.

*For example:*

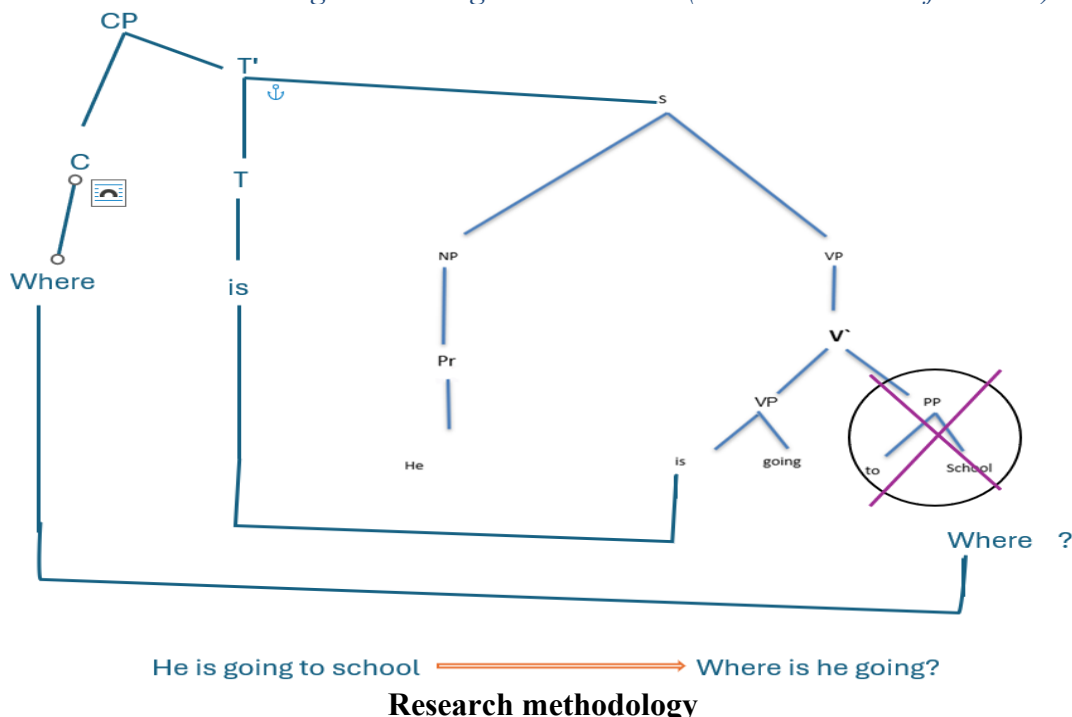
$$\begin{aligned} S &= NP + VP \\ NP &= D + N \\ VP &= V + NP \end{aligned}$$

$$\text{Hence: } S = NP(D+N) + VP(V'(Aux.V+M.V.) + NP(D+N))$$

**Syntactic Tree.** A syntactic tree, also known as a parse tree, is a diagram that represents the grammatical structure of a sentence. It illustrates how words and phrases in a sentence are related to one another according to the rules of syntax. In a syntactic tree, the root represents the entire sentence, and branches represent the constituent parts, such as nouns, verbs, phrases, and clauses. Each node in the tree corresponds to a specific grammatical category, helping to visualize the hierarchical organization of the sentence's components. This is often used in linguistics, computer science (particularly in natural language processing), and language education to analyze and understand sentence structure.



Figure 2: Wh-Movement in English interrogative sentences (researchers' modified Tree)



**Research Design**

This study adopts an exploratory qualitative research approach for data collection and data analysis.

**Data Collection**

The researchers collected data for this study by first forming a focus group of six participants. Their conversations were recorded, and the participants came from various areas of the Malakand Division, including Swat, Malakand, Buner, Shangla, and Dir (both Lower and Upper). Since the researchers were all Pashto speakers, their observations further facilitated data collection. Additionally, the researchers visited the Pashto Department at the University of Malakand, where they gathered insights and validated the collected data and analysis procedure with knowledgeable professors in Pashto.

**Data Analysis**

The researchers used a qualitative approach to analyze the data and selected only those sentences which contained interrogative words such as کوم، څه، څوک، چرته، کله، څنگه. The researchers also employed syntactic theories in their analysis (Chomsky, 1970; Jakendoff, 1977). The Wh-movement in the Pashto language does not occur in the same manner as it does in English. To explore this phenomenon, the researchers in the current study introduced a variable X that serves as a stand-in for both objects and adverbs of all types. This variable can be substituted with any interrogative pronoun, enabling a more detailed investigation of how different languages within the Indo-Aryan and Indo-Iranian families construct questions and the underlying grammatical principles that govern these transformations.

**Results and Discussion**

In the present study, the researchers aimed to understand the syntactic structure underlying the formation of interrogative sentences, focusing specifically on English-style Wh-questions that

predominantly feature in-situ placement in most Indo-Iranian languages. A crucial aspect of their inquiry was to investigate whether Pashto, a language within the Indo-Iranian family, exhibits wh-movement in its question formation or remains in-situ. If it turns out that wh-movement is absent in Pashto, the researchers sought to explore alternative methods for defining the process of Wh-creation in such languages in the absence of such movement. To achieve this goal, the researchers drew insights from various syntactic theories (Chomsky, 1957, 1970; Jakendoff, 1977; Carnie, 2013) and developed an innovative formula to enhance understanding among linguists and researchers. This new framework is intended to facilitate a clearer understanding of how Wh-interrogatives operate across a range of Indo-Iranian languages. Hence, the formula to trace X within the simple syntactic tree, developed and employed by the researchers, is as follows:

1. *Sentence Structure for Simple Pashto Sentence*:  $S=NP+VP \rightarrow S=NP (D+N)+VP (N/Adv + V)$
2. *Sentence Structure introducing X*:  $S=NP+VP \rightarrow S=NP (D+N) + VP (X + V)$
3. *Where X can be replaced with any of these interrogative pronouns*: چرته, څه, کله, څنگه, and کوم

**The master formula developed for interrogative (wh-) creation in Pashto is:**

$$\forall w, (Subj(w) \vee Obj(w) \vee Det(w) \vee Adv_{time}(w) \vee Adv_{place}(w) \vee Adv_{manner}(w)) \Rightarrow Replace(w) = X$$

where:

$$X \in \{څنگه, چرته, کله, کوم, څه, څوک\}$$

### Analysis of Pashto Interrogatives

#### *Interrogative Question 1: کله (when)*

In Pashto, کله is used as an interrogative as “when” in English. The interrogative کله in Pashto is used for a similar sense when the time of an action is unknown. The primary function of کله is to ask about time: when something happened, is happening, or will happen. For example:

تا روټی کله وخورله؟

*Ta rotai kala okhwarala?*

When did you eat the meal?

As in English, Pashto’s کله is not restricted to asking questions. The word کله can also appear in complex sentences to express time clauses. For instance:

مونږه کلاس واخیست کله چې استاد راغی.

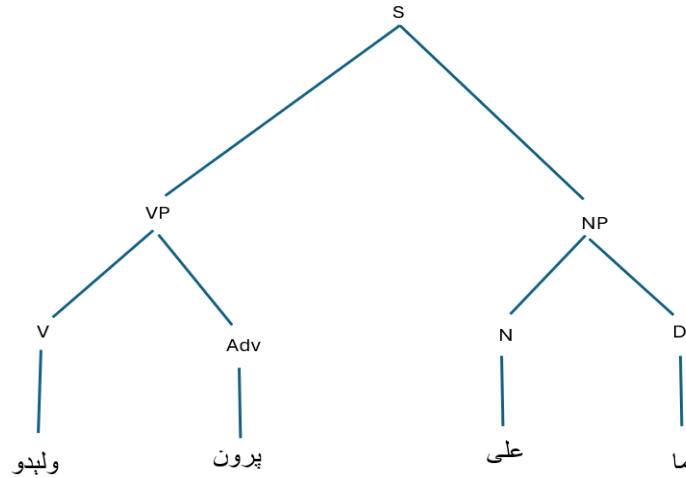
*Munga class waghest kala che Ustad raghay.*

We took the class when the teacher came.

*Table 1: Example sentences of کله*

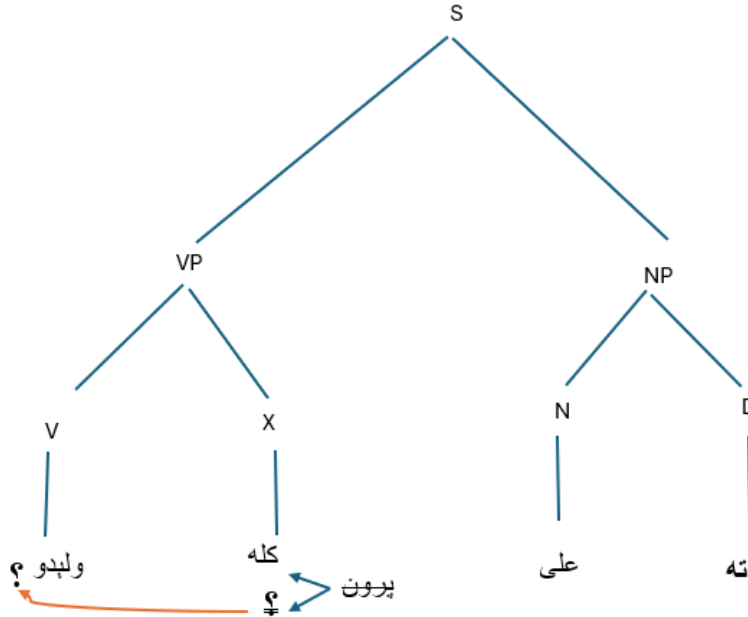
| Questions             | Translation in Pashto | Answer to Questions        | Translation in Pashto  |
|-----------------------|-----------------------|----------------------------|------------------------|
| When are you leaving? | ته کله روانیږی؟       | I am leaving this evening. | څه نن ماښام روانیږم    |
| When did you see Ali? | ته علی کله ولیدو؟     | I saw Ali yesterday.       | مه علی پرون ولیدو      |
| When is your exam?    | ستا امتحان کله دی؟    | My exam is next week.      | څما امتحان بلې هفتې دی |

Figure 3: Tree Syntactic tree for a simple sentence in Pashto with an adverb of time (researchers' visualization)



The tree shown in the figure above illustrates a Pashto sentence with an adverb of time.

Figure 4: Syntactic tree for the simple sentence and its interrogative کله (researchers' visualization)



In this sentence, the X stays in place (in-situ) while the question mark (which appears to represent the replaced adverb of time) moves to the end.

In the above sentence, let's suppose:

X be a linguistic variable.

کله be a time adverb.

پرون be a time adverb.

*Equation 1: Formula developed for کله in-situ*

**Given**

$$X = \text{کله}$$

And a word  $w$  belongs to the class of time adverbs, then:

$$w \in \text{Adv}_{\text{time}} \wedge X = \text{کله} \Rightarrow w \mapsto X$$

Since:

$$\text{پرون} \in \text{Adv}_{\text{time}}$$

Then:

$$\text{پرون} \mapsto X = \text{کله}$$

Hence:

$$\forall w \in \text{Adv}_{\text{time}}, X = \text{کله} \Rightarrow \text{Replace}(w) = X$$

In the sentence above,  $X$  is used as a variable to replace the adverb of time, پرون, with the IQ word کله. Additionally, the question mark, which corresponds to the replaced adverb, has been moved to the end of the sentence, as illustrated in the figure above.

**Ambiguity with the use of کله in the Pashto language.** The Pashto language is complex yet flexible in its rules. For example, there can be ambiguities when placing کله as an interrogative in the wrong position. For instance, in the example below, the interrogative کله is also used at the end of the sentence, creating ambiguity.

Correct sentence: ته کله څي؟

Ambiguity: ته څي کله؟

**Interrogative Question 2: څه (What)**

The primary word for “what” in English is څه in Pashto. This word serves as a Wh-pronoun or Wh-determiner and is employed to inquire about various things, objects, or actions, making it an essential component of the language. Notably, څه is not used when asking about people; for such inquiries, the word who is utilized instead. In everyday conversation, څه is frequently used to seek information about something unspecified or unknown; for example, one might ask, څه دي؟, which means What is it? This simple yet powerful word opens the door to countless questions and clarifications, allowing speakers to navigate discussions with ease and curiosity about the world around them.

ته څه خوري؟

What are you eating?

*Table 2: Example sentences of the integrative pronoun څه*

| Question                  | Translation in Pashto | Answer to Question         | Translation in Pashto |
|---------------------------|-----------------------|----------------------------|-----------------------|
| What do you want?         | ته څه غواړی؟          | I want water.              | څه اوبه غواړم -       |
| What does my brother eat? | ځما رور څه خوری؟      | My brother eats a meal.    | ځما رور ډوډی خوری -   |
| What were you telling me? | ته ما ته څه وئیل؟     | I was telling you a story. | ما تاته قیصه کول -    |

Equation 2: Formula developed for *څه* in-situ

**Given:**

$$X = \text{څه}$$

**Rule:**

$$w \in \text{Obj} \wedge X = \text{څه} \Rightarrow w \mapsto X$$

**Since:**

$$\text{ډوډی} \in \text{Obj}$$

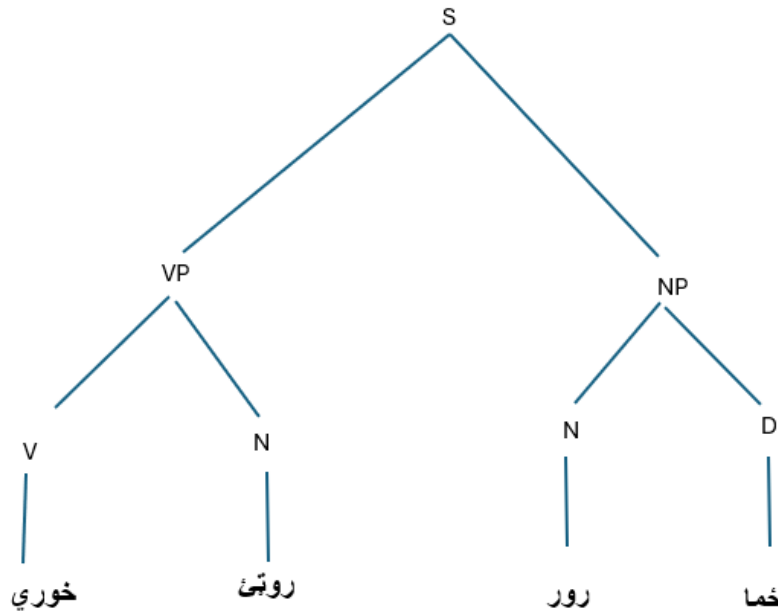
**Then:**

$$\text{ډوډی} \mapsto X = \text{څه}$$

**Hence:**

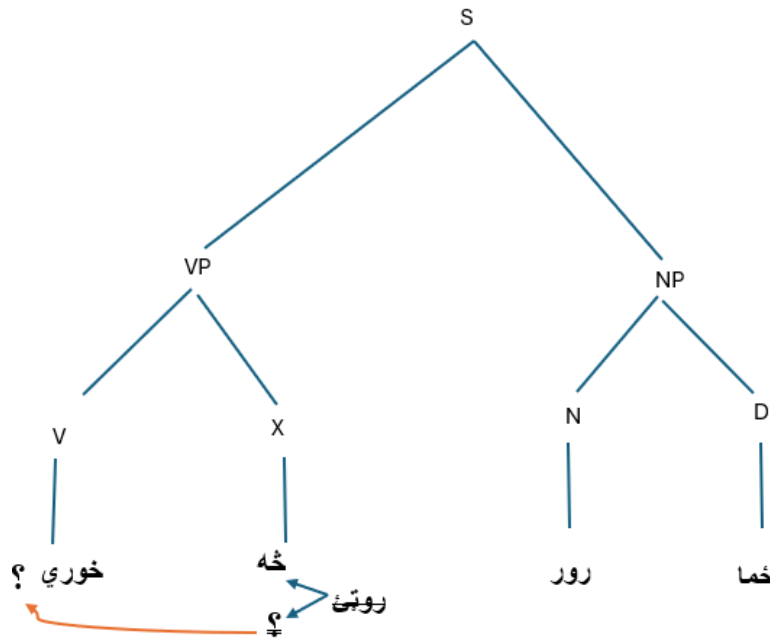
$$\forall w \in \text{Obj}, X = \text{څه} \Rightarrow \text{Replace}(w) = X$$

Figure 5: Syntactic tree of a simple Pashto sentence with an Obj. (researchers' visualization)



The tree illustrated above shows the syntactic structure of a simple Pashto sentence. It consists of two noun phrases: one serving as the subject and the other as the object, along with a verb phrase. Together, these components form a complete and grammatically correct Pashto sentence. It is important to note that this specific interrogative pronoun always replaces the object of the sentence. In the example above, X is used as a variable to replace the object *روټی* with the interrogative word *څه*. Additionally, the question mark, which accompanies the replaced object, is placed at the end of the sentence, as shown in the figure above.

Figure 6: Syntactic tree of the sentence with the integrative **څه** (researchers' visualization)



### Ambiguity of positioning **څه** in the Sentence

تا خوري څه؟

After conducting the fieldwork and careful observation, the researchers identified ambiguity in sentences such as **څه** دا دي (What is this?) and **څه** ته خوري څه؟ (What do you eat?). In instances involving these phrases, we encounter sentence-structure ambiguity that merits further exploration. In everyday conversation, the inquiry **څه** دا دي is commonly followed by responses such as **څه** دا اوبه دي (This is water). However, if someone were to phrase it as **څه** اوبه دي دا (Water is this), it would create a syntactical inconsistency that contradicts the established rules of Pashto syntax. Such deviations not only highlight the complexities of the language but also underscore the importance of adhering to its grammatical structures to ensure clarity and coherence in communication.

### Interrogative Question 3: چرته (Where)

In the Pashto language, the primary word for “where” is چرته (charta). This term is used to inquire about places, locations, or directions. It is frequently used to formulate questions that pinpoint the specific position of an object or person. For instance, one might use چرته to ask about the whereabouts of a particular item or to navigate through an unfamiliar area in different time periods, for example:

- Present: تا چرته ځي؟  
Where are you going?
- Past: تا پرون چرته لاري؟  
Where did you go yesterday?
- Future: غونډه به چرته كېږي؟  
Where will the meeting be held?

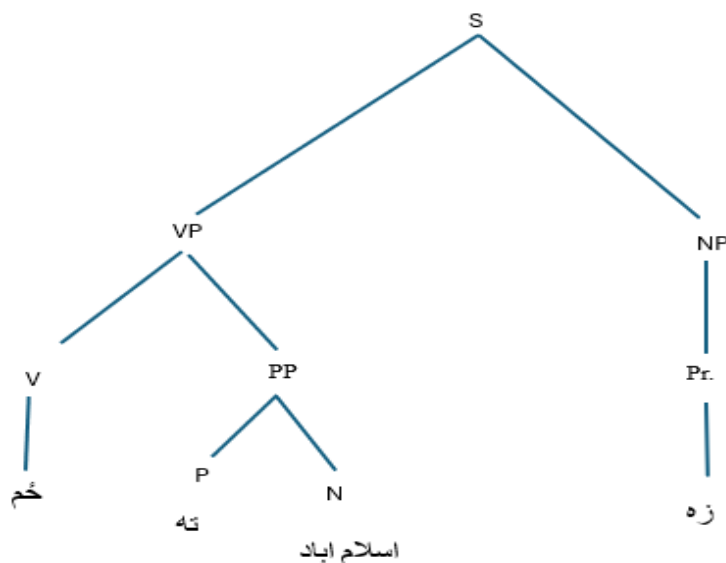
Table 3: Example sentences for چرته

| Questions               | Translation in Pashto | Answer to Questions           | Translation in Pashto   |
|-------------------------|-----------------------|-------------------------------|-------------------------|
| Where are you going?    | ته چرته ځي؟           | I am going to Islamabad.      | ځه اسلام آباد ته ځم -   |
| Where did you see Ali?  | ته علي چرته وليدو؟    | I saw Ali at the market.      | ما علي بازار کي وليدو - |
| Where are the children? | ماشومان چيرته دي؟     | The children are in the park. | ماشومان پارک کي دي -    |

Equation 3: Formula developed for چرته in-situ

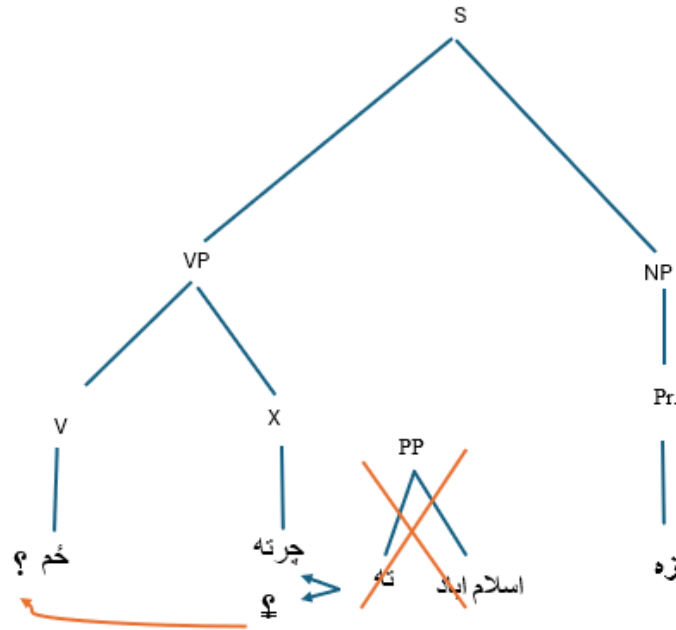
|               |  |
|---------------|--|
| <b>Given:</b> | $X = \text{چرته}$  |
| <b>Rule:</b>  | $w \in \text{Adv}_{\text{place}} \wedge X = \text{چرته} \Rightarrow w \mapsto X$             |
| <b>Since:</b> | name of place (i.e. Islamabad) $\in \text{Adv}_{\text{place}}$                               |
| <b>Then:</b>  | name of place (i.e. Islamabad) $\mapsto X = \text{چرته}$                                     |
| <b>Hence:</b> | $\forall w \in \text{Adv}_{\text{place}}, X = \text{چرته} \Rightarrow \text{Replace}(w) = X$ |

Figure 7: Syntactic tree for a simple sentence with an adverb of place (researchers' visualization)



The tree depicted in the illustration above highlights a sentence that features an adverb indicating location.

Figure 8: Syntactic tree with the interrogative چرته (researchers' visualization)



As can be seen in the sentence above, X is used as a variable to replace the adverb of place اسلام اباد with the word IQ چرته, and the question mark, which should come with the replaced object, is moved to the end of the sentence, as shown in the figure above.

**Ambiguity of positioning چرته.** The researchers also identified some sentences spoken by Pashto speakers that violate the rules of Pashto syntax for such interrogatives. For example, in the following sentences, the ambiguous sentence clearly shows the violation of the correct placement of the interrogative چرته:

Correct sentence: ته چرته څي؟

Ambiguity: څي چرته ته

**Interrogative Question 4: کوم (which)**

In the English language, the word “which” functions as an interrogative determiner or pronoun, serving the purpose of selecting or specifying one option from a known set of items. This word is essential for forming questions or clarifications when multiple choices are available. In Pashto, the equivalent term for “which” is کوم (kum). This translation not only reflects the meaning but also aligns with the grammatical variation of the Pashto language, as it agrees with the noun's gender and number. This means that the form of کوم will change depending on whether the noun is masculine, feminine, singular, or plural, ensuring proper grammatical concordance in the sentence.

Kum کوم: Masculine singular

Kuma کومه: feminine singular

Kum کوم: plural (contextual)

Table 4: Example sentences of کوم

| Questions | Translation in Pashto | Answer to Questions | Translation in Pashto |
|-----------|-----------------------|---------------------|-----------------------|
|-----------|-----------------------|---------------------|-----------------------|



|                             |                     |                              |                          |
|-----------------------------|---------------------|------------------------------|--------------------------|
| Which fruit do you like?    | ته کومه میوه خوښوي؟ | I like Apples.               | خه مني خوابنوم -         |
| Which book are you reading? | ته کوم کتاب لولي؟   | I am reading a history book. | خه دا تاريخ کتاب لوالم - |
| Which game do you like?     | ته کومه لوبه خوښوي؟ | I like hockey.               | خه هاکی خوابنوم؟         |

The primary function of کوم is to ask choice-based questions from a limited set. In Pashto:

Example 1: (Masculine)

تا کوم کتاب اخلي؟

Which book are you taking?

Example 2: (Feminine)

ستا کومه خور راغلي ده؟

Which sister has come?

Example 3: (plural)

کوم ماشومان ښوونځي ته ځي؟

Which children are going to School?

In these cases, کومه, کوم function as modifiers of nouns that appear before them. Another important point is that کوم can also appear in relative clauses, not just in questions. As we can say:

زه هغه کتاب غواړم کوم چې ستا سره دي.

I want the book that is with you.

In this context, “which” introduces a relative clause and functions similarly to *that* or *which* in English. When used in questions, the word کوم (for masculine) or کومه (for feminine) comes before the noun it modifies. Similarly, in a relative clause, کوم is placed before the noun, followed by *che* (چی), which means that.

*Equation 4: Formula developed for کوم in-situ*

**Given:**

$$X = \text{کوم}$$

**Rule:**

$$w \in \text{Det} \wedge X = \text{کوم} \Rightarrow w \mapsto X$$

**Since:**

$$\text{دا تاريخ} \in \text{Det}$$

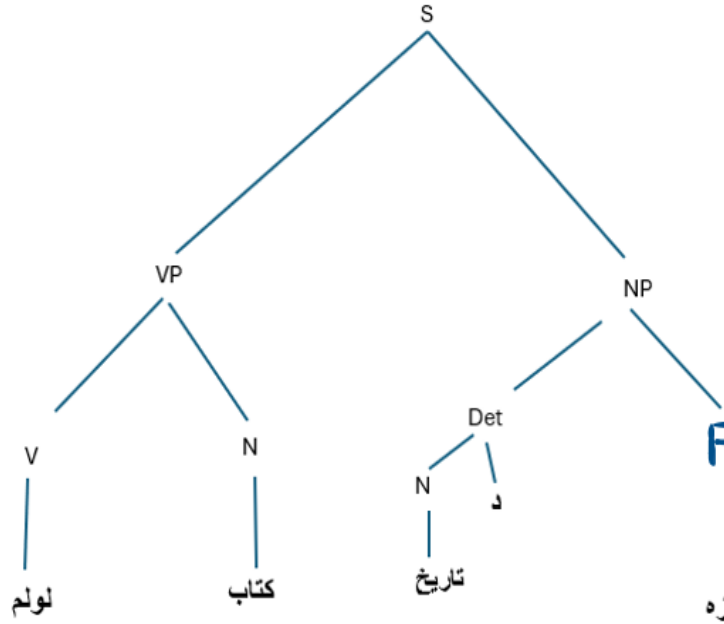
**Then:**

$$\text{کوم} = X \mapsto \text{دا تاريخ}$$

**Hence:**

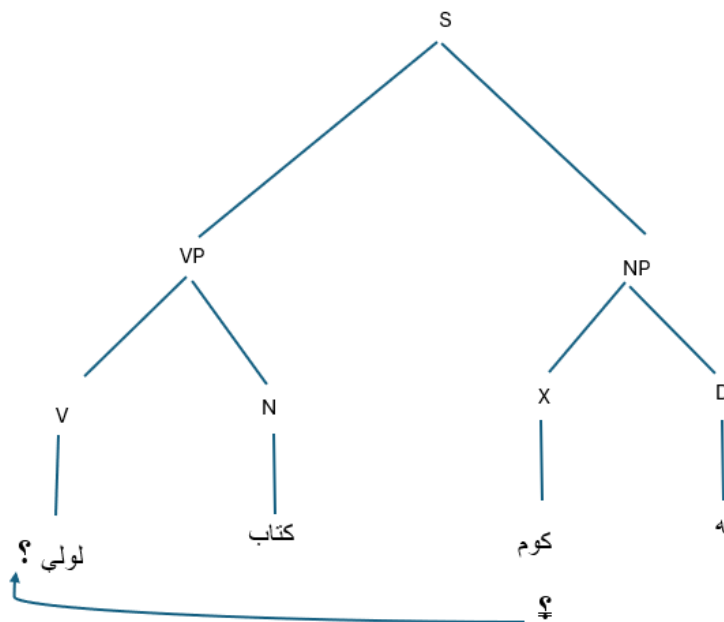
$$\forall w \in \text{Det}, X = \text{کوم} \Rightarrow \text{دا تاريخ} = X$$

Figure 9: Simple Pashto sentence with Det. Insertion (a noun modifier) (researchers' visualization)



The tree shown in the above figure depicts a sentence with a determiner (Det). In Indo-Iranian languages, a noun can modify another noun. In the above sentence, the Det. (دا تاریخ) in NP, modifies the N (کتاب) in the VP.

Figure 10: Pashto sentence with Interrogative کوم (researchers' visualization)



In the example sentence above, variable X is used to replace the object تاریخ with the IQ word کوم. Furthermore, the question mark that typically accompanies the replaced object has been moved to the end of the sentence, as illustrated in the figure above.

**Ambiguous use of کوم**

Correct sentence: ستا کوم رنگ خوښ دی؟

Ambiguity: ستا خوښ کوم رنگ دی؟

After a detailed examination and observation, the sentence ستا خوښ کوم رنگ دی؟ is found to have an ambiguous sentence structure. In general use of Pashto when answering that question

ستا کوم رنگ خوښ دی؟

The answer is:

زما تور رنگ خوښ دی.

**Interrogative Question 5: څنگه (How)**

In Pashto, the word for English “how” is څنگه. This word is used to inquire about the manner, method, or degree of an action or situation. The primary and most common function of “څنگه” in Pashto is as an interrogative adverb that asks about manners. Typically, it appears at the beginning of a question. For example:

Table 5: Example sentences of څنگه

| Questions                 | Translation in Pashtu | Answer to Questions        | Translation in Pashto |
|---------------------------|-----------------------|----------------------------|-----------------------|
| How are you?              | ته څنگه ئی؟           | I am fine.                 | خه ښه یم -            |
| How is the weather today? | نن هوا څنگه ده؟       | The weather is cold today. | نن هوا یخه ده -       |
| How is your friend?       | ستا دوست څنگه دی؟     | He is good.                | هغه ښه دی             |

څنگه یی؟

How are you?

ناسو د کار څنگه کوی؟ 2.

How do you do this work?

څنگه is used in all forms of past, present, and future questions. Unlikely, Pashto څنگه does not appear at the start of a sentence like how in English, but it appears before the verb it modifies because it mainly works as the adverb of manner.

Present: دا ماشين څنگه کار کوي؟

How does this machine work?

Past: ما وليدل چې هغه څنگه موټر جوړ کړ.

I saw how he fixed the car.

Future: موټر نه پوهېږو ي حالت به څنگه وي.

We do not know how things will turn out.

Another important point about using څنگه is that this word is mainly used in questions, but Pashto also allows it in non-interrogative clauses, such as indirect questions or conditional statements.

زه نه پوهېږم څنگه یی دا کار وکړ.

(I do not know how he did this work)

زه غواړم چې پوه شم دا ماشين څنگه کار کوي. 2.

(I want to understand how this machine works.)

The formula that the researchers developed to see the IQ *ځنگه* creation in Pashto is as follows:  
*Equation 5: Formula developed for the ځنگه in-situ*

**Given:**

$$X = \text{ځنگه}$$

**Rule:**

$$w \in \text{Adv}_{\text{manner}} \wedge X = \text{ځنگه} \Rightarrow w \mapsto X$$

**Since (underlying declarative form):**

$$\begin{aligned} &\text{نن موسم ښه دی} \\ &\text{ښه} \in \text{Adv}_{\text{manner}} \end{aligned}$$

**Then:**

$$\text{ښه} \mapsto X = \text{ځنگه}$$

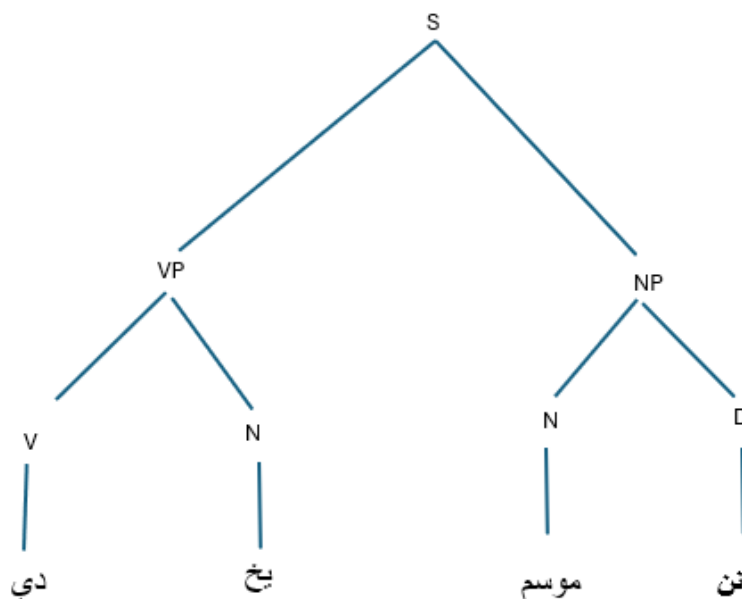
**Resulting WH-sentence (your example):**

نن موسم ځنگه دی؟

**Hence:**

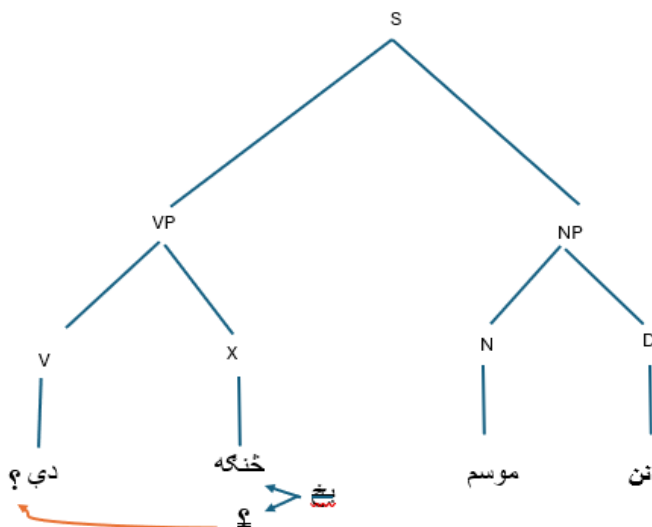
$$\forall w \in \text{Adv}_{\text{manner}}, X = \text{ځنگه} \Rightarrow \text{Replace}(\text{ښه}) = X$$

Figure 11: Syntactic tree of a Pashto sentence with an adverb of manner (researchers' visualization)



The tree in the figure above represents the syntactic representation of a simple Pashto sentence containing an adverb of manner.

Figure 12: Syntactic tree with interrogative ځنگه (researchers' visualization)



As can be seen in the sentence above, X is used as a variable to replace the object یخ with the IQ word ځنگه, and the question mark, which should come with the replaced object, is moved to the end of the sentence, as shown in the figure above.

**Ambiguity of positioning ځنگه**

Correct: ته ځنگه یې؟

Ambiguous: ځنگه یې ته؟

Correct: دا رنگ ځنگه دې؟

Ambiguous: ځنگه دې دا رنگ؟

After a thorough analysis of the collected sentences, the researchers observed that in the sentences ځنگه یې ته؟ and ځنگه دې دا رنگ؟. The position of ځنگه is incorrect, making the sentence ambiguous.

**Interrogative question 6: څوک (Who)**

The main word for English “who” in Pashto is څوک. The word څوک in Pashto is used to ask about a person, just like in English. It can serve as both the subject of the verb and appear mostly in the pre-verbial position. In interrogative sentences, څوک is used when the question involves a person. For example:

ته څوک یې؟  
(Who are you?)  
څوک راغلی و؟  
Who came?

Table 6: Example sentences of the interrogative pronoun څوک

| Questions            | Translation in Pashtu | Answer to Questions        | Translation in Pashto |
|----------------------|-----------------------|----------------------------|-----------------------|
| Who is coming today? | نن څوک راځي؟          | My father is coming today. | نن ځما پلار راځي؟     |
| Who is your friend?  | ستا ملگره څوک دې؟     | Ali is my friend.          | ځما ملگره علی دې -    |

|                          |                  |                                 |                     |
|--------------------------|------------------|---------------------------------|---------------------|
| Who is playing football? | فټ بال څوک کوي ؟ | My brother is playing football. | ځما رورفت بال کوي - |
|--------------------------|------------------|---------------------------------|---------------------|

The word څوک is used in questions about the past, present, and future. Here are some examples:

Present: څوک راځي (Who is coming?)

Past: پرون څوک راغلی وو (Who came yesterday?)

Future: سبا څوک راځي (Who will come tomorrow?)

*Equation 6: Formula for introducing څوک (who) in the Subject (Preverbal Position)*

**Given:**

$$X = \text{څوک}$$

**Rule:**

$$w \in \text{Subj} \wedge X = \text{څوک} \Rightarrow w \mapsto X$$

**Since (your example):**

نن بابا راځي  
بابا  $\in$  Subj

**Then:**

$$\text{بابا} \mapsto X = \text{څوک}$$

**Sentence Structure (Pashto):**

$$S = [\text{Adv}_{\text{time}} + \text{Subj} + V] \Rightarrow S = [\text{Adv}_{\text{time}} + X + V]$$

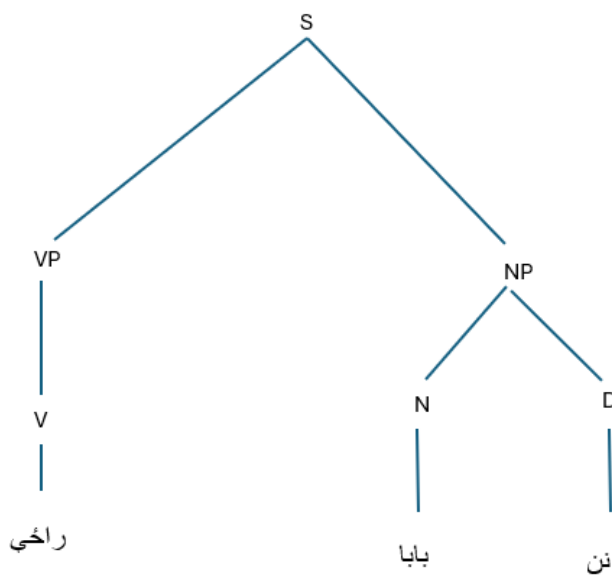
**Resulting WH-sentence:**

نن څوک راځي؟

**Hence:**

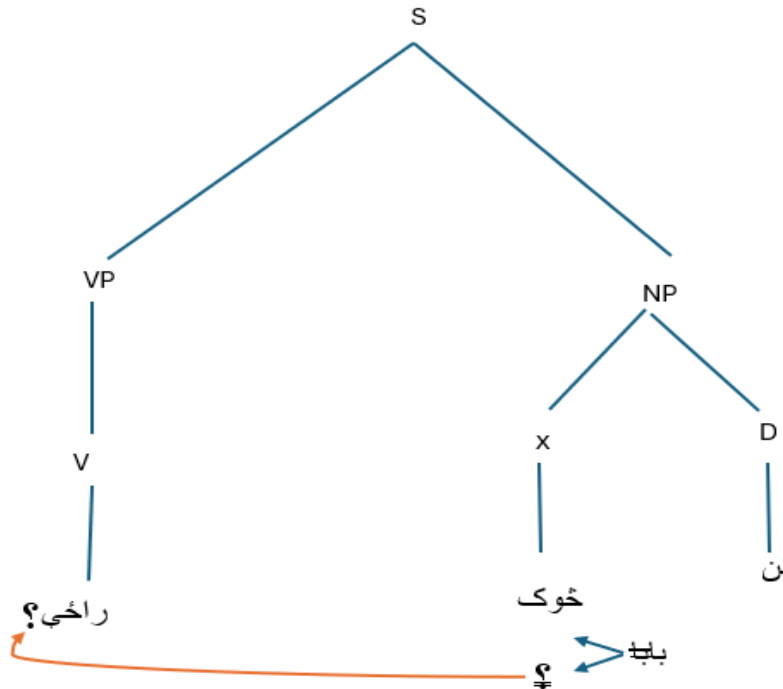
$$\forall w \in \text{Subj}, X = \text{څوک} \Rightarrow \text{Replace}(w) = X \wedge \text{Position}(X) = \text{preverbal}$$

*Figure 13: Syntactic tree of a Pashto sentence with preverbal subject (researchers' visualization)*



The tree in the figure above illustrates a simple Pashto sentence with a preverbal subject.

Figure 14: Syntactic tree with an interrogative at the proverbial position (researchers' visualization)



In the sentence above, X is a variable used to replace the preverbal subject *بیا* with the word, *څوک* (who).

**Ambiguity with positioning the interrogative pronoun څوک.** After a detailed analysis of the sentences, the researchers identified specific instances of ambiguity that warrant further clarification. For example, the phrase *ته څوک یې؟* translates directly to *Who are you?* demonstrating a clear syntactic formulation. However, when the researchers encountered the ambiguous construction *څوک یې ته*, the intended meaning became less clear, potentially leading to communication confusion. Similarly, the phrase *څوک راغلی و؟*, which means *Who came?* maintains a straightforward structure. In contrast, the rearranged phrase *راغلی وو څوک* introduces ambiguity that can lead to misunderstandings. This study further identifies that these cases emphasize that ambiguity often arises from deviations in the established syntactic order of Pashto.

### Conclusion

This study was designed to analyze Pashto sentences, particularly their interrogative structures and the various methods of forming questions. To achieve this goal, the researchers conducted an extensive field survey and employed a qualitative research approach to thoroughly analyze the collected data. Through a detailed examination, the study concludes that Pashto is a complex language in which interrogative forms can be generated in diverse ways. Unlike English, which predominantly relies on WH-questions to form interrogatives, Pashto employs a distinctive method that the researchers refer to as interrogative question (IQ) creation. This study reveals that Pashto lacks a singular, specific interrogative word that is universally applicable for posing questions, as it is in Urdu (کیا). Instead, it uses a flexible set of terms (*څوک، څه، کله، چرته، کوم، څنگه*) that serves various roles within sentence structures and can be called WH-alternatives in Pashto. The syntactic

trees developed by the researchers in this study further corroborate that, in Pashto, interrogatives cannot be constructed in the same manner as in English. In Pashto, WH interrogatives, or IQ interrogatives, typically occupy the middle of the sentence, stay in-situ replacing certain elements that would otherwise occupy that position:

ته علی کله ولیدو؟

When did you see Ali?

مه علی پرون ولیدو.

I saw Ali yesterday.

In this instance, the term کله (when) is replaced with پرون (yesterday), demonstrating the flexibility of the Pashto interrogative structure. Furthermore, the researchers introduced the variable X to represent the range of Pashto interrogative words (څنگه، کوم، چرته، کله، څه، څوک)، which can function as adverbs, nouns, verbs, and other parts of speech. In English, the use of a complementizer phrase (CP) is a common syntactic structure; however, the current study reveals that this construction is not effectively applicable in Pashto. This finding significantly contributes to our understanding of Pashto's distinctive syntactic features. To further explore such distinctiveness, the researchers developed an innovative set of formulas (see Equations 1-6), all derived from a foundational master equation:

$$\forall w \in (\text{Subj}(w) \vee \text{Obj}(w) \vee \text{Det}(w) \vee \text{Adv}_{\text{time}}(w) \vee \text{Adv}_{\text{place}}(w) \vee \text{Adv}_{\text{manner}}(w)) \Rightarrow \text{Replace}(w) = X$$

where:

$$X \in \{\text{څنگه، چرته، کله، کوم، څه، څوک}\}$$

These formulas serve as valuable tools for linguists studying other languages within the same linguistic family (Indo-European, Indo-Iranian, Indo-Aryan), enabling them to examine their own processes of interrogative creation in a more systematic manner.

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