



Head Movement Operation in Academic Discourse: A Syntactic Based Analysis



Muhammad Saleem

Subject Specialist (English), Elementary and Secondary Education Department, Peshawar, KP, Pakistan.

Naseer Abbas

PMS Officer, KP, Pakistan.

Shaista Irshad Khan

Assistant Professor, Department of Education, Abdul Wali Khan University, Mardan, KP, Pakistan.

Abstract: *This research study is an investigation of Head-Movement operation in the syntactic structures of classroom discourse of university level teachers in Pakistan. The head of one phrase is moved independently to attach to the head of a higher phrase in an apparently simple action known as head movement [X goes to Y]. The data was collected through recording of fourteen classes of the teachers. The recorded classes were transcribed manually for understanding the syntactic structures. Transcribed data of classes have total 27194 words [male transcribed words 14132 and female transcribed words 13062]. The frequency of the head-movement was analysed qualitatively and quantitatively through tabulations. The findings suggest that the syntactic structures of the selected fourteen teachers have head-movement with its two types; V-to-T and T-to-C. The result shows that the occurrences of head movement operation are 803 and the percentage is 2.952 %.*

Key Words: Discourse, Head-Movement, Minimalist, Syntax, Teacher

Corresponding Author: Muhammad Saleem (Subject Specialist, English, Elementary and Secondary Education Department, Peshawar, KP, Pakistan. Email: saleemsafiq@gmail.com)

Introduction

Linguistics is all about language where we study language thoroughly and scientifically. We study language and its aspects for the better speaking and writing of that particular language. The different parts of language are studied in different platforms at different times (Saleem, 2018). In linguistic theory, the head movement is an operation which leads the entire phrase and its words. Head is the terminal node and it is a morphological structure terminal which means syntactically indivisible. The heads arising is as a result of

head-movement within the syntactic structure of a sentence. The two operations which create the head-movement are the complex nodes and the syntactically atomic (Chomsky, 1995 & Marantz, 2013). It is substantial counterparts between the kind of movement operation involved in V-to-T [verb to tense] movement and T-to-C [tense to complementiser] movement. These operations include head movement of head of the phrase into the other position of head in a phrase (Radford, 2009).

Tense to Complementiser Movement (T-C)

In T-to-C [tense→complementiser] movement, the complementiser is slotted in front of the clause as before the subject and it makes a complementiser phrase [CP]. The head is complementiser in complementiser phrase [CP] and filled by a complementiser [if/that/for] (Radford, 2004). In the sentence 1 & 2 the head movement is shown.

1. you will come
2. will you come?

In sentence (1) the word 'will' is used as tense (T) while in sentence (2) the word 'will' came in place of complementiser (C) and tense (T) is null in the sentence (1). This operation and movement is T-to-C movement in the sentence structure.

V-to-T movement

The V-to-T [verb→tense] movement is a finite main verb within a sentence from head verb position of verb position to head tense position of tense projection [TP] (Radford, 2009).

1. She *thinks* for me.*
2. She does think for me.

In sentence (1) the word 'thinks' is used as tense (T) while the verb of sentence is a null constituent. It is shown that verb is moved from its position to tense position. The V-to-T movement is taken place in sentence (1).

Phrase contains functional word and content word where the first word plays the role of head word in its structure. According to Chomsky's Minimalist theory [Headedness principle], a phrase would be named with the first word of the phrase, like "the young boy", the first word's category is determiner; therefore this phrase is named as determiner phrase (DP). Another example, "young boy" in this phrase the first word (young) is an adjective; therefore it is named as adjective phrase (Adj P). An operation

occurs in a phrase which is known as head movement. The leaving of original slot and taking of new slot within phrase or sentence is known as a head movement (Chomsky, 1995). Non-native speaker specifically and native speaker in general make shift and move the head of phrase in order to make it stressed or any other purpose could be drawn (Saleem, 2018). This research analysed the two kinds of head movements [T-to-C movement & V-to-T movement]. Many researches have been conducted in syntactic analysis and academic discourse but no research has been done on finding head-movement in syntactic analysis of English classes in Pakistani academic discourse at undergraduate level. Therefore, the present research is aimed to analyse English classes syntactically through minimalistic perspective.

Scope of the Study

This study has a broad scope in teaching in general and in linguistics in specific. Syntax is a core study of linguistics however; syntactic analysis plays a vital role in the construction of language of students and teachers. In the classroom, the teachers use English language which contain many syntactic operations, likewise this study aims to highlight and investigate the use of head movement and frequency of head movement in the discourse of teachers inside the classrooms. It has scope for an individual to make him/her confident to use proper structure of language. The syntactic structures of a language are accurately maintained in their written form, but when a language is spoken; its users (teachers) alter or leave syntactic structure slots unfilled, indicating that the head-movement action is used. This study helps in improving teachers' and language users' knowledge of head movement in syntactic domain of spoken discourse of classroom. This study has theoretical significance for linguists,

interpreters, language policy makers, grammarians, discourse analysts and many more. It also has practical significance for teachers, students, language learners, language practitioner, translators and others.

Research Objective

- To investigate the use of head-movement operation in the classroom discourse of Pakistani university level teachers.
- To find the types of head-movement in the classroom discourse of Pakistani university level teachers.

Research Question

- How frequently do the teachers use head movement operation in the classroom discourse?
- What type of head-movement do the teachers use in their classroom discourse?

Literature Review

Head-movement has locality restriction, it expresses the belief that head categories can only move to the next head position in their structure (Saleem, 2018). In this area of study, several researches have been carried out to present head-movement operation in discourses of different communities. Ouhalla (1988) studied the head movement of a Berber where head-movement processes and phrase structure categories were investigated. The findings were significant to the field of study.

McClave (2000), a research article was published where the researcher had some video recording of native speakers of America. It says that head movement occurs between direct and indirect discourse. The speakers change the head position at the beginning of quote. It is their cross-cultural and region based. This research proves that

the expression (you have a head for language) is changed now and it needs modification.

In narrow syntax, head movement operation might be omitted from the major operations of syntax (Chomsky, 1995). In this discussion, Jung (2009) worked on verb inflection compound in Korean language which resulted that either V→C movement or V→T movement may happen in narrow syntax. Jung stated that the topic is often licenced by agreement with some feature other than -features, i.e., an honorific feature, when it comes to subject agreements in Korean. However, recent study has shown that subject agreement in Korean is far more complicated than what has previously been found (Mok & You 2003; Pak, 2006; Jung 2009).

Harizanov (2019) studied head movement operation of head of a phrase to specifier positions of another phrase. It is stated that the participle fronting negates the Head-movement constraint (which targets a specifier position) in Bulgarian language. Sato & Maeda (2021) conducted research on the head movement in where the result was Japanese [V-toT-to-C Movement] permits a VEA to a yes/no question. However, polarity particles could be the answer alternatively.

Question: Moo tuki-masi-ta-ka?

Already arrive-POL-PAST-Q

Did you arrive already?

Answer 1: Tuki-masi-ta-yo. (VEA)

Arrive-POL-PAST-PRT

Intended: 'I arrived already.'

Answer 2: Hai./Iie. (polarity-based answer) yes/no

'Yes./No.' (Sato & Maeda, 2021, p. 361)

There are numerous researches in the area of head movement. The notable contributors are; Harizanov & Gribanova, 2019; Mathew 2015; Fanselow, 2009; Landau, 2007; Matushansky, 2006; Embick & Noyer, 2001; Rivero, 1991; Bhatt, 2013; and Caink 1999. They had researched different languages and areas of head movement. However, the study

of head movement is not being found in the teachers' discourse of classrooms at university level of Federal territory of Pakistan. This research was aimed to analyse the syntactic structures of teachers of two universities of Islamabad.

Research Methodology

Data Collection

The data collection was made from department of English of two different universities of Islamabad. The classes were audio recorded through audionic device. The researchers used random sampling.

Research Design

The study was analysed qualitatively and quantitatively where the structure of sentences are shown and the occurrences are counted manually. The frequency of head movements were shown through tabulations.

Recording of Classes

The researchers selected male and female teachers equally. The transcribed male classes have 14132 words while female have 13062 words.

Theoretical Framework

In syntactic analysis, the researchers chose minimalist program of Chomsky (1995) as a theoretical framework. In this research, the framework is limited to head movement in the syntactic structures of the selected classes.

The Minimalist Program (MP)

This book shows latest version of Noam Chomsky's linguistic theory. The Minimalist Program (MP) was presented in 1995, which is a major achievement of Noam Chomsky's generative grammar. MP was not the achievement by Chomsky but he actually

ruined the transformational generative grammar paradigm by detaching himself. During 1920s Leonard Bloomfield started to work on this paradigm which was preceded in 1920s and 1950s by Zellig Harris (Harris, 1970). Generative semantics was the new version of transformational generative grammar that converted early in 1960s. At starting, Chomsky was in favour of this development but later on he was in contradiction of it in 1968 and come up with a new syntax-based which is called "random-generator" view. A series of varieties of this random-generator view met some good days then which ended in MP giving more in 1993.

This is focused to minimalism that is important for the purposes; and study makes extensive use i.e. Null Constituents, Wh-Movement, and Head Movement. The minimalist program has also an attachment with its different versions like, human language Principle-and-Parameters Theory. These parameters are divided further in order to make the research area more specific to reach to the locality of sentence structures. However, the present study is limited to the head movement of minimalist program.

Data Analysis

The collected spoken data of university teachers are analysed syntactically. The data was searched for head-movement operation manually. The researchers worked to find and allocate the movement of heads in a syntactic structure. Head movement operations in phrases and in sentences are highlighted and which are also shown in tables.

T-to-C movement

When tense moves from its slot to Complementiser, this is known as T-to-C movement (tense movement to complementiser).

Table 1

Movement of Head

Not moved to C	
Didn't I ask you people yesterday?	Did I ask not you people yesterday?
Haven't I taught this?	Have I not taught this?
Aren't you getting my lecture?	Are you not getting my lecture?
Wont you come again?	Will you not come again?

Example of T→C movement which is analysed in sentence (a) & (b)

- a) You will come in order to take the exam.
- b) Will you come in order to take the exam? *
- c) You come will in order to the exam*

In sentence (b), there is determiner phrase (DP- the exam), Infinitival tense projection (TP- to take), prepositional phrase (PP-in order), verb phrase (VP-V- come), and maximal projection is complementiser phrase (CP-will). it is shown that 'will' was performing the position of T (tense) but due to the tense shift to complementizer it become complementizer (C).

Table 2

Detail of occurrence of T-to-C movement

	Class	Female	Male	Occurrences
	-1	No	Yes	41
	-2	No	Yes	19
	-3	No	Yes	14
	-4	No	Yes	20
	-5	No	Yes	51
	-6	No	Yes	34
	-7	No	Yes	25
	-8	Yes	No	11
	-9	Yes	No	09
	-10	Yes	No	23
	-11	Yes	No	17
	-12	Yes	No	24
	-13	Yes	No	26
	-14	Yes	No	45
Total	14	7	7	359

The recorded spoken lectures of teachers (both female and male) were transcribed for the purpose of syntactic analyses. Table 2 shows the detail of occurrence of T to C movement in the collected data. The number of utterance of T-to-C movement was three hundred and fifty nine [359] times in the fourteen transcribed classes of the recorded

data. This shows that the teachers have uttered sentences which contain T-to-C movement. It indicates that syntactic operation [head movement] is in use in the discourse of teachers inside the classrooms.

V-to-T movement [verb movement to tense]

When verb moves from its own function and functions as tense is called V-to -T movement (verb to tense movement).

1) She writes down.

In sentence (1), it has noun phrase (NP-down), verb phrase (VP-null), tense as T bar

(T'-writes), and with sepcifier pronoun (PRN-she) and maximal projection is tense projection. It is shown that 'writes' shows present indefinite tense that is why the verb write is projecting tense here.

Table 3

Detail of occurrence of V-to-T movement

Class	Female	Male	Occurrences
-1	No	Yes	30
-2	No	Yes	15
-3	No	Yes	29
-4	No	Yes	40
-5	No	Yes	19
-6	No	Yes	33
-7	No	Yes	50
-8	Yes	No	61
-9	Yes	No	20
-10	Yes	No	41
-11	Yes	No	21
-12	Yes	No	35
-13	Yes	No	22
-14	Yes	No	28
Total	7	7	444

The recorded spoken lectures of teachers (both female and male) were transcribed for the purpose of syntactic analyses. Table 3 shows the detail of occurrence of T to C movement in the collected data. The number of utterance of V-to-T movement was four hundred and forty four [444] times in the fourteen transcribed classes of the recorded

data. This shows that the teachers have uttered sentences which contain V-to-T movement. It indicates that syntactic operation [head movement] is in use in the discourse of teachers inside the classrooms. Further, the total numbers of T→C and V→T are shown in the table (4).

Table 4

Detailed frequency of Head-movement in total recorded classes

S. No	Type of Head Movements	Frequency
1	T-to-C movement	359
2	V-to-T movement	444
Total		803

The table 4 shows the frequency of Head-movement in the transcribed data. In column one it shows the total number of Head-movement. In the second column it shows

the name of all the mentioned Head-movement. The third column shows the frequency of word(s) occurred in the transcribed material. The second last row

shows the total number of word(s) and its total frequency which eight hundred and three (803). For the clarity, the researchers used percentage in order to show the results

$$\begin{aligned} \text{Total number} &= 27194 \\ \text{Actual number} &= 803 \\ \text{By putting values in this equation,} \\ \text{Percentage} &= \frac{803}{27194} \times 100 \\ &= 2.952 \% \end{aligned}$$

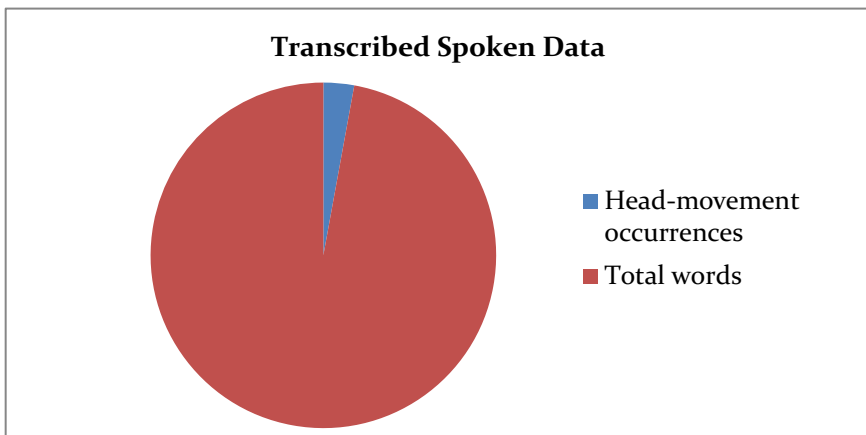
Percentage

Percentage is equal to actual number divide by total number and multiply by hundred [100]. Actual number is the number for which the researchers were intended to find out the percentage of the value. Total number is the number which is used for the comparison of the actual number. The following equation shows the percentage for the analysis of the data of this research.

The percentage figure i.e. 2.952 % of the analysed data is negligible number. The percentage [2.952 %] is less, however, the result shows that head movement operation is less in number in the classroom discourse of university teachers in Pakistan [in the selected universities of federal territory—Islamabad—of Pakistan]. Furthermore, the percentage is shown in diagram 1.

Diagram 1.

Transcribed Spoken Data



In diagram 1, the dark red colour shows the total number of words in the recorded classes of teachers [male & female] while blue colour shows the occurrences of head movement [T-C & V-T] in the recorded lectures of the randomly selected teachers.

Conclusion

Syntactic analysis is one of the core analyses of linguistics. In syntactic analysis, the sentence is taken into account with a lens of syntax. In this study, the researchers chose spoken data of classroom discourse of two universities of Islamabad. The collected data

was transcribed manually and the researchers analysed the data through minimalist approach of Chomsky [as theoretical framework]. The total numbers of transcribed words of the recorded lectures are 27194 and the total occurrences of head movement are 803. However, the result shows that the number of occurrences of head movement is less which indicates that head movement operation is least occurring in the classroom discourse. The data was also analysed through percentage method which gave the result of the data as 2.952 %. This percentage shows that head movement

operation is used in less numbers by the teachers inside classrooms. Further, the analyzed data show two types [V-to-T & T-to-C] of head-movement were found in the discourse of teachers inside classroom.

Findings

The research findings suggest that minimalism is an approach which works in classroom in order to help the teachers to know the minimal pair of the structure used in their classes. It helps the students to get to know about the comprehension level and the production of the language and its syntactic structure. Head-movement at phrasal level and sentence level were observed. Head-movement was found in the classroom

discourse of university level teachers of tow selected universities of Islamabad. The head-word was misplaced and two types [T-to-C and V-to-T] of head movement were found in the transcribed data. The percentage [2.952 %] shows that head movement is used by the teachers in least number.

Future Research

The following areas could be explored.

1. In classroom discourse, the minimalist approach could be applied on the discourse of students.
2. Instructors could be interviewed and the transcribed data of the interviews could be analyzed with the perspective of minimalism.

References

- Bhatt, R. M. (2013). *Verb movement and the syntax of Kashmiri* (Vol. 46). Springer Science & Business Media.
- Caink, A. D. (1999). Against long head movement. *Topics in South Slavic syntax and semantics*, 91-123.
- Chomsky, N. (1995). *The minimalist program*. Cambridge, MA: MIT Press.
- Embick, D., & Noyer, R. (2001). Movement Operations after Syntax. *Linguistic Inquiry*, 32(4), 555-595. <https://doi.org/10.1162/002438901753373005>.
- Fanselow, G. (2009). Bootstrapping verb movement and the clausal architecture of German (and other languages). *Linguistik Aktuell*, 85-118. <https://doi.org/10.1075/la.141.05boo>.
- Harizanov, B. (2019). Head movement to specifier positions. *Glossa: A Journal of General Linguistics*, 4(1). <https://doi.org/10.5334/gjgl.871>.
- Harizanov, B., & Gribanova, V. (2018). Whither head movement? *Natural Language & Linguistic Theory*, 37(2), 461-522. <https://doi.org/10.1007/s11049-018-9420-5>.
- Harris, Z. S. (1970). From Phoneme to Morpheme. *Papers in Structural and Transformational Linguistics*, 32-67. https://doi.org/10.1007/978-94-017-6059-1_2.
- Jung, Y. J. (2009). *Syntactic head movement and root merger*. In Joint Conference of the Korean Generative Grammar Circle and the Modern Linguistic Society of Korea, Daejeon, Korea.
- Landau, I. (2007). EPP Extensions. *Linguistic Inquiry*, 38(3), 485-523. <https://doi.org/10.1162/ling.2007.38.3.485>.
- Marantz, A. (2013). Verbal argument structure: Events and participants. *Lingua*, 130, 152-168. <https://doi.org/10.1016/j.lingua.2012.10.012>.
- Mathew, R. (2015). Head movement n syntax. *Head Movement in Syntax*, 1-201.
- Matushansky, O. (2006). Head Movement in Linguistic Theory. *Linguistic Inquiry*, 37(1), 69-109. <https://doi.org/10.1162/002438906775321184>.
- McClave, E. Z. (2000). Linguistic functions of head movements in the context of speech. *Journal of Pragmatics*, 32(7), 855-878. [https://doi.org/10.1016/S0378-2166\(99\)00079-X](https://doi.org/10.1016/S0378-2166(99)00079-X).
- Mok, J., & You, H. (2003). A correlation between category of verbs/endings and person of subject. *Language research*, 39(3), 529-558.
- Ouhalla, J. (1988). *The syntax of head movement: A study of Berber* (Doctoral dissertation, University of London).
- Pak, M. (2006). Jussive clauses and agreement of sentence final particles in Korean. *Japanese/Korean Linguistics*, 14, 295-306.
- Radford, A. (2004). *English Syntax: An Introduction*. United Kingdom : Cambridge University Press.
- Radford, A. (2009). *An Introduction to English Sentence Structure*. New York, USA: Cambridge University Press.
- Radford, A. (2009). *Analysing English Sentences: A Minimalist Approach*. Cambridge University Press.
- Rivero, M. L. (1991). Long head movement and negation: Serbo-Croatian vs. Slovak and Czech.
- Saleem, M. (2018). *Syntactic Analysis of Classroom Discourse: A Minimalist Perspective* (Unpublished M.Phil thesis). Air University Islamabad, Pakistan.