

Grammar in Sign Language: A Comparative Study

Saep Kamel Allala¹, Mahmod Obid², Mohamed Abushaira³, Nahida Mohsin Abdelhadi⁴, Mohammed Awda Al-Anzi⁵

1 Special Education Department, College of Educational and Psychological Sciences. Amman Arab University, Jordan, S.allala@aau.edu.jo ,ORCID://orcid.org/0009-0009-4044-5235

2 Special Education Department, Arab American University, Mahmoud2.Obaid@aaup.edu

3 Special education department, Special Education Department, University of Tabuk mabushaira@ut.edu.sa, ORCID ://orcid.org/ 0000-0002-3670-4320

4 Special Education Department, College of Educational and Psychological Sciences. Amman Arab University, Jordan, n.abdelhadi@aau.edu.jo , ORCID ://orcid.org/0009-0000-0463-2935

5 Educational Institution, Saudi Ministry of Education, Kingdom of Saudi Arabia, contact@mohe.gov.sa

Abstract

The current research deals with grammar in sign language, as it compares the grammatical rules in the Arabic language with the grammatical rules applied in sign language, through an inductive approach that traces the linguistic structures in sign language to reach the overall rules of these structures.

The study reached a number of results, the most important of which are: There are special grammar rules in sign language. Sentences in sign language are basically nominal sentences. There are no phonetic clues to determine the role of the word in the sign language, grammatical meanings are determined (subject, object, etc.). Through the direction of movement in sign language, thus no grammatical signs are used. Special indicative morphological forms are also used to build grammatical meanings, such as masculine and feminine, and the type of verb: present, past, or imperative.

Keywords: sign language, grammar, linguistic sciences, SignWriting

Introduction :

The following research deals with the topic of grammar in sign language, comparing it with grammar in the Arabic language, grammar means sentence structure, and this applies to different international languages. The current research attempts to compare grammar in sign language, considering that it is the language in which people with audio disabilities communicate., and grammar in the Arabic language, along with providing practical suggestions, this research is nothing but an attempt and an invitation to participate in enriching this topic in light of the increasing interest in sign language locally and globally, and the spread of sign translations for most types of news bulletins is only an example of this interest.

Linguistic research in sign language for the deaf is of great importance for several reasons, including the following:

1. Understanding language and culture: Linguistic research helps to better understand sign language, enabling better interaction with deaf people and a deeper understanding of their culture (Adami & Swanwick, 2024)

2. Development of educational programs and tools: Linguistic research can be used to develop effective educational programs and educational tools that help learn sign language better and more effectively (Tang, 2024).

3. Improving communication: By understanding the linguistic systems of sign language, communication between deaf and hearing people can be improved, which contributes to enhancing understanding and reducing communication barriers (Wilbur, 2024).

4. Promoting scientific research: Linguistic research in sign language can contribute to developing scientific knowledge about sign linguistics and its impact on the brain and visual comprehension (Vermeerbergen & Van Herrewegh, 2023)

5. Develop support policies and programs: Linguistic research can be used to develop support policies and programs for the deaf community, contributing to improving their quality of life and opportunities in society (Lucas, & Valli, 2023)

Therefore, linguistic research in sign language for the deaf contributes to understanding language and culture, developing educational programs, improving communication, promoting scientific research, and developing policies and programs supporting the deaf community.

. **The concept of grammar and its importance:** Grammar in language is the intention, and grammar in terminology is the science of sentence structure, and is known as the science that studies the integrity of the linguistic structure in the sentence (Ibn Huwaili, 2009). The science of grammar appeared in the Arabic language due to the corruption of the faculty of the tongue. As Ibn Khaldun says in: “When the faculty of the Arabic tongue became corrupted in the movements called - among grammarians - parsing, laws were devised to preserve them.” Ibn Huwaili quotes Al-Jurjani that grammar is the science of the structures of the language (Ibn Huwaili, 2009), and grammar is understanding the structures of speech, analyzing its placement and constructing its forms in the sentence (Al-Atabi, 2007).

Grammar is concerned with distinguishing correct verbal forms from incorrect ones (Qaddour, 2008), and grammar cannot be understood apart from morphology (Hassan, 1994); For example, in the sentence (She came quickly), the ta’ in the word (She came) is useful in morphology (feminine) and is useful in grammar (subject), and grammar is based on syntactic movements through which we know the relationship between the words of the sentence (Ibn Huwaili, 2009).

The term Grammar used the parsing of the word, but recent studies have used the term syntaxes to refer to the structure of the sentence, the relationship of the words to each other, and the meanings that result from those structures (Qaddour, 2008).

Tammam Salam believes that the grammatical system is based on:

1. General grammatical meanings, which are the meanings of sentences.
2. Special grammatical meanings, including the subject, object, and genitive.
3. Relationships between specific meanings (such as attribution, specification, ratio, and subordination).
4. What the science of morphology and phonetics provides in terms of verbal clues (evidence) that clarify the meaning.
5. Controversial values and matching between sentence elements. (Hassan, 1994)

It is not possible to understand grammar apart from morphology, as we mentioned earlier, and for further clarification, we present the following example: (The girl wrote a letter) written to indicate the past, the ta’ for the feminine, the dhammah (the girl) indicates the subject, and the Fatha (Tanween Aal-Fath) in (message) indicates the object..

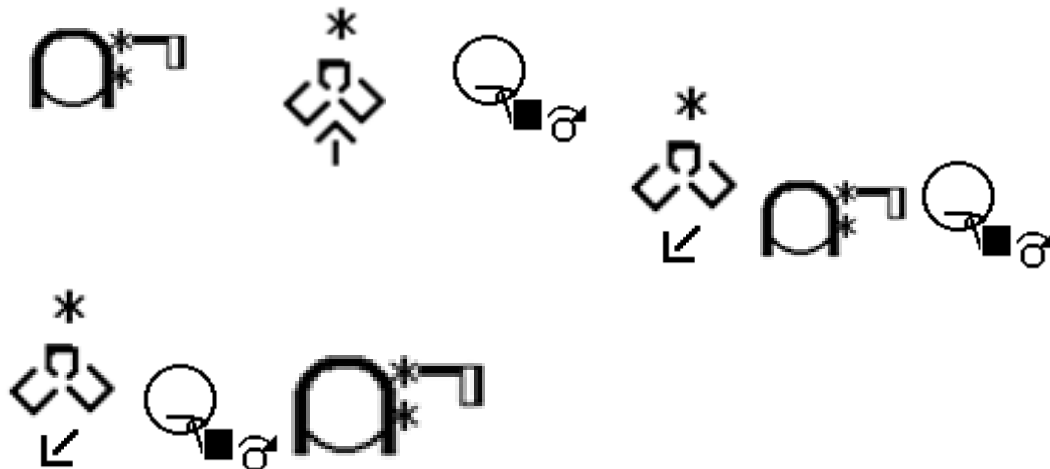
In sign language, there is no reference to the past, the present, or the subject except through the context and the accepted meaning. As in the example;



In such a sentence, the logic is that the girl is the one writing the letter and not the boy.

In another sentence, for example (Khaled assisted Omar), identifying the subject from the object is linked to verbal clues such as Dhammah and Fatha, where the Dhammah refers to the subject and the fatha to the object. However, in sign language, identifying the subject and the object is linked to other clues such as the direction of movement, as in the sentence (The boy assisted the girl)

This sentence can be written in several ways



The direction of movement here shows the subject from the object, and it also shows whether the speaker is the subject himself or someone else describing the action. In the first sentence, the boy helped the girl (in order), and in the second sentence, the boy says: The girl helped me, and in the third sentence, the girl says: The boy. Help me.

In sign language (Arabic in particular), what is known as the science of grammar in sign language has not been formed, and nothing is more evident than the scarcity of studies that attempted to research the rules of sign language. Samreen and Banali were the pioneers of this subject in their first book of its kind - according to science. The researchers - which is the book (Rules of the Unified Qatari Arabic Sign Language in 2010 (Samreen and Al-Binali, 2010) and the Book of Arabic Grammar for the Deaf and Dumb (Sign Language) (Abu Draya, Kulaib, and Al-Thukair, 2010), and perhaps studies such as the study of Al-Turki (2017) and Abu Shaira came. (2018) to give some insights into the science of grammar in sign language.

Sentence:

A sentence is the smallest amount of speech that has an independent meaning (Issa, 2012). It is an attributional relationship between two nouns or a noun and a verb, and attribution is the attribution of one word to another or the attachment of a word to the other (Qaddour, 2008). Linguists consider the predicate and the assigned to be the mainstay of the sentence (its basis) and everything else is a surplus (excess) that can be dispensed with (Issa, 2012).

A sentence may convey a meaning and is called a speech, otherwise it remains a sentence. Among that condition sentence, such as the saying (If I come), which has no meaning, and the answer to the condition alone (I honored you) has no meaning. But if the condition and its answer are combined, the meaning becomes clear (If you come, I will honor you) (Hassan, 1994). Grammarians do not require the presence of a meaning for the sentence as much as they require the presence of the predicate and the assigned to, such as the conditional sentence and the conditional answer sentence (Qaddour, 2008). The sentence in the Arabic language is divided into a nominal sentence and a verbal sentence.

Nominal sentence: The nominal sentence consists of a subject (predicate) + a predicate (assigned to), meaning the predicate relates to the subject, such as (the weather is hot) and (the haste is a regret)...etc.

The declarative sentence: It consists of a verb (predicate) + a subject or something representing it (assigned to) + an object, such as (Zaid came) and (Amro went).

The German orientalist (Bergster Asser) pointed out that the nominal sentence is the oldest linguistic structure (Asser, 1994), and this supports the statement that the sentence in sign language is essentially a nominal sentence, as it is a modern language and is in the process of development.

The syntax differs in some modern Western languages; The sentence consists of several forms, including: noun + auxiliary verb + noun or adjective (Qaddour, 2008).

In sign language, there is nothing that indicates knowledge and indefiniteness that is not used, the imperfect verb (Kana and its sisters) is not used, nominative, accusative, and jussive devices are not used, nominative signs are not used, nor are accusatives or jussives as they are used in the Arabic language. The definite articles the, a, an are not used, and the auxiliary verb is, was, were, and are not used.

The bottom line here is that the sentence in sign language is originally a nominal sentence, and it turns into a verbal sentence if it is linked to a sign indicating a past or present tense or an imperative.

An example of a sentence in sign language is:

This is a clear nominal into a verb sentence, indicate the verb as in



ended




sentence, and in order for it to turn an indicative word must be added to the sentence.



It means that boy eat the food and

Grammatical meaning:

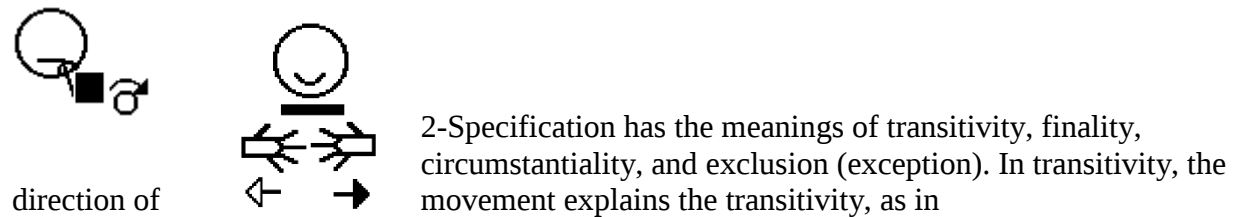
Knowing the meaning of a sentence requires us to know the phonetic meaning, the morphological meaning, the grammatical meaning, the lexical meaning, and the context (Maqam) that takes place in the speech (Hassan, 1994), and it is not permissible to separate these meanings to understand the speech (Qaddour, 2008).

It must be noted that understanding grammatical meaning is linked to moral clues (evidence), which are context relationships, and verbal clues, which are the meaning that sound and morphology give to it:

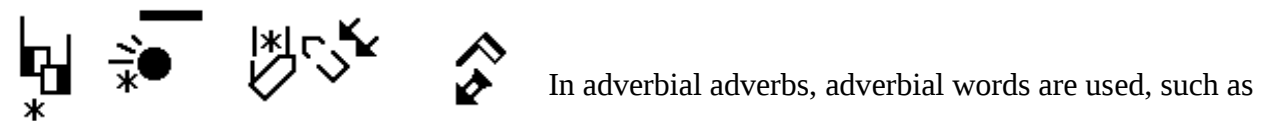
. Moral evidence:

1. Attribution, which is the relationship between the predicate and the assigned to, for example; The relationship between the subject and the predicate

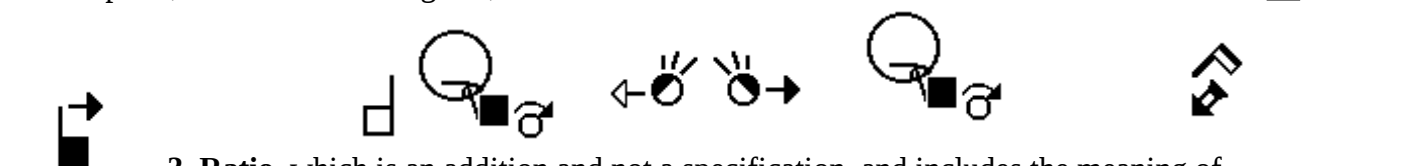
The relationship between the verb and the subject is like. Here is a similarity between spoken language and sign language.



In teleology we use the word (reason) as in:

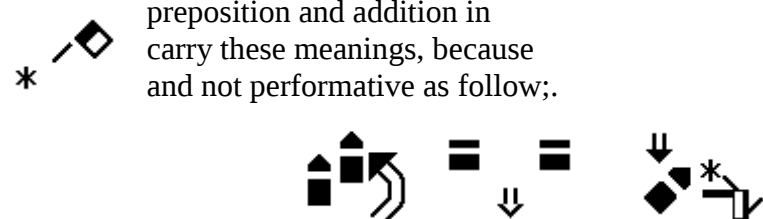


In exception, the verb can be negated, as in



3. Ratio, which is an addition and not a specification, and includes the meaning of spoken language, but in sign language it does not addition and preposition are phonetic concepts

preposition and addition in carry these meanings, because and not performative as follow;.



4. Subordination means following one word to another in the singular, dual, plural, accusative, nominative, and genitive, and this is not available in sign language in the accusative, nominative, and genitive. As for the singular, dual, and plural, it can appear by adding a sign that explains the number. However, it is not possible to match as in spoken language, where We say (the rain is

heavy) and it can be translated into sign language, does not appear in the nominative, for example.

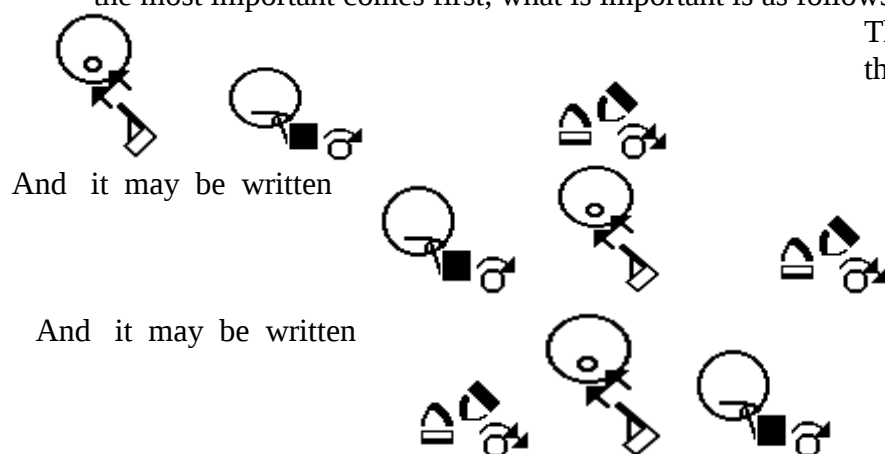


so the subordination

Verbal clues

1. Parsing signs: Parsing signs show the roles of the vocabulary in the sentence, and among the most famous examples of the role of parsing signs are the two noble verses in the Almighty's saying: (Only among His servants are the knowledgeable do they fear Allah. Al-Baqarah, 2:28) and in His Almighty's saying: When His Lord tested Abraham with all things He died and completed them Al-Baqarah, 2: 124) But these signs are not used in sign language, as sign language is a performative language, and grammatical signs are phonetic manifestations.

2. Rank: which is determining the location of the word in speech. In the Arabic language, for example, the described precedes the description, the genitive precedes the genitive, and the verb precedes the subject, and the interrogative, conditional, negative, and assertive tools also come first (Qaddour, 2008). In sign language, the rank is related to the importance of the word; Where the most important comes first, what is important is as follows



This sentence may be the answer to the question, what the boy did?

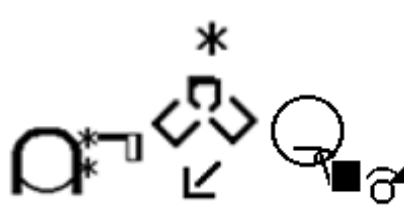
This sentence may be the answer to the question, who eat the banana?

This sentence may be the answer to the question, What did the boy eat? Where the important introduced

In an interrogative question, there is a special order for the sentence that begins with the interrogative article, then the person being asked about, then one or two interrogative articles.



3 . Formula: In the Arabic language, for example, the morphological singular helps to determine the grammatical meaning. The subject, object, subject, and predicate, for example, in their morphological structure, are nouns, not verbs. In sign language, we do not use verbal clues, but rather we use indicative performative clues through which the grammatical meaning appears, as in the example.



Subject here



Even if the location of the indicative vocabulary changes, as in

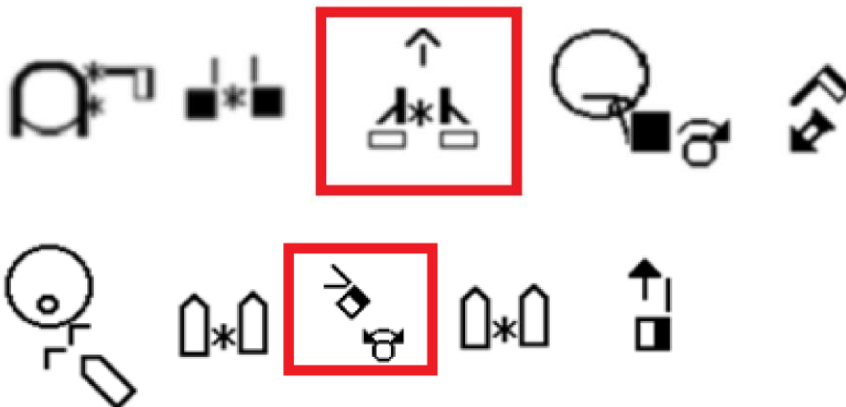


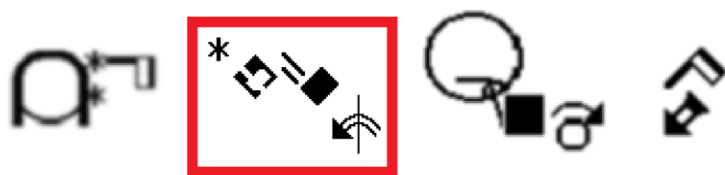
4. Matching: It means matching two words in terms of parsing marks, person, number, type, and other necessities of matching. In Arabic, for example, we say a smart boy and we do not say a smart boy, and we say Muslims are honest but we do not say Muslims is honest,,,,, etc. As for sign language, there is no matching with the same verbal forms, as there are no parsing

as for matching numbers, it is done by adding a sign  to indicate the dual and a sign  for the plural

For gender, the sign  is added for feminine and the sign of  for masculine. The context here is visual in the case of writing the sign or tool in the case of performing the sign.

4.Connecting: It is the connection of two words to each other to clarify the meaning and clarify the correspondence, as happens between an adjective and what is described, an adverb and its owner, a subject and its predicate...etc. Connecting is done with tools including the hidden pronoun, the letter fa in the response to the condition, the lām in the response to the oath, and other tools. In sign language, the connection is the type, direction, and mechanism of movement, as well as body gestures, facial expressions, and hand shapes. As in the indicative sentence



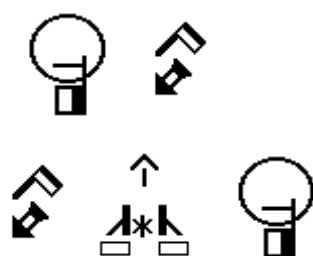


The conjunction sign, the choice sign, and the repetition sign are linking tools.

6. Conjunction: That is, the presence of a linguistic word requires the presence of another, and if it is deleted, there must be something that refers to it, such as the subject and the predicate, the genitive and the genitive, conjunctions and conjunctions, the connection and the connective, and others.



It can be a sentence



If the context makes clear what is deleted.

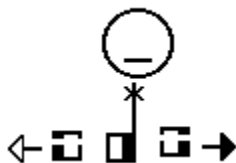
7. Tools: They are morphological structures that have a grammatical function (Qaddour, 2008), and the tools do not have lexical meanings (Hassan, 1994). They indicate conjunction, connection, and other verbal clues in the spoken language, and they are very numerous. In sign language, the tools are signs that do not have a meaning in themselves, and this is identical to spoken language, but they have a role in clarifying the overall meaning of the sign sentence, such as:



The direction of the arrow determines the grammatical meaning of the subject and object.

8. Tone: It is the vocal framework of the sentence in its context. There is intonation associated with interrogation, exclamation, negation, affirmation, and appeal. If it is sign language, it does not mean that there is no vocal tone according to the ability of the deaf. Through the author's dealings with the deaf, he found that there is a vocal expression for the deaf in various situations, such as exclamation, appeal, denial, and affirmation. etc.

Tone may sometimes be used as a performative expression through facial expressions, body gestures, hand shapes, etc., as in



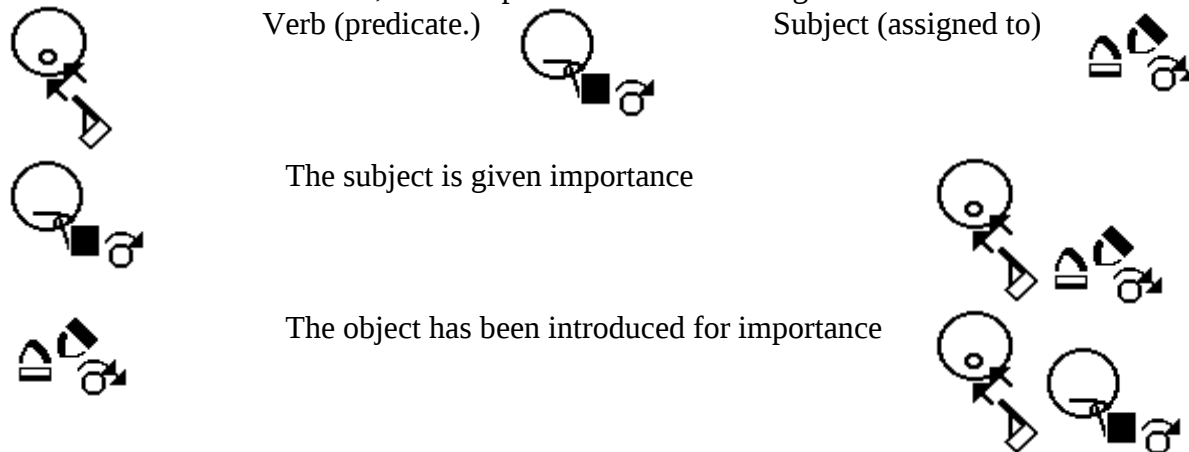
Attributional structure analysis

As previously mentioned, the sentence is an attributive relationship between a predicate and assigned to , examples of the predicate include: the verb and the predicate. examples of the

subject, its deputy, the subject, etc., but the science of grammar was not always sufficient to determine the relationships between the subject and the subject, so linguists in the modern era resorted to a deeper study to identify the relationships (Qaddour, 2008).

It appeared in three directions in the attributive structure: the functional direction, the distributive direction, and the generative or transformational direction.

- **Functional trend:** This trend studies the relationship between the linguistic system and how the system is employed to perform meaning through: multiple linguistic options, connection to societal culture, and integration of the linguistic system (Qaddour, 2008). The predicate is presented over the subject in the sentence, or what is intended to be presented is presented. Pay attention to it in the sentence, as we explained in the following sentences



The functional direction is characterized by the following:

- 1) The functional direction presents multiple options before the speaker, and these options do not have to be synonymous, but rather each of them achieves a specific function.
- 2) In the functional direction, the grammatical formulation is closely related to the culture of society, so the discourse between father and son differs from it between the boss and the subordinate, the friend and the friend...etc.
- 3) All components of speech combine to achieve the overall function of communication (Ahmed, 1989).

A. The distributive trend: The distributive trend depends on the fact that language is composed of discriminatory units that are revealed by division. The distribution approach relies on the formal method to reach the direct components and final components (Qaddour, 2008).

Illustrative example:

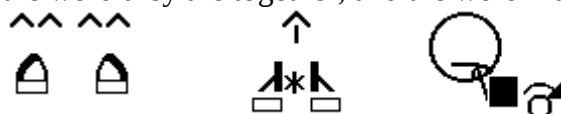
The boys are watching TV



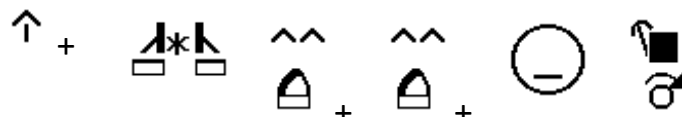
The sentence in the Arabic language consists of two direct components (the boys + watch TV) and final components that are related to the morphological aspect and can be analyzed as follows:

Boys = boys

In sign language, there are three words that refer to children: the word boys as a masculine word, the word they are together, and the word many

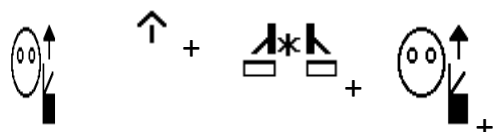
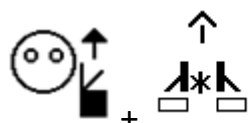


Which consists of



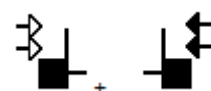
They watch = watch + wen

In sign language, two words refer to the act of watching: watching and with each other



Television = Al + Television

And in sign language



- The generative or transformational approach

This approach is based on the rule that every linguistic hypothesis is correct unless it is proven to be wrong, that is, every hypothesis is correct unless subsequent data prove it incorrect (Qaddour, 2008). This perception comes from the creative ability of language users to produce sentences even without hearing them. By (Khalil, 2016), and in sign language, as an idiomatic language, the field of linguistic creativity is wide open, but the problem lies in spreading this creativity to sign language users and introducing them to it, and this requires a very great effort. There are a number of deaf people and professional translators who show some creativity in the linguistic structure of vocabulary that has no linguistic counterpart in sign language.

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