A Study of Sign Language Phonology

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การศึกษาระบบสัญลักษณ์ทางเสียง

บทคัดย่อ

การศึกษาวิจัยครั้งนี้ เป็นการศึกษาระบบสัญลักษณ์ทางเสียง วัตถุประสงค์ของการวิจัยแบ่งออกเป็น 3 ข้อ คือ 1. เพื่อศึกษาประวัติความเป็นมาของภาษาสัญลักษณ์ 2. เพื่อศึกษาเปรียบเทียบระบบเสียงของภาษาพูดและภาษาสัญลักษณ์ และ 3. เพื่อศึกษาหน่วยเสียงของระบบภาษาสัญลักษณ์และส่วนประกอบไวยากรณ์ภาษาที่ใช้เป็นช่องทางในการติดต่อสื่อสารที่แตกต่างกันหรือการสื่อสารทางเสียงโดยการฟัง การพูด การวิจัยในครั้งนี้เป็นการวิจัยภาษาศาสตร์เชิงพรรณนาโดยศึกษาเอกสาร และเก็บรวบรวมข้อมูลจากแหล่งข้อมูลปฐมภูมิ ได้แก่ หนังสือ วารสาร และบทความ และข้อมูลทุติยภูมิด้วยการสัมภาษณ์และการสังเกต

ผลการศึกษา พบว่า จำนวน 376 สัญลักษณ์ที่ใช้รูปร่างมือ และประมาณ 286 (76%) สัญลักษณ์ที่ใช้ศีรษะและลำคอ นอกจากนี้ จำนวน 517 (81.7%) สัญลักษณ์ทางเสียงที่ใช้ศีรษะและลำคอโดยผู้พิการทางการได้ยินหรือคนหูหนวกที่ใช้มือแทนเสียงพูดในชีวิตประจำวัน

คำสำคัญ : ภาษาสัญลักษณ์, ระบบเสียง

ABSTRACT

The purpose of this research is to study of sign language phonology. The objectives of the study are classified into three categories as the following: 1. To study the history of sign language, 2. To study the comparison phonology in spoken language and sign language, and 3. To study the units of sign language phonology and other components of the grammar in a different communication channel, or modality. The studies are primarily documentary and descriptive linguistics research. The necessary information collecting data analyzed and categorized from the primary source of books, journals, and articles. The secondary sources are commonly used data collection instruments in case studies such as interview, and observation.

The outcome from study, the researcher found that there are 376 signs using a marked hand shape, approximately 286 (76%) of these are produced on the head and neck locations. There are also 517 (81.7%) of signs produced centrally in the head and neck locations are one-handed spoken by the deaf or disorders people in their practical life.

Keywords : Sign language, Phonology

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Introduction

Only humans have two kinds of language; spoken and sign. So, sign languages arise spontaneously wherever there is a group of deaf people who have facilities to communicate with one another. Sign languages are relevant to phonological theory precisely because they are naturally occurring languages that are not conveyed through sound, but rather are characterized by a level of structure that is comparable to phonology, which I elaborate in this review.

Sign languages are normally relevant and connect in the current academic climate, in which a growing body of research is seeking to revise or replace influential paradigms of modern phonology. In the generative phonology tradition, important aspects of phonology are deemed to be universal and innately specified: features and types of rules and interactions.

Similarity, sign language is an ocular language that uses facial expression, gestures, hand shapes and body language. The sign language signal is shaped by the face, hands and body. The speech signal is shaped by articulators inside a tube spreading between the lips and the vocal cords. Despite this fact, sign languages have phonology. Sign languages are languages that use the visual-manual modality to carry meaning. Language is expressed through the manual sign stream in combination with non-manual elements. Sign languages are full-fledged natural languages with their own grammar and lexicon. This means that sign languages are not universal and they are not mutually intelligible, although there are also striking similarities among sign languages.

Sign language, a product of the mind that is like spoken language in some respects and unlike it in others, offers an extraordinary opportunity to address these issues, for three reasons. First, the study of sign languages helps to isolate and more clearly define types of organization that are directly attributable to the physical system underlying phonology. Second, doing so reveals those properties that are universal regardless of modality. Third, due to their youth, sign languages bring critical empirical evidence to bear on the claim that phonology is an emergent system in which culture and diachronic processes play a role.

Initially, sign language phonology broadens the extent of forms under consideration for phonological theory. It is an easy way to understanding phonology in its most complete range of cases. As phonology is the level of the language that directly interfaces with the articulators, anatomical differences in turn have the potential to influence the phonological structure of languages across modalities. It is apparent with respect to production because the articulators involved in speaking and signing are different; the articulators in speech are the lips, teeth, tongue, throat, and larynx, and the articulators in signing are the hands, arms, head, body, and face. Besides this obvious difference, there are fundamental differences between these sets of articulators.

Wendy Sandler (2012: 9) claims that in many ways, sign languages are like spoken languages. They are natural languages that arise spontaneously wherever there is a community of communicators; they effectively fulfill all the social and mental functions of spoken languages; and they're acquired without instruction by children, given normal exposure and interaction. These characteristics have led many linguists to expect sign languages to be similar to spoken languages in significant ways. But sign languages are different too. As manual visual languages, sign languages exploit a completely different physical medium from the vocal-auditory system of spoken languages. These two dramatically different physical modalities are also likely to have an effect on the structure of the languages through which they are transmitted.

Fischer (2014: 7) found that the rate of speaking measured as words per second was twice as high as the rate of signing measured as signs per second, and they attributed this result to the size of the articulators, as the arms and hands are much larger. Therefore, this require more effort to move than those involved in speaking. Despite the slower rate of signing compared to speech, the proposition rate was similar across signed and spoken languages. They attributed this result to the use of simultaneous organization in sign languages, concluding that both modalities are equally efficient at conveying information, but do so in different ways. Speech is more likely to use sequentially ordered units, while sign languages are more likely to layer morphological units simultaneously.

Consequently, severally from certain interesting differences that have already surfaced, phonologies of different sign languages have enough in common to make it possible to talk about sign language phonology generally, even though there are hundreds of sign languages in the world. The reason suggested here is that all sign languages are young, and, as such, exhibit the early stages of phonology rounded in the phonetics of the modality.

Richard P. Meier (2012: 3) stated that the signal in sign language may have less of a role in phonological explanation than it does in speech, because the source articulators are visible; in other words, the spoken language is more prone to reanalysis due to acoustics to production decoding. Sign language can transmit multiple visual events simultaneously, and there are two hands and arms involved in articulation; in contrast, speech is transmitted through the single stream of an acoustic signal.

Itô and Mester (1995: 8) claims that because of the modality differences between signed and spoken languages, we might expect to see differences between the two types of languages in the organization of phonological units. In this section, the distribution of features across the lexicon, in syllables, and in words is described. Because phonological distributions in both spoken and sign languages change based on the origins and morphological structure of words, it is useful to view the lexicon as multi-componential. A multi-componential

model allows words or signs with different origins and morphological structure to have different phonetics.

Normally, the sign language lexicon is categories into three components: the core lexicon, the non-core lexicon and the non-native lexicon. Phonological theory concerning sign languages has been based on the core lexicon, where the sub- lexical elements are considered to be phonological. They can create contrast and be implicated in rules, and they may have no meaning in themselves. Signs from the non-core lexicon, sometimes called the spatial lexicon, are made up of elements that can be both morphological and phonological constructed action forms where the whole body functions as an articulator.

Ronald Pfau (2012: 552) stated that sign language can transmit multiple visual events simultaneously, and there are two hands and arms involved in articulation; in contrast, speech is transmitted through the single stream of an acoustic signal. With regard to perception, the difference between central and peripheral vision is important for feature distribution and is also related to paired articulators. In sign languages, the addressee must look at the person signing to them, and signers focus their gaze on the face, neck, and upper torso, and it is in these areas that visual acuity is greatest.

Dinane Brentari (1992: 23) said that linguists and cognitive scientists who do not know sign language with a point of entry into the study of sign language phonology. At the same time, it presents a comprehensive theory of phonology, while reviewing and building on alternative theories. One claim of this theoretical framework is that, because of sign language's visual and gestural phonetic basis, the consonant-like units and vowel-like units are expressed simultaneously with one another, rather than sequentially as in spoken languages. A second claim is that movements operate as the most basic prosodic units of the language. It is also concerned to show both the similarities and differences between signed and spoken languages, and to indicate some directions for future work in cognitive science that can be derived from her phonological model.

Fenlon, J. (2012: 12) explains that Compared to spoken language phonology, the field of sign language phonology is a young one, having begun in the 1960s together with research into sign languages generally. Before this point, linguists often dismissed the academic study of sign languages as manual representations of spoken languages or as iconic wholes lacking any internal structure.

Moreover, it is widely known that in the sign language literature that the manual parameters of hand shape, place of articulation movement, and orientation play a significant role at the phonological level in a similar way to the spoken language properties of place of articulation, manner, and voicing. Non-manual behaviors of the face and body are also part of the phonology.

MacNeilage (2008: 4) stated that it has been proposed that the organization of a syllable in speech stems from the opening and

closing movement of the jaw, which acts as an oscillator in speech; when one looks at sign languages, it is apparent that there is not a single oscillator linked to articulation. Signs can be produced by different joints of the arms and hands, as shown by the signs. On this basis, the syllable in sign language is physically distinct from the syllable in spoken languages, since it clearly has a more varied articulatory basis.

Finally, my research focuses on the sign language phonology. To my understanding, this research is very potential and interested to know more significant things about the sign language phonology.

Objectives of the study

Based on this research, the key objective is to pursue sign language phonology. The objectives of the study are classified into three categories as the following:

1. To study the history of sign language.
2. To study the comparison phonology in spoken language and sign language.
3. To study the units of sign language phonology and other components of the grammar in a different communication channel, or modality.

Research Methodology

The studies are primarily documentary and descriptive linguistics research. The necessary information collecting data analyzed and categorized from the primary source of books, journals, and article. And the secondary sources commonly used data collection instruments in case studies such as interviews, and observation. With the consideration method, it is predominately related to the linguistics data obtained by observation. Therefore, there is a percentage formula used the research study in order to figure out the number of sign language phonology spoken by the deaf or disorders people in their practical life. The researcher found that there are 376 signs using a marked hand shape, 286 (76%) of these are produced on the head and neck locations. There are also 517 (81.7%) of signs produced centrally in the head and neck locations are one-handed. This observation, together with the distribution of marked and unmarked hand shapes with respect to location, suggests that constraints on the distribution of features may have their origins in perception.

Conclusion

As mentioned above, the key objective of the study is to discover the Sign language phonology. The aim of the research was to look at the current level of the sign language phonology that uses by the people. The researcher had collected the data from the primary source of books, Journals, and Article. And the secondary sources selected interviews, and observation.

The outcome from study, the researcher found that there are 376 signs using a marked hand shape, approximately 286 (76%) of these are produced on the head and neck

locations. There are also 517 (81.7%) of signs produced centrally in the head and neck locations are one-handed spoken by the deaf people in their practical life.

Discussion

The main purpose of this research was to explore the sign language phonology. The researcher after having finished collected all data about the sign language phonology. The researcher picked up and willing to discuss the most important points as following;

1. Initially, deaf or disorders people are facing the problems to communicate by sign language phonology.

2. Secondly, deaf or disorders people are still lack of facilities of sign language training and no chance to fulfill their basis deserve of higher education.

Suggestion

In researcher's opinion, sign language phonology immensely beneficial for deaf or disorders people in their practical life. It will be very convenience for them in terms of speaking and express their problems with others by using sign language. This study was limited information collected from data from the primary source of books, English Journals, and Article. And the secondary sources selected interviews, and observation.

Therefore, further studies should be undertaken as follows:

1. A study of further investigations can be done on the sign language phonology.

2. The deaf or disorders people should need to get the more facilities to get higher education and sign language training course.

3. A further study to collect the more information of sign language phonology.

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