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Factors Behind Image Selection of Sign in Schematization Process

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Abstract

Sign language is a natural language that is actively used by deaf, hard of hearing, or even hearing people who can sign in communication with deaf people. Sign language which was acknowledged as a complete language around the 1960s is visual gestural language that relies on the hand (or other part of the body) to produce utterance. Japanese Sign Language is a natural sign language in Japan. Recently, many deaf communities in Japan are sharing their videos on YouTube with such rich and varied topics. This article classified Japanese Sign Language focus on sign of food into three groups based on collected data. There are three big groups that classify the sign of food in Japanese Sign Language, based on how the food proceeds, how the food is enjoyed, and how the shape or the character of the food. Those three factors became the significant factor that motivated selection of food image into then the sign of foods.
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1. Introduction

Sign language is natural language in deaf community environment and it has existed and been used widely since deaf people born (Fisher, 2014). This language is visual-gestural language in which the input is received visually and then produced into gestures using the hands and the other body parts (Isma, 2012; Wedayanti, 2019; Wedayanti et al., 2021). Sign languages are distinguished from gestural and kinesics languages based on different studies. Gestures and kinesics languages are treated as parts of language which function to complete speech or emphasize meanings. Meanwhile, sign language uses the hand as a manual or main feature, and the other body parts, such as face expressions, mouth movements and the gaze direction, as the significant parts and become the grammatical elements of the sign language itself. Recently, this language is sign not only by deaf people but also those with hard of hearing or people who can hear but are fluent in signs (Matsuoka, 2015; Plaza-Pust, 2016).

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Japanese sign language (*Nihon shuwa*) is referred to the natural sign language used in Japan. Sign language is neither universal nor homogeneous in one and another region. Like the spoken language, for instances, Indonesian sign language has a language system and structure that is different from the Japanese sign language or other foreign languages. So, Indonesian Sign Language signers are not automatically able to communicate with deaf people from Japan who communicate using Japanese sign language. Furthermore in Japan, there are two systems of sign language used by deaf people. The first one is *nihonshuwa*, a 'Japanese sign language' which is referred to a natural language that develops naturally when deaf people communicate. The second one is *nihon taiou shuwa*, a 'signed Japanese language' which means signed system of a formal Japanese language.

The lexical sign language can differ from one country to another because it is influenced by cultural aspects or different ways of life. For example, eating signs in Indonesia will be different from those in Japan because of the different eating habits. In Indonesia, the verb EAT will be indicated by the curved-beak handshape directed towards the mouth, like putting food in or like the movement of Indonesians eating with their hands. Whereas in Japan, the eating activity is signed with the index finger and middle finger sticking horizontally towards the mouth, taking the form of chopsticks pointing towards the mouth. Based on this fact, lexical signs in Japanese sign language, especially food signs, are heavily influenced by the daily habits of Japanese society. Thus, this article attempts to classify food signs in Japanese sign language based on how the food is eaten and cooked as well as what the visual character or the shape of the food is.

2. Material and Method

Several research results correlated with this article are used as references that have a significant contribution in providing a more objective rationale in the process of analyzing data. Coppola said that the emergence of a sign is strongly affected by the gestures which are close parts of the communication patterns in people who can hear and influence deaf people. The process of gestures becoming signs is mentioned in two ways. The first one is manual gestures as a source of lexicalization or grammaticalization of gestures. Meanwhile, the second one is that the elements in non-manual gestures become an integrated part of the grammar (Matsuoka et al., 2023; Sandler et al., 2022). Taub also emphasize that the iconization proses of one language is neither arbitrary nor predictable, but rather motivated. The term motivated here refer to language-external forces that can influence the nature of linguistics items (Taub, 2004).

Hara described systematically and clearly about Japanese sign language which can be examined from micro-linguistic studies, from explanations of phonology and morphology to syntax in Japanese sign language. Several illustrations of signs that have minimal pairs are also included in his article to support his opinion that sign language can also be analyzed phonologically because of its clear parameters for determining phonological studies in Japanese (Hara, 2002).

Matsuoka and Gajewski (2013) wrote about The Polarity-Sensitive Mouth-Gesture Intensifier in Japanese Sign Language. JSL, a natural sign language in Japan, uses several non-manual features that have an important role in sign language grammar, including the movements of the eyeball, chin, mouth, head, shoulders and the other body parts. Among these non-manual features, mouth movements have an important grammatical function. For example, aspects or modals produced by mouth movements affect the construction of the sentence as a whole. Mouth movements are said to be part of the gestures of spoken language speakers which then undergo grammaticalization and become part of sign language. These mouth movements are very helpful in investigating the absolute and relative properties of the adjectives. For example, the expression of adjective *takai* 'tall' using mouth movements makes the interlocutor of the signer understand better on how high the thing is conveyed by the signer (Matsuoka & Gajewski, 2013). The research conducted by Matsuoka and

Gajewski provides an understanding of non-manual features in sign language which should not be overlooked because they can be important factors in understanding signs more accurately.

Sign Linguistic Studies

Since sign language was widely known as a language around 1960, studies focusing on exploring sign language scholarship have been carried out very progressively. Even though sign language is examined using more established spoken language theories, it is found that the grammatical characteristics of sign language have a different structure from spoken language. In the study of phonology, sign language has five parameters to classify its smallest unit system. They are sign location, sign orientation, hand shape, hand movement, and non-manual expressions (including facial expressions, mouth movements, eyebrow movements, or gaze direction)(Isma, 2018; Wedayanti et al., 2021; Woodward, 1993). Meanwhile, Matsuoka explains that in one lexical sign language, there must be at least four forming segments i.e., hand shape, hand orientation, location where the sign is produced, and hand movements (as shown in the chart below) (Matsuoka, 2015). Some sign vocabularies consist of several smallest sign segments that makes word of signs. Then, the sentences are composed of some sign vocabularies

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'sentence'

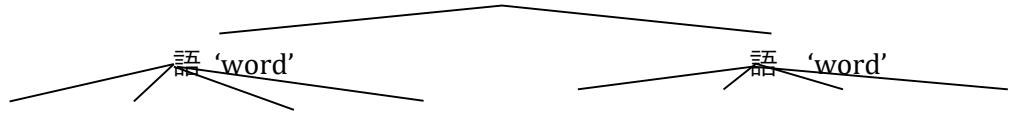


Chart 1 Linguistic segmentation in sign language

Iconicity in Language

Language has an arbitrary feature which is unable to explain references or correlations between objects and the referents, especially for abstract objects or references, such as feelings, things that are experienced, or other mental activities that are not concrete. Mardikantoro stated that conventionalization can overcome the arbitrary nature of language. It means that all members of society who use the language must comply with the convention that certain symbols are used to represent the concepts they signify. On the other hand, Mardikantoro also wrote about the existence of lingual forms that are iconic in language. Crystal defined Iconic as a term refers to a sign whose physical form is closely related to its distinctive nature because an icon is a sign relationship with a physical type resemblance. A language sign is said to have iconic properties when the language sign is heard (or seen when it is written) and at the same time the marked thing is remembered or understood, then in this time the iconizing occurs(Mardikantoro, 2013).

Lingual iconization is referred to as a lingual statement that reflects the referential reality it refers to. Gentner and Markman refer to iconicity as the similarity in language between the form of a linguistic object and its meaning (Taub, 2001). The ability to recognize similarities or resemblances between one object and another is an ability only humans have. When we feel there are similarities between one concept and another, we begin constructing patterns to maintain the similarity of the concepts we are comparing. From the concept of the image, we then abort the parts that are irrelevant or impossible to be presented in a language (ibid). For example, in spoken language we choose the cat sound 'meow' as the most typical concept to be referred to in a language to represent the cat. The following scheme is a model of the process of constructing an object into material or words in sign

language which begins with the process of recognizing the character of the object. The following scheme uses a TREE whose general features can be classified by shape, smell, texture or other features. The next process is the elimination of features that are less relevant or not too iconic and take the features that are most likely to be embodied in sign language using speech production tools (manual or non-manual). The tree sign is then constructed in the sign by maintaining the features such as "has branches, is tall and grows on a flat surface".

Methods

This study uses qualitative methods that aim to understand certain situations, events, roles, groups or social interactions. The research approach that begins with linguistic facts, aims to find conclusions that provide the general descriptions of linguistic phenomena in the language object studied. (Creswell, 2014). The data source used is in the form of signed videos from videos that are available in YouTube channels which upload videos about people signing on the topic of food. The two video channels are selected because they have videos about signs as the topic that can be used as the object in this study. The data were collected by selecting and downloading the necessary sign videos. Those videos then analyzed carefully to execute what factor that motivated a certain image of the food being selected and become the representation to refer to that food. From various sign videos of Japanese foods, there are some generalizations on how the object, i.e. the food, becomes a sign. The generalization is influenced by cultural factors that decide which the most salient characteristics of those foods then decide to proceed as a sign.

3. Results and Discussion

Based on the collected data that point out references related to the topic of this article, sign language related to food can be represented in three general patterns i.e., from the way the food is made, from how the food is enjoyed or consumed, and from the shape or visual of the food.

A. Sign with a general pattern of how the food is cooked or made



Fig 1. GYOUZA 'gyoza'



Fig 2. SUSHI 'sushi'

The GYOUZA sign is indicated by the dominant S-handshape in neutral space, with repetitive squeezing movement, as if it forms a *gyouza* whose shape is usually as big as a fist. Besides that, *gyouza* is also wrapped with a wavy texture. This *gyouza* gesture shows a food sign that selects the most salient image, which is how the food is made as a reference in the iconization process that it becomes a lexeme sign used in Japanese sign language. The sign of SUSHI (fig.2) is illustrated at how sushi is made by using one hand that press rice in the fist of another hand so that it appears as if trying to stick the rice into a ball and not to ruin the grains when fish is added on top of the rice ball. This word sign consists of both hand location in neutral space of the signer. With the dominant N-extended-handshape facing down the non-dominant hand. Meanwhile non-dominant hand has C-spread handshape facing upward. The sign vocabulary for sushi takes the concept of how the food is

made. It does not use other features that can represent the food such as how the food is consumed using hands (or chopsticks), or how it is usually dipped in soy sauce (*shoyu*).

B. Signs with a general pattern of how the food is consumed (drink or enjoy)

The iconization process of food such as sweet potato (cooked), steak, pasta and *atsukan* 'hot sake' shows how these types of food are consumed.



Figure 3. SUTEEKI 'steak'

The sign for STEAK in Japanese sign language is shaped by both hand with money-handshape facing each other, located in front of the signer. This sign indicated by the two hands holding the knife and fork moving like cutting meat on a plate. In general, steaks are consumed in the aforementioned way. Other than SUTEEKI 'steak' that has salient pattern of how the food is consumed, sign of sweet potatoes in Japanese Sign Language also has patterned as how it usually be eaten. Sweet potatoes either cooked by steaming, baking or boiling, will generally be indicated by how it is consumed. It is stated that sweet potatoes are better consumed warm. Thus, it is indicated in the mouth movement as if it blows an object. Then the sweet potatoes that are consumed without cutlery, or consumed directly using hands are implied by the hands holding the sweet potatoes and moving to the mouth. This sign located in front of signer's mouth, with the C-spread hand shape moving toward the signer mouth. The IMO or 'sweet potato' sign is the closest projection of how Japanese people generally eat sweet potatoes.

C. Sign with a general pattern of food shapes or visual characteristics of the food



Figure 4. *ODEN* 'oden'

Oden is a Japanese traditional food and classified as hot pot dish which is cooked by simmering in broth and consists of several ingredients such as processed meats, tofu or vegetables in various shapes, including triangular, round and skewered so that it is easier to take the ingredients from the pot. Today's *oden* has come in various shapes and tastes; however, in Japanese sign language the most iconic shapes of *oden* used are *chikuwa*, radish and triangle-tofu that skewered as one. The *ODEN* sign in the video is indicated by the non-dominant hand, and the dominant hand made a sequential-skewered sign of a circular-horizontal shapes (to illustrate a *chikuwa* or green onion) with the index finger pointing vertically moving from top to bottom. Both hand located in neutral space in front of signer, with dominant hand and non-dominant hand making a sequential sign respectively. In

Japanese Sign Language, the food name nikuman ‘steamed bun filled with meat’ also picked the shape of the food as the most salient indicator the represent the food itself.

The sign NIKUMAN or 'steamed bun with meat filling' is indicated by the signer pinching the hand first to symbolize the meat, then both hands forming a triangle to imply the shape of the meat bun. The construction of the sign vocabulary for NIKUMAN or ‘steamed bun with meat’ is formed sequentially with the first signs indicating MEAT pinching the skin of back of hand then the next sign referring to STEAMED BUN, the signer will shape triangle by combining beak-open hand shape of both hand together. Thus the two signs, will form the derivative word of NIKUMAN or 'steamed bun with meat filling'. Therefore, the pattern obtained here is the most common form or representation of the 'steamed bun with meat filling'. The color as well as the taste of the steamed bun has been overlooked because it does not represent the general impression of Japanese people regarding the steamed bun with meat filling.

4. Conclusion

The signs that are formed are constructed by optimizing the language tools the deaf people have, such as hands as the main feature supported by the other body parts like mouth movements, facial expressions as well as upper body movements. The object or concrete object viewed, its iconic characteristics are schematized and then some irrelevant parts are eliminated to acquire the necessary parts to be produced as a sign using language devices owned by deaf people. According to the data, there were the most salient patterns/concepts that obtained and prioritized as generalizations of food signs in Japanese sign language i.e., the shape/texture of the food, the way the food was made/cooked, the way the food was served/consumed.

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Figure resources

https://www.youtube.com/@shuwaisland/videos
https://www.youtube.com/@user-fl5dh1ss2i