Iconicity and Natural Languages

The Case of Classifier-like Constructions in Japanese Sign Language

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1. Introduction

Classifier constructions have been a topic of considerable interest in recent sign language research (see, for example, Emmorey 2003), in part because of the fact that all sign languages appear to have classifier constructions, and because many spoken languages also have similar constructions. Another point of interest is that, as Emmorey and Herzig (2003: 221) state, "classifier constructions are iconic and not arbitrary in form". One reason this aspect of signed classifiers is of interest is because for at least the past century, due in part to the influence of Saussure, many linguists have come to accept the notion that the relationship between a linguistic sign and its meaning is arbitrary. This apparent contradiction between the arbitrariness of signs and the iconicity of signed classifiers can create problems for some sign linguists who, on one level, recognize the iconic nature of signed classifiers, but on another level are trying to demonstrate that sign languages are natural human languages. This paper will confront this dilemma by using data on Japanese Sign Language (JSL) classifier-like constructions to illustrate how these forms, even though they are iconic, behave like similar forms (classifiers and onomatopoeia) in other natural languages.

First, let us attempt to define the notion of iconicity. As suggested in the quotation above, if a sign is iconic, there is some non-arbitrary relationship between its form and meaning. Stated more directly, if a sign is iconic, its form, in some way, imitates the meaning (or form) of its referent. This kind of iconic relationship can be illustrated most easily by actual examples from JSL. Consider the JSL sign for telephone below:

Figure 1

Some signs, like the one in Figure 1 (which can probably be understood by anyone, even a person without knowledge of JSL), are more transparent than others because the form clearly mimics the form of its referent. The sign in Figure 2 below, however, where the handshape is the same as in Figure 1, but for which the location and orientation are different, is less transparent.

Figure 2

Though less transparent, if the iconic motivation is explained, it becomes easier to understand. The handshape above is the finger-spelling for 'Y' in American Sign Language (ASL), and the finger-syllabary 'YA' in JSL. That is, the handshape is an iconic representation of 'Y' in ASL, and JSL has borrowed the 'Y' shape and used it to represent the 'YA' syllable.

While we are considering handshape, location and orientation, three of the sub-lexical components important for manual sign formation, let us also consider an example of the fourth component, motion. The JSL sign below incorporates motion into a compound sign.
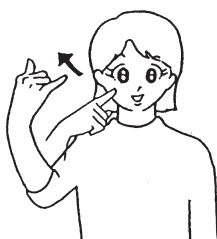
Figure 3

This iconic sign is a bit more complicated than the others, resulting in less transparency. First, it is necessary to introduce the JSL signs for male (Figure 4) and female (Figure 5) below:

Figure 4   **Figure 5**

The thumb in Figure 4 represents the (usually bigger, vertical) male in comparison to the little finger in Figure 5 that represents a (usually smaller, vertical) female. The 'Y' shape in Figure 3 thus is

a compound representing a man and woman together. The first part of the sign in Figure 3 is similar to a non-productive 'prefix' indicating something like 'parental relatives', and so after the prefix, raising only the thumb indicates 'father', the prefix plus a raised little finger indicates 'mother', and both together, as in the sign in Figure 3, indicates 'mother-and-father'.

2. Classifier-like constructions in JSL

Classifier constructions (or predicates) are defined by Emmorey (2002: 21) as:

> complex forms in which the handshape is morphemic, and the movement and location of the hand specify the movement and location of a referent. Classifier predicates are generally used to talk about the motion and position of objects and people or to describe the size and shape of objects. For example, to describe a person meandering along a path, a signer would use a classifier predicate in which the 1 handshape (referring to the person) moves forward with a zig-zag motion.

In these classifier constructions, then, the handshapes are morphemes that represent certain categories of people or objects, and are thus said to 'classify' these different types of entities. In the above example, the 1 handshape (which is a fist with only the forefinger extended) is used to represent a person 'meandering'. Now recall the examples illustrated in the previous section, where handshapes like those in Figures 4 and 5 can indicate male and female referents, and can combine, as in Figure 3, to form a one-handed compound to indicate a male-female couple. This couple-handshape, a classifier-like handshape, can be used in different ways to form other signs as well. For example, the sign in Figure 6, below, changes the orientation of the handshape, and adds a different kind of 'meandering' movement to form the sign for 'date'; in other words the couple is walking along happily together on a date.

Figure 6

Pluralization is also possible with this handshape, and is illustrated in Figure 7 with the sign for 'people', or in some contexts, it could mean 'society'. For this sign, the movement does not imitate some actual physical movement, as it does in Figure 6, but instead is a kind of reduplication, where the different positions of the hands are intended to imitate more and different stationary men and women, i.e., people.

Figure 7

A similar but different kind of pluralization occurs for the sign for groups of men and women. The groups are formed in a circle, and again, the movement does not imitate movement, but is a reduplication of the signs for men and women in a circular form.
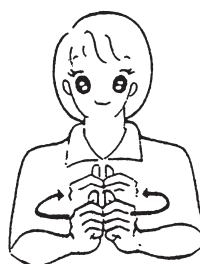

Figure 8

Figure 9

So far we have seen the male-thumb and female-pinky used in gender-marker-like and plural-marker-like constructions. Now let us consider person-marker-like constructions, where the sign in Figure 10 indicates a 'police-person' or 'policeman' (the badge on the hat＋person), Figure 11 a teacher (shaking a finger to teach＋person), and Figure 12 a doctor (taking a pulse＋person).
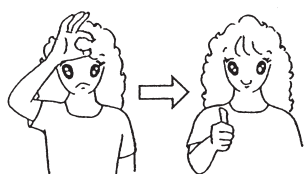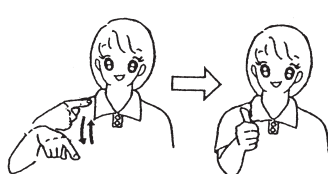

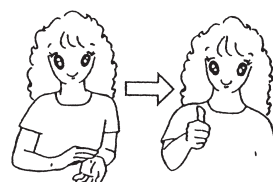
Figure 10

Figure 11

Figure 12

The thumb in these signs, in the unmarked interpretation, means 'person', but it could also mean 'male', in which case it is possible to contrast with the pinky to indicate a female doctor, teacher, or police. For the sign for 'nurse', the person-marker was the pinky, as in Figure 13 below, where 'pulse-taking' is added to 'taking-care' and then 'female', but this final pinky portion of the sign has recently been changed to a more politically correct gender-neutral form.

The head of some group can also be indicated by using the person-marking-thumb, as in Figure 14 below, where the sign first imitates a portion of the Chinese character for 'meeting', and adds to
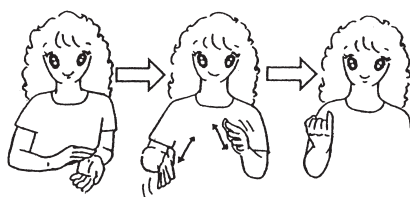
Figure 13

that a raised thumb, indicating the 'head of a group' or 'company president'. The sign on the right is a variation of the raised thumb morpheme, where instead of just raising the thumb, it is raised on the platform of the other hand. This suffix can be used interchangeably with the raised thumb, and has the same meaning; the 'head' of something.

Figure 14

The sign for 'assistant head' is interesting in that it is a compound of two thumbs, as indicated below. As in Figure 14, the raised-thumb can be replaced by the thumb-on-the-other-hand morpheme.
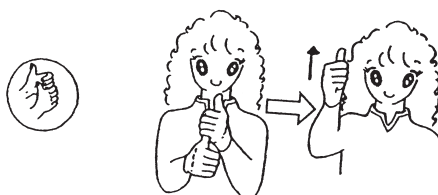

Figure 15

With this information, one who does not know JSL might guess that the sign below means 'female-head'.

Figure 16

That guess would be incorrect, however, since the raised (or platformed) thumb in Figure 15 is the unmarked person marker (and therefore refers to both males and females), and the sign in Figure 16 instead means 'elder sister', or more literally, a 'female-above-me'. That being the case, considering some of the signs discussed in the first section of this paper, what is the meaning of the following sign?

Figure 17

This sign means 'father's-younger-sister', and illustrates, for those who may think that iconicity can make a sign inefficient and time-consuming to perform, that even though a sign may be iconically motivated and have a rather complicated meaning, it can be expressed in less time than it takes to say, "your father's younger sister".

Now consider the three signs below. These signs are more like the typical classifier constructions discussed in the sign language literature in that they involve an animate-entity handshape combined with a verb of motion. What is especially interesting about these three classifier-like constructions is that they all involve the same or similar movement, but different handshapes.

Figure 18   **Figure 19**   **Figure 20**

Even for someone who does not know JSL, if you have read this far, you can probably guess the meaning of the first sign. It involves a man and woman coming together, and means 'to marry'. The second sign, involving similar movement but different handshapes has quite a different meaning. For this sign the thumbs do not specify males only, and are instead the person-like-marker, and when brought together twice express the sign for 'a meeting' or 'conference'. The third sign, in Figure 20, involves almost the same movement as the sign in Figure 18, but the meaning is quite different. The two extended forefingers are truly gender-neutral person markers, and so the two persons coming together express the verb 'to meet'. The forefinger then can also act as a classifier-like animate-entity

maker for the people who 'meet'. The forefinger is also used in the following three signs, but with different movements, and therefore different meanings.

Figure 21

Figure 22

Figure 23

The first sign, in Figure 21, means 'to participate', and is expressed by bringing the forefinger of one hand (representing a person) into contact with the other opened hand (representing what is joined). While this use of the forefinger is again classifier-like, in that it is the unmarked iconic animate-entity shape that does the 'participating', the forefinger in Figure 22 is more like an index than an icon in that it is merely pointing at the path of motion, therefore 'indicating' the motion. This forefinger therefore does not iconically represent the animate entity that 'goes', but instead points to the act of 'going'.

Figure 23 is the sign for 'to come', and in this case the forefinger again is classifier-like in that it is representing the animate entity that comes. One of the differences in Figures 22 and 23 seems to be the pragmatic consideration that 'going' is usually expressed from the point of view of the signer, and therefore the 'going-entity' is already present in the flesh as the signer, and only the motion needs to be indicated. For 'coming', however, the 'coming-entity' is often someone other than the signer, and therefore the 'coming-entity', for pragmatic and perhaps politeness considerations, is explicitly expressed. This kind of subject-marking animate-entity can thus also be used as a kind of politeness marker (this politeness perhaps being borrowed from Japanese), although it is acceptable to use the upright pointer to refer to the signer for both coming and going. But the pointer is not the only finger used for coming-and-going, as the sign below illustrates. The sign for 'commute' uses the thumb for the animate entity for the unmarked or male commuter, but the pinky can also be use for females, as the inset illustrates.

Figure 24

In the examples that have been discussed so far, it appears that only subject-like entities are represented by handshapes in these kinds of constructions, but object-like entities are also a possibility. Consider the four signs below.

| Figure 25 | Figure 26 | Figure 27 | Figure 28 |

With the inset, the sign in Figure 25 is rather transparent. It means 'to love' someone, or to consider them 'lovable'. The object of the affection, the handshape, could be either the pinky or thumb, but the unmarked form for the verb 'to love' uses the thumb. The sign in Figure 26 is a bit more complicated. It is the sign meaning 'to trick' or 'to fool' someone, where the thumb is the person that is fooled. The right hand imitates a clever fox-like creature (this is in fact the JSL sign for 'fox'), and the non-manual 'tongue-in-cheek' is also used for other signs, like 'to lie', and imitates pretending to have something in the mouth.

The sign in Figure 27 imitates keeping someone down, but is often used in a passive-like expression, so that the signer is the one that is being kept down. It could also mean someone proceeding but not making progress, that is, not necessarily being kept down by someone else, but perhaps being kept down by one's own limitations. The last sign in Figure 28 is somewhat similar to the sign for 'head' of something discussed above, but in this case the facial expression is completely different, and indicates only trying to make someone 'feel important' or 'to treat someone as important", though they might not deserve it, just to avoid trouble. So again, the handshape is an object-like argument of the verb.

Finally, moving from isolated signs, let us consider some signed sentences. The sentence in Figure 29 is a direct translation from Japanese, and the three signs mean, respectively, 'yet', 'married', and 'not', and the sentence means 'I'm not married yet'.
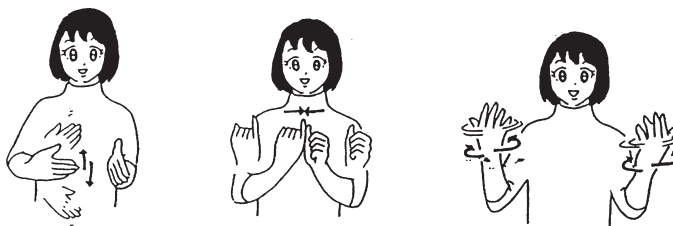

Figure 29

Though this type of Japanese-language-like JSL is understandable for many deaf people in Japan since they are often bilingual in Japanese and JSL, it is a bit strange from a deaf JSL point of view. The sentence in Figure 29 is really Signed Japanese, which uses the signs of JSL but the grammar of Japanese. More natural JSL sentences expressing similar meanings would be sentences like those in Figures 30 and 31.

Figure 30

Figure 31

The difference between the meanings of sentences 29, 30 and 31 is as follows. The sentence in Figure 29 is like a statement without intonation. It expresses a fact, but with no emotional content. Sentence 30, however, means something like 'I'm not married yet', but includes a non-manual marker of a smile that indicates the person is happy about not being married yet. Sentence 31, on the other hand, has negative non-manual markers, a frown-like expression that indicates that the person is not happy about the situation, along with the right hand being further away from the 'goal' of the left hand, and could be translated as something like, 'I'm STILL not married!'.

One final example of a JSL sentence. The sentence below consists of five signs that should be relatively transparent. The first one is a compound consisting of a 'roof'＋'people' under the roof (i.e. 'a family'), then the sign for 'parents', then 'elder sister', 'self', and then 'four' plus writing of the Chinese character for 'person' with the left hand. The sentence therefore is, 'In my family, there are my parents, my elder sister, and me, four people".
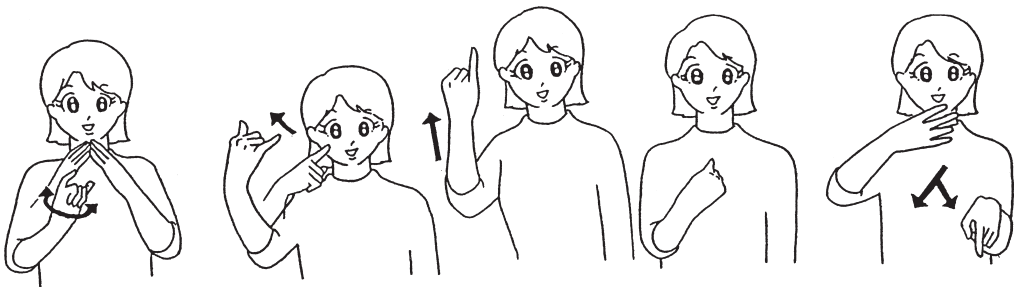
Figure 32

Notice that the thumb, pinky, and pointer-finger are used, but for the final numeral-marker (or classifier?), a thumb or forefinger is not used, and instead a Chinese character is traced in the air. Is this tracing-in-the-air another kind of classifier?

3. Summary and speculation

What we have seen in the previous section is how the thumb, pinky and pointer fingers can be used as animate-entity markers in JSL constructions, somewhat similar to 'classifiers' in other signed and spoken languages. It would also be helpful to know if these forms are similar in any other ways to other lexical forms in other natural languages. Though there is not space in this paper for a discussion of all the possibilities for comparison, one other interesting speculation is possible. As mentioned before, the JSL classifier-like handshapes are all iconic representations, but classifiers in spoken languages are usually not iconic expressions. This iconicity (or lack of it) may in fact be an important difference between classifiers in sign languages and spoken languages, and perhaps important for a complete description of these forms. For example, if we ask what lexical forms in spoken languages are iconic, the answer is unambiguous: onomatopoeia. These words are by definition iconic expressions. Perhaps we are missing some possible valuable generalizations if we do not consider whether these iconic expressions, onomatopoeia in spoken languages, and classifier-like handshapes in signed languages, are not in some way related.

For those who are familiar only with the comparatively underdeveloped system of sound symbolism in languages like English, this iconic connection between onomatopoeia and sign language classifier-like handshapes may seem to be rather unpromising. For those familiar with the onomatopoeic system in languages like Japanese, however, this consideration should not seem so strange. In Japanese, for example, as discussed in Herlofsky (1981: 31), it is possible to identify "specific syllables or segments of syllables" that correspond to "certain general areas of meaning", and in fact Carter and Nash (1990: 122–123) also suggest a similar idea in their discussion of English onomatopoeia, taking the example of the onomatopoeic word 'crunch':

> Once we have invented the word crunch, for instance, we are free to use it in any sense we communally choose — we crunch an apple, a stick of celery, a sweet; hear the crunch of boots on gravel, hear the car crunch on the gatepost; wonder what will happen 'when it comes to the crunch', and, in financial difficulties, know that we shall feel the crunch on quarter-day. The word derives its meaning from its use, and is not tied to a particular meaning through the mystique or mumbo-jumbo of sounds. But onomatopoeic creation does not specify the singular event; it relates to types of events in the physical world.

In other words, onomatopoeic expressions identify some salient characteristic or property of the type of event they refer to, and their use involves a combination of this iconic relationship between the sounds of the word and types of events in the physical world, and the somewhat arbitrary interaction of words and chains of meanings within the sentence (not unlike the combinations of signs seen in the

previous section). Carter and Nash (1990: 123) term these onomatopoeic words that express these types of events or general properties 'onomatopoeic arguments'.

> The type onomatopoeically expressed by crunch involves (i) the abrupt impact of something compact and hard striking on something that yields, (ii) a yielding surface that is also hard, but brittle, and (iii) a harsh or strident sound of brief duration. The word in its entirety is a kind of argument representing these properties by shrewdly matching them with the acoustic properties of certain consonantal and vocalic speech sounds. We can defend crunch as an 'onomatopoeic argument', against other possibilities, e.g. 'crinch', 'crunge', which are less convincing.

There are, then, even in English, various ways in which the linguistic representation of these types of events in the physical world, in other words, onomatopoeic forms, can be reinterpreted to subtly change their meanings. In the Japanese language, however, the system of subtle changes can be more sophisticated. In discussing onomatopoeia in Japanese, it is important to point out that iconic expressions in Japanese are generally divided into two groups; those that imitate sounds, 'gi-on-go' ('imitate-sound-word'), and those that imitate conditions, 'gi-tai-go' ('imitate-condition-word'), and that, as noted in Herlofsky (1981), the terms 'phonomeme' and 'phenomeme' have been used by Martin (1975) and others when discussing these two types in Japanese and Korean. It will be useful for us to combine these terms into one term, 'phono-pheno-meme', when discussing Japanese phono-pheno-memes.

Japanese phono-pheno-memes, like the Japanese language itself, have a long history, and, as described by Yamaguchi (2003), have reached various stages of grammaticalization. Although most are verbal modifiers that add (or sometimes don't add) certain grammatical particles when performing their functions, others, as Yamaguchi (2003) states, have developed to independent verbs themselves. By far the most common form of Japanese phono-pheno-meme, however, is the reduplicative form of the AB-AB type, as in the phenomemes 'kira-kira' ('sparkle') and 'piri-piri' ('shock'), that is combined with some appropriate verb, often the verb 'suru' ('to do'), to form a predicate like 'piri-piri-suru' ('to prickle'). The AB-AB reduplicative forms all indicate some kind of repetition or continuation, and in this way, they are somewhat like the plural forms of the JSL signs in Figures 7, 8, 9, which could also be considered reduplicative-like forms.

These reduplicative forms can be modified to change their meanings slightly. For example, in the words above, the word-initial and medial voiceless consonants can be voiced, so that the words 'gira-gira' ('glare') and 'biribiri' ('intense shock') are formed. This subtly changes the meaning of the words to give them a slightly heavier, intense, or more negative meaning. In this way, for many of the phono-pheno-memes of Japanese, voiceless consonants have a lighter, more positive meaning, while voiced

consonants have a heavier/intense or more negative meaning. In some ways, then, the voiceless/voiced contrast can be seen as somewhat similar to the modification of meaning that non-manual markers bring to JSL signs. Recall the example of 'not being married yet', where a smile or frown can add a positive or negative nuance to the sign for getting married.

In addition to reduplication and voicing contrasts, other basic sub-lexical building-blocks can be added at the end of these Japanese phono-pheno-memes to subtly modify the meanings. For example, a glottal stop can be added to the end of a word to usually indicate a sudden end to a sound or condition. Or, to indicate a less-sudden more continuous or penetrating sound/condition, the syllabic nasal 'N' can be added to the end of a word (There are other morphemes that can affect meanings that will not be considered here, please see Herlofsky 1981, Kakehi, Tamori, and Schourup 1996, Hamano, 1998, Yamaguchi 2003). So, for example, according to Kakehi, Tamori, and Schourup (1996: 1316–1318), 'zukiQ' ('Q' indicates a glottal stop) indicates a "state of feeling a sharp pain", 'zukiN' refers to a "state of feeling a deep, penetrating pain", 'zukiN-zukiN' refers to a "state of feeling a throbbing, penetrating pain", and 'zuki-zuki' refers to a "state of feeling a throbbing pain". The glottal stop therefore adds a sudden 'sharpness' to the pain, the syllabic N adds 'penetration', and the repetition of 'zuki-zuki' adds a 'throbbing' sensation.

The different sub-lexical morphemes of Japanese phono-pheno-memes, therefore, can form different semantic groups, and can combine with the verb 'suru' ('to do') to form predicate constructions expressing iconically some sound or condition. Negative or positive nuances, or other forms of intensity can be added with the voiced/voiceless contrast. A kind of pluralization can be achieved with reduplication. In addition, other subtle adjustments to the meanings can be made with the glottal stop and syllabic N.

For JSL classifier-like forms, the sub-lexical handshape morphemes can form different semantic groups, and can combine with motion to form predicate constructions expressing iconically action, state, or condition. Negative or positive nuances, or other forms of intensity, can be added with non-manual marker contrasts. Pluralization can be achieved with a kind of reduplication. In addition, subtle adjustments to the meanings can be made with changes in the movement and handshapes.

Although the data is still meager, it seems to me that Japanese phono-pheno-memes are quite similar to the JSL classifier-like forms discussed in this paper. Certain meanings have been grouped into certain iconic-forms, and slight modification, like reduplication (repetitive movement in JSL), voicing (non-manual markers in JSL), or Q and N (different kinds of movement in JSL), can be added to modify and expand the meaning. Further development of these possibilities is not within the scope of the present paper, and must remain a topic for future research, but it seems to me that if these JSL forms are really like the phono-pheno-memes of Japanese as well as being like the classifiers of spoken languages, perhaps we should refer to them as something like 'classifier-phenomemes'.

Let us consider one more example that can provide another illustration of the possibilities for

future research, crosslinguistic comparisons with aspects of classifier-like behavior that have been identified for other sign languages. First, consider this quotation about ASL classifiers from Emmorey (2002: 78):

> Liddell and Johnson (1987) observed that whole entity classifiers do not allow other classifier morphemes to be located on them. For example, it is ungrammatical in ASL to place the hooked V handshape used to represent small animals on top of the vehicle classifiers to indicate "the cat was on top of the car". Instead, the surface morpheme must be used to represent the roof of the car — in this case, a B handshape (palm down). Surface morphemes are the only morphemes that allow other classifiers to be located on them.

According to Emmorey, therefore, based on Liddell and Johnson (1987), in ASL it is ungrammatical for one classifier handshape to be located on another classifier. One question that we can ask, then, is whether this is also the case for JSL classifiers? The first part of Figure 15 suggests that compounds of classifier-like morphemes may be possible in JSL, but to clarify, let us consider the JSL expression, 'the man is on top of the car'. Figure 33 is the sign for 'car', and Figure 34 is 'the man is on top of the car'.
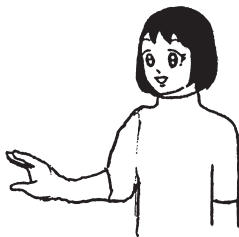

Figure 33

Figure 34

In JSL, the sign in Figure 34 is grammatical in the proper context. This suggests that there is a difference in the interaction of classifiers in JSL and ASL. Part of this difference between ASL and JSL in the above example may be due to the fact that the JSL classifier-like handshape for 'car' provides a flat surface on which another can easily be located, and so a switch to a separate surface-morpheme handshape is unnecessary. Of course, much more investigation is needed before a definite statement can be made about whether classifier-like handshapes can always appear on top of each other in JSL or not, but the above example should serve as an illustration of the type of crosslinguistic research that is needed.

In addition to comparing JSL classifier-like handshapes with other onomatopoeic or iconic forms in other languages, and crosslinguistic comparisons with other sign languages, future research should also consider the function and distribution of these forms as well. For example, the classifier-like signs in

Figures 23 and 24 appear to function as the subjects of intransitive verbs, while those in figures 25–28 appear to be functioning as objects of transitive verbs, functional differences predicted by Aikhenvold's (2000) study of spoken language classifiers. Though examining these possibilities in detail is beyond the scope of this analysis, it remains an important topic for future research (see Herlofsky 2005).

Note

Also, many of the examples used in this paper are the same as those used in Herlofsky (2005, and to appear in print in 2007), but the conclusions reached and the discussion of onomatopoeia in this paper are different from the other paper.

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