Emoji and Relevance: A Phonological Pragmatic Comparison of Two Versions of *The Pictorial Heart Sutra*

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1. Introduction

The modern Japanese language is known for its abundance of characters. The most prominent examples are three main scripts: kanji (Chinese character or idiogram, 漢字), hiragana (primary cursive syllabic script, 平仮名), and katakana (secondary syllabic angular script, 片仮名). Originally, kanji was borrowed from the Chinese language, and each kana script, hiragana and katakana, was developed by simplifying kanji to express Japanese syllables. The Roman alphabet and other characters from foreign languages can also be included in the Japanese writing system of today.

Taking such a profusion of characters into consideration, it is not surprising that hanjimono (rebus, 判じ物), picture puzzles based on the sound similarity between syllables of the object represented by images and those of the words implied, were widely enjoyed during the Edo period (1603-1867), especially in the last one hundred years. They were used not only for word plays but also for missionary purposes. *Eshingyō* (*The Pictorial Heart Sutra*, 絵心経) illustrated in Figure 1 in the next page is one example of the latter.

Figure 1 is an extract of four lines from the Daikakuji version still available today. Each vertical line consists of three columns that represent original kanji on the left, hiragana representing syllabic sounds in the middle, and their alternative pictographic expressions on the right.

色即是空空即是色受

想行識亦復如是舎利

子是諸法空相不生不

滅不垢不浄不増不減

(Sakaguchi n.d.: 10-11)

Figure 1　*Eshingyō*

Basically, *Eshingyō* is composed only of pictures in the right column in which sounds of the sutra are represented by emojis or glyphs instead of kanji or hiragana. These pictographs share sounds with the original kanji but no conceptual contents. Sometimes syllables are changed, partly abbreviated or omitted, and others require inference to be pronounced as intended.

There have already been researches on *The Pictorial Heart Sutra*. Among them are Watanabe (2012) and Marra (2016). In addition, some recent introductions to hanjimono, including Ono (2000, 2005) and Iwasaki (2004, 2016), provide helpful discussions. There seem, however, no analyses of *Eshingyō* from a cognitive pragmatic point of view. If a systematic approach to *Eshingyō* from a pragmatic perspective is proved applicable, it can cast further light on how the description of concrete images are transformed into abstract signs, by what parts of syllables are chosen to represent a consistent text, and how all these processes are carried out.

This paper focuses on two versions of *The Pictorial Heart Sutra* from a cognitive pragmatic standpoint, especially a relevance theoretic point of view advocated by Sperber & Wilson (1995). After an overview of some aspects of the Japanese writing system which give grounds for

the creation of word plays, an introduction of hanjimono, or picture puzzles, is shown in Chapter 2. Following a brief description of two versions of *The Pictorial Heart Sutra*, Chapter 3 deals with two kinds of *The Pictorial Heart Sutra*, examining each example of the characters used and their distributional data. Through comparison, Chapter 4 focuses on their phonological and pragmatic aspects. At the end of this paper, it is concluded that introducing a phonological pragmatic point of view makes it possible to examine both audio and visual aspects of characters at the same time, leading to more convincing explanations on how symbols become words.

2. Pictorial Representations in Present-day Japanese

2.1. Emoji and Other Characters from Pictures

The Japanese writing system incorporates many characters. In addition to kanji, hiragana, katakana, the increasing number of borrowed words from English adds the Roman alphabet to Japanese texts. Below is an example of advertisement from a popular comic magazine for girls, which announces the launch date of the next issue.[1]
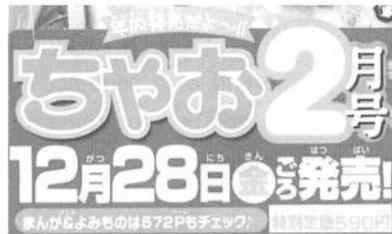
年内発売だよ～!! (It will be released later this year～!)
ちゃお2月号 (Ciao February Issue)
12月28日金ごろ発売! (Released Around Fri. Dec. 28!)
まんが＆よみものは572 Pもチェック♪

(Check page 572 for further information on comics and stories ♪)
特別定価590円 (Special Price 590 yen)

Figure 2 Advertisement in Japanese Comic Magazine[2]

The release date is announced as 12月28日金ごろ using numbers (12 and 28), kanji (月 month, 日 date, and 金 Friday) and hiragana (ごろ around). There are hiragana and katakana characters above each kanji to indicate the pronunciation of kanji just in case young readers cannot read it. The abbreviated symbols "&" and "P" are also accompanied with katakana, which usually represents the sound of the borrowed words added just above each of them. Emoji-like symbols such as "〜" and "♪" are also used in this advertisement.⁽³⁾ As Figure 2 demonstrates, the mixed use of different kinds of characters gives the Japanese writing system variety. In other words, the Japanese language are receptive to different, new, and sometimes peculiar ways of writing, making the creation of the popular emojis for SNS communication possible.

Prior to the widespread use of emojis, there appeared other means of communication on the Internet playing the same role as generally agreed written symbols. Although expressions used by Japanese speakers when exchanging text messages are like emoticons for English speakers, they have been developed into more picture- or manga-like images. Below are the variations of the "laughing" expressions that are well known to Japanese speakers.

(1) a. （笑）　　e. g. 何でやねん（笑）（No way！lol）
Usually used at the end of a sentence to express the writer's attitude toward the contents of the sentence as "intended to make you laugh" or "as a joke."

b. ﾜﾗ　　e. g. 何でやねんﾜﾗ
The abbreviation of the sound （笑）, or warai, with katakana, usually written in halfwidth fonts, often intended as satire.

c. 藁　　e. g. 何でやねん藁
Based on the phonetic coincidence between ワラ (wara) and 藁 (wara), a kanji character 藁 (straw) is used instead of ワラ.

c. w　　e. g. 何でやねん w
The initial word of transliterated expression from Japanese 笑 into Roman letters *warai*, sometimes representing irony.

d. 草　　e. g. 何でやねん草

Based on the similarity between the visual form of the letter "w" and grass on the ground, which can be expressed as 草 (kusa) in kanji.

e. (＾-＾)　　e. g. 何でやねん (＾-＾)

Laughing face like the emoticon " :) " familiar to English speakers, usually called kaomoji (literally face character 顔文字).

All examples are used at the end of a sentence to add positive feelings by expressing laughter. In addition to the richness of letters and characters in Japanese writing, these varieties of expressions pave the way for the appearance of emojis in SNS communication.

The term emoji itself consists of two parts: *e* (picture or image, 絵) and *moji* (letter or character, 文字). The direct translation of emoji in English is picture letters or pictographs but is now widely used as an English word borrowed from the Japanese language. The most famous emoji might be the "Face with Tears of Joy" selected for The Oxford Dictionaries Word of the Year 2015.

(Oxford Dictionaries 2015)

Figure 3　The Oxford Dictionaries Word of the Year 2015 "Face with Tears of Joy" emoji

Emojis are not temporary gaming characters; they have become a common means of communication. It can be said that emojis are now

part of the language itself, as the Oxford Dictionaries guaranteed their status as a "word" by designating one as the Word of the Year.

2.2. Expressiveness of Kanji Characters

Another ground for the creation of new ways of writing exists in a protean aspect of kanji. There are three main reasons that the use of kanji characters facilitates the appearance of new ways of communication. First, kanji characters basically communicate meanings as well as sounds. Thus, when combined with other kanjis to make coherent expressions, they are used polyphonically.

⑵ a. 海女 (*ama*): a female diver for seafood
   b. 海豚 (*iruka*): a dolphin
   c. 海丹 (*uni*): a sea urchin
   d. 海老 (*ebi*): a shrimp
   e. 海髪 (*ogo*): Ceylon moss (a kind of seaweed)

(Summarized from Kobayashi (2004: 339))

Kobayashi (2004) refers to these expressions as intriguing examples of polyphonic aspects of kanji. Each example contains a kanji character 海 (literally sea), which can be read as *a, i, u, e,* and *o* —the five main Japanese vowels.

Second, kanji usually consists of many parts that can be divided into smaller parts with individual meanings. There are mainly two parts of kanji: *hen* (left-side radicals, 偏) and *tsukuri* (right-side radicals, 旁). Examples of kanji that include 木 (tree) as a part of them are presented below.

⑶ a. 木 (*ki*, tree) / 林 (*hayashi*, trees) / 森 (*mori*, forest)
   b. 杉 (*sugi*, Japanese cedar) / 札 (*fuda*, card or label) / 析 (*seki*, analysis)
   c. 棟 (*tō*, tower or building) / 椅 (*ki*, chair) / 椎 (*tsui*, hammer)

Three main variations can be seen here. (3a) shows an descriptive aspect of kanji. The kanji 木 (tree) is a pictographic character because it has a high appearance similarity to a real-world tree. As the number of trees to be expressed increases, the character 木 is added to show the amount.[4]

(3b) has a synecdochical construct because the left-side radical *kihen* 扌 signifies the category "plant" and the other part of the character adds individual properties to its meaning. For example, 彡, the right part of 杉 means hair, so this kanji expresses trees with leaves that looks like hair. 札 means a card made by shaving wood with a knife, which is represented by the right part 乚. 析, composed of a tree and an axe or hatchet 斤, means analyzing the object by dividing it into smaller parts. (3c) shows the varied pronunciation of kanji as the right parts of each character represent: 棟 reads as *to*(東), 椅 as *ki*(奇), and 椎 as *tsui*(隹).

Thanks to these properties, infinite numbers of kanji characters can be created combining two or more parts into one kanji character. Thus, even native speakers of the Japanese language sometimes find it difficult to read kanji correctly, although certain numbers of kanjis are designated for ordinary use and are taught in school. Conversely, the separable construct of kanji helps produce some interesting expressions. For example, the kanji character 只 (*tada*, free of charge) is divided into two parts, ロ and ハ, which look like the katakana characters ロ(*ro*) and ハ (*ha*). This is why the pun ロハにする (*roha ni suru*) was used as an alternative expression for 只にする (*tada ni suru,* make it for free) in the past.

The third is rather social. According to Atsuji (1999), as the use of computer became common, the Japanese writing system began to rely on pre-installed fonts on computers. It is almost impossible for users to create new forms of characters because they can only use the scripts that have already been built into the software. The creation of new characters or expressions is inevitably limited here. Emojis or some plays of words made from the combination of already existing letters and characters as illustrated in (1a-e) seems to be an outlet of this limitation.

Furthermore, some characters which are frequently used in hand-

writing are not included in ordinary fonts. This can often be noticed
when a person's name needs to be typed.

Table 1　Japanese Common Surname with Uncommon Kanji

Surname	Correct kanji	Alternative kanji
Yoshida	𠮷田	吉田
Takahashi	髙橋	高橋
Nishida	𫝆田	西田

By using ordinary fonts, some characters cannot be represented properly,
so alternative characters that resemble them are sometimes replaced, as
in Table 1. A special format needs to be installed to correctly show and
print these fonts. As above, compared to the original handwritten expres-
sions, pre-fixed fonts are limited in use.

　These polyphonic, multi-composability aspects of kanji on the one
hand and restrictions of reproducibility on the other can drive Japanese
speakers to search for new ways of writing. However, the desire for
inventing scripts or characters as an alternative to existing one is not
unique to present-day Japanese. During the Edo period, invented pictur-
esque glyphs were sometimes used instead of orthodox characters. In the
next section, a brief background information is given for later analysis.

2.3. Hanjimono as Picture Puzzles

　The Edo period (1603-1867) saw the bloom of common people's cul-
ture. In the mood of a more stable social situation than the preceding
war era, there was no doubt that certain kinds of parody or puzzles
criticizing the mainstream culture appeared. Hanjimono, a kind of
picture puzzles based on the similarities between the sound that should
be pronounced and some parts of the sound the picture represents, is one
example of this. *Eshingyō*, introduced in Chapter 1 and discussed later in
detail, is also included this type of text, as Marra (2007) points out.[5]

　In addition to hanjimono, there are many examples of mojie (picture
letters, 文字絵), which build letters into parts of a picture.

Figure 4   Inner Leaflet of Dorayaki Cake[6]

Figure 5   Henohenomoheji

Figure 6   Sign of Kyoto Chinese Hamamura[7]

The examples in Figures 4-6 are interesting because they use scripts to draw images of humans. Figure 4 is partly extracted from an inner leaflet announcing the launch date of a traditional Japanese Dorayaki cake. A person seen from behind is represented by two kanjis 毎月 (*maigetsu*, every month) where 毎 takes the form of the upper part of the body and 月 of the lower. Figure 5 shows a person's face depicted by seven hiragana characters へのへのもへじ (*henohenomoheji*), and the facial profile in Figure 6 uses hiragana letters ハマムラ(*hamamura*) to represent the name of the restaurant embedded in it. Hanjimono might have developed along with this type of word and picture plays.

Ono (2005) defines Hanjimono as "a visual play on characters and letters, and a kind of play on words in Japanese" (Ono 2005: 56). Iwasaki (2016) defines hanjmono as "making people guess the meaning of the

expression hidden in characters and pictures" and "puns based on the rich homonymity of the Japanese language" (Iwasaki 2016: 7). Konno (2016) refers to hanjie, another name for hanjimono, as "riddles made of eliminating words from already existing riddles consisting of both words and pictures" (Konno 2016: 227).

In addition to its function as picture puzzles or word plays, hanjimono had been used for another purpose. During the Edo period, the literacy rate in Japan was lower.[8] Some people remained illiterate, which caused difficulties when Buddhist monks chanted their teachings. To tell the Buddhist teachings, or how to summon the sutra, hanjimono was used instead of common characters to spread Buddhist beliefs. These kinds of texts are called *Ekyō* (pictorial sutra, 絵経). The most famous *Ekyō* is that of *The Heart Sutra* called *Eshingyō*. The first and most comprehensive study of *The Pictorial Heart Sutra* is Watanabe (2012), which defines *Eshingyō* as "the sutra to explain *The Heart Sutra* for illiterate people with pictographs" (Watanabe 2012: 22).

According to Watanabe (2012), there were mainly two versions *Eshingyō* in Japan: the Tayama version and the Morioka version. Although the latter was clearly affected by the former, interesting contrasts can be observed between the two. In the next chapter, a brief overview of the two is presented for further examination.

3. Emojis in *The Pictorial Heart Sutra*

3.1. Two Versions of *The Pictorial Heart Sutra*

The Pictorial Heart Sutra is also classified into mekuramono which literally means texts represented by glyphs or picture images for illiterate readers (Watanabe 2012: 1). These kinds of texts were especially popular among the public during the latter half Edo period. However, after the Meiji restoration, they fell out of practical use. One of the reasons for this is that the publication of mekuramono was prohibited by the prefectural ordinance of Iwate prefecture around 1872 (Watanabe 2012: 63).

Watanabe (2012) introduces two major versions of *The Pictorial*

Heart Sutra. The Tayama version, the former one, was published around the end of the 18th century. About a half century later, in the middle of the 19th century, the Morioka version, also called the Maitaya version, appeared. Although the former had a greater effect on the latter, however, there are some interesting contrasts between them as Sakaguchi (n.d.) mentions as "Rather simplified pictographic symbols are used in the Tayama version, while more concrete and realistic images can be seen in the Maitaya version" (Sakaguchi n.d.: 4-5).

Table 2 shows the distribution of pictographs in the two versions of *The Pictorial Heart Sutra.*

Table 2 Representations in Two Versions of *The Pictorial Heart Sutra*[9]

	Tayama version	Morioka version	Total
(1) Phonetic coincidence	211	193	404
(2) Numeric characters	47	46	93
(3) Analogical inference	6	24	30
(4) Hiragana characters	5	3	8
Total	269	266	535

(Modified from Shiota (2018: 126))

(1) in Table 2 indicates the similarity between the sound that is to be implied and sounds of the picture itself. If the hiragana characters and numbers appear as they are, they are categorized into (2) or (4). (3), which requires analogical inference for interpretation, shows interesting and pragmatic aspects discussed later in this chapter.

Three questions arise when comparing the two versions of *The Pictorial Heart Sutra.*

(4) a. Why do the two versions of the same sutra exist?
   b. Why does the later version have an elaborate rather than simplified description?
   c. Why do some emojis require inference for interpretation?

Before answering these questions, let us have a look at the two a little closer in the next two sections.

3.2. Tayama Version

The oldest version of *Eshingyō* or *The Pictorial Heart Sutra* is the Tayama version, whose images are more simplified than those of the later Morioka version. According to Watanabe (2012), the existing oldest Tayama version included in *Tōyūkikōhen* (東遊記後編) by Nankei Tachibana (橘南谿) was published in 1797. Clearly, it had a great impact on other versions of the pictorial sutras, including the Morioka and the Daikakuji sutras. Below are variations of the first line 観自在菩薩, which reads as *kan ji zai bo za*, extracted from Watanabe (2012) and Sakaguchi (n.d.).

| Tayama Version | Morioka Version | Daikakuji Version |
| (Watanabe 2012: 66) | (Watanabe 2012: 94) | (Sakaguchi n.d.: 8) |
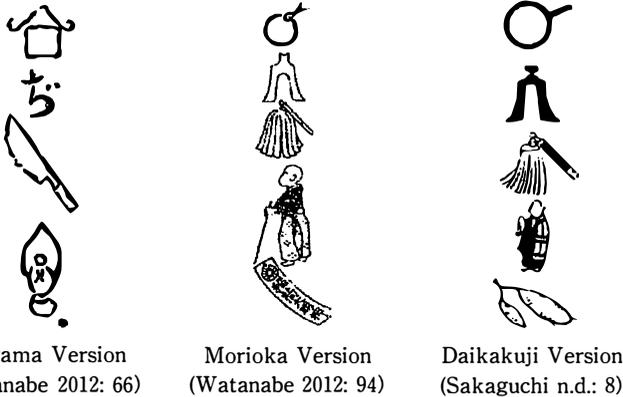
Figure 7 First Part of Three Versions of *The Pictorial Heart Sutra*

Despite some simplification, the emojis in the present-day Daikakuji version are almost the same as those in the Morioka version, which means the Morioka version might be the completion of *The Pictorial Heart Sutra*.

As for the Tayama version, 76 different kinds of emojis are used in the whole text composed of 269 in total. As shown in Table 2, they are divided into four categories. Most are picturesque symbols, but abstract

numerical expressions and hiragana characters are also included. Additionally, the same picture characters appear many times in the sutra. Table 3 contains a list of emojis used in the Tayama version in order of frequency. Each bracketed number in the category column refers to the classification in Table 2.

Table 3 Items in Tayama Version [10]

Item	Category	Number	Pronunciation	Meaning
�	(2)	22	mu	six
☰	(2)	11	ku	nine
⊡	(1)	11	ze	a coin
○	(1)	11	fu / bu	Dry baked wheat gluten
✦	(1)	10	ku	a mulberry
⚟	(1)	9	so / sō	a Buddhist monk
▱	(1)	9	shiki	a threshold
₪	(1)	9	ko	sticks of incent
井	(1)	7	i	a well
▣	(1)	7	ta	a rice field
☗	(1)	7	hannya	a mask of hannya
●	(1)	7	syu	red circle

Table 3 indicates that each emoji has its corresponding sound, which shows that these emojis had alternative functions in hiragana and katakana. However, because they represent only the sounds of the sutra,

the images used in *Eshingyō* appear to be phonetic signs without any conceptual contents, or rather like musical notes.

There are a certain number of numeric characters in the Tayama version where each line represents the number "one."

(Watanabe 2012: 66-72)

Figure 8   Numbers in Tayama Version

Only six in total composed of three kinds need analogical inference.

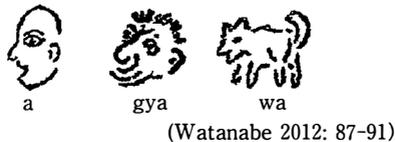a   gya   wa

(Watanabe 2012: 87-91)

Figure 9   Picture Puzzles in Tayama Version

In Figure 9, *a* is the initial sound for the word *akubi* (yawing), whereas *gya* (cries of monkeys) and *wa* (barking of a dog, "bowwow" in English) communicate the initial part of the cry of animals. These emojis need some inference because they do not directly express the images of pictures themselves. Instead of just a face, a monkey, or a dog, they represent sounds or movements that can be inferred from these visual images.

These inferentially represented emojis are closer examples of hanjimono than other types of emojis in the Tayama version. Considering the fact that *Eshingyō* can be included in hanjimono as stated above, however, the number of these kinds of emojis used in the Tayama version is surprisingly small.

This scarcity shows that even though *The Pictorial Heart Sutra* is often included in hanjimono, their functions are different. Additionally, the religious purpose of *Eshingyō* should not be ignored. It was made not as a picture puzzle for fun but as a sacred object to be worshipped. Marra (2016) refers to this aspect of the sutra:

Hanjimono are strictly chosen, to represent the sound of the Sūtra, they are in no way making fun or trying to explain or illustrate the Sūtra's contents…. As many folk religious customs indicate, Sūtras were believed to possess protective or healing properties, just owing a copy was supposed to be beneficial, which explains the high demand for cheap printed versions. (Marra 2016: 52)

The main function of *Eshingyō* is to show the sounds of the sutra as exactly and memorably as possible. The analogical inference is not helpful in this regard because it requires additional efforts to achieve a clear understanding, thus, the room for misunderstanding increases.

Furthermore, the Tayama version has two kinds of hiragana characters that appear five times in total.

(Watanabe 2012: 75)

Figure 10   Hiragana in Tayama version

This indicates that it was difficult for people in those days to represent sounds without relying on the already existing writing system, and that some hiragana characters were decipherable even among illiterate people. In any case, the Tayama version was a start to develop into a more elaborate, artistic, and even funny Morioka version.

3.3. Morioka Version

Compared with the Tayama version, the Morioka sutra employs more detailed descriptions. Although in many cases, picture-like characters like kanji develop into more simplified, and thus abstract, characters like kana scripts, the emojis of the Morioka version went in the opposite direction. There may be some reasons for this. The first reason is that emojis had become fixed as a means of communication along with other letters like kanji and kana. They were not alternatives to kanji and kana any more but were recognized as emoji, that is, as an individual way of representation. Second, the increased popularity of the

woodblock printing helped emojis to evolve and made them easy to reproduce. Further, in the course of their development, emojis encountered a divide between letters and pictures, and the emojis in *The Pictorial Heart Sutra* chose to be the latter.

The Morioka version is composed of 266 emojis of 76 kinds, almost the same number as the Tayama version. As with the Tayama version, the Morioka version also contains numerical representations and hiragana, but their number is not significant as shown in Table 4, a list of the most used emojis in order of frequency.

Table 4 Items in Morioka Version [11]

| Item	Category	Number	Pronunciation	Meaning
	(2)	22	mu	six
	(2)	11	ku	nine
	(1)	11	ze	a coin
	(1)	11	fu / bu	Dry baked wheat gluten
	(1)	9	jyu	a tiered box for food
	(1)	9	shiki	a plow
	(1)	8	hara	a belly
	(1)	8	ko	an infant
	(1)	7	mi / mitsu	a winnow
	(1)	7	ta	a rice field
	(1)	7	hannya	a mask of hannya
	(4)	7	kuu	to eat

Half, or six out of twelve emojis in the Morioka version are similar to those in the Tayama version. However, they appear to be more picture like than the latter. The numerical expressions are also different, as demonstrated below.

(Watanabe 2012 : 94-100)

Figure 11 Numbers in Morioka Version

Issai (a die showing one spot, 一賽) appears three times, *shi* (a card representing the number "four" in the *Kurofuda* card game enjoyed in the Tōhoku region, 四) is used six times, *mu* (representing the number six with both hands, 六) is seen 22 times, and *ku* (nine circles, 九) is printed fifteen times in the Morioka version. Except for *ku*, these three representations need more effort than the representations in the Tayama version in Figure 8, where the numerals are represented by the number of simple lines.

Detailed expressions can also be observed in emojis that needs some inference. Figure 12 shows all the examples of this kind in the Morioka sutra.


① gya (4)　② a (1)　③ satsu (1)　④ pi (1)

⑤ maka (1)　⑥ ze (11)　⑦ ri (1)

⑧ keige (2)　⑨ shiu (1)　⑩ jitsu (1)
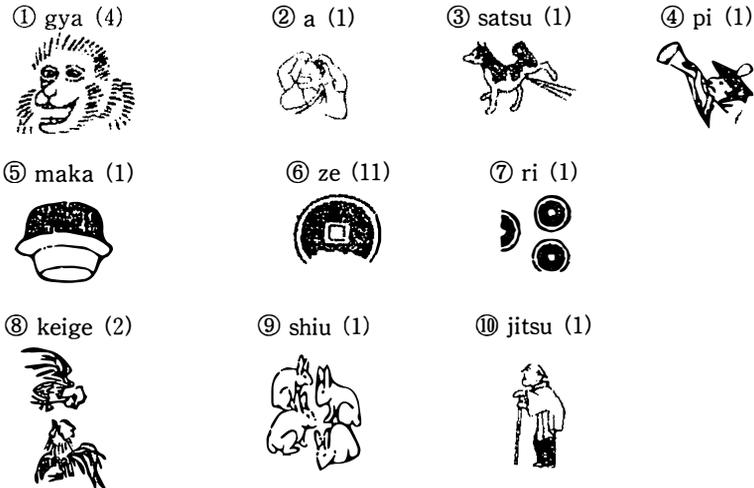
Figure 12　Picture Puzzles in Morioka Version [11]

The bracketed numbers after the pronunciation indicate the number of times they appear in this sutra. The first two emojis ①*gya* and ②*a* show a high similarity with the Tayama version, so they might have been borrowed from that version. ③*satsu* and ④*pi* are onomatopoetic expressions drawn from the actions that emojis describe. Additionally, interesting puzzles are seen in ⑤*maka*, ⑥*ze*, and ⑦*ri*. In ⑤, an image of a rice pot *kama* is represented upside down, which means the syllables of *kama* should be read in reverse as *maka*. ⑥*ze* represents a coin without the lower half. This means that *zeni* (a coin) should be read as *ze* with the latter half of the sound *ni* omitted. A further interesting example is ⑦*ri*, representing the amount of *rishi* (interest on loan), which usually costed two-and-a-half coins. ⑧-⑩ are also need inference because they are composed of more than one words. ⑧*keige* consists of *kei* (chicken) and *ge* (kicking), ⑨*siu* is made up of *shi* (four) and *u* (rabbits), and ⑩ *jitzu* combines the initial sounds of two words, *jii* (old man) and *tsue* (a stick).

Compared with the Tayama version, there is an interesting contrast in the distribution of emojis that require inference. That is, as the number of hiragana decreases, that of emojis that need analogical inference increase. This means that emojis became an alternative way and fixed as a genre of writing, making some puzzle like expressions that needed some inference appear. The tendency for emojis to rely less on already existing characters allowed their unique development.

The fact that there is only one hiragana ん that appears three times in this sutra also confirms this suggestion.

ん (Watanabe 2012: 103)
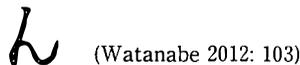
Figure 13 Hiragana in Morioka Version

As above, starting out as a simple description, emojis in *The Pictorial Heart Sutra* developed into an individual genre of writing or texting. This distinctive means of communication can be further analyzed by using phonologic and pragmatic points of view, as shown in the next chapter,

where a linguistic approach to the emojis in *Eshingyō* will be applied.

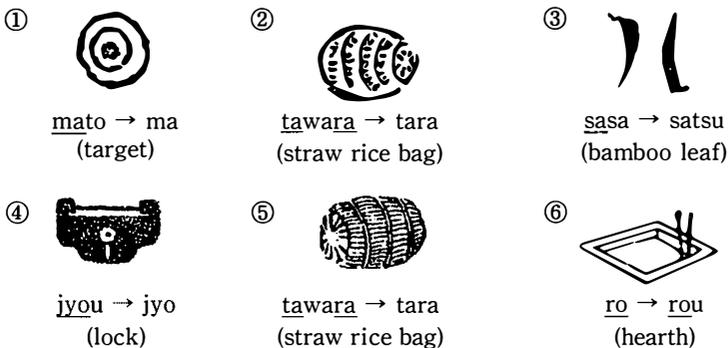## 4. Phonological Pragmatic Approach to *The Pictorial Heart Sutra*

4.1. Phonological Salience and Bathtub Effects

Emojis in *Eshingyō*, the pictorial version of *The Heart Sutra*, were used to indicate how the sutra should be chanted by decoding emojis. Thus, special emphasis was put on the phonological aspect, as Marra (2016) mentions:

> The custom to make pictorial Sūtras, mainly the Heart-Sūtra available to illiterate Buddhist believers, reflects a strong belief in the power of the Sūtras' sound. Rather than trying to explain the contents of the written text, it was seen as a viable first step towards enlightenment to be able to just pronounce the wording of the Sūtra. (Marra 2016: 52-3)

As above, it is believed that just chanting the sutra invites people to attain enlightenment. This means that the sound aspect is especially important for the sutra. Marra (2016) also mentioned that they "are strictly chosen to represent the sound of the Sūtra" (Marra 2016: 52). In that case, how are they chosen? Let us start this section by searching for the answer to this question.

Certain parts of the sounds represented by images are chosen to indicate the original sutra pronunciation. The emojis in *Eshingyō* are depicted based on the sound similarities between the pronunciation of the original sutra and that of the emoji representation. Although some emojis read as they are, others represent only a part of the emoji and eliminate the rest when pronouncing. Initial sounds are likely to be kept as illustrated in Figure 14. The three examples in the upper part are excerpts from the Tayama version, and those in the lower part are from the Morioka.

| ① | mato → ma (target) | ② | tawara → tara (straw rice bag) | ③ | sasa → satsu (bamboo leaf) |
| ④ | jyou → jyo (lock) | ⑤ | tawara → tara (straw rice bag) | ⑥ | ro → rou (hearth) |

Figure 14 Initial Sounds Represented by Emojis[10][11]

Only the underlined parts of each emoji are pronounced. This choice of sounds is made based on the bathtub effect, which Aitchison (2012) defined as follows.

> People remember the beginnings and ends of words better than the middles, as if the word were a person lying in a bathtub, with their head out of the water at one end and their feet out at the other. And, just as in a bathtub the head is further out of the water and more prominent than the feet, so the beginnings of words are, on average, better remembered than the ends.... (Aitchison 2012: 158)

By applying this effect to emojis, further intriguing aspects can be found. The initial syllables of each word are chosen to make 14-① and 14-④. The beginning and ending parts of a word are read in 14-② and 14-⑤, and the latter half is changed or added in 14-③ and 14-⑥. These examples certainly reflect the bathtub effect on the sound representation. Aitchison's suggestion that "the beginnings of words... are better remembered" (Aitchison 2012: 158) is confirmed here.

Metanalysis is another aspect worth focusing on regarding sound representation. Iwasaki (2016) points out this aspect when he discussed the rules of hanjie:

The correct interpretation of hanjie is not directly given. This is because, to create hanjie, a word is divided into some syllables and then reorganized as a different form from the original. In a sense, this is like deciphering. (Iwasaki 2016: 14)

This method can also be applied to *Eshingyō*. In Figure 6, each version divides the original text differently. The Tayama version divides it into four parts, whereas the other two versions divide it into five parts.

(5) a. Tayama version: kan / ji / zai / bosatsu
    b. Morioka and Daikakuji versions: kan / ji / zai / bo / satsu

Both the Tayama and the Morioka versions contain 76 kinds of images, but their combinations are sometimes different. Because of these differences, readers might have enjoyed different combinations of sounds. However, it is interesting that both versions follow the original sentence division and punctuation. In particular, the Tayama version has a period at the end of each chunk, and there are no emojis that go between two sentences. There are also other interesting phonological aspects such as the application of the accent of the Tōhoku dialect to sound representation, as Wanatabe (2012) points out.[12]

Eshingyō is sometimes categorized as hanjimono. However, their purposes are different. The former aims to make people laugh or feel comfortable through puns and riddles, whereas the latter explains how to chant Buddhist teachings to help people to attain enlightenment. In spite of that, examining the general pattern of hanjimono by Iwasaki (2016) summarized as follows can be very helpful to analyze emojis in *Eshingyō*.

(6) Types of Hanjimono by Iwasaki (2016)
    a. Composed of a combination of images to express one word
    b. Puns based on homonymity
    c. Images missing a certain part, indicating that its sound should be eliminated

d. Pictures represented upside down, indicating that its syllables should be read conversely

e. Voiced sound mark and semi-voiced sound mark added to each emoji

f. Personification

g. Combination of many types

h. Certain kinds of emoji equivalent to fixed sounds

<div align="right">(Summarized from Iwasaki (2016: 12-5))</div>

Almost all the rules above can be applied to *The Pictorial Heart Sutra*. (6a) concerns the metanalysis aspects of *Eshingyō* mentioned above. Almost every example shares the feature of (6b) because emojis are based on the similarities of sounds between kanji in the original sutra and the images represented by emojis. (6c) can be seen in the examples in Figure 12-⑥ and 12-⑦ and (6d), in 12-⑤. Also, (6e) can be demonstrated in Figure 15.
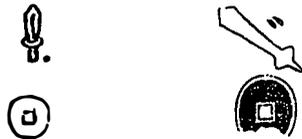

<div align="center">(Watanabe 2012: 68)　　　(Watanabe 2012: 96)</div>

Figure 15　Difference in Representation of Voiced Sound

The Tayama version on the right uses expressions that has similar sounds as alternative ways of representation, such as *ken* for *gen* and *zeni* for *ze*. Meanwhile, the Morioka version on the left uses a voiced sound mark to represent a sound more precisely. Additionally, *zeni* without its lower part means that the latter half of the word is not pronounced as listed in (6c). Although no example of (6f) can be found in *Eshingyō*, (6g) is illustrated in Figure 12-⑩, and (6h) can be proved by the high frequency of certain kinds of emojis observed in Tables 3 and 4.

(6c) and (6d) are worth focusing on because they only appear in the later Morioka version as in Figure 12, which means the Morioka version was affected by a text genre of hanjimono and developed along with that

さかな　　かな　　さな　　さか　なかさ　さがな
sa-ka-na　*ka-na*　*sa-na*　*sa-ka na-ka-sa sa-ga-na*
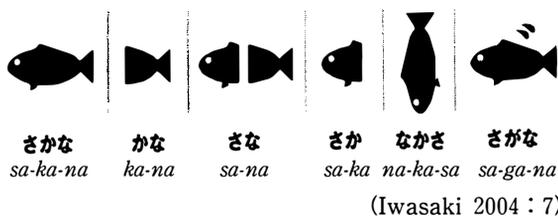
(Iwasaki 2004：7)

Figure 16　How to Read Syllables of Sakana (Fish) in Hanjie

kind of texts. It becomes more obvious when compared to the general pattern of hanjie summarized by Iwasaki (2016). Under the influence of hanjimono, the Morioka sutra began to take on features of picture puzzles more than the Tayama version, causing it to differentiate itself from language.

4.2. Pragmatic Inference Needed for Interpretation

The Pictorial Heart Sutra was devised to tell illiterate people of the time how to pronounce the words of the sutra. As the nature of sutras, recitation is crucial. In other words, the sounds of the text should be remembered and chanted again and again. This means that *Eshingyō* might be a kind of mnemonic devise to remember the sounds of the sutra. Watanabe (2012) mentions this aspect of *Eshingyō* as below.

> *Eshingyō* was created to make the sutra more memorable and inter-pretable by pictorial images of the sound for the people at that time when the literacy rate was low. (Watanabe 2012: 19)

To be remembered, sound representations need to be easily understood and recovered. In other words, they need to be lower cost stimulus with higher effects. This cost-benefit relationship of communication was for-mulated as relevance theory advocated by Sperber & Wilson (1995).

According to Sperber & Wilson (1995), human communication is geared to the maximization of relevance. Relevance theory defines rele-vance as follow.

Relevance is characterized in cost-benefit terms, as a property of inputs to cognitive processes, the benefits being positive cognitive effects (e.g. true contextual implications, warranted strengthenings or revisions of existing assumptions) achieved by processing the input in a context of available assumptions, and the cost the processing effort needed to achieve these effects. (Wilson 2004: 352-53)

This cost-benefit relationship consists of processing efforts and cognitive effects which can be summarized as below.

(7) Two Factors of Determining Degrees of Relevance
    a. Three Kinds of Cognitive Effects
        Case A: combining with the context to yield contextual implications
            B: strengthening existing assumptions
            C: contradicting and eliminating existing assumption (revising existing assumptions)
    b. Three Causes of Processing Efforts
        (a) the form in which information is presented
        (b) logical and linguistic complexity
        (c) the accessibility of the context

(Uchida 2017: 2)

By adjusting the costs and benefits balance attainable from the utterance, optimal interpretation is drawn. Through this process, the range of concept which words communicate is temporarily widened or narrowed. This kind of adjustment is called ad hoc concept construction. Lexical pragmatics developed by relevance theory, one of the leading perspectives of cognitive pragmatics, deals with this aspect of pragmatic process as Hall (2017) puts it as below.

Lexical pragmatics studies the processes by which word meanings are pragmatically modulated in context, resulting in communicated

concepts that are different from the concepts encoded by the words used. (Hall 2017: 85)

From a lexical pragmatic point of view, adequately but not literally communicated meanings illustrated in the following examples can be explained.

(8) a. Mary is a *working mother*. (Wilson 2004: 344)
   b. Holland is flat. (Clark 2013: 248)
   c. Not all *banks* are river banks. (Wilson & Carston 2007: 238)

(8a) is an example of concept narrowing. The phrase "working mother" does not denote a female parent who works but more specifically, a female parent who works outside her home and at the same time, grows up her young children. It is obvious that "flat" in (8b) is not communicated literally because "no surfaces are absolutely flat" (Clark 2013: 249). So here occurs widening of the concept FLAT to be interpreted as FLAT*, meaning not mountainous, for example. However, in the process of ad hoc concept construction, narrowing and broadening sometimes happen at the same time, and on-line process is also made as in (8c). In this particular instance, the concept "banks" at first refers to a wide variety of meanings such as river banks, financial institutions, piggy banks and so on. After this process of widening, the interpretation that "banks" has metalinguistic multi-conceptual meaning of "the word 'banks'" is decided by on-line construction of the concept BANKS*.

For lexical pragmatics, and pragmatics as a whole, the word "concepts" are usually equivalent to the communicated meanings of the word. However, it is possible that not only the concept of words, but also sounds are pragmatically adjusted to bring the intended interpretation of the communicator. "Concepts," as far as they refer to the communicated information in the communication situation, must include visual and audio information as well as contents or meanings. This visual and auditory aspects are apparent when we look at written characters and sound

representations this paper is focusing on. The former is perceived when dealing with written language or utterance written down as a string of characters. The latter, however, is likely to be neglected because they cannot be written precisely without using special phonetic symbols, and thus tend to be excluded from the subject of pragmatics.

From this perspective, however, it is possible that all aspects, including visual and sound ones, of concept construction be combined into systematic study of language. Introducing this ad hoc concept construction, various aspects which any expressions can obtain are explained systematically. In other words, in addition to ad hoc concept construction, ad hoc phonetic construction, ad hoc visual construction should be taken into account.

As we can see in *The Pictorial Heart Sutra*, visual and phonetic extensions are connected with concept construction. It is also possible that ad hoc manipulation based on relevance or const-benefit relationship are made not only concepts but also other aspects of communication. From this observation, next section will answer the questions risen at the beginning of this paper.

4.3. Answers from Phonological Pragmatics

Now answers can be given to the questions of (4) in 3.1. from a phonological pragmatic point of view.

(4) a. Why do the two versions of the same sutra exist?
　　b. Why does the later version have an elaborate rather than simplified description?
　　c. Why do some emojis require inference for interpretation?

We have already answered some of these questions above partly in the course of introduction to *Eshingyō*. However, we can also rethink about the questions from a phonetic pragmatic point of view.

As stated, the development and popularity of woodblock printing made it possible to develop *The Pictorial Heart Sutra* into a more refined

version. In addition, another kind of pictorial texts hanjimono affected it as we saw in 4.1. Along with these social or historical factors, pun-like aspects of emojis are also developed. The Morioka version contains emojis which require more inference than the Tayama version. This can be possible that emojis temporary used to represent sounds were fixed and made known to the people. Wilson & Carston (2007) put this aspect concerning lexical pragmatics enough to allow some variations to appear.

> ...some of these [nonce] pragmatically constructed senses may catch on in the communicative interactions of a few people or a group, and so become regularly and frequently used. In such cases, the pragmatic process of concept construction becomes progressively more routinized, and may ultimately spread through a speech community and stabilize as an extra lexical sense.
>
> (Wilson & Carston 2007: 238)

It is also true to *Eshingyō* that it is "routinized, and ultimately spread through a speech community" (Wilson & Carston 2007: 238) and then gain sense of their own. In this respect, the existence of two versions of *Eshingyō* shows the process through which certain kinds of expressions are created and spread and at last, stabilized. It is, however, not concepts of *Eshingyō* but sounds of the sutra that are communicated. This also means that lexical pragmatic point of view can be applied to phonological aspects of communication.

More spread emojis in *Eshingyō*, more picture-like descriptions appeared. Starting from a simple sketch by unsophisticated lines, it evolved into more elaborate pictorial depiction. It seems that this goes against the process of generalization of writing because usually complicated forms tend to be simplified when stabilized as a common means of communication, like from kanji to kana characters. However, from a pragmatic point of view, it is not difficult to imagine that the more elaborate glyphs are described, the easier illiterate people can understand the pronunciation from the picture images. This idealistic cost-benefit

relationship can explain the development of description. However, in the end, these emojis were not stabilized as an alternative way of communication. As above, representations need to have cost-benefit balance, but these emojis lost the balance in the course of history.

As stated, there are three factors of processing efforts: the form in which information is presented, logical and linguistic complexity and the accessibility of the context as in (7). They can also explain the answer. Firstly, emojis in *Eshingyō* were different from the common writing system at that time, so they were kinds of special way of communicating information. Second, they are logically complex, because sometime inference to solve picture puzzles or riddles are needed. The last point can also be applied. Emojis in the Tōhoku region has developed exclusively within the region and also, after the Meiji restoration, the number of illiterate people decreased thanks to the introduction of new education system, causing them to be obsolete as means of communication and forgotten.

Inferencing imposes time and cost on the recipient. However, based on the pragmatic point of view, less efforts are welcome when processing the stimulus. Emojis need additional inference because they require some efforts for readers to gain more appropriate effects. Stimulus interpreted this way are likely to be remembered because the cost should be rewarded by increased cognitive effects. To function as a mnemonic device, some degrees of efforts are needed to become available as fixed knowledge.

As suggested, pragmatic account of communication is useful even for the phonological descriptions of language. This means that phonological pragmatics can be attempted applying relevance theoretic point of view to the phonological aspect of representation. Given that *Eshingyō* is a kind of pictorial metarepresentation of phonological aspects of the sutra, phonological pragmatics can be a bridge between audio and visual aspects of representation.

5. Conclusion: Phonological Pragmatics as an Approach to Language

It is common that some points of view or methods are chosen to analyze the research subject. They have their own focus. For example, phonetics focuses on the sound, semantics looks at meanings and so on. They individually approach the object of the study from their point of view, yielding numerous groups of studies. It means that to prove the validity of their theoretic standpoint, certain aspects of language tend to be chosen and others ignored. It causes difficulty for barrier crossing cases.

Applying phonological pragmatic approach can be one solution. Borrowing the method of relevance theory, we can extend the object as a whole. From this point of view, we have looked at phonologic and pragmatic or inferential aspects of *The Pictorial Heart Sutra*.

Emojis for illiterate people are now enjoyed by literate people. This is because picture puzzles require efforts to solve, but in return, they can get additional cognitive effects that bring readers the awareness, surprise and bran new ways of looking at all things around them. It can be possible by ad hoc phonological pragmatic manipulation.

Notes
(1) All translations in this paper are mine unless otherwise indicated.
(2) *Ciao* ちゃお. 2018. January 2019 issue. Tokyo: Shogakukan.
(3) These symbols can also be seen in Japanese manga. They are called mampu (comic symbol, 漫符), used to describe emotions of comic characters. For example, ♪ means "feeling happy" (Kouno 2018: 8).
(4) Kanjis 林 and 森 are categorized into *kaiimoji* (compound ideograph, 会意文字) which made up of some parts with individual meanings. Therefore, all examples of (3b) are also kaiimoji.
(5) Marra (2016) refers to the relationship between hanjimono and the sutra as "It were monks from the Tohoku area who adopted Hanjimono to represent the Heart Sutra and thus helped to make it accessible to the illiterate lay people" (Marra 2016: 47). Iwasaki (2016) also categorizes the pictorial sutra into hanjie, or hanjimono.
(6) Sasayaiori 笹屋伊織. n.d. Inner leaflet of its traditional Dorayaki cake.
(7) Kyōto Chūka Hamamura 京都中華ハマムラ. n.d. Accessed December 25,

2018. https://kyoto-chuka-hamamura.owst.jp/.

⑻ "Although Japan generally enjoyed a higher literacy rate than Western countries, it has been pointed out, that there existed a huge knowledge gap between social and economic strata, genders, as well as urban and rural areas. It has been also pointed out, that 'literacy' is hard to define, when it comes to Japanese, as there are 3 writing systems." (Marra 2016: 49)

⑼ Table 2 is adapted from Shiota (2018) as the description below. However, the order of the items in the column is partly changed because of the convenience.

⑽ Items are extracted from Watanabe (2012), especially from commentary section of the Tayama version (Watanabe 2012: 74-92).

⑾ Items are extracted from Watanabe (2012), especially from commentary section of the Morioka version (Watanabe 2012: 102-19).

⑿ Wanatabe (2012) points out that some dialects of the Tōhoku region can be observed in the emoji representation. For example, *shiki* (plow) in the sixth column of Table 4 read as *suki* in common pronunciation of the Japanese language (Watanabe 2012: 21).

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