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**Volume 16**
Ideophones, Mimetics and Expressives
Edited by Kimi Akita and Prashant Pardeshi

# Ideophones, Mimetics and Expressives

*Edited by*

Kimi Akita
Nagoya University

Prashant Pardeshi
National Institute for Japanese Language and Linguistics (NINJAL)

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CHAPTER 10

# The structure of mimetic verbs in child and adult Japanese

Keiko Murasugi
Nanzan University

In this chapter, based on the analysis of Root Infinitive Analogues (Murasugi and Fuji 2011; Murasugi and Nakatani 2013; among others) and the analysis of mimetics (Murasugi 2016, 2017a, b), we present evidence that *-suru* in mimetic verbs is the realization of small *v* in both adult and child Japanese, and argue for the hypothesis that there is no essential discrepancy between mimetic verbs and conventional lexical verbs, as far as syntax and semantics are concerned, and no learnability issue arises in the process of the acquisition of mimetic verbs.

## 1. Introduction

Child Japanese is characterized by the productive innovation of mimetic verbs. At the earliest observable stage, mimetic expressions appear in the bare form, as shown in (1).

(1) a. *Poi* (Sumihare, 1;01)
MIM
[context: throwing something]
b. *Toon* (Sumihare, 1;03)
MIM
[context: throwing a seed of plum to the ground] (Noji 1973–1977)

Later, at around 2, mimetics come to be associated with the light verb *-suru*, as shown in (2).

(2) a. *Mata* ***ton-sita*** *yo* (Sumihare, 2;00)
again MIM-did SFP
'(It) hit (the box) again.'
b. *Kei-tyan* ***an'an-sita*** (Sumihare, 2;02)
Kei-DIM MIM-did
'Kei cried.' (Noji 1973–1977)

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In this chapter, we will analyze the structure of mimetic verbs in Japanese, a typical language with rich mimetic verbs, and discuss the learnability issues. We argue that *-suru* in mimetic verbs is the phonetic realization of small *v* in both adult and child Japanese, and mimetic verbs (mimetic + *-suru*) reflect the onset of the syntactic category of verbs in child Japanese.

## 2. Acquisition of mimetic verbs in Japanese

Japanese-acquiring children produce a lot of mimetics at a very early stage of language acquisition. Instead of conventional lexical verbs (such as *nageru* 'to throw' in (3b)), mimetic expressions (such as *poi* in (3a)) are used at around 18 months of age.

(3) a. *Poi* (Sumihare, 1;07)
MIM
[context: throwing a ball]

b. *Boku booru nagete kaatyan to* (Sumihare, 2;01)
I ball throw mommy with
'I will throw a ball with/to Mother.' (Noji 1973–1977)

Murasugi and Fuji (2011) and Murasugi and Nakatani (2013), among others, based on the longitudinal study of Yuta and the corpus analysis of Sumihare (Noji 1973–1977), argue that mimetic verbs come to be used in a specific order, and there are typically three stages found in the process of the acquisition of mimetic verbs in child Japanese.

(4) Stage I: the bare mimetic (= MIM) form
Stage II: MIM-*ta* (past form)
Stage III: MIM-*suru* (non-past form), MIM-*tyoo* (propositive), MIM-*tyee* (imperative)

At stage I, bare mimetics (e.g., *poi* [context: 'throwing something away'] and *byu byu byu* 'I want to draw a picture') frequently appear in natural context, followed by stage II, where mimetic words, just like stems of verbal elements, come to be associated with *-ta* (past-tense form) or sometimes with *-na* (sentence-final particle (SFP)) (e.g., *pai-ta* 'I want mom to remove the dirt' and *pai-na* 'I want to take off my gown', respectively).

Interestingly enough, as shown in (5), at stage II, a lot of children mark mimetic words with the past-tense form *-ta*.

(5) a. ***Poo syusyupopo*** *ta* (Sumihare, 1;08)
MIM PST
'The steam locomotive puffs along.'



b. *Razio* ***tintinpuu*** *ta* (Sumihare, 1;09)
radio MIM PST
'I heard the time whistle in the radio.' (Noji 1973–1977)

Murasugi and Fuji (2011) and Murasugi and Nakatani (2013), among others, argue that children at stages I and II are actually in the stage of Root Infinitive Analogues (RIAs),[1] and child mimetic verbal elements are used not only for the description of present/past events, but also for the irrealis meaning, which is termed the Modal Reference Effects, a typical semantic property found in RIAs.

After the stage of RIAs, mimetics come to be associated with *-suru* 'to do' as shown in (2), repeated in (6).

(6) a. *Mata* ***ton-sita*** *yo* (2;00)
again MIM-did SFP
'(It) hit (the box) again.'

b. *Kei-tyan* ***an'an-sita*** (2;02)
Kei-DIM MIM-did
'Kei cried.' (Noji 1973–1977)

*Ton* in (6a) and *an'an* in (6b) are both mimetics, and they are followed by *-suru* 'do', thereby creating innovative mimetic verbs.

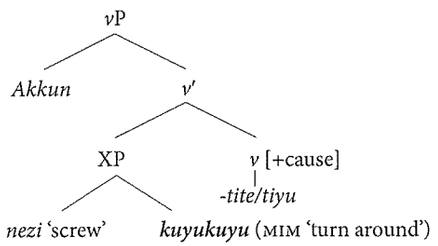
Murasugi and Hashimoto (2004) argue that mimetic verbs found at stage III in language acquisition exemplified in (7) provide direct evidence for the hypothesis of *v*P shell, originally proposed by Larson (1988), the proposal of which hinges on the fact that verbs can be decomposed into a causative part and a remainder whose meaning differs according to the verb in question. Murasugi and Hashimoto (2004) report a longitudinal study of a Japanese-speaking child, Akkun, and argue that the child seems to realize the small *v* as *-tiyu* or *-suru*, *-tita* or *-sita*, and *-tite* or *-site*, meaning 'do', 'did', and 'doing'. They argue that this is the stage where the *v*-VP frame shows up directly. In (7), *kuyukuyu* (*kurukuru*) is a mimetic word describing things turning around, and expresses the meaning that the screw turns around.

(7) Stage III: the analysis of MIM + *-suru* 'to do' in child Japanese
*Akkun nezi* ***kuyukuyu-tite,*** *konoko syaberu* (2;09)
Akkun screw turn.around (MIM)-do this.one talk.NPST
'When Akkun (/I) winds the screw, it will talk.'
(Murasugi and Hashimoto 2004: 8)

1. Root Infinitives are default verb forms which very young children use in the root clauses, where they are not generally grammatical in the target language. They have been widely observed in the early speech of one- to two-year-old children acquiring a number of languages (Wexler 1994; Rizzi 1994; among others).

Children start producing mimetic verbs quite productively at stage III, and children seem to be using *-suru* to describe an activity that causes a certain event or change of state. Thus, *-tite/tiyu*, just like their adult counterparts *-site/suru*, can assign the agent role, as English *do* does. Further, the rest of the utterance, *nezi kuyukuyu*, seems to describe an event or a change of state. Thus, *-tiyu/tita/tite* in child Japanese or *-suru* 'to do' in mimetic verbs seems to correspond exactly to small *v*. Thus, Murasugi and Hashimoto (2004) propose that the structure in (8) is for (7).

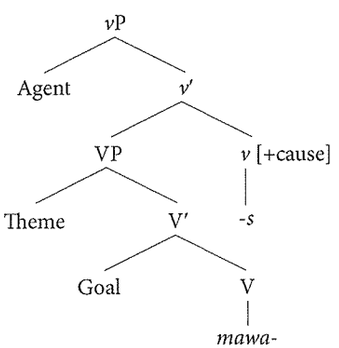
(8)




(Murasugi and Hashimoto 2004: 7)

In (8), *-tite* describes an activity that causes a screw to turn around, and Akkun is the agent. The complement of the small *v* is indicated not as VP but as XP because it lacks a verb. Thus, Murasugi and Hashimoto's (2004) analysis provides direct evidence for the *v*P shell analysis for agentive verbs. Children, at one point, start using *-suru* as a realization of [+cause] small *v* to express agentivity, and they form agentive transitives based on their grammar at that time. According to this analysis, since *kurukuru-suru* is not a conventional lexical verb in Japanese, children have to learn the adult conventional lexical verb form *mawa-s-u* 'to turn around' at a later stage, as given below.

(9) a.

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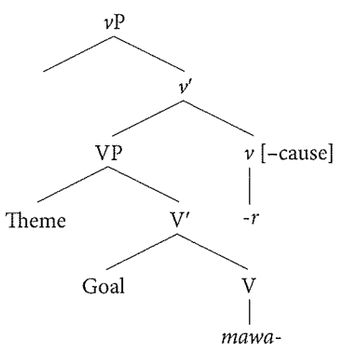



(Murasugi and Hashimoto 2004: 8–9)



In other words, at stage III, very young children realize the small *v* as *-suru* phonetically, instead of *-s* or *-r* in the target adult grammar. (See Murasugi and Hashimoto (2004) for a detailed discussion of the *v*P shell analysis of Japanese transitive/intransitive alternations.)

## 3. The structure of mimetic verbs in adult Japanese

Given Murasugi and Hashimoto's (2004) analysis briefly summarized above, very young children should know the basic structure of *v*-VP after the stage of RIAs, and the structure would be something like the one given in (8), which is the onset of the *v*-VP structure. The proposal suggests that the structure of verbal phrase is acquired in a top-down fashion: *v* is lexically realized as *-suru* 'to do', and it is only at a later stage that the syntactic status of the complement of *v* is specified.

Here, an important learnability question arises. If the syntactic structure of child mimetic verbs can be schematized as in (8), then, when is the structure delearned, and how do children attain the adult grammar given in (9)? In this section, we argue that the structure of mimetic verbs in (8) that Murasugi and Hashimoto (2004) propose does not hold only for child mimetic verbs, but it also holds for adult mimetic verbs in Japanese. We will argue that the structure of mimetic verbs in adult Japanese is also basically schematized as shown in (8).

As is well known, there has been an important debate between Tsujimura (2005) and Kageyama (2007) regarding the syntactic status of mimetic verbs in Japanese. According to Tsujimura (2005: 147), "a specific interpretation of a mimetic words' multiple 'meaning' is determined only when the global information throughout the sentence is taken into consideration". In contrast, Kageyama (2007: 36) states that if we succeed in grasping the precise meanings of mimetic words themselves, "it is entirely feasible to assimilate the semantics of mimetic verbs into standard, compositional semantics without invoking the notion of construction. Mimetic words determine the syntactic constructions they appear in, and not the other way around". According to Kageyama (2007), the meaning of mimetic verbs can be divided into seven types, and the meaning of mimetic verbs is fully represented by a mechanism making use of Lexical Conceptual Structure (LCS), and the syntactic and semantic behavior of mimetic words can be properly assimilated to the standard framework of lexical semantics. That is, the syntactic realization of their arguments in adult grammar is fully predicted by general principles of linking.

The evidence for the argument that mimetic verbs behave just like the conventional lexical verbs can be supported by the accentual patterns. There are words characterized by ambiguity in stress placement in languages, e.g., the contrast between deSERT (verb) and DESert (noun) in English. As Kageyama (2007) points

out, mimetic verbs and mimetic adverbs form a natural class, and they are pronounced as *GAragara*, while mimetic adjectives and mimetic nouns create another natural class, and they are pronounced as *gaRAGARA*. The capital letter indicates high pitch.

(10) a. verbal:
*Nodo ga* ***GAragara-suru.***
throat NOM MIM-do
'My throat feels irritated.'
b. adverbial:
*Iwa ga* ***GAragara*** *to kuzureta.*
boulders NOM MIM QUOT came.down
'Large boulders came.'
c. adjectival:
*Eigakan wa* ***gaRAGARA*** *da.*
theater TOP MIM be
'The theater is almost empty.'
d. nominal:
*Akatyan ni* ***gaRAGARA*** *o ageta.*
baby DAT MIM ACC gave
'I gave the baby a rattle.' (Kageyama 2007: 31)

Akita and Tsujimura (2016: 134) also note that mimetic words can exercise different syntactic functions when put in phrases, ranging over nouns, adjectives, adverbs, and verbs, as exemplified by *hirahira* (representing 'fluttering' or 'flapping state'). Observe (11).

(11) a. ***Hirahira*** *ga kininaru* (nominal)
MIM NOM be.conscious
'He is conscious about the flapping object.'
b. ***Hirahira*** *no/na sukaato* (adjectival)
MIM COP skirt
'fluttering (flare) skirt'.
c. *Sakura no hanabira ga* ***hirahira*** *to tiru* (adverbial)
cherry GEN petal NOM MIM QUOT fall
'Cherry petals fall in a fluttering manner.
d. *Hata ga* ***hirahira-suru*** (verbal)
flag NOM MIM-do
'A flag flutters.' (Akita and Tsujimura 2016: 134)



The previous studies introduced above clearly indicate that there are not only mimetic verbs but also mimetic nouns, adjectives, and adverbs in Japanese, and such rich productivity of mimetic expressions features the grammar of the language.

Now, let us go back to the original question. What does the structure of mimetic verbs look like? Kageyama (2005) argues that there are in fact three types of *-suru*, which are all categorized as V, in Japanese: a main verb, a light verb, and *-suru* in mimetic verbs. The difference resides in the mechanism making use of LCS: the main verb *-suru* has LCS content, just like conventional lexical verbs, while the light verb's LCS is null (e.g., *kokyuu-suru* 'to breathe'). The mimetic verb is a composite predicate, and seven LCS templates are associated with the verb *-suru*. The LCS templates are conflated with the LCS content of the mimetic base to derive the meaning of the mimetic verb.

Suppose that mimetic words provide the core meaning of overall syntactic elements and play an important role in the syntactic constructions. Then, the mimetic part of a mimetic verb, which is the head of a mimetic phrase in Kageyama's (2007) analysis, should also be part of such nominal, adverbial, and adjectival elements illustrated in (11). Furthermore, we would expect that the meanings of mimetic words are linked with the arguments that the mimetic verbs take. In fact, Yoshinaga (2018), in line with Kageyama (2007), for instance, argues that *iraira-suru* 'to be irritated' is an instance of unergative verb, while *zukizuki-suru* 'to throb' is an instance of unaccusative verbs.

Note here, however, that it is not always the case that the mimetic word and the arguments that the mimetic verb takes make a one-to-one correspondence. Murasugi (2017a, b) points out, in line with Tsujimura (2014), that there are mimetic verbs whose meaning can be three-way ambiguous, i.e., mimetic words that can form transitive, unaccusative, and unergative verbs.

(12) a. *Tama o* ***gorogoro-suru***[2]
ball ACC roll (MIM)-do.NPST
'(I) roll the ball(s).' → transitive
b. *Onaka ga* ***gorogoro-suru***
stomach NOM growl (MIM)-do.NPST
'My stomach is growling.' → unaccusative
c. *Inu ga* ***gorogoro-suru***
dog NOM roll.over (MIM)-do.NPST
'The dog is rolling over.' → unergative (Murasugi 2017b: 143)

2. (12a) is not necessarily an expression used in the child-directed speech (see Kageyama 2007). *Booru o gorogoro-suru* '(I) roll the ball(s)' can be used in the context where someone is using balls to give massage to his/her back.

This descriptive finding suggests that the meaning of the mimetic *gorogoro*, which is three-way ambiguous, cannot be considered to be the sole factor to determine the arguments that the verb might take. Rather, as shown in (13), mimetic words can be derivationally selected by other elements, which determine the overall syntactic status of the category containing the mimetics.

(13) a. ***kirakira-tyan*** (MIM + DIM) 'Ms. Kirakira' (nominal)
b. ***tyara-i*** (MIM + *(k)i*) 'flashy' (adjectival)
c. ***hirahira*** *na* (MIM + COP) 'fluttering' = (11b) (adjectival)
d. ***hirahira*** *to* (MIM + QUOT) 'in a fluttering manner' = (11c) (adverbial)
e. ***hirahira-suru*** (MIM + 'do') 'to flutter' = (11d) (verbal)

If a diminutive element *-tyan* follows the mimetic word *kirakira*, it forms a nominal element as in (13a). If *-(k)i* or *na* follows a mimetic word, an adjective is derived as in (13b) and (13c). If *to* (or *ni*) follows a mimetic form, an adverb is derived as in (13d), and if *-suru* follows a mimetic word, it makes a mimetic verb as shown in (13e). The analysis suggests that mimetics are derivationally selected stem in Japanese.

Note here that the mimetic in a mimetic verb cannot be a full NP, just like the stem of adjectives exemplified in (13b) and (13c) cannot be, and hence, it cannot be the complement of the Verb *suru* (contra the syntactic structure that Kageyama (2007) proposes). As shown in (14), the mimetic word *mogumogu* in the mimetic verb *mogumogu-suru* cannot be Case-marked. That is, *mogumogu o suru*, is out, if the mimetic verb is meant to be 'to bite'.

(14) *Yoku* ***mogumogu*** *(*o) suru*
well MIM (ACC) do
'*Lit.* Do a lot of biting.' ('to bite a lot', typically found in motherese)

The only possible interpretation of *mogumogu o suru* is that someone plays a game of "*mogumogu*" where "*mogumogu*" refers to a specific game, for example. The accusative Case normally cannot be assigned to the mimetic word *mogumogu*. This would provide a piece of evidence for the claim that the mimetic word cannot be a complement of the verb, nor a full NP. In fact, this point crucially distinguishes mimetic verbs from such verbs containing a borrowed word as *zyanpu (o) suru* 'to jump' and a light verb construction such as *kokyuu (o) suru* 'to breathe', where the accusative Case marker is optional.

The discussion so far naturally leads us to conjecture that both insights, i.e., Tsujimura's insight that mimetic words may have multiple meanings, and Kageyama's insight that there are three types of *-suru* in Japanese and the meaning of mimetic verbs is represented by a mechanism making use of LCS, are both



basically correct. However, unlike their proposals, our analysis indicates that the mimetic word is not the complement of the verb *-suru*, and the meaning of a mimetic word is not the sole factor that determines the syntactic construction it appears in. The notion of construction is not necessary either, and the interpretation of multiple meanings of a mimetic word is not determined when the global information throughout the sentence is taken into consideration. Rather, the mimetic can be (morphological-) derivationally selected by a syntactic head such as *-suru*, *-(k)i*, *na*, *to*, and *ni*, which determines the overall syntactic status of the category containing the mimetic word.

Given the argument so far, then, we have to say that mimetic verbs cannot be essentially different from conventional lexical verbs. In fact, just as the meaning of mimetic verbs can be ambiguous (cf. (12)), such conventional verbs as *toziru* 'to shut' and *warau* 'to laugh', for example, can be ambiguous, and can also be either transitive or intransitive.

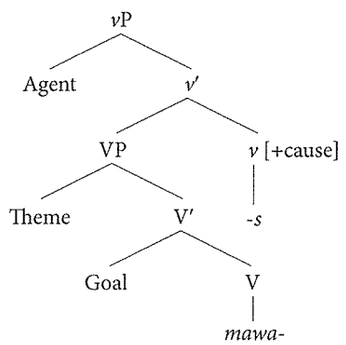
(15) a. *Doa o toziru*
door ACC shut
'(Someone) shuts the door.'
b. *Doa ga toziru*
door NOM shut
'The door shuts.'

(16) a. *Sore o warau*
that ACC laugh.at
'(Someone) laughs at that.'
b. *Piero ga warau*
crown NOM laugh
'The crown laughs.'
c. *Hiza ga warau*
knee NOM laugh
'My knees tremble.'

The stem of *toziru* and that of *warau* given in (15) and (16), respectively, are the large V in the *v*-VP framework. The stem constitutes the core meaning of the verbs, and the combination of the stem and the small *v* (which is phonetically realized as null) determines the syntactic construction it appears in.

Here, let us recall the syntactic structure of transitive and intransitive verbs in Japanese schematized in (9), repeated in (17). These are the structures that Murasugi and Hashimoto (2004) propose for the transitive/intransitive alternations in Japanese-type verbs under the *v*P-shell hypothesis.

(17) a.

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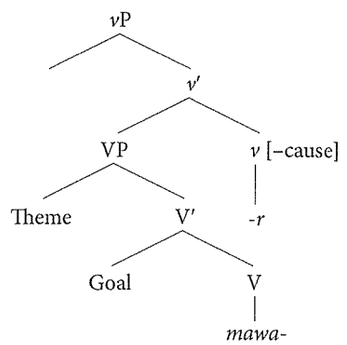
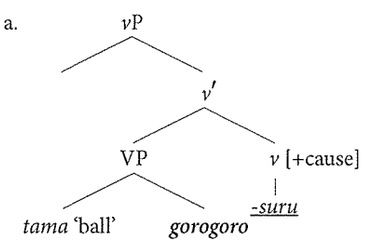



If we assume the *v*P-shell structure for Japanese conventional lexical verbs with Murasugi and Hashimoto's (2004) line of argument, then the structure of mimetic verbs would also consist of a mimetic word (or stem) and the small *v* (which is phonetically realized as *-suru*). The core meaning of the mimetic verbs would be determined by the mimetic word, and the mimetic word and the small *v* would determine the syntactic constructions that the mimetic word appears in.

Thus, the structure of adult mimetic verbs and conventional lexical verbs are captured in a parallel way. In this sense, the claim is parallel with Kageyama (2007). However, the structure here is crucially different from the one proposed in Kageyama (2007) in that *-suru* in mimetic verb is not V but *v*, and the parallelism resides in the role of small *v*. Murasugi (2017b) suggests that adult mimetic verbs which can be transitive, unaccusative, and unergative shown in (12a), (12b), and (12c) have such structures as those schematized in (18a), (18b), and (18c), respectively.

(18) a.

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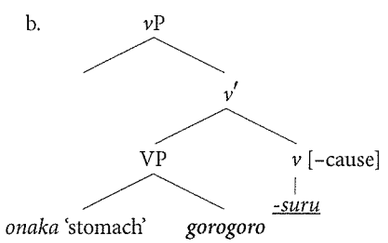




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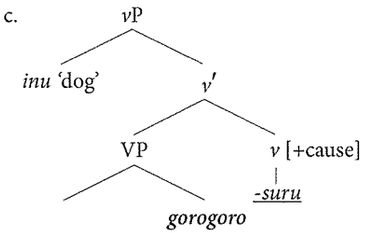



(Murasugi 2017b: 143)

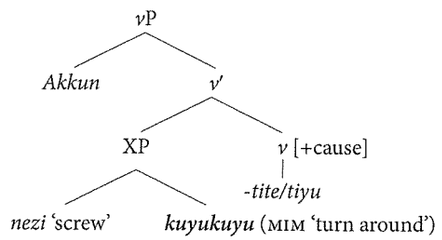
The structure of adult mimetic verbs is, then, essentially identical with that of adult transitive/intransitive verbs, and there is no discrepancy found between them. The only difference resides in the fact that the former has a mimetic word as the root of the mimetic verb, while the latter has large V as the root of the conventional verb. *-Suru* 'to do' in mimetic verbs is the phonetic realization of small *v*, and can be three-way ambiguous depending on the features associated with the small *v*, i.e., [+cause] or [−cause], and the subjects, internal or external.[3]

Kageyama's insight that mimetic words play an important role in determining the possible argument structure of mimetic verbs that they appear in, should be maintained, because not all the mimetic verbs are three-way ambiguous. For instance, *kirakira-suru* 'to be shiny' can be unaccusative or unergative, but can never be transitive. Although our analysis maintains the essential insight of Kageyama's, our analysis is different from it with respect to the syntactic structure of mimetic verbs. The core meaning of mimetic verbs is determined by mimetic words (just like V in *v*-VP framework), and the mimetic words and the small *v*, not the mimetic words themselves, determine the syntactic constructions that the mimetic verbs appear in.

If so, then an interesting implication for the learnability of mimetic verbs is obtained. That is, the structure of adult mimetic verbs is essentially identical to the structure of child mimetic verbs given in (8), repeated below in (19), although child mimetic words do not get a specific syntactic category yet at this stage. Very young children start with the specification of the feature of transitivity in verb acquisition and one of the first complements of *v* is the mimetic in Japanese, and mimetics help children bootstrap the argument structure of verbs.

3. Note here that, interestingly, there are considerable variations in the phonetic realization of small *v* in Japanese dialects: *sun* in Okinawa-Naha, *tuku* in Akita, Chiba, and Gifu, *iu* in Ehime and Hiroshima, and so on (Takeda 2017). Thanks to Kimi Akita who asked me if the analysis presented here would apply to such verbs as *iu* and *tuku* in *zyuuzyuu-iu* 'to be burned' and *gira-tuku* 'to glitter'. The answer to the question is positive. Just like *-suru*, these verbs can be used both as V and *v*. In other words, those verbs which can be used as *v* would be able to select the mimetic as the root.

(19)




Thus, child mimetic verbs, adult mimetic verbs, and adult conventional lexical verbs share the basic syntactic structure, and no learnability issue arises here. Very young children, after the RIA stage, naturally construct a *v*-VP structure, which is basically identical to the structure of adult mimetic verbs and that of conventional lexical verbs. Our analysis, then, would suggest that the lexical semantic properties upon which the meaning and argument structure of a mimetic verb is built is not essentially different from those of a conventional lexical verb, for example, as proposed in Kageyama (2007). The argument presented here implies, more generally, that child grammar and adult grammar are continuous, thereby supporting the strong continuity hypothesis of language acquisition.

## 4. Conclusion

In this chapter, based on the analysis of RIAs (Murasugi and Fuji 2011; Murasugi and Nakatani 2013; among others) and the analysis of mimetics (Murasugi 2016, 2017a, b), we presented evidence that *-suru* in mimetic verbs is the realization of small *v* in both adult and child Japanese. The analysis presented here suggests that the acquisition of the syntax of mimetics proceeds in parallel with that of conventional verbs, and mimetics are the ones that bootstrap the argument structure of verbs. The thesis implies that the lexical semantic properties upon which the meaning and the argument structure of a mimetic verb is built is not different from those of a conventional lexical verb, for example, as proposed in Kageyama (2007). Then, as far as syntax and semantics are concerned, there is no discrepancy between mimetic verbs and conventional lexical verbs, and no learnability issue arises in the process of the acquisition of mimetic verbs.



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CHAPTER 11

# Iconicity in L2 Japanese speakers' multi-modal language use

## Mimetics and co-speech gesture in relation to L1 and Japanese proficiency

Noriko Iwasaki[i,ii] and Keiko Yoshioka[iii]
[i]SOAS University of London / [ii]Nanzan University / [iii]Leiden University

Japanese mimetics are often reported to be difficult for speakers of Japanese as a second/foreign language (L2). Recent work examining L2 Japanese learners' comprehension/perception (e.g., Naito-Billen 2013; Nakaishi et al. 2014) found that understanding mimetics is indeed challenging even for advanced learners, but less is known about L2 speakers' spontaneous use of mimetics and gesture, which are known to co-occur (Kita 1997). We examined the use of mimetics and co-speech gesture by L2 Japanese speakers whose first language (L1) is either English or Korean, focusing on narrations of video clips. The aim of this study was to gain a deeper understanding of the role of L2 Japanese speakers' L1 and their L2 proficiency in the use of mimetics (highly iconic phonomimes and less iconic phenomimes) and co-speech gesture. Our analyses show that differences in the availability of mimetics in a speaker's L1 affect the use of L2 mimetics and gesture in a subtle manner. Regardless of L1, L2 Japanese speakers produced iconic co-speech gestures accompanying mimetics, especially for phonomimes. While the frequency of mimetics use does not correlate with the level of proficiency, the pattern of mimetic-gesture synchronization seems to reflect L2 proficiency. The results are discussed in terms of the two modes of representations involved in language use (Kita 1997; Dingemanse and Akita 2017).

## 1. Introduction

Japanese has a large inventory of mimetics that are used on a daily basis across different registers (e.g., conversation, newspapers, magazines, advertisements, novels), as attested by many scholars (Schourup 1993; Kakehi et al. 1996: xi; Ivanova 2006). Mimetics constitute an integral part of adult spoken and written Japanese; they are therefore of vital importance for students of Japanese as L2 to learn (Makino

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and Tsutsui 1986: 50; Tsujimura 2005a; Akimoto 2007; Mikami 2007). However, mimetics are often reported to be difficult for L2 Japanese speakers (e.g., Zhang 1989; Hamano 1998; Yamaguchi 2003). Though many earlier reports are anecdotal, some recent empirical studies have also shown that L2 learners have difficulty in comprehending and producing mimetics (e.g., Nakaishi et al. 2011; Naito-Billen 2013; Nakaishi et al. 2014).

The reported difficulty in acquiring mimetics is at odds with the generally agreed non-arbitrary (canonically iconic) relationship between mimetic words' forms and their meanings. Mimetics may imitate the sounds they refer to (phonomimes), or symbolically represent aspects of non-auditory meaning such as manners/states or emotions (phenomimes; psychomimes). Such iconic form-meaning relationships likely make learning mimetics easier than non-mimetic words, whose form-meaning relationships are non-iconic.[1]

Previous studies examined whether or not the non-arbitrary form-meaning relationships indeed facilitate learning Japanese mimetics among children learning Japanese as L1 and among adult learners of Japanese as L2. As reviewed below, the results of previous studies are rather puzzling. Though the form-meaning relationship is found to be facilitative for *linking* the word forms and their meanings, it does not necessarily make *learning* and *using* mimetics easier for L2 Japanese speakers. The current study aims to help to elucidate the puzzle.

A potential key to the puzzle may be the fundamental difference between L1 and L2 Japanese learners; that is, the L2 speakers' L1 is expected to interact with their L2 acquisition and use. Whether or not a learner's L1 has a rich repertoire of mimetics and whether their L1 mimetics share some characteristics with Japanese mimetics may make a difference in their use of the latter. The current study explores L2 Japanese speakers' spontaneous use of mimetics in speaking, focusing on its relation to their L1 (English or Korean) and their Japanese proficiency. Though we do not examine L2 acquisition of mimetics per se, the relation to proficiency levels may be suggestive of L2 developmental stages in learning mimetics, which have been understudied. Moreover, because spontaneous use of mimetics is characteristically linked to co-speech iconic gestures (Kita 1997), it is important to examine L2 speakers' production of co-speech gestures as well.

Below, before presenting the current study, we first review previous studies related to sound symbolism (systematic relationship between sound and meaning), and studies of L1 and L2 learning of Japanese mimetics. In the latter, we pay close attention to two types of mimetics differing in their degree of iconicity: highly iconic phonomimes (referring to sound) and somewhat less iconic phenomimes (referring

1. Some studies suggest that the relationship between non-mimetic words' forms and meanings are not entirely arbitrary (see Nygaard et al. 2009, for example).



to manner/state). We then survey studies in three related areas: studies comparing Japanese mimetics with English sound-symbolic words; studies comparing Japanese and Korean mimetics; and studies related to gesture (the co-production of gesture and mimetics; L2 speakers' gesture). In the current chapter, we use the expression "sound-mimetic words" to refer to mimetic equivalents in English, including both onomatopoeia and other words containing sound symbolism, and the term "mimetics" for their Japanese and Korean counterparts.

## 2. Previous studies

### 2.1 Sound-symbolism and mimetics in L1 Japanese acquisition

The sound-meaning relation represented in Japanese mimetics was found to facilitate the learning of verb meaning among children learning Japanese as L1 (Imai et al. 2008). Based on Hamano's (1998) analysis of sound symbolism in Japanese mimetics, Imai et al. created 6 novel verbs (e.g., *batobato suru*, *tokutoku suru*) which include systematic sound-meaning relations such as voiced initial consonants (e.g., /b/) associated with heavy forceful movement, /t/ expressing hitting, and reduplication indicating repetition. Video clips depicting walking differing in fast-slow and heavy-light dimensions were created to match the novel mimetic verbs. Adult L1 English and L1 Japanese speakers evaluated the video clips, and their ratings confirmed that the novel mimetic verbs matched the walking actions depicted in the video clips. It was found that, when provided with an aural presentation of target words and shown two alternative video clips, both 2-year and 3-year-old L1 Japanese children were able to select video clips that matched the mimetic action verb, performing the task better with the target verbs with proposed sound symbolic relationships than with non-sound-symbolic verbs (e.g., *nekeru*, *yatiru*). Kantartzis et al. (2011) showed that, among L1 English-speaking 3-year olds, the same sound-meaning relationship also facilitated the learning of novel word meanings (e.g., *doing batobato*, *doing tokutoku*) as compared to non-sound-symbolic novel verbs (e.g., *bretting*, *truffing*) In fact, mimetics are found to form the basis of infants' and toddlers' language acquisition (see Murasugi 2017, this volume).

With regard to mimetics differing in degree of iconicity, it is reported that phonomimes are used first by children. In longitudinal studies, L1 Japanese children tend to produce creative, innovative phonomimes early on at the age of 1 or 2 years (e.g., *tantantan* produced by 1-year old, Okubo 1967: 55), and only later do they produce conventional, lexicalized mimetic words, including phenomimes in other semantic/sensual domains (e.g., *hurahura suru* 'unsteadily', *sappari suru*

'refreshing' produced by a 2 or 3-year old, reported by Okubo 1967: 51–59; Osaka 1999: 159–161. See also Ishiguro 1993). Children's production of phonomimes before phenomimes was also confirmed by Herlofsky (1998). Herlofsky's data were elicited from 60 L1 Japanese children aged 3 to 6 years old. He specifically examined the production of phonomimes referring to two sound-emitting events (the crowing of a rooster; the ringing of an alarm clock) and that of phenomimes referring to two state/manner descriptions (the brightness of the sun; the fluffiness of clouds) when the children talked about events shown in a picture book. Most children used phonomimes across different age groups, but fewer, older, children used phenomimes. Only 5 children (4 years or older) used conventional mimetics for brightness, and only 3 children (5 or 6 years old) used mimetics for fluffiness.

## 2.2 Sound symbolism and Japanese mimetics in L2 learning

Sound symbolism is reported to help L2 learners to associate unknown words and their meanings (e.g., Deconinck et al. 2014). Lockwood et al. (2016) showed that sound symbolism facilitates the learning of Japanese mimetics among L1 Dutch speakers in a lab setting. In their experiment, Dutch speakers who had no experience with Japanese could learn the pairings of Japanese mimetics and meanings better when provided with their real meanings (than with false opposite meanings).

Iwasaki et al. (2007a, b) also showed that L1 English speakers with no knowledge of Japanese were capable of guessing some aspects of the meanings of Japanese mimetics. Likewise, Naito-Billen (2013) found that L1 English speakers with no knowledge of Japanese could match novel mimetics containing sound symbolism (palatalized consonants associated with uncontrolledness, e.g., *pasyupasyu*, *nyoren-yore*) and pictures depicting the state of uncontrolledness. Their judgments were similar to those of L1 Japanese speakers. In relation to types of mimetics differing in degree of iconicity, Iwasaki et al. (2007a) Japanese phonomimes and their meaning, specifically words referring to the quality of voice and manner of laughing (e.g., roaring, giggling). This study found that English speakers' judgments examined of the meaning of phonomimes were more similar to L1 Japanese speakers' judgments than their judgments of the meaning of phenomimes referring to manner of walking.

Despite the reported facilitative role of sound symbolism in form-meaning mapping among Dutch and English speakers with no knowledge of Japanese, studies show that L2 learners have difficulty in comprehending and producing Japanese mimetics. Nakaishi and her colleagues experimentally examined both production (Nakaishi et al. 2011) and comprehension (Nakaishi et al. 2014) of Japanese mimetics among L2 Japanese learners with Mandarin Chinese as their L1. They found that



their experimental tasks were difficult even for advanced learners.[2] Naito-Billen (2013) reported that matching novel mimetic words containing palatalized consonants with uncontrolledness was challenging for intermediate-level learners of Japanese. Naito-Billen speculates that L2 Japanese learners may be inclined to use their knowledge of non-mimetic Japanese words' arbitrary form-meaning relations, which may distract them from intuitions based on sound symbolism. In addition, research on spontaneous production in speaking found that L2 Japanese speakers whose L1 is English or Korean rarely produce mimetics until they are at least mid/upper intermediate-level (Sakurai 2003; Iwasaki 2008, 2017a). Yoshioka (2017) also found that a L1 Dutch-speaking learner of L2 Japanese used mimetics only in the later stages of a longitudinal study, and used more phonomimes than phenomimes.

Part of the contradiction in previous findings may stem from the different tasks used in the studies. Many of the studies showing the facilitative role of iconicity in L1 and L2 word learning (Imai et al. 2008; Kantartzis et al. 2011; Naito-Billen 2013; Lockwood et al. 2016) used a forced-choice alternative task paradigm, with only two options given. Monaghan et al. (2012) pointed out that such tasks involve the learning of a category distinction, rather than the learning of individual words. In their experiments, sound symbolism (i.e. plosives such as /k/, /p/ and front vowels such as /i/, /ei/ associated with angular shapes; continuants such as /n/, /l/ and back vowels such as /ɔ:/, /ɑ:/ associated with rounded shapes) facilitated their participants' word learning only when the target shape was presented with a foil of the contrasting shape category rather than a foil of the same shape category. Such word learning associated with a category distinction would not suffice for Japanese speakers to use mimetics as they need to know individual words that match their intended meanings.

It is also important to consider the influence of L2 learners' L1 when considering mimetics. The habitual use of such words in a speakers' L1 has likely 'trained' them to lexicalize the concepts they are conveying – as proposed in the 'thinking-for-speaking' hypothesis (Slobin 1991). With regard to the description of motion events, based on Talmy's typological framework (Talmy 2000), English speakers are known to typically use manner verbs (e.g., *jump up*) while Japanese speakers often use (mimetic) adverbs (e.g., *pyon to agaru* 'ascend in a manner of *pyon*'), verbal compounds (e.g., *tobi-agaru* 'jump-ascend'), and adverbial adjuncts (e.g., *tonde agaru* 'ascended, jumping') to habitually encode manner of motion. Korean lexicalization is considered to have the same pattern as Japanese (see Choi and Lantolf 2008). In other

2. Nakaishi et al. (2011) had 10 L1 Chinese participants who had passed Level 1 (the highest level) of the Japanese Language Proficiency Test, and Nakaishi et al. (2014) had participants enrolled in university Japanese courses at intermediate and advanced level.

words, while English speakers habitually encode manner of motion in the main verb, both Japanese and Korean speakers often encode manner in (mimetic) adverbs or adjuncts. It has also been found that L2 speakers' L1 affects their construal of motion events (see Jarvis and Pavlenko 2008; Pavelenko 2014 for review of such studies). Pavelenko (2014: 166) states that "cross-linguistic variation in motion and event encoding affects all aspects of the speech planning and execution process, extending Slobin's (1996) notion of 'thinking for speaking' to *thinking, seeing, and gesturing for speaking about motion events*" (emphasis by Pavelenko).

It is now acknowledged that mimetics play an important role in motion event descriptions in some languages (Ibarretxe-Antuñano 2005). Though English has a limited repertoire of sound-symbolic words and does not possess an independent category of such words (e.g., Sugahara 2010), Korean has a greater repertoire of mimetics than Japanese (e.g., Lee 2001). If L2 Japanese speakers' L1 has an established category of mimetics, and if those mimetics play similar roles in lexicalization as in Japanese, then their habitual use of L1 mimetics may facilitate their use of Japanese mimetics.

## 2.3 Mimetics in English and in Korean

Identifying sound-symbolic words in English is not straightforward (Tamori and Schourup 1999), but in addition to onomatopoeic words referring to sounds, there are other words where sound symbolism is recognized (e.g., word-final voiceless plosive associated with noise or action ending abruptly, e.g., *clap*, *click*, *snap*, *smack*). However, some similarities are found in sound symbolism in Japanese mimetics and English sound-symbolic words (Tamori and Schourup 1999).

Korean is known to have a large number of mimetics (e.g., Lee 2001), but they are reported to contain language-specific sound symbolism that diverges from commonly observed sound symbolism, as discussed by Kim (1977). For example, the vowel /i/, which is typically associated with smallness in other languages, is associated with largeness in Korean. However, recent studies have found that Korean speakers do utilize cross-linguistically common sound symbolism as well. For instance, Shinohara and Kawahara (2016) showed that when presented with novel words, Korean, English and Japanese speakers associate the vowel /i/ with smallness and /a/, /u/, /o/ with larger sizes. With regard to the production of mimetics, Iwasaki et al. (2013) found that Korean speakers produced mimetics similar to those produced by Japanese speakers in response to the same auditory and visual stimuli in terms of types of consonants and vowels. Garrigues (1995) also reports similarities between Japanese and Korean mimetics. Hence, taken together, both English speakers and Korean speakers may utilize similar sound symbolism that is also shared with Japanese, at least to a certain extent.



However, it is clear that the grammatical properties of mimetics diverge between Korean and English. While Korean mimetics are often used as adverbs, similarly to Japanese (Lee 2001), English sound-symbolic words are rarely used as adverbs and are predominantly used as verbs (Schourup 1993; Tamori and Schourup 1999; Sugahara 2010). Examples (1a)–(1c) below show the use of phonomimes referring to the sound that water makes in Japanese (1a), Korean (1b) and English (1c). Examples (2a)–(2c) exemplify the use of phenomimes referring to the manner in which gold shines brightly in Japanese (2a), Korean (2b) and English (2c). Below, the mimetics are shown in bold fonts and simply glossed as MIM without translation.

(1) a. *Ogawa o* ***zabuzabu*** *to watat-ta.*
stream ACC MIM QUOT cross-PST
'[I] crossed the stream with splash.'

b. *Sinay lul* ***chelpekchelpek kenne-ss-ta***
stream ACC MIM cross-PST-DECL
'[I] crossed the stream with splash.'

c. *I* ***splashed*** *across a stream.*

(2) a. *Kin ga* ***kirakira*** *hikar-u.*
gold NOM MIM shine-NPST

b. *Kum i* ***panccakpanccak*** *pichna-n-ta.*
gold NOM MIM shine-NPST

c. *The gold* ***glitters.***

In (1a), (2a), (1b) and (2b), both phonomimes and phenomimes are used as adverbs in Japanese and Korean, while the mimetic counterparts in English are used as verbs in (1c) and (2c). Mimetics can be used as other grammatical categories, but their use as adverbs is common in Japanese and Korean, while their use as verbs is common in English.

Based on the differences between English and Korean above, it is plausible that L1 Korean speakers who have mimetics similar to Japanese in their L1 may have been trained to use mimetics (especially as adverbs), while L1 English speakers have not. This may also lead to a prediction that L1 Korean speakers use more mimetics than English speakers. However, this prediction did not hold when Iwasaki (2008, 2017a) examined a corpus of Japanese oral proficiency interviews (OPI)[3] with 30 L1 English speakers and 30 L1 Korean speakers. English speakers were found to use more mimetics in the corpus than Korean speakers. However, topics in these

3. The corpus (KY Corpus) was created by Osamu Kamada and Hiroyuki Yamauchi by compiling interviews assessing oral proficiency, utilizing the protocol of the American Council on Teaching of Foreign Languages (ACTFL).

interviews varied according to the proficiency levels of the interviewees, leading to an inconclusive result.

Furthermore, when Iwasaki (2017b) analyzed a subset of the current study's data, motion event descriptions, L1 Korean speakers used more mimetics than L1 English speakers, but this was mostly due to their use of mimetics referring to a 'rolling' event. Korean speakers did not necessarily use more mimetics in other contexts. It was concluded that in addition to a combination of a rich repertoire of mimetics in L1 and typologically similar lexicalization patterns for motion event descriptions, manner-salient events likely lead to frequent use of mimetics. In order to better understand this speculative conclusion, more contexts need to be analyzed.

When it comes to the semantics of mimetics, English appears to be rich in phonomimes but it has fewer phenomimes (see Tamori and Schourup 1999). On the other hand, Korean has far more phenomimes than phonomimes (Park 2015: 188), as is the case for Japanese. It is plausible that English speakers use more phonomimes than Korean speakers because they may consider mimetics to be primarily sound-related. It is also possible that as they do not possess a recognizable category of mimetics in their L1, they learn mimetics from scratch and that the learning process resembles that of L1 children learning mimetics, starting with phonomimes. Yoshioka's (2017) data from a single Dutch learner of Japanese supports this view. Though Iwasaki (2008) reported that English speakers used slightly more phonomimes than Korean speakers, the topics in the interviews were not targeted to elicit descriptions of sound-emitting events. A study utilizing stimuli including the description of sounds is needed to understand L2 speakers' use of phonomimes and phenomimes in relation to their L1 and to their L2 Japanese proficiency.

## 2.4 Mimetics and gesture

Thus far, we have only discussed oral production. However, language use is inherently multi-modal. Below, we first discuss how speech, mimetics, and gesture are integrated in language use. We then describe three patterns of mimetic-gesture synchronization, which will be utilized in the current study's analysis.

### 2.4.1 *Co-speech gesture and mimetics*

The type of gesture that we examine in this study is the co-speech iconic gesture ('gesture' hereafter), which often expresses an object or an event. These gestures, often involving hand and arm movements, are semantically and temporally synchronized with speech and jointly express meaning, reflecting the integrated nature of these two modalities (e.g., McNeill 1992; Kendon 2004). This view is supported by various empirical studies (e.g., Kita and Özyürek 2003; Beattie and Schovelton 2006; Kelly et al. 2010).



Gestures serve different communicative functions. They can emphasize the speaker's communicative intention by conveying redundant or complementary information in a visual manner (Goldin-Meadow 2003). For example, speakers can rotate their fingers or arms while saying 'rolling', emphasizing the verb meaning by using an additional modality. Gesture can also disambiguate information, e.g., by manually demonstrating and situating entities in the space in front of the speaker (McNeill 1992). Speakers also resort to gesture to support the information represented in verbal communication (see Rowbotham et al. 2012, on communicating different aspects of pain). This integrated nature of speech and gesture is observed in both L1 and L2 speech (e.g., Gullberg 1998; Stam and McCafferty 2008; Gullberg et al. 2010).

In order to successfully synchronize the two modes of expression, the timing of the production of a gesture may be manipulated (mostly unconsciously). Within a gesture unit (i.e., from the beginning of a hand movement until it comes back to the resting position), there are considered to be three major phases. These are 'preparation', 'stroke' and 'recovery' (Kendon 2004, 112). In addition, a 'stroke' may be followed by 'post-stroke hold' (Kita 1993). These different phases may be manipulated to synchronize with speech to express the desired integrated imagery. For instance, a hand may be sustained in mid-air as if to wait for the corresponding speech to be made (i.e., preparation with a possible pre-stroke hold). At other times, a hand may be kept in the same position after the stroke until the corresponding imagery is described in speech (i.e., post-stroke hold, e.g., McNeill 1992; Kendon 2004). In the current study, we focus on the synchronization between mimetics and the accompanying gesture.

It was Kita (1997) who first pointed out the co-production of mimetics and gesture. He found that mimetic expressions were accompanied by gesture strokes (i.e. the meaningful phase of a gesture which tends to be most forcefully performed) more often than verbs (94% vs. 40%). Kita distinguished between two different dimensions of semantic representation in language use: the analytic dimension and the affecto-imagistic dimension. He argued that the former is represented by ordinary words, while the latter is represented by mimetics and gesture. He supports this claim with his findings that mimetics are almost always accompanied by gesture strokes.

The co-production of mimetics and gesture has been further investigated by Dingemanse (2013), who examined conversation data in Siwu, an African language with a large repertoire of mimetics (typically called ideophones in studies on African languages). He reports a lower rate (38%) of gesture accompaniment for ideophones. Given that Kita's data were narratives, Dingemanse's findings suggest a possible influence of data type on the rate of speech and gesture co-production.

Whether mimetics tend to be accompanied by gestures may depend on the type. For instance, Son (2010) compared the rate of gesture accompaniment for

phonomimes and phenomimes using a Japanese television corpus. He found that phonomimes were accompanied by gestures more frequently (60%) than phenomimes (12%). He explains the results via the notion of 'mimeticity' originally put forth by Tamori and Schourup (1999). Son measured the degree of mimeticity based on three criteria: whether or not 1) the mimetic expresses a sound, 2) its form is unconventional, and 3) the quotative marker *to* is obligatory (Son 2010: 138–139). He argues that the higher rate of gesture accompaniment among phonomimes is due to their higher degree of 'mimeticity'.

On the other hand, Dingemanse and Akita (2017) found the opposite trend, with phenomimes more likely to be accompanied by gestures than phonomimes (71.48% vs. 53.62%).[4] However, this finding was not fully discussed, as the study focused more on the extent to which the accompaniment of gesture was a predictor of the morphosyntactic integration of mimetics. Dingemanse and Akita argue that less grammatically integrated mimetics (e.g., quotative mimetics with a quotative marker *to*) are more expressive and likely to be accompanied by gesture in L1 Japanese than mimetics in other morphosyntactic contexts. The degree of gestural accompaniment was explained by adopting two notions of representation, 'description' and 'depiction'. Similar to Kita's notion of analytical dimension, 'description' is a discrete system represented by ordinary non-mimetic words, whereas 'depiction' is an iconic depictive system represented by mimetics. The authors argue that mimetics with a higher degree of morphosyntactic independence are likely to be associated with expressive features (such as gesture) in depicting imagery.

In sum, the previous findings on mimetics and gesture suggest the following points that are pertinent to the current study's research questions and interpretation of the results. First, gestures tend to accompany mimetic expressions more frequently than verbs, reflecting the tight coupling of mimetics and gesture. Secondly, the types of mimetics, i.e. phonomimes vs. phenomimes, may influence the frequency of gesture accompaniment. Thirdly, the type of discourse, i.e. narratives vs. conversations, may influence the frequency of mimetic-gesture coupling.

### 2.4.2 *Mimetic-Gesture Synchronization Patterns*

With respect to mimetic-gesture synchronization, Kita (1997) maintains that mimetics are mostly accompanied by a stroke phase. Son (2010) provided two criteria to identify gestures: (1) the gesture begins almost simultaneously with mimetics, and (2) the gesture can be distinguished from the one made beforehand and afterwards. While the examples are provided, explanations are focused mostly on the hand movements. Thus these two studies did not clarify the details of the gestural accompaniment in terms of the unit or phases of gesture.

4. Information about the rates was shared in a personal communication with the authors.



However, we argue that three possible types can be distinguished with regard to the pattern of co-occurrence of mimetic expressions and gesture. In the first type, the gesture stroke co-occurs only with the main part of the mimetic that expresses the core meaning, which we call the 'stem', as in (3) and (4) from the current study's data.

(3) *Ame mo [zaazaa]*[5] *hut-te, hut-te imasu* (E02 L1 English IM, Clip 3)[6]
rain also MIM fall-GER fall-GER is
G
'The rain is falling with manner/sound of <u>zaazaa</u> (a strong force)'
G: left hand open palm moving from the shoulder, downward and up, and then retracted before the verb is uttered

(4) *Ano sorede miti o [guruguru]* (K02 Korean IM, Clip 1)
and then road ACC MIM
G
'And then rotating on the road'
G: both hands in front of the body make circular movement from the wrist, hands facing each other

In (3), the mimetic *zaazaa* is used by an L1 English speaker as an adverb expressing the sound of rainfall. The accompanying gesture expressing the vertical movement of the rainfall only overlaps with the mimetic stem, *zaazaa*. In (4), the mimetic *guruguru* (manner of spinning/rotating) is used by an L1 Korean speaker as if it is the main verb. The accompanying gesture again only overlaps with the mimetic stem.

In the second type of synchronization, the stroke phase of the gesture extends to grammatical elements such as the light verb *suru*, which makes it a mimetic verb, and the quotative marker *to*, which is typically used for adverbial mimetics. In (5), the gesture stroke not only overlaps with the stem but also with the light verb *suru* 'do'.

(5) *Terebi ga taore-te ano [pikapika si-te-ta]* (E03 AL Clip 4)
television NOM fall-GER uhm MIM do-GER-PST
G
'The television fell and, uhm (it was) flashing on and off'
G: right hand lifted in front of the face with palm facing left side, with relaxed fingers closing and opening repeatedly.

5. [ ] shows the part that the gesture stroke co-occurs with. The underlining shows the co-occurrence with the post stroke hold. G indicates where the gesture starts.

6. The source of the data is indicated by the participant ID, his/her proficiency level, and the video clip the participant is describing. See Section 4.

In the third type of synchronization, the post-stroke hold overlaps with grammatical elements and the rest of the clause that is semantically related to the mimetic. According to Kendon (2004), the stroke and post-stroke hold phases form the nucleus of the gesture, carrying its meaning. In (6), the quotative *to* and the rest of the clause are accompanied by a post-stroke hold.

(6) ... *ano* *[kabe]* *ni* ***[paaQ*** *to* *butukaru* *n* *des-u]* (K14 KM Clip 2)[7]
uhm wall to MIM G QUOT hit NMLZ COP-NPST

'(the cat) hit the wall with a manner of paaQ (quick motion)'
G: Accompanying *kabe* 'wall', the left hand moves down vertically as if to trace the wall. Then, accompanying the mimetic word, the left hand (with the palm facing left) moves toward the location where the hand moved vertically in the previous gesture accompanying *kabe*. The hand is held in the same position until the end of the clause.

These three types are different in terms of how the gesture is integrated with the expressed meaning. In the first type, the meaning of the gesture is limited to the lexical semantics of the mimetic. In the second type, the meaning of the gesture includes the grammatical element, the conjugated *suru* 'do', which expresses tense/aspect. In the third case, the meaning expressed by the nucleus (i.e., stroke and post-stroke hold) goes beyond a mimetic and includes other elements (sometimes the rest of the clause). Given that the production of the gesture nucleus is motivated by imagery, the long post-stroke hold reflects the integration of the mimetic expression with the description of the scene as one event.

The distinction of the three synchronization patterns is important, as previous studies on L2 gestures suggest L2 speakers' proficiency as well as L1 affects how they use gesture in several ways, including the rate of gesture, the category of the gesture produced, the function the gesture plays, and speech-gesture synchronization patterns (e.g., Gullberg 1998; Yoshioka 2005; Brown 2015; Stam 2015; but see Nagpal et al. 2011). Relevant to the present study is the finding that L2 speakers' speech-gesture synchronization patterns are influenced by their L1 (Yoshioka and Kellerman 2006; Brown and Gullberg 2008; Choi and Lantolf 2008; Brown 2015; Stam 2015), but become more target-like as L2 learners' proficiency develops (Özyürek 2002; Stam 2015). For instance, Stam (2015) examined the synchronization patterns by a L2 speaker whose L1 (Spanish) is typologically different from her L2 (English). Her speech-gesture synchronization patterns became more target-like as her proficiency developed.

7. Following Hamano (1998), the moraic nasal is romanized as N and the first half of the geminate as Q.



Given that mimetics are not prevalent in all languages, only limited research on the co-production of mimetics and gesture in L2 has been conducted so far. Of relevance is the longitudinal study by Yoshioka (2017) of mimetic-gesture coupling in the speech of a Dutch learner of Japanese. Like English, Dutch does not have a recognized category of mimetics. The results showed that the learner's production of mimetics was frequently accompanied by gestures as in the previous studies of L1 Japanese speakers. In addition, the co-production of mimetics and gesture appeared after the speaker's proficiency level reached the mid/upper intermediate level (as measured by the Japanese Proficiency Test). However, because the study only focused on whether or not gesture strokes co-occurred with mimetic words, detailed patterns of co-occurrence between the two modes of expression were not investigated.

In this study, we investigate L2 Japanese speakers' use of mimetics and mimetic-gesture synchronization patterns, both in relation to their L1 and their Japanese proficiency.

## 3. Current study: Research questions

We examined the narratives recounted by L1 English and L1 Korean speakers with Japanese as L2 in order to better understand how such speakers use different types of mimetics and produce gestures, and how their production is related to their L1 and Japanese language proficiency.

We have two sets of research questions, one related to the use of mimetics, and the other related to gestures accompanying the use of mimetics. With regard to the use of mimetics, we aim to answer the following two questions:

> RQ1: When speaking Japanese as an L2, how often do L1 English and L1 Korean speakers use mimetics (phonomimes and phenomimes)?
> RQ2: Is L2 Japanese speakers' use of mimetics (phonomimes and phenomimes) related to their Japanese proficiency?

If familiarity with the use of mimetics in their L1 plays a role, Korean speakers are predicted to use more mimetics across different contexts. Furthermore, considering Iwasaki's (2008) and Yoshioka's (2017) findings, English speakers may use more phonomimes, either because phonomimes are well established as onomatopoetic words in English, or because they are using mimetics without prior 'training'. If their process of learning mimetics resembles L1 Japanese children's acquisition of mimetics, then lower proficiency speakers are expected to use more phonomimes. Moreover, the relationship between L2 speakers' Japanese proficiency and frequency of mimetic use has only been examined by utilizing oral proficiency

interview data (e.g., Iwasaki 2017a), and has not yet been examined by the use of stimuli that aim to elicit mimetics.

As for the production of gestures, we aim to answer the following two questions:

> RQ3: When speaking Japanese as L2, how often do L1 English and L1 Korean speakers produce gestures accompanying mimetics?
> RQ4: Is the co-production of mimetics and gesture by L2 Japanese speakers' related to their Japanese proficiency?

Regarding the frequency of mimetic-gesture co-production, we speculate that as in L1, mimetics are more likely than verbs to be accompanied by gestures in both groups of L2 Japanese speakers. In other words, we predict that mimetics will show a tighter coupling with gesture than verbs because mimetics and gesture possibly belong to the same modes of communication (i.e. the affect-imagistic mode, depiction) in L2, similarly to L1. As for the possibility of crosslinguistic influence, it is plausible that L1 Korean speakers, with their rich repertoire of mimetics, may have already been conditioned to co-produce mimetics and gesture, unlike their L1 English counterparts.

To determine the role of proficiency, we examine the synchronization patterns among the L2 speakers at different proficiency levels. Due to the lack of baseline data from the L2 speakers' L1 or the target L1 data, we will limit our analysis to the effect of proficiency within the L2 data. It is plausible that if the speaker's proficiency is low, a gesture stroke will be likely to co-occur only with the mimetics due to the high processing load involved. The integration of the gesture nucleus (i.e. 'stroke' and 'post-stroke hold') with the other elements of an utterance will more likely be observed among L2 speakers with higher proficiency.

## 4. Method

### 4.1 Participants

Thirty-eight L2 Japanese speakers originally participated in our study (14 English speakers in London and 24 Korean speakers in Seoul), but data from two participants (an English speaker born in Japan who spent her childhood there, and a Korean speaker whose OPI did not elicit sufficient data to determine the level) were later excluded. Participation was voluntary and the participants received modest monetary compensation. The 13 English-speaking participants consisted of 7 women and 6 men, aged from 19 to 33 (average age of 21.5 years). The 23 Korean-speaking participants consisted of 15 women and 8 men, aged from 22 to 27 (average age of 24.7 years).



L2 Japanese speakers' oral proficiency was assessed by OPI conducted by the first author (a certified OPI tester at the time of the data collection) and officially agreed ratings were obtained through ACTFL Language Testing International (LTI).[8] As shown in Table 1, among the 13 L1 English speakers were 10 Intermediate-level (1 High, 5 Mid, 4 Low) and 3 Advanced-level (2 Mid and 1 Low) speakers of Japanese. The 23 Korean speakers consisted of 1 Novice-High level speaker, 11 Intermediate-level (3 High, 7 Mid, and 1 Low) speakers, 10 Advanced-level (3 High, 5 Mid, and 2 Low) speakers and 1 Superior-level speaker of Japanese. Novice-High, Advanced-High and Superior speakers' data were excluded from the analyses designed to answer RQ1 (the relative frequency of mimetics among English and Korean speakers). However, they were examined for RQ2. This is because the Korean speakers' wider range of proficiency levels helps us explore the effect of different levels of proficiency on their spontaneous use of mimetics.

**Table 1.** Oral proficiency levels of participants

| L2 Japanese proficiency (OPI Ratings) | | L1 English speakers | L1 Korean speakers |
|---|---|---|---|
| Novice | High (NH) | – | 1 |
| Intermediate | Low (IL) | 4 | 1 (1) |
| | Mid (IM) | 5 | 7 (7) |
| | High (IH) | 1 | 3 (2) |
| Advanced | Low (AL) | 1 | 3 (1) |
| | Mid (AM) | 2 | 4 (2) |
| | High (AH) | – | 3 |
| Superior | (S) | – | 1 |

For a closer examination of gesture, we examined all 13 English speakers' and 13 Korean speakers' data. The 13 Korean speakers were randomly selected from those in the same proficiency range (therefore excluding Novice-High, Advanced-High and Superior speakers) as English speakers. Though the proficiency range is identical for both groups, Korean speakers at intermediate levels are more proficient than English speakers in terms of their sub-levels. Table 1 shows the participants' proficiency levels. The numbers in parentheses in the Korean speakers' column show the number of speakers chosen for gesture analyses.

The English speakers had studied Japanese from 1 to 10 years (average of 4.5 years) and the Korean speakers from 9 months to 10 years (average of 4.9 years). One of the English speakers spent 1 year studying in Japan and another spent 2 years working there. Four of the Korean speakers spent 6-8 months in Japan, two

8. LTI has sent the OPI data to other certified testers and the ratings agreed were deemed official ratings.

spent 1 year, and three spent 3 years there (mostly to study the language while also working). The rest of the participants had only travelled to Japan for a short period. English speakers spent an average of 13 months in Japan, while Korean speakers spent an average of 11 months there. All the Korean students had studied English as a foreign language, and the average length of study was 9.3 years.

### 4.2 Stimuli

The participants were shown 4 video clips and asked to provide narration without any time limit. Two clips, 41 seconds each, were extracted and edited from the Canary Row cartoon (also known as Loony Tunes), which is often utilized in gesture research (e.g., Kita and Özyürek 2003). In Clip 1, Sylvester the cat climbs up the inside of a drainpipe to catch Tweety-bird (who is looking out of a window above), but Tweety throws a bowling ball down the pipe that Sylvester swallows, causing him to slide down and exit the pipe. He then rolls down a slope and enters a bowling alley, striking the bowling pins. Clip 2 contains two short episodes. In one, Sylvester stands on one end of a seesaw and throws a heavy weight onto the other end, allowing him to shoot into the air and catch Tweety. The weight, however, falls on him and he is crushed. In the other episode, Sylvester plans to catch Tweety by swinging by rope from one building to another, but instead he crashes into a wall. Both clips have sound-emitting sub-events that that potentially elicit phonomimes (e.g., hitting bowling pins, flying up in the air, and crashing into a wall).

The other two clips were 10-second videos of disaster scenes (a hurricane and an earthquake), edited from YouTube video clips. In the hurricane video (Clip 3), strong winds are blowing, with a palm tree being battered and debris flying. In the earthquake video (Clip 4), an office is shown, with desks and shelves moving, objects falling and pieces of papers flying around. Sound-emitting sub-events included the sound of wind and objects moving and falling down.[9]

### 4.3 Data collection procedure

Korean speakers' data were collected at two universities in Seoul, and English speakers' data were collected at a university in London. After the OPI was conducted, the participants watched the 4 short video clips shown on a computer screen with ear phones and then narrated what they saw in Japanese to a native-speaker

9. If the participants took the protagonists' perspectives, some of the sub-events could have elicited psychomimes to express their emotions, but no psychomimes were used.



interlocutor, a female Japanese speaker in her mid-20s, who had not seen the video clips.[10] The participants were instructed to relate the events to the interlocutor. They each described all video clips in one of four counter-balanced orders. The interlocutor asked clarification questions if the descriptions were too brief. Many speakers were given this opportunity to elaborate, regardless of their L1. In the analysis, the initial description is distinguished from subsequent elaboration. The participants' narratives were all video-recorded.

### 4.4 Method of analysis

For the analysis, all the narratives were transcribed and each use of mimetics was identified and categorized into phonomimes, phenomimes, or mimetics that appear to refer to both sound and manner (or ambiguously either). Examples (7a)–(7b) below illustrate instances of mimetics that ambiguously refer to both or either.

(7) a. *nekosan no atama ni **batyaaN** to* (L1 English, AM, Clip 2)
cat GEN head LOC MIM QUOT
'(The weight fell and hit) the cat's head with the sound/manner of batyaan)'

b. *kabe to **buu** to si-te* (L1 Korean , IM, Clip 2)
wall with MIM QUOT do-GER
'(Sylvester) crashed into a wall with the noise of buu'

In (7a) the speaker was unable to use an adequate verb (e.g., *atar-u* 'hit'), and instead continued, *tootyaku zya nakute, sonna kanzi desu ne* 'not arrival, but it's like that'.[11] In essence, he referred to (the sound/manner of) a hitting action by the use of mimetics (with a gesture). In (7b) the speaker used the sound of crashing to refer to the action of crashing. The two authors, both native speakers of Japanese, independently classified the types of mimetics; the interrater reliability was 95.1%. Where the initial classification of mimetics differed, the raters discussed the relevant token to reach agreement. Frequency of mimetic use was tallied considering both type and token frequency. For instance, if a given mimetic was used 3 times by the same speaker, it was tallied 3 times for token frequency but only once for type frequency.

10. The interlocutor was present in the room when the participant watched the video clips, but she could not see the computer screen or hear the sounds.

11. An English expression '(it) landed on his head' might have led him to retrieve the expression *tootyaku* 'arrive'.

To analyze the production of gesture, we first identified gestures whose nucleus (i.e., stroke alone or with stroke-hold) overlapped with the production of mimetics. While Son (2010) only included gestures different from the gestures that occurred right before and after the target gesture, we did not adopt such restrictions. This is because speakers often produce similar gestures before or after the target gestures, as shown in Dingemanse and Akita (2017).

Similar utterances including mimetics or verbs from the four target events (Clips 1 to 4) were selected and coded using ELAN (an annotation tool). The proportions of mimetics and of verbs accompanied by iconic gesture strokes were computed following Kita's (1997) analysis. Patterns of co-occurrence with mimetic expressions were also examined. The two authors independently coded the presence/absence of gesture accompaniment for mimetics and verbs. The inter-rater reliability for mimetics was 100% and 93.8% for L1 English and L1 Korean groups, respectively, while for verbs, it was 86.24% and 89.1% respectively. The instances of differences between the two raters were discussed to reach agreement.

## 5. Use of mimetics

### 5.1 RQ1: When speaking Japanese as L2, how often do L1 English and L1 Korean speakers use mimetics?

The 13 English speakers used a total of 52 tokens and 36 types of mimetics, with a mean of 4.0 tokens and 2.8 types respectively. Excluding 1 Korean participant's data,[12] the 17 Korean speakers of the same proficiency range as English speakers used a total of 84 tokens and 30 types, with a mean of 4.9 tokens and 1.7 types, respectively. Thus Korean speakers used fewer types than English speakers but more tokens, indicating that Korean speakers tended to use a smaller number of mimetics repeatedly across participants.

Among Korean speakers, the most often used mimetic was *zuQ to* and lengthened *zuuQ to* 'continuously, all the way'. This mimetic accounted for 21 tokens (by 8 speakers), followed by *guruguru* 'rotating/spinning' with 12 tokens (by 6 speakers), *gorogoro* 'rolling' with 7 tokens (4 speakers), *doNdoN* 'rapidly, briskly' with 7 tokens (3 speakers), and *metyakutya* 'messy' with 6 tokens (4 speakers). Among English speakers, only *zaazaa* 'heavy rain fall' (2 tokens) was used by 2 different speakers,

12. Data from one of the Korean participants were excluded because, of the 29 tokens of mimetics used, 26 were instances of the same mimetic *paaQ*, which may cause possible skewing effects. No other L1 English or L1 Korean participants relied on use of one mimetic to a similar extent.



and all other mimetics used multiple times (5 tokens of *zuQ to*, 4 tokens of *dooN*, 4 tokens of *pikapika*, 3 tokens of *dooN*) were each produced by a single speaker.

If we consider only initial descriptions before any subsequent elaboration, the mean token frequency is much higher among Korean speakers (3.5) than English speakers (1.9), suggesting that Korean speakers were inclined to use mimetics without requests for clarification. Table 2 shows the token frequencies of English and Korean speakers' mimetics in their initial descriptions and elaborations.

**Table 2.** Token means of English and Korean speakers' use of Japanese mimetics

| | | Phonomimes | Phenomimes | Both | Total | Means |
|---|---|---|---|---|---|---|
| L1 English | Initial | 8 | 13 | 4 | 25 | 1.9 |
| (N = 13) | Elaboration | 11 | 10 | 6 | 27 | 2.1 |
| | Total | 19 | 23 | 10 | 52 | 4.0 |
| L1 Korean | Initial | 2 | 49 | 8 | 59 | 3.5 |
| (N = 17) | Elaboration | 0 | 23 | 2 | 25 | 1.4 |
| | Total | 2 | 72 | 10 | 84 | 4.9 |

Table 2 also reveals that Korean speakers produced fewer phonomimes (2.3%; 2/84) than phenomimes or 'both', while English speakers produced phonomimes (36.54%; 19/52) much more often than Korean speakers. As predicted, it was English speakers who willingly used phonomimes. The 2 tokens (2 types) of phonomimes by Korean speakers were produced by one Advanced-Mid speaker; they were *aaa* (cry of Tarzan) and *gotoN*. The 19 tokens (14 types) of English speakers' phonomimes were produced by 4 speakers. They included both innovative (*uuuu* (cry of Tarzan), *gagaga*) and conventional phonomimes (*zaazaa*, *dooN*, *baaN*).

### 5.2 RQ2: Is L2 use of mimetics related to Japanese proficiency?

RQ2 considers whether English and Korean speakers' frequencies of mimetic use was related to their Japanese proficiency in such a way that higher proficiency speakers used more mimetics. For this, we included the Korean speakers at the lowest and highest Japanese proficiency levels.

To answer this question, we computed the token and type means for each proficiency level in each L1 group, though the number of participants of some sub-levels is very small and the frequency of mimetic use for each level is not representative. Nevertheless, we opted for this presentation showing each sublevel rather than collapsing the participants for major categories in order to explore potential patterns. Figures 1 and 2 illustrate the frequencies of mimetic usage by proficiency levels among English and Korean speakers.

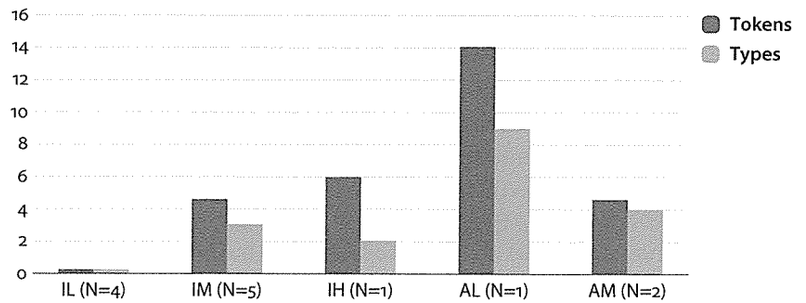


**Figure 1.** L1 English speakers' Japanese oral proficiency and use of mimetics

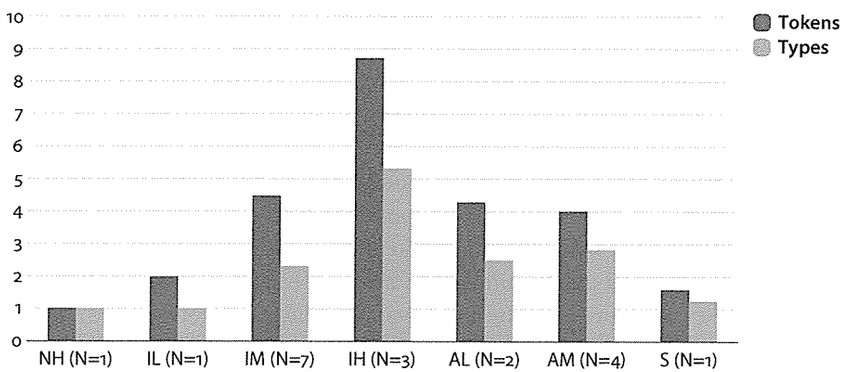


**Figure 2.** L1 Korean speakers' Japanese oral proficiency and use of mimetics

First, it is evident that beginners (Novice-High or Intermediate-Low) rarely used mimetics, confirming earlier reports (e.g., Iwasaki 2017a; Yoshioka 2017). However, importantly, it is also clear that higher proficiency did not necessarily lead to more frequent use of mimetics.

The relation between English speakers' use of phonomimes and their proficiency levels may shed further light on the reason why they use more phonomimes than Korean speakers. If English speakers' acquisition of mimetics in Japanese follows the sequence of phonomimes before phenomimes, similar to L1 Japanese children's acquisition patterns, then we expect lower proficiency English speakers to use more phonomimes.

Of the 4 lowest proficiency speakers (Intermediate-Low), one speaker (E01) used one mimetic, as seen in (8), which was classified as 'both' for the same reason as Example (7b) above.



(8) *Utigawa no kabe o **dun...*** (E01 L1 English IL, Clip 2)
inside GEN wall ACC MIM
'Onto the wall, thud ...'

This speaker used an innovative word *duN* (or possibly an English word or sound effect) by which she appeared to be referring to the crash. None of the other Intermediate-Low speakers used mimetics.

The speakers who were Intermediate-Mid or above, shown in Table 3, used both phonomimes and phenomimes, and there is no apparent preference based on their proficiency. Table 4 shows the mimetics used.

**Table 3.** Types of mimetics used by L1 English speakers and Japanese proficiency

| ID | Level | Tokens | Types | Phonomimes | Phenomimes | Both |
|---|---|---|---|---|---|---|
| E02 | IM | 2 | 1 | 2 | | |
| E04 | IM | 0 | 0 | | | |
| E09 | IM | 9 | 6 | 2 | 4 | 3 |
| E10 | IM | 6 | 6 | 4 | | 2 |
| E11 | IM | 5 | 3 | 4 | | 1 |
| E06 | IH | 6 | 2 | | 6 | |
| E03 | AL | 14 | 9 | 3 | 11 | |
| E05 | AM | 7 | 6 | 2 | 2 | 3 |
| E13 | AM | 2 | 2 | 2 | | |

**Table 4.** Phonomimes used by L1 English speakers and Japanese proficiency

| ID | Level | Phonomimes | Phonomimes used |
|---|---|---|---|
| E02 | IM | 2 | *paN* (or pang), *zaazaa* |
| E04 | IM | | |
| E09 | IM | 2 | *pooN, boN* |
| E10 | IM | 4 | *tikuuN, gagagaga, uuuu, biNbiN* |
| E11 | IM | 4 | *huu, zaazaa, baaN, baN* |
| E06 | IH | | |
| E03 | AL | 3 | *dooN* (3 tokens) |
| E05 | AM | 2 | *batyaaN, haaaa* |
| E13 | AM | 2 | *paaN, hyuu* |

Beginners like E01 may utilize phonomimes as a strategy to refer to sound-emitting actions when they lack knowledge of target verbs. It appears that Intermediate or Advanced speakers at times continue to use this strategy with the use of innovative mimetics (e.g., *gagagaga, huu*) to some extent. At the same time they also use more conventional phonomimes (e.g., *zaazaa* referring to the sound of rain, and *dooN* referring to crashing) as well as phenomimes. Notably, their phonomimes are

mostly what Hamano (1998) regard as highly iconic mimetics based on CV-roots, except for two tokens of CVCV-root mimetics *batyaaN* and *tikuuN* (though use of the latter to refer to sound is unconventional.)

### 5.3 Discussion on the use of mimetics

With regard to RQ1 (how often English and Korean speakers use mimetics when speaking Japanese as L2), the results were not straightforward. When we consider overall token frequency, Korean speakers used somewhat more tokens (M = 4.9) than English speakers (M = 4.0). In particular, they used more tokens (M = 3.5) for initial descriptions than English speakers (M = 1.9), suggesting that Korean speakers are inclined to use mimetics from the outset.

However, Korean speakers used fewer types (M = 1.7) than English speakers (M = 2.8). They used a smaller number of Japanese mimetics multiple times (e.g., 21 tokens of *zuQ to* by 8 speakers, 12 tokens of *guruguru* 'spinning' by 6 speakers). It appears that possessing similar mimetics in their L1 have led them to use the specific L2 items similar to their L1 counterparts. The Japanese mimetic *zuQ to* resembles the Korean *ccwuk* 'straight, all the way' and Japanese *guruguru* resembles the Korean *teykwulteykwul* 'rolling, rumbling' in their form and meaning. The initial consonants of *zuQ* and *ccwuk* are both affricates followed by the similar vowel /u/[13] and *guruguru* and *teykwulteykwul* are both reduplicates containing a velar stop[14] followed by the vowel /u/ and the liquid /r/, /l/. The current results suggest that it is not the fact that Korean has a large inventory of mimetics but rather the inventory of similar mimetic entries that may have led to the use of these mimetics.

Hence, a large dictionary inventory of mimetics in L1 did not necessarily lead Korean speakers to use more Japanese mimetics. In fact, Abe (2011) found that having a large inventory does not lead Korean speakers to use many mimetics in their L1 either. Abe gave a questionnaire to L1 Japanese speakers and L1 Korean speakers and asked them to provide as many mimetics and adverbs in their L1 as possible for 9 verbs. She found that Japanese speakers supplied more mimetics than Korean speakers, who tended to supply non-mimetic adverbs.[15]

13. Precisely speaking, the Japanese vowel is /ɯ/ without lip rounding, while Korean /u/ involves lip rounding.

14. The Korean plain /k/ becomes voiced between voiced segments; hence, /k/ sounds like [g] in this word.

15. The different formats of the questionnaire for Japanese and Korean speakers may have induced more mimetics from Japanese speakers (as pointed out by Kimi Akita, personal communication). In the Japanese version, the quotative particle *-to* is provided in parentheses (e.g., *(to) warau* 'laugh'), which implicitly invites the use of mimetics, but in the Korean version, only verbs are provided (e.g., *wusta* 'laugh'). Furthermore, while the Japanese dictionary form is identical to the informal speech style, the Korean dictionary form, used in the questionnaire, cannot be used in speaking/writing. The latter may not readily elicit the actual use of language.



In terms of the use of phonomimes, one of the 4 English speakers with lower proficiency (Intermediate-Low) used the phonomime *duN* 'thump', shown in (4) above, and a Korean Intermediate-Mid speaker used *buu-to site* 'doing "buu"' in (3b), which we classified as 'both', referring to the sound and the manner in which the sound was emitted. An intermediate Korean speaker grammatically integrated the mimetic into the sentence by making it a verb, with the addition of the light verb *suru* in its gerund *-te* form. Korean phonomimes are often used with such light verbs as *-kelita*, but it is premature to suggest that Korean speakers' use of mimetics with *suru* is due to L1 influence. Such use is also observed among L1 Japanese children, as discussed below. In other words, these speakers used phonomimes not just to refer to the sound, but also to refer to the action causing the sound. They appeared to be compensating for a lack of vocabulary, specifically the Japanese manner verb(s) referring to crashing (e.g., *butukaru*, *ataru*, *syoototu-suru*). Indeed, Choi and Lantolf (2008), who examined English-Korean bilinguals' description of motion events, found that even highly proficient L2 Korean speakers had difficulty producing the Korean manner verb *kwuluta* 'roll'. Imitative phonomimes may thus serve as a compensatory tool among adult L2 learners of Japanese in such cases.

L1 Japanese children are also known to use mimetic verbs in similar ways. Tsujimura (2005b) reports uses of mimetic verbs produced by Sumihare[16] at the age of 1;9 (1 year and 9 months) and 1;10 such as (9a-b) below (Tsujimura 2005b: 376). (The method of Romanization is adjusted to make it consistent with the method in the current chapter, and glosses are added).

(9) a. *paaN-sita* [1;9]
MIM-do.PST
'I broke it' (He hit a bottle against concrete and broke it)

b. *tooN-sita* [1;10]
MIM-do.PST
'I hit (my head)' (after hitting his head against a corner of a box)

While there are only a small number of instances in the L2 data, a similar mechanism for using phonomimes to compensate for a lack of knowledge of verbs for sound-emitting events appears to operate across L1 and L2 learners of different L1 backgrounds.

16. The longitudinal records of his utterances are available in Noji (1973–1977).

Beyond the beginner levels, English speakers use both phonomimes and phenomimes to describe sound-emitting events, while Korean speakers appear to disfavor the use of phonomimes. This can be attributed either to the availability and salience of mimetics in different semantic domains in the L2 Japanese speakers' L1s or to differential sociolinguistic constraints (or perceptions thereof) related to semantic types of mimetics and to context. Further research is necessary to understand the use, rather than just inventories, of mimetics in different semantic and pragmatic domains.

Regarding RQ2, more proficient speakers did not necessarily use more mimetics. In fact, highly proficient speakers in both groups used fewer mimetics. Variables other than proficiency appear to play a role in the preference for mimetics. This lack of relation to proficiency distinguishes mimetics from ordinary words. Instead, mimetics may be similar to emotion words and colloquial expressions, whose use by L2 speakers depends on variables such as personality (e.g., extroversion) (Dewaele and Pavlenko 2002). Baba (2003) in fact showed that frequency of mimetics use correlates with emotional intensity involved in role-plays among L1 Japanese speakers.

What is particularly noteworthy is the fact that Korean speakers with the highest proficiency in Japanese (AH and S levels) rarely or never used mimetics. This may be due to prior knowledge regarding the subtlety of mimetic usage in Korean. Korean speakers may be aware of the sociolinguistic constraints (e.g., formal vs. informal) imposed on their use, affecting their judgment as to when Japanese mimetics are appropriate. It is possible that the contexts in which Korean speakers use mimetics may be more constrained than is the case for Japanese.

## 6. Co-production of mimetics and gesture

### 6.1 RQ3: When speaking Japanese as L2, how often do L1 English and L1 Korean speakers produce gestures accompanying mimetics?

For RQ3, we analyzed descriptions by 26 participants (13 English and 13 Korean speakers). Table 5 shows the proportion of gesture strokes accompanying mimetics and the accompanying verb phrases. Figure 3 illustrates the participants' use of gesture compared to L1 Japanese speakers' proportions reported by Kita (1997).

**Table 5.** Proportions of gesture accompaniment for verbs and mimetics

| | Gesture accompaniment in L2 Japanese | |
|---|---|---|
| | with mimetics | with verbs |
| L1 English speakers | 94.2% (49/52) | 65.9% (114/173) |
| L1 Korean speakers | 75.0% (54/72) | 58.9% (73/124) |



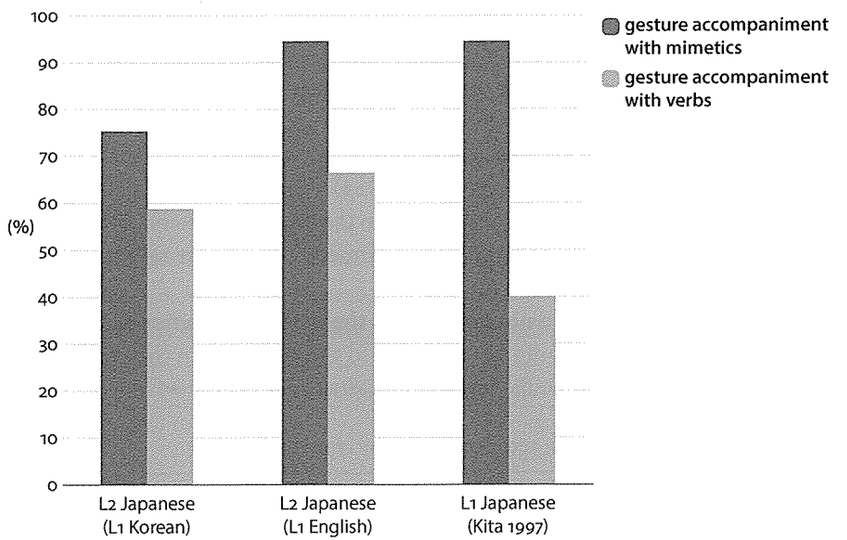


**Figure 3.** Proportions of gesture accompaniment with verbs and with mimetics

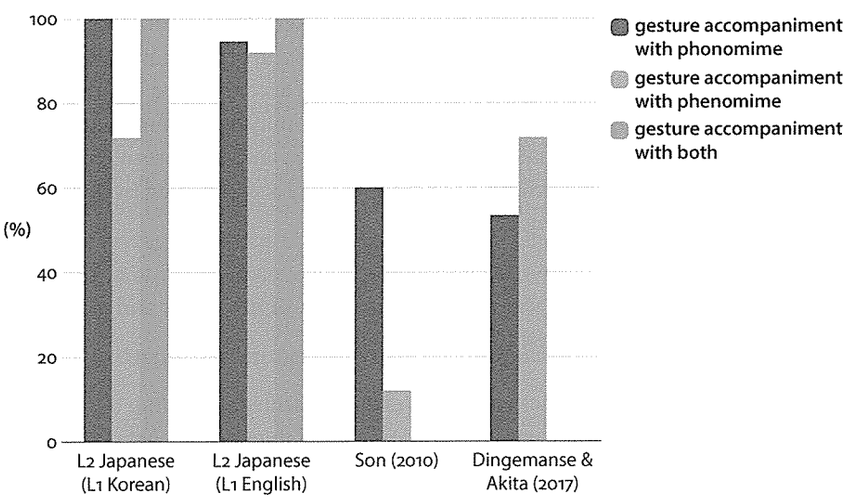


**Figure 4.** Proportions of gesture accompaniment with phonomime, phenomime and 'both', in comparison to Son (2010) and Dingemanse and Akita (2017)

As shown in Figure 3, mimetics and gestures co-occurred in L2 frequently – both among English speakers (94.2% of the time) and Korean speakers (75.0%). In line with Kita (1997), the rate of co-occurrence is higher than the gestural accompaniment for verbs in both language groups. Chi-square tests computed for utterances containing mimetics or verbs show significant differences in both L1 groups ($\chi^2$ (1, N = 223) = 19.30, $p < .01$; $\chi^2$ (1, N = 234) = 16.6, $p < .01$). This suggests a tight coupling between mimetics and gesture in the L2 as well. Interestingly, Korean speakers produce gestures accompanying mimetics at a lower rate than the L1 Japanese speakers in Kita's study (1997).

Table 6 shows the same data according to the types of mimetics, namely, phonomimes, phenomimes or both as compared to the results from the previous two studies by Son (2010) and Dingemanse and Akita (2017).

**Table 6.** Proportions of gesture accompaniment by types of mimetics

| | Gesture accompaniment in L2 Japanese | | |
|---|---|---|---|
| | Phonomime | Phenomime | Both |
| L1 English speakers | 94.2% (18/19) | 91.3% (21/23) | 100% (10/10) |
| L1 Korean speakers | 100% (2/2) | 71.4% (45/63) | 100% (7/7) |

Set against the previous studies of L1 Japanese speakers, the L2 data show higher rates of gesture accompaniment for both phonomimes and phenomimes. In the two groups, the mimetics classified as 'both' were always accompanied by iconic gestures, and gestural accompaniment is higher for phonomimes than for phenomimes (although the difference is small for the English group, and the Korean group only had two data points). Furthermore, phenomimes were accompanied by gestures at a much higher rate among English speakers.

### 6.2 RQ4: Is L2 Japanese speakers' co-production of mimetics and gesture related to their Japanese proficiency?

The co-occurrence of mimetics and gestures was classified according to the three synchronization patterns discussed in Section 2.4.2. Tables 7 and 8 below show the distribution of three synchronization patterns among English and Korean speakers. To reiterate, in Type 1, the gesture stroke accompanies only the mimetic stem. In Type 2, the gesture stroke accompanies the entire mimetic expression including elements such as *suru* 'do', or *ni naru* 'become'. In Type 3, the gesture stroke accompanies the mimetic with a following hold. The post-stroke hold may overlap with a single grammatical element such as a quotative *to* or the rest of the entire clause. The percentage of the total number of gestures is shown in parentheses.



**Table 7.** L1 English speakers' patterns of gesture accompaniment in L2 Japanese

| Level | Tokens of gesture accompaniment | TYPE 1 | TYPE 2 | TYPE 3 |
|---|---|---|---|---|
| IL (N = 4) | 1 (1) | 1 (100%) | 0 | 0 |
| IM (N = 5) | 22 (22) | 16 (72.7%) | 3 (13.6%) | 3 (13.6%) |
| IH (N = 1) | 6 (6) | 4 (66.7%) | 1 (16.7%) | 1 (16.7%) |
| AL (N = 1) | 13 (13) | 3 (23.1%) | 9 (69.2%) | 1 (8.3) |
| AM (N = 2) | 7 (9) | 2 (28.6%) | 2 (28.6%) | 3 (42.9%) |
| Total | 49 (52) | 26 (53.1%) | 15 (30.6%) | 8 (16.3%) |

**Table 8.** L1 Korean speakers' patterns of gesture accompaniment in L2 Japanese

| Level | Tokens of gesture accompaniment | TYPE 1 | TYPE 2 | TYPE 3 |
|---|---|---|---|---|
| IL(N = 1) | 1 (2) | 1 (100%) | 0 | 0 |
| IM (N = 7) | 21 (32) | 10 (47.6%) | 8 (38.1%) | 3 (14.3%) |
| IH (N = 2) | 18 (20) | 7 (36.8%) | 5 (26.3%) | 6 (31.6%) |
| AL (N = 1) | 2 (3) | 1 (50.0%) | 1 (50.0%) | 0 |
| AM (N = 2) | 12 (15) | 2 (16.7%) | 5 (41.7%) | 5 (41.7%) |
| Total | 54 (72) | 21 (38.9%) | 19 (35.2%) | 14 (25.9%) |

The gestures of the two lowest proficiency speakers in both groups (IL), exhibited Type 1 synchronization. This tendency for Type 1 was also observed among Intermediate-Mid speakers of the L1 English group but not among the L1 Korean group. In contrast, gestures by Intermediate-Mid to Advanced-Low Korean speakers are rather equally distributed across the three types. Type 3 mimetic-gesture coupling was mostly observed among Advanced-Mid speakers in both groups. Thus, while both Intermediate and Advanced level speakers produced gestures accompanying mimetics, the influence of proficiency seems to be reflected in the patterns of mimetic-gesture synchronization patterns.

### 6.3 Discussion on mimetic-gesture co-production

With regard to RQ3, the results revealed that regardless of their L1, the L2 Japanese speakers in the present study produced gestures accompanying mimetics at higher rates than those accompanying verbs, although the tendency was more marked for the English speakers. In addition, it was found that phonomimes were accompanied by gesture at higher rates than phenomimes in both L1 groups (albeit with a small number of phonomimes among Korean speakers).

The difference in the rate of gestural accompaniment for mimetics and verbs in the L2 data illuminates a number of important aspects of L2 gesture. First, the results suggest that not all L2 gestures are motivated by the same reason. While some

L2 gestures are produced to compensate for problems in speech (e.g., Gullberg 1998; Kim and Ahn 2011), the current results show that L2 Japanese speakers' gestures accompanying mimetics are probably not produced for compensatory purposes to 'replace' target words; rather, they 'complement' the meaning expressed by mimetics (cf. Yoshioka and Kellerman 2006, Brown 2015, Stam 2015 for the complementary aspect of L2 gesture).

In fact, gestures accompanying mimetics provide the contextual support for the often innovative L2 mimetics by demonstrating the event visually. By doing so, gestures strengthen the expressive meaning carried by the mimetics (See also Nuckolls, this volume). As discussed above, the imitative phonomimes may serve as a tool for L2 Japanese speakers when they lack knowledge of adequate vocabulary. However, the meaning of an imitative phonomime such as *duN* 'thump' in (8) is not clear on its own, especially when the mimetic appears to serve as a verb. Yet the accompanying gesture, where the right hand with an open palm moves towards the speaker's face as if the hand hits the face, provides the contextual clue for the interpretation that *dun* is a sound emitted when the main character hits the wall head on. Gestures accompanying verbs also complemented the meanings. This seemed to be particularly the case when English speakers resorted to generic path verbs (*iku* 'go') or motion verbs (*ugoku* 'move'), when they might have preferred to use manner verbs. This may at least partly explain why L2 speakers' show higher rate of gestures accompanying verbs than the L1 Japanese speakers reported by Kita (1997).

The higher rate of gestural accompaniment for mimetics as compared to verbs may be best explained as follows: as in the case with L1 Japanese speakers, mimetics in L2 may be linked to a mode of representation that is different from that for ordinary words. Recall that this mode has been termed 'affecto-imagistic' (Kita 1997), or 'depiction' (Dingemanse and Akita 2017). According to this view, using language basically involves two modes of communication; one that is analytical and arbitrary, best represented by the use of ordinary words, while the other is iconic and imagistic, best represented by mimetics and gesture. The strong mimetic-gesture coupling observed in the L2 data suggests that these two modes of communication are at work in the L2. The challenge for L2 speakers is learning to manipulate these two modes of communication in speech production processes where the information needs to be mapped linearly onto the target language within the relevant grammatical constraints, and simultaneously onto gesture. Obviously, this requires demanding processing. For this reason, we believe that the production of mimetics only begins when an L2 speaker's proficiency reaches a certain level, and that mimetic-gesture synchronization patterns reflect the speakers' L2 proficiency level.

One observation made about the rate of co-occurrence of mimetics and gesture was that it was higher for English speakers than Korean speakers. This may



be partially due to the types of mimetics used by Korean speakers. For instance, the phenomime, *metyakutya* 'messy', used 7 times by Korean speakers (but never by English speakers), was never accompanied by gesture. This mimetic is also a nominal-adjective mimetic, which likely involves both the analytical dimension and the affecto-imagistic dimension when tested by the logical negation test suggested by Kita (1997) (see also Baba 2003: 1869). Given that iconic gestures mostly express size, speed and physical relations (Hollar and Beattie 2003), this mimetic may not be suited to gestural accompaniment. It is also possible that the Korean speakers in the current study grammatically integrated mimetics more than English speakers, as found in Iwasaki (2017b); this may have reduced the use of gesture (Dingemanse and Akita 2017). One other possible reason is the way L1 Korean speakers generally use Korean mimetics and gesture, but without the relevant L1 Korean baseline data, we cannot draw any conclusions on this point.

The trend of higher gestural accompaniment for phonomimes than phenomimes is in accordance with Son's (2010) study of L1 Japanese speakers. Son explains this finding by using the notion of 'mimeticity' referred to earlier (Tamori and Schourup 1999). The degree of 'mimeticity' may affect gesture accompaniment in L2 as well. However, most of the mimetics used by Korean speakers were phenomimes, including more uses of nominal mimetics mentioned above.[17]

Regarding RQ4 on mimetic-gesture synchronization patterns, the results show that when the speaker begins to produce mimetics at Intermediate proficiency levels, the co-occurrence of mimetics and gesture is characterized by the relatively high frequency of Type 1 synchronization, where the gesture temporally and semantically synchronizes only with the mimetic stem. Many of these mimetics were used as if they were verbs, as seen in (8). Similarly, Type 2 synchronization is often observed when the mimetic expression served as a main verb of the clause with the light verb *suru*, as in (5) above. Given that L2 mimetics at a lower proficiency level usually serve as predicates rather than adverbials (Iwasaki 2017a), the data seem to suggest that, at this level, the mimetics (mimetic stem or mimetic verb) are accompanied only by the gesture stroke. In other words, Types 1 and 2 are the dominant mimetic-gesture synchronization patterns. In contrast, when a L2 Japanese speaker with advanced proficiency uses mimetics as adverbs, the mimetic-gesture synchronization patterns seem to change. Gesture is more integrated into the morphosyntactic element or the rest of the clause with the use of post-stroke holds.

17. Dingemanse and Akita (2017) found the phenomime was accompanied by iconic gestures more often than phonomimes (personal communication). At the moment, we do not have a satisfactory explanation for the discrepancy between their and our findings, except for the difference in topic and the data type (interview).

Though such morphosyntactic integration led to fewer mimetic-gesture co-occurrences in Dingemanse and Akita's (2017) study, co-occurrence was observed in the L2 Japanese speakers' narratives in the current study. This suggests that at the advanced level, when they do produce gestures, the L2 speakers can better manipulate the two modes of representations, where a single image or idea is expressed by a complex combination of the analytical and descriptive manner and the iconic and depictive manner.

## 7. General discussion and conclusion

The current study examined L2 Japanese speakers' use of two types of mimetics (phonomimes and phenomimes) and iconic co-speech gestures accompanying mimetics in relation to the L2 speakers' L1 and their levels of L2 proficiency. On the one hand, English does not have a large inventory of sound-symbolic words that are equivalents of Japanese mimetics. The most recognized are sound-mimicking onomatopoeia, and English sound-symbolic words are usually used as verbs (or sometimes as nouns, but rarely as adverbs), as distinct from Japanese mimetics, which are commonly used as adverbs. On the other hand, Korean is reported to have more mimetics than Japanese, especially phenomimes. They are usually used as adverbs, as in Japanese.

We entertained the possibility that similarity in structure and lexicalization patterns (Talmy 2000) between Japanese and Korean mimetics may allow Korean speakers to use more L2 Japanese mimetics than English speakers, on the basis of the 'thinking-for-speaking' hypothesis (see also Iwasaki 2017b), but Korean speakers in the current study did not necessarily use more mimetics than English speakers, except for some mimetics that are similar to Korean equivalents (e.g., *guruguru/gorogoro* and *zuQ to* that resemble their Korean counterparts *teykwulteykwul* 'rolling, rumbling' and *ccwuk* 'all the way'). When Iwasaki (2017b) showed a related finding based on a subset of the current data (a few selected motion event descriptions), she speculated that the 'rolling' event prompted frequent use of mimetics *guruguru/gorogoro* among Korean speakers (and English speakers to a certain extent) possibly because it is a manner-salient event. However, in the current study, Korean speakers' frequent use of *zuQ to* is not directly related to manner-saliency. This implies that the presence of L1 items similar in form and meaning plays an important role, resulting in more item-based L1 influence than system-wide phenomena. Item-based L1-L2 similarity in form and meaning appears to be a robust factor in how L2 Japanese speakers learn and use individual mimetic words, as is the case with the L2 acquisition of non-mimetic words, for which cognateness is greatly facilitative (e.g., de Groot and Keijzer 2000).



Yet, category-based L1 influence is also observed. For instance, despite the fact that participants narrated sound-emitting events, only English speakers willingly used phonomimes. It is plausible that, for English speakers, the representative mimetics are phonomimes because their L1 has a well-recognized inventory of onomatopoeia. Furthermore, it is also possible that their L1 onomatopoeia are more 'onomatopoetic' than Korean phonomimes (Akita 2013), which may have made English speakers more familiar with the use of phonomimes than Korean speakers. Korean has a substantial inventory of phonomimes but has a much richer inventory of phenomimes. Korean speakers' preference for using phenomimes may be due to the predominance of phenomimes in their L1.

The fact the Korean speakers who are most proficient in Japanese rarely or never used mimetics suggests another potential variable affecting mimetics use. This variable is possibly linked to sociocultural factors, which may have interacted with the L1 influence discussed above. Having a rich repertoire of mimetics in L1, Korean speakers may be keenly aware of when to and when not to use mimetics and which mimetics to use in Korean. For instance, they may limit their use of phonomimes to highly informal, intimate contexts. L2 Japanese speakers with L1 Korean might have either adopted the Korean norm or avoided the use of Japanese mimetics, being uncertain of the Japanese norm. However, we do not know enough about how native speakers of English or Korean use their L1 mimetics in various sociocultural contexts, and which mimetics they prefer to use in each context. For that matter, we may not know enough about L1 Japanese speakers' use of mimetics, either. More investigations like Baba's (2003), who examined the use of mimetics in role-plays in different contexts, would be needed to deepen our understanding of when and what types of mimetics L1 Japanese speakers use. Baba found that subjectivity (reporting one's direct experience) and involvement (having the audience) significantly affected the frequency of mimetics. L1 and L2 speakers' attitudes towards mimetics may also affect their use. More research on how mimetics are used in L2 speakers' L1s is also needed to advance our understanding of L1 influence on the use of L2 mimetics.

The current study further examined L2 Japanese speakers' mimetic-gesture co-production based on the proposal that mimetics and gesture share the same mode of representation (Kita 1997; Dingemanse and Akita 2017). We enlarged on previous studies by considering different types of mimetics varying in their degree of iconicity (phonomimes and phenomimes), along with the three types of mimetic-gesture synchronization patterns. We found that phonomimes were always accompanied by gesture and that the use of mimetics and the production of gesture are as tightly integrated in L2 as in L1. This supports the idea that the dichotomy of representations, variously called 'analytical' vs. 'affecto-imagistic' (Kita 1997) or 'description' vs. 'depiction' (Dingemanse and Akita 2017), is also likely to be

applicable to the L2 situation. However, as discussed above, L2-specific characteristics such as L2 proficiency and L1 may affect how L2 speakers utilize these two modes in language use.

With respect to the influence of proficiency on mimetic-gesture co-production, the results show that L2 Japanese speakers' mimetic-gesture synchronization patterns differed according to L2 proficiency. While speakers with lower proficiency showed Type 1 patterns, more advanced speakers showed Type 2 and 3 patterns. However, in order to understand the relationship between the synchronization patterns and L2 Japanese proficiency, the analysis of morphosyntactic integration in utterances may be necessary. This is because Type 2 and 3 synchronization patterns require some morphosyntactic integration of mimetics. If intermediate speakers have not integrated mimetics using grammatical elements, then there are fewer opportunities for Types 2 and 3 patterns to occur. Moreover, Iwasaki (2017b) reported that Korean speakers' motion event descriptions in L2 Japanese showed more grammatical integration than English speakers'. If Korean speakers' use of mimetics is generally more grammatically integrated than English speakers', then there are more opportunities for Type 2 and 3 patterns to occur. At the same time, if morphosyntactic integration reduces co-production of mimetics and gesture, as suggested by Dingemanse and Akita (2017), Korean speakers' higher grammatical integration may partially account for their less frequent mimetic-gesture co-production.

While the current study investigated the temporal synchronization between mimetics and gestures, focusing specifically on two gesture phases ('stroke' and 'post-stroke hold'), it is worth noting that some qualitative differences in gesture were also observed between the gestures accompanying mimetics and those accompanying verbs; those accompanying the former were more iconic in that they were more clearly articulated, for instance, in terms of size and movement, and the use of extended fingers and open palm. One such indicator was the ratio for the interrater reliability for the judgment of gesture occurrence accompanying mimetics and verbs. The rate of interrater reliability for coding presence/absence of iconic gestures was higher for mimetics (100% and 93.8% for L1 English and L1 Korean groups, respectively) than those accompanying verbs (86.24% and 89.1%), as reported in Section 4.4. The gestures accompanying mimetics were easily identifiable in comparison to those accompanying verbs which were more ambiguous. The strong coupling between mimetics and gestures in L1 and L2 in both temporal and semantic aspects appears to be a consequence of the universal characteristics of mimetics, namely, iconicity/mimeticity. However, in order to fully understand the nature of mimetic-gesture co-production, further investigation is necessary with an added focus on the qualitative aspects of gesture.

The point of the departure for the current study was the seemingly puzzling situation concerning the reported difficulties in learning and using mimetics in



L2, despite the generally agreed iconic form-meaning relationship which facilitates learning among L1 Japanese children. Based on the results, we argue that three issues should be highlighted in relation to the apparent difficulties in the L2 acquisition of Japanese mimetics: the individual item-based form-meaning relation, socio-cultural constraints, and individuals' attitudes related to the use of mimetics.

As for the form-meaning mapping, the challenge for L2 speakers in learning to use mimetics is two-fold: One is to understand the sound symbolism (e.g., /m/ is associated with murkiness, Hamano 1998), while the other is to understand the subtle variation in the item-level form-meaning mapping (e.g., *mogomogo* vs. *mogumogu* both of which concern the manner of speaking indistinctively, Kakehi et al. 1996). The latter may be more challenging for any L2 speaker unless there is item-based L1-L2 similarity in form and meaning.

The second issue concerns socio-cultural norms, and the third concerns individual traits. Unlike non-mimetic words, when and to what extent the use of mimetics is appropriate, effective, or desirable may be extremely difficult to judge, and the norms possibly vary across different cultures. This pragmatically fuzzy usage may discourage some L2 speakers from actively using mimetics. In addition, some advanced L2 speakers may favor using mimetics for expressivity while others consciously avoid using mimetics, aware of the subtlety of mimetic usage and the sociolinguistic constraints imposed on that usage as mentioned above.

To conclude, using mimetics in L2 involves not only learning the mapping between the form and meaning, but also acquiring how to integrate mimetics structurally and multi-modally. In other words, L2 speakers need to manipulate the two modes of representation in a multi-modal language use. This dynamic of using mimetics in L2 cannot be captured by comprehension studies focusing on the understanding of the form-meaning relationship. Thus we argue that future studies should adopt approaches from both comprehension and production research to gain a fuller understanding of L2 Japanese speakers' use of mimetics.

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CHAPTER 12

# Ideophones as a measure of multilingualism*

G. Tucker Childs
Portland State University

The purpose of the pilot research described here was twofold. The first was to develop a measure for multilingualism, how to characterize what has come to be known in the literature as a linguistic repertoire in a rapid and economical manner. A linguistic repertoire is not a language but the resources and practices of a multilingual in a multilingual community. How this repertoire can be descriptively characterized is problematic. A first pass, as illustrated here, used knowledge of ideophones as the measure of language mastery just because ideophones are so language-specific and deeply embedded in the socio-cultural patterns of the language. The study was limited to one of the three vital languages in the research area but will eventually be extended to the others. The second purpose was to explore the interaction of multilingualism with the mastery of ideophones.

## 1. Introduction

Expressive language such as ideophones and mimetics has provided an important index of social and cultural features, forming boundaries which do not necessarily coincide with linguistic ones. On the continent of Africa, the widely used term for one such expressive word category is 'ideophones', which appear in every major phylum and in most families (Childs 1994a). They appear even in the continent's pidgins and creoles (as well as urban varieties and slangs), thus representing a language *function* of some considerable areality (Childs 1994b). The one place they do not appear, however, is in the colonizing languages when the exoglossic languages have not been appropriated by local communities. When the European languages become every day varieties, however, ideophones are regularly used just as they would in the substrate or endoglossic varieties. In a complementary way, when African languages are used by urban elites eschewing their local ties, ideophones disappear (Childs 1997). Thus, ideophones form a crucial and even quintessential component of most African languages, one well worthy of investigation in multilingual contexts.

* Online appendixes available from https://doi.org/10.1075/ill.16.13tuc.video

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