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# Contents

Acknowledgments . . . . .	v
Foreword . . . . .	vii
<i>The No Blur Principle Effects as an Emergent Property of Language Systems</i>	
Farrell Ackerman, Robert Malouf. . . . .	1
<i>Intensification and sociolinguistic variation: a corpus study</i>	
Andrea Beltrama . . . . .	15
<i>Tagalog Sluicing Revisited</i>	
Lena Borise . . . . .	31
<i>Phonological Opacity in Pendau: a Local Constraint Conjunction Analysis</i>	
Yan Chen . . . . .	49
<i>Proximal Demonstratives in Predicate NPs</i>	
Ryan B. Doran, Gregory Ward . . . . .	61
<i>Syntax of generic null objects revisited</i>	
Vera Dvořák. . . . .	71
<i>Non-canonical Noun Incorporation in Bzhedug Adyghe</i>	
Ksenia Ershova . . . . .	99
<i>Perceptual distribution of merging phonemes</i>	
Valerie Freeman . . . . .	121
<i>Second Position and “Floating” Clitics in Wakhi</i>	
Zuzanna Fuchs. . . . .	133
<i>Some causative alternations in K’iche’, and a unified syntactic derivation</i>	
John Gluckman . . . . .	155
<i>The ‘Whole’ Story of Partitive Quantification</i>	
Kristen A. Greer . . . . .	175
<i>A Field Method to Describe Spontaneous Motion Events in Japanese</i>	
Miyuki Ishibashi . . . . .	197

<i>On the Derivation of Relative Clauses in Teotitlán del Valle Zapotec</i> Nick Kalivoda, Erik Zyman . . . . .	219
<i>Gradability and Mimetic Verbs in Japanese: A Frame-Semantic Account</i> Naoki Kiyama, Kimi Akita. . . . .	245
<i>Exhaustivity, Predication and the Semantics of Movement</i> Peter Klecha, Martina Martinović. . . . .	267
<i>Reevaluating the Diphthong Mergers in Japono-Ryukyuan</i> Tyler Lau . . . . .	287
<i>Pluractionality and the stative vs. eventive contrast in Ranmo</i> Jenny Lee . . . . .	307
<i>Labial Harmonic Shift in Kazakh: Mapping the Pathways and Motivations for Decay</i> Adam G. McCollum . . . . .	329
<i>Reference to situation content in Uyghur auxiliary ‘bolmaq’</i> Andrew McKenzie, Gülnar Eziz, Travis Major . . . . .	353
<i>Case-Marking in Estonian Pseudopartitives</i> Mark Norris . . . . .	371
<i>Discourse Coherence and Relativization in Korean</i> Sang-Hee Park. . . . .	397
<i>Negotiating Lexical Uncertainty and Speaker Expertise with Disjunction</i> Christopher Potts, Roger Levy . . . . .	417
<i>Patterns of Misperception of Arabic Consonants</i> Chelsea Sanker. . . . .	447
<i>The Imperative Split and the Origin of Switch-Reference Markers in Nungon</i> Hannah Sarvasy . . . . .	473
<i>Asymmetries in Long-Distance QR</i> Misako Tanaka. . . . .	493
<i>The cross-linguistic distribution of sign language parameters</i> Rachael Tatman . . . . .	503

<i>Homophony and contrast neutralization in Southern Min tone sandhi circle</i>	
Tsz-Him Tsui . . . . .	. 515
<i>Cultural Transmission of Self-Concept from Parent to Child in Chinese American Families</i>	
Aya Williams, Stephen Chen, Qing Zhou . . . . .	. 533
<i>Fruits for Animals: Hunting Avoidance Speech Style in Murui</i>	
Katarzyna Izabela Wojtylak . . . . .	. 545
<i>A Quest for Linguistic Authenticity: Cantonese and Putonghua in Postcolonial Hong Kong</i>	
Andrew D. Wong. . . . .	. 563



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# Foreword

This monograph contains a number of the talks given at the 41st Annual Meeting of the Berkeley Linguistics Society, held in Berkeley, California, February 7-8, 2015. The conference included a General Session and the Special Session *Fieldwork Methodology*. The 41st Annual Meeting was planned and run by the second-year graduate students of the Department of Linguistics at the University of California, Berkeley: Kenny Baclawski, Anna Jurgensen, Spencer Lamoureux, Hannah Sande, and Alison Zerbe.

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The BLS 41 Executive Committee  
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# Gradability and Mimetic Verbs in Japanese: A Frame-Semantic Account

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## 1 Introduction

Mimetics (also known as ideophones and expressives) have highly specific meanings.<sup>1</sup> This paper demonstrates that this semantic specificity gives rise to seemingly unpredictable “exceptions” in the gradability of the verbal uses of Japanese mimetics. This observation will enable us to formulate fine-grained generalizations regarding the gradability of mimetic verbs that are consistent with a version of Construction Grammar that foregrounds the role of specific situation types or “(semantic) frames” (Fillmore and Atkins 1992, 1994; Nemoto 1998; Boas 2003; Croft 2003, 2009; Iwata 2008; *inter alia*)

This paper is organized as follows. In Section 2, we outline the semantic specificity and complexity of Japanese mimetics in favor of Frame Semantics (Fillmore 1982). In Section 3, we cite previous generalizations about the gradability of Japanese verbs and about the semantic types of Japanese mimetic verbs. In Section 4, the gradability of mimetic verbs is examined by means of degree adverbs and compound verbs. In Section 5, we propose a frame-semantic account for the observed peculiar behavior of mimetic verbs. Section 6 presents the conclusion.

## 2 The Frame Semantics of Mimetics

Japanese is among the languages that abound in sound-symbolic words, which are termed “mimetics” (Kakehi et al. 1996; Hamano 1998; see also Hinton et al. 1994; Voeltz and Kilian-Hatz 2001). Japanese mimetics cover both auditory (e.g., *kokekokkoo* ‘cock-a-doodle-doo’, *batan* ‘slamming’) and non-auditory eventualities (e.g., *kirari* ‘glistening’, *sarasara* ‘dry and smooth’, *tiku?* ‘prickling’, *wakuwaku* ‘excited’), and they are characterized by holistic, fine-grained event depiction (Kita 1997; Dingemanse 2011; Akita 2012; Toratani 2012; Yu 2014). The “holisticness” of mimetics manifests itself as detailed semantic specifications that can be attested through their (in)compatibility with phrases with particular meanings. For example, although both the mimetic adverbial *sutasuta-to* ‘walking briskly’ and the non-mimetic adverbial *asi-baya-ni* (foot-quick-COP) ‘with quick steps’ represent human quick walking, as shown in (1a–c), the mimetic has more detailed semantic specifications, as shown in (1d–g) (Akita, to appear). Here, the (i)- and (ii)-examples illustrate the mimetic and non-mimetic adverbials, respectively. (Note that, as Akita (2012) argues, the potential limitations

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<sup>1</sup>The abbreviations used in this paper are as follows: ACC = accusative; CONJ = conjunctive; COP = copula; MIM = mimetic; NEG = negative; NOM = nominative; PASS = passive; PST = past; QUOT = quotative; TOP = topic.

of semantic compatibility tests are that they say nothing about the features that they do not test.)

## (1) a. Self\_mover:

i. {Ken/?Inu}ga sutasutato aruite ita.

{Ken/inu} -ga sutasuta -to arui -te i -ta  
Ken/dog -NOM MIM -QUOT walk -CONJ be -PST

‘{Ken/?The dog} was walking briskly.’

ii. {Ken/?Inu}ga asibayani aruite ita.

{Ken/inu} -ga asi -baya -ni arui -te i -ta  
Ken/dog -NOM foot -quick -COP walk -CONJ be -PST

‘{Ken/?The dog} was walking with quick steps.’

## b. Motor\_pattern:

i. Kenga sutasutato {arui/??hasit}te ita.

Ken -ga sutasuta -to {arui/hasit} -te i -ta  
Ken -NOM MIM -QUOT walk/run -CONJ be -PST

‘Ken was {walking/??running} briskly.’

ii. Kenga asibayani {arui/??hasit}te ita.

Ken -ga asi -baya -ni {arui/hasit} -te i -ta  
Ken -NOM foot -quick -COP walk/run -CONJ be -PST

‘Ken was {walking/??running} with quick steps.’

## c. Speed:

i. Kenga sutasutato {isoide/??yukkuri} aruite ita.

Ken -ga sutasuta -to {isoi -de/yukkuri} arui -te i -ta  
Ken -NOM MIM -QUOT hurry -CONJ/slowly walk -CONJ be -PST

‘Ken was walking {in a hurry/??slowly}.’

ii. Kenga asibayani {isoide/??yukkuri} aruite ita

Ken -ga asi -baya -ni {isoi -de/yukkuri} arui -te i -ta  
Ken -NOM foot -quick -COP hurry -CONJ/slowly walk -CONJ be -PST

‘Ken was walking {in a hurry/??slowly}.’

## d. Stability\_of\_path:

i. Kenga sutasutato {rikkyoo/?turibasi}o aruite ita.

Ken -ga sutasuta -to {rikkyoo/turibasi} -o arui -te i -ta  
Ken -NOM MIM -QUOT overpass/rope.bridge -ACC walk -CONJ be -PST

‘Ken was walking briskly on {an overpass/?a rope bridge}.’

ii. Kenga asibayani {rikkyoo/turibasi}o aruite ita.

Ken -ga asi -baya -ni {rikkyoo/turibasi} -o arui -te i -ta  
Ken -NOM foot -quick -COP overpass/rope.bridge -ACC walk -CONJ be -PST

‘Ken was walking with quick steps on {an overpass/a rope bridge}.’

- e. Inner\_state:
- i. Kenga zisin{arige/?nasage}ni sutasutato aruite ita.  
 Ken -ga zisin -{arige/nasage} -ni sutasuta -to arui -te  
 Ken -NOM confidence -with/without -COP MIM -QUOT walk -CONJ  
 i -ta  
 be -PST  
 ‘Ken was walking briskly {confidently/?timidly}.’
- ii. Kenga zisin{arige/nasage}ni asibayani aruite ita.  
 Ken -ga zisin -{arige/nasage} -ni asi -baya -ni arui -te  
 Ken -NOM confidence -with/without -COP foot -quick -COP walk -CONJ  
 i -ta  
 be -PST  
 ‘Ken was walking with quick steps {confidently/timidly}.’
- f. Sound:
- i. Kenga {sizukani/?urusaku} sutasutato aruite ita.  
 Ken -ga {sizuka -ni/urusaku} sutasuta -to arui -te i -ta  
 Ken -NOM quiet -COP/noisily MIM -QUOT walk -CONJ be -PST  
 ‘Ken was walking briskly {quietly/?noisily}.’
- ii. Kenga {sizukani/urusaku} asibayani aruite ita.  
 Ken -ga {sizuka -ni/urusaku} asi -baya -ni arui -te i -ta  
 Ken -NOM quiet -COP/noisily foot -quick -COP walk -CONJ be -PST  
 ‘Ken was walking with quick steps {quietly/noisily}.’
- g. Shoes:
- i. Kenga {suniikaa/\*geta}de sutasutato aruite ita.  
 Ken -ga {suniikaa/geta} -de sutasuta -to arui -te i -ta  
 Ken -NOM sneaker/geta -in MIM -QUOT walk -CONJ be -PST  
 ‘Ken was walking briskly in {sneakers/\*Japanese clogs}.’
- ii. Kenga {suniikaa/geta}de asibayani aruite ita.  
 Ken -ga {suniikaa/geta} -de asi -baya -ni arui -te i -ta  
 Ken -NOM sneaker/geta -in foot -quick -COP walk -CONJ be -PST  
 ‘Ken was walking with quick steps in {sneakers/Japanese clogs}.’

Note that certain of these semantic features are causally related to each other within the mimetic (Akita 2012). Specifically, the inner state specification as “confident” is the reason for the quick speed, and the sound specification as “quiet” is the reason why noisy shoes, such as Japanese clogs, cannot be involved. This is why we take a frame-semantic view of mimetics, which allows us to discuss the internal structure of finely specified eventuality representations. Following the recent explorations by Osswald and Van Valin (2014), we use AVM-based notations for frames. Frames consist of frame-specific semantic roles called “frame elements”, which serve as features that participate in (part of) event structure. The

following AVMs clearly represent the semantic difference between the above mimetic vs. non-mimetic pair.

Figure 1: *Sutasuta-to* ‘walking briskly’ vs. *asi-baya-ni* ‘with quick steps’

Brisk_steps		Quick_steps	
SELF_MOVER	① [+sentient]	SELF_MOVER	① [+sentient]
AREA	②	AREA	②
MTR_PTN	walking	MTR_PTN	walking
INNER_STATE	confident	INNER_STATE	
SPEED	quick ←	SPEED	
PATH_STABILITY	▬▬▬	PATH_STABILITY	
SOUND	inconspicuous	SOUND	
SHOES	normal ←	SHOES	

In Section 5, we will use AVM-based frame representations to identify gradable features in mimetic verbs. It should be stressed that all of these featural specifications have empirical grounds in the sense that, as illustrated above, they are testable in terms of semantic compatibility. We assume that this method guarantees the minimum reliability of the present frame-semantic study that would otherwise remain interpretive and impressionistic.

### 3 Previous Studies

#### 3.1 The Gradability of Japanese Verbs

The gradability of Japanese verbs has been discussed with special focus on their cooccurrence with the degree modifier *totemo* ‘very’ and on their compoundability with the verb *sugi-* ‘pass’. Tsujimura (2001) identifies the following three conditions for the *totemo* modification of Japanese verbs.<sup>2</sup>

- (2) a. A verb must have a STATE component in its event structure.
- b. The STATE component must refer to a gradable property.
- c. The gradable property defined over scalar structure must be with nontrivial standard.

(Tsujimura 2001:47)

Among the three, only the first condition crucially concerns the present study (see also Kennedy and McNally (2005) for the relevance of “nontrivial standard” in scale semantics). This condition is based on the event-structural (or Aktionsart) classification of verbs. Tsujimura assumes the following division of verbs with respect to the presence/absence of STATE in the event structure. The condition in (2a) says that *totemo* can intensify a degree

<sup>2</sup>One important question regarding these conditions is whether they are applicable to other degree adverbials, including informal ones (e.g., *metyakutya* ‘absolutely’, *sugoku* ‘terribly’). Due to its slightly formal tone, *totemo* appears to be subject to additional usage restrictions that may blur our judgments on gradability.

in [+STATE] verbs in (3a) but not in [-STATE] verbs in (3b). (Sentence examples will be presented in contrast with mimetic verbs in Section 4.)

- (3) a. [+STATE]:
- i. Psych-verbs (e.g., *totemo kurusim-* ‘suffer very much’)
  - ii. Emission verbs (e.g., *totemo hikar-* ‘shine very much’)
  - iii. Change-of-state verbs (e.g., *totemo atatamar-* ‘get warmed very much’)
- b. [-STATE]:
- i. Activity verbs (e.g., *#totemo waraw-* ‘laugh very much’)
  - ii. Semelfactive verbs (e.g., *#totemo tatak-* ‘hit very much’)
  - iii. Change-of-location verbs (e.g., *#totemo sizum-* ‘sink very much’)

As Tsujimura notes, *totemo* modification itself is also available to the [-STATE] verbs in (3b). However, in this case, the only possible interpretation is what Bolinger (1972:160–162) calls “extensibility intensification”. Extensibility intensification is the emphasis of event-general dimensions, such as quantity, distance, frequency, and duration. For example, the possible readings of *totemo waraw-* ‘laugh very much’, *totemo tatak-* ‘hit very much’, and *totemo sizum-* ‘sink very much’ in (3b) are ‘laugh for a long time’ (duration), ‘hit many times’ (frequency), and ‘sink a long distance’ (distance), respectively. These types of interpretations are available to virtually all verbs, including the [+STATE] verbs in (3a) (e.g., *totemo kurusim-* ‘suffer for a long time’ [duration], *totemo hikar-* ‘shine many times’ [frequency], *totemo atatamar-* ‘(many things) get warmed’ [quantity]). Therefore, our observation of mimetic verbs will also focus on the availability of degree intensification reading.

A parallel generalization has been found applicable to the compoundability of verbs and *sugi-* ‘pass’ to form complex verbs whose meanings considerably overlap those of English *over-*verbs, such as *overeat*, *overrun*, and *oversleep* (Yumoto 2005:Chapter 5). As illustrated in (4a), *sugi-* can express the excessiveness of a gradable property in [+STATE] verbs. However, as illustrated in (4b), only extensibility intensification readings are available to [-STATE] verbs followed by *sugi-*.

- (4) a. [+STATE]:
- i. Psych-verbs (e.g., *kurusimi-sugi-* ‘suffer too much’)
  - ii. Emission verbs (e.g., *hikari-sugi-* ‘shine too much’)
  - iii. Change-of-state verbs (e.g., *atatamari-sugi-* ‘get warmed too much’)
- b. [-STATE]:
- i. Activity verbs (e.g., *#warai-sugi-* ‘laugh too much’)
  - ii. Semelfactive verbs (e.g., *#tataki-sugi-* ‘hit too much’)
  - iii. Change-of-location verbs (e.g., *#sizumi-sugi-* ‘sink too much’)

Based on the distributional facts described here, we will use *totemo* modification and *sugi-*compounding in our assessment of the gradability of mimetic verbs in Section 4.



### 3.2 Event-Structural Types of Mimetic Verbs

Although the primary category of Japanese mimetics is the adverb, many of them can also be realized as part of complex verbs, most notably in the [MIM + *su*- ‘do’] construction (Tsujimura 2005, 2014; Kageyama 2007; Akita 2009; Toratani 2015; Akita and Usuki, to appear). Mimetic verbs are also classified by their event-structural types. By reinterpreting Kageyama’s (2007) lexico-semantic analysis of mimetic verbs in light of Tsujimura’s (2001) verb classification in Section 3.1, it appears that a [ $\pm$  STATE]-based classification of mimetic verbs will look like (5).<sup>3</sup>

- (5) a. [+STATE]
- i. Psych-verbs (e.g., *gakkari-su*- ‘get disappointed’)
  - ii. Emission verbs (e.g., *kirakira-su*- ‘glitter’)
  - iii. Change-of-state verbs (e.g., *assari-su*- ‘get light (of taste)’)
  - iv. Physiological verbs (e.g., *zukizuki-su*- ‘throb (of head or teeth)’)
  - v. Physical perception verbs (e.g., *guragura-su*- ‘wobble’)
- b. [-STATE]
- i. Activity verbs (e.g., *akuseku-su*- ‘work busily’)
  - ii. Motion verbs (e.g., *urouro-su*- ‘wander around’)
  - iii. Semelfactive verbs (e.g., *?tonton-su*- ‘tap’)
  - iv. Change-of-location verbs (n/a)

In the next section, we will show that the event-structural generalization of the gradability of Japanese verbs does not hold for all mimetic verbs.

## 4 Gradability of Mimetic Verbs

In this section, we examine the gradability of each event-structural type of mimetic verb by means of the two criteria outlined in Section 3.1. First, in accord with Tsujimura’s (2001) observation of non-mimetic verbs, degree intensification is available to *totemo* ‘very’ that cooccurs with mimetic verbs with a STATE component, as in (6).<sup>4</sup> Hereafter, we contrast mimetic verbs and non-mimetic verbs with similar meanings to highlight what is (not) shared between the two groups of verbs.

- (6) [+STATE]:
- a. Psych-verbs:

<sup>3</sup>Kageyama’s original classification includes (light) emission verbs in “physical perception verbs”, and his “(manner-of-)motion verbs” correspond to a subset of Tsujimura’s “activity verbs”. A few minor terminological modifications were also made for (5aiii) and (5biii). As the question mark in (5biii) indicates, mimetic verbs for semelfactive impact have a babytalk flavor (Kageyama 2007; Akita 2009). Moreover, Japanese does have mimetics for change of location, but they cannot form verbs, perhaps due to their high iconicity (e.g., *\*suton-to-su*- ‘fall flat’) (Akita 2009; Toratani 2015).

<sup>4</sup>As Tsujimura (2001:40–41) notes, the stative construction *-te i-* (CONJ be) makes *totemo* modification available to telic verbs that are otherwise resistant to it. Therefore, throughout this paper, we test the gradability of verbs in their simple past tense form.

Kodomowa totemo {kuyokuyosita/nayanda}.  
 Kodomo -wa totemo {kuyokuyo -si -ta/nayan -da}  
 child -TOP very MIM -do -PST/worry -PST  
 ‘The child worried and regretted/worried very much.’

b. Emission verbs:

Hosiga totemo {kirakirasi/hikat}ta.  
 Hosi -ga totemo {kirakira -si/hikat} -ta  
 star -NOM very MIM -do/shine -PST  
 ‘The star {glittered/shone} very much.’

c. Change-of-state verbs:

Suupuga totemo {assarisi/atatamat}ta.  
 Suupu -ga totemo {assari -si/atatamat} -ta  
 soup -NOM very MIM -do/get.warmed -PST  
 ‘The soup got {very light/warmed very much}.’

d. Physiological verbs:

Atamaga totemo {zukizukisita/itanda}.  
 Atama -ga totemo {zukizuki -si -ta/itan -da}  
 head -NOM very MIM -do -PST/hurt -PST  
 ‘[My] head {throbbled/hurt} very much.’

e. Physical perception verbs:

Isuga totemo guragurasi/yureta.<sup>5</sup>  
 Isu -ga totemo {guragura -si/yure} -ta  
 chair -NOM very MIM -do/shake -PST  
 ‘The chair {wobbled/shook} very much.’

Conversely, mimetic verbs without a STATE component exhibit unexpected behaviors. Some of them do allow *totemo* modification in degree intensification reading, as illustrated in (7).

(7) [-STATE]:

a. Activity verbs:

Kodomowa totemo {nikonikosi/#warat}ta.  
 Kodomo -wa totemo {nikoniko -si/warat} -ta  
 child -TOP very MIM -do/laugh -PST  
 ‘The child {smiled/#laughed} very much.’

b. Motion:

Kodomowa totemo {tyokomakasi/#hasit}ta.

<sup>5</sup>As Hideki Kishimoto correctly pointed out, the verb *yure-* ‘shake’ is normally conceived of as a semelfactive verb, which does not have an evident STATE component. However, we assume a STATE semantics for this verb, as the shaking movement of an object appears to be considered its property (see Tsujimura 2001:36–37 for a similar justification of the STATE semantics of emission verbs).

Kodomo -wa totemo {tyokomaka -si/hasit} -ta  
 child -TOP very MIM -do/run -PST

‘The child {ran around/#ran} very much.’

c. Semelfactive:

Kodomowa doao totemo {?dondonsi/#tatai}ta.

Kodomo -wa doa -o totemo {dondon -si/tatai} -ta  
 child -TOP door -ACC very MIM -do/hit -PST

‘The child {?banged/#hit} the door very much.’

*Totemo* cooccurring with these mimetic verbs are interpreted to intensify a type of degree: the cheerfulness of the child’s smile in (7a), the child’s speed in (7b), and the forcefulness or volume of banging in (7c).

Second, a similar unexpected distribution is found for *sugi*-compounding. As shown in (8), *sugi*-compounding is possible in degree intensification reading for [+STATE] mimetic verbs.

(8) [+STATE]

a. Psych-verbs:

Kodomowa {kuyokuyosi/nayami}sugita.

Kodomo -wa {kuyokuyo -si/nayami} -sugi -ta  
 child -TOP MIM -do/worry -pass -PST

‘The child {worried and regretted/worried} too much.’

b. Emission verbs:

Hosiga {kirakirasi/hikari}sugi(te mega kuranda).

Hosi -ga {kirakira -si/hikari} -sugi -te me -ga kuran -da  
 star -NOM MIM -do/shine -pass -CONJ eye -NOM be.dazzled -PST

‘The star {glittered/shone} too much (and [I] was dazzled).’

c. Change-of-state verbs:

Suupuga {assarisi/atatamari}sugita.

Suupu -ga {assari -si/atatamari} -sugi -ta  
 soup -NOM MIM -do/get.warmed -pass -PST

‘The soup got {too light/warmed too much}.’

d. Physiological verbs:

Atamaga {zukizukisi/itami}sugi(te sissinsita).

Atama -ga {zukizuki -si/itami} -sugi -te sissin -si -ta  
 head -NOM MIM -do/hurt -pass -CONJ faint -do -PST

‘[My] head {throbbled/hurt} too much (and [I] lost consciousness).’

e. Physical perception verbs:

Isuga {guragurasi/yure}sugi(te kikendatta).

Isu -ga {guragura -si/yure} -sugi -te kiken -dat -ta  
 chair -NOM MIM -do/shake -pass -CONJ danger -COP -PST

‘The chair {wobbled/shook} too much (and [it] was dangerous).’

As was the case for *totemo* modification, some [-STATE] mimetic verbs show unexpected gradability, as illustrated in (9).

(9) [-STATE]:

a. Activity verbs:

Kodomowa {nikonikosi/#warai}sugi(te gyakuni kirawareta).

Kodomo -wa {nikoniko -si/warai} -sugi -te gyaku -ni kiraw -are  
child -TOP MIM -do/laugh -pass -CONJ contrary -COP hate -PASS  
-ta  
-PST

‘The child {smiled/#laughed} too much (and, contrary to [his] intention, was hated).’

b. Motion:

Kodomowa {tyokomakasi/#hasiri}sugi(te tukamaranakatta).

Kodomo -wa {tyokomaka -si/hasiri} -sugi -te tukamara -nakat -ta  
child -TOP MIM -do/run -pass -CONJ be.caught -NEG -PST

‘The child {ran around/#ran} too much (and was not caught).’

c. Semelfactive:

Kodomowa doao {?dondonsi/#tataki}sugita.

Kodomo -wa doa -o {dondon -si/tataki} -sugi -ta  
child -TOP door -ACC MIM -do/hit -pass -PST

‘The child {?banged/#hit} the door too much.’

It should be noted that not every mimetic verb can be intensified by means of *totemo* modification and *sugi*-compounding. For example, in parallel with the non-mimetic cases, the following [-STATE] mimetic verbs behave as non-gradable (i.e., only compatible with extensibility intensification).

(10) a. Motion:

i. #Kodomowa matio totemo {buraburasi/arui}ta.

Kodomo -wa mati -o totemo {burabura -si/arui} -ta  
child -TOP town -ACC very MIM -do/walk -PST

“#The child {strolled/walked} very much in the town.”

ii. #Kodomowa matio {buraburasi/aruki}sugita.

Kodomo -wa mati -o {burabura -si/aruki} -sugi -ta  
child -TOP town -ACC MIM -do/walk -pass -PST

“#The child {strolled/walked} too much in the town.”

b. Semelfactive:

i. #Kodomowa doao totemo {tontonsi/tatai}ta.

Kodomo -wa doa -o totemo {tonton -si/tatai} -ta  
 child -TOP door -ACC very MIM -do/hit -PST

“#The child {tapped/hit} the door very much.”

- ii. #Kodomowa doao {tontonsi/tataki}sugita.

Kodomo -wa doa -o {tonton -si/tataki} -sugi -ta  
 child -TOP door -ACC MIM -do/hit -pass -PST

“#The child {tapped/hit} the door too much.”

The judged gradability of some other [-STATE] mimetic verbs is shown in (11).

- (11) a. Activity verbs (all [+gradable]):  
*akuseku-su-* ‘work busily’, *batabata-su-* ‘scurry’, *daradara-su-* ‘laze around’, *gorogoro-su-* ‘lie around’, *motamota-su-* ‘act slowly’, *utouto-su-* ‘doze off’
- b. Motion verbs:  
 i. [+gradable]:  
*noronoro-su-* ‘walk/act slowly’, *nosonosu-su-* ‘move sluggishly’, *tyokotyoko-su-* ‘walk with short steps’, *tyorotyoro-su-* ‘move around quickly’, *urouro-su-* ‘wander around’  
 ii. [-gradable]:  
*hurahura-su-* ‘walk aimlessly’, *hyokohyoko-su-* ‘jump along weakly’, *nyoronyoro-su-* ‘wriggle’, *pukapuka-su-* ‘float’, *yotiyoti-su-* ‘toddle’
- c. Semelfactive verbs:  
 i. [+gradable]:  
*bokoboko-su-* ‘beat violently’, *gosigosi-su-* ‘scrub’, *guriguri-su-* ‘press and rub with one’s elbow or fist’  
 ii. [-gradable]:  
*kotukotu-su-* ‘rap’, *kotyokotyoko-su-* ‘tickle’, *kusyakusya-su-* ‘tousle’, *pokopoko-su-* ‘hit lightly’, *pokupoku-su-* ‘beat (a Buddhist wooden drum)’

Two striking facts can be noted for the lists in (11). First, all mimetic activity verbs in (11a) escape the event-structural generalization, behaving as gradable. This distribution forms a sharp contrast with the utter non-gradability of non-mimetic activity verbs. Second, the gradability contrast in (11c) appears to be correlated with the voicing contrast at the initial consonant (i.e., [+voiced] = [+gradable]; [-voiced] = [-gradable]), and this is a local phenomenon that is not observed in such a systematic fashion in other semantic categories. The voicing of obstruents is arguably the most important feature in Japanese mimetics, which is sound-symbolically paired with a set of semantic features, such as heaviness and intensity (Hamano 1998). In the present case, mimetics with voiced initials (e.g., *dondon* ‘banging’, *bokoboko* ‘beating violently’) represent loud and strong impacts, whereas those with voiceless initials (e.g., *tonton* ‘tapping’, *kotukotu* ‘rapping’) represent quiet and weak impacts.

In this section, we have observed that the event-structural generalization of the gradability of verbs does not perfectly hold for mimetic verbs. Although the generalization does

account for the gradability of [+STATE] mimetic verbs, [-STATE] mimetic verbs were found to behave in a complicated fashion with respect to gradability. Nevertheless, the lists of [-STATE] mimetic verbs in (11) suggested partial systematicity in their gradability. In the next section, we demonstrate how fine-grained semantic descriptions in Frame Semantics can capture these seemingly not-fully-predictable “exceptions” in the gradability of mimetic verbs.

## 5 A Frame-Semantic Account

In this section, we search for a gradable dimension in the meaning of each type of [-STATE] mimetic verb that exhibits gradability. The frame-semantic approach that we employ in this study enables us to delve into the specifics of the meanings of mimetic verbs, particularly those that would be jumbled up as “MANNER” in the event-structural representations in a traditional lexical-semantic approach to argument realization (Pinker 1989; Levin 1993; Levin and Rappaport Hovav 1995, see Kageyama 2007 for such an approach to mimetic verbs). In this regard, the present study on scale semantics shares the basic tenet with frame-semantically (or more broadly, “encyclopedically”) informed Construction Grammar, which values the significance of subclass-level generalizations in the discussion of the syntax-semantics interface (Langacker 1988; Fillmore and Atkins 1992, 1994; Taylor 1996; Croft 2001, 2003, 2009, 2012; Boas 2003; Iwata 2008).

In what follows, we show the frame-semantic representations of the three relevant types of [-STATE] mimetic verbs (i.e., activity, motion, and semelfactive) and reinforce them with semantic compatibility tests (see Section 2). Based on the representations, we extend the [ $\pm$ STATE]-based generalization of the gradability of Japanese verbs to cover that of mimetic verbs, proposing the following generalization.

- (12) Japanese verbs behave as gradable when the frames they evoke involve prominent gradable dimensions (or frame elements).

The “gradable dimensions” are frame elements that constitute the frames evoked, ranging over VOLUME, FORCE, SIZE, LENGTH, DURATION, SPEED, COLOR, VALUE, etc. (see Berkeley FrameNet). Note that these frame elements include, but are notably broader than, “STATE components” in the original event-structural generalization.

### 5.1 Mimetic Activity Verbs

The mimetic verbs that correspond to the activity class in non-mimetic verbs were all found to be gradable. This part of the data can be accounted for in terms of Hamano’s (2014:117) remark that mimetic activity verbs tend to have evaluative meaning. Put differently, mimetic activity verbs are thought to evoke frames for evaluated activities. For example, *nikoniko-su-* ‘smile’ involves a positive evaluation, informally called “cheerfulness”. The presence of this feature in the meaning of this mimetic verb is confirmed by its incompatibility with the adverbial *human-ge-ni* ‘with a dissatisfied look’, as shown in (13).

- (13) Cheerfulness:  
Kodomoga {manzoku/\*human}geni nikonikosita.

kodomo -ga {manzoku/human} -ge -ni nikoniko -si -ta  
 child -NOM satisfaction/dissatisfaction -look -COP MIM -do -PST

‘The child smiled with a {satisfied/\*dissatisfied} look.’

Note that the cheerfulness expressed by *nikoniko-su-* has a range, as shown by its compatibility with different degrees of satisfaction in (14).

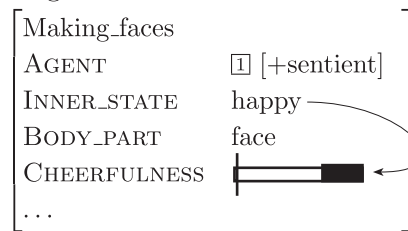
(14) Kodomoga {amarinimo/kanari/?yaya} manzokugeni nikonikosita.

kodomo -ga {amarinimo/kanari/yaya} manzoku -ge -ni nikoniko -si  
 child -NOM too.much/pretty/a.little.bit satisfaction -look -COP MIM -do  
 -ta  
 -PST

‘The child smiled with a(n) {excessively/pretty/?slightly} satisfied look.’

The frame-semantics of *nikoniko-su-*, incorporating the observations here, is represented in Figure 2. The diagrammed scale in the figure indicates that this mimetic verb highlights the upper (i.e., right) range of the cheerfulness dimension, with the rest kept backgrounded.

Figure 2: *Nikoniko-su-* ‘smile’

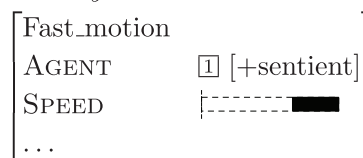


Meanwhile, many mimetic activity verbs have negative connotations. For example, *daradara-su-* ‘laze around’, *gorogoro-su-* ‘lie around’, and *motamota-su-* ‘act slowly’ in (11c) involve similar negative evaluations of slow or lazy movement. These evaluated activities provide gradable dimensions that may be further specified as better or worse by degree words.

## 5.2 Mimetic Motion Verbs

The non-uniform behavior of mimetic motion verbs observed in Section 4 receives a straightforward account when we apply a fine-grained classification to them. However, mimetic verbs for fast motion, such as *tyokomaka-su-* ‘run around’, *tyokotyoko-su-* ‘walk with short steps’, and *tyorotyoro-su-* ‘move around quickly’, are gradable because they specify the speed of motion as high with the degree of highness left unspecified, as shown in Figure 3.

Figure 3: *Tyokomaka-su-* ‘run around’





A compatibility test again confirms the gradable speed specification of these mimetic verbs, as illustrated in (15).

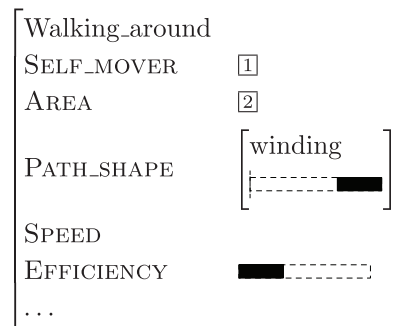
(15) Speed:

- a. Kodomoga {subayaku/\*yukkuri} tyokomakasita.  
 Kodomo -ga {subayaku/yukkuri} tyokomaka -si -ta  
 child -NOM quickly/slowly MIM -do -PST  
 ‘The child ran around {quickly/\*slowly}.’
- b. Kodomoga {amarinimo/kanari/?yaya} subayaku tyokomakasita.  
 Kodomo -ga {amarinimo/kanari/yaya} subayaku tyokomaka -si -ta  
 child -NOM too.much/pretty/a.little.bit quickly MIM -do -PST  
 ‘The child ran around {too/pretty/?a little bit} quickly.’

A parallel account is applicable to mimetic verbs for slow motion, such as *noronoro-su-* ‘walk/act slowly’ and *nosonosu-su-* ‘move sluggishly’.

SPEED is not the only criterial attribute for gradable mimetic motion verbs. For example, as shown in Figure 4, PATH\_SHAPE and EFFICIENCY serve as gradable dimensions in the mimetic motion verb *urouro-su-* ‘wander around’.

Figure 4: *Urouro-su-* ‘wander around’



The following semantic compatibility tests confirm the relevance of these semantic features to this mimetic verb and their gradable nature.

(16) a. Path\_shape:

- Kodomowa matio {(amarinimo/kanari) irikunda keirode/\*massugu} urourosita.  
 kodomo -wa mati -o {(amarinimo/kanari) irikunda keiro  
 child -TOP town -ACC too.much/pretty complicated route  
 -de/massugu} urouro -si -ta  
 -in/straight MIM -do -PST  
 ‘The child wandered around the town with a {(too/pretty) complicated/\*straight} way.’

b. Efficiency:

- Kodomowa matio {(amarinimo/kanari) hikooritutekini/\*koorituyoku} urourosita.

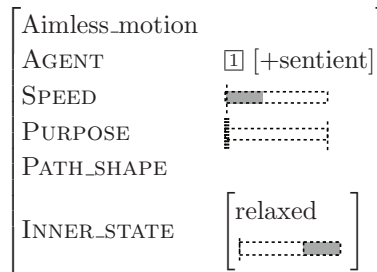


kodomo -wa mati -o {(amarinimo/kanari) hikoorituteki -ni/koorituyoku}  
 child -TOP town -ACC too.much/pretty inefficient -COP/efficiently  
 urouro -si -ta  
 MIM -do -PST

‘The child wandered around the town {(too/pretty) inefficiently/\*efficiently}.’

Conversely, mimetic verbs for aimless motion, such as *burabura-su-* ‘stroll’ and *hurahura-su-* ‘walk aimlessly’, are non-gradable because they highlight aimlessness, which does not appear to have a range, as shown in Figure 5.

Figure 5: *Burabura-su-* ‘stroll’



The presence of the aimlessness specification and its non-gradable nature is confirmed in (17). (Orienteering is an exploring activity with a clear purpose.)

(17) Aimlessness:

a. Kodomowa {atedonaku/\*orienteeringude} buraburasita.

kodomo -wa {atedonaku/orienteeringu -de} burabura -si -ta  
 child -TOP aimlessly/orienteering -in MIM -do -PST

‘The child strolled {aimlessly/\*in orienteering}.’

b. Kodomowa {??amarinimo/\*kanari/\*yaya} atedonaku buraburasita.

kodomo -wa {amarinimo/kanari/yaya} atedonaku burabura -si -ta  
 child -TOP too.much/pretty/a.little.bit aimlessly MIM -do -PST

‘The child strolled {??too/\*pretty/\*a little bit} aimlessly.’

What is worth noting here is the fact that, according to semantic compatibility tests, these mimetic verbs for aimless motion do have gradable specifications, such as speed and inner state, as shown in (18).

(18) a. Speed:

Kodomowa {(amarinimo/kanari) yukkuri/??hayaaside} matio buraburasita.

kodomo -wa {(amarinimo/kanari) yukkuri/haya -asi -de} mati -o  
 child -TOP too.much/pretty slowly/quick -foot -with town -ACC  
 burabura -si -ta  
 MIM -do -PST

‘The child strolled {(too/pretty) slowly/??at a quick pace} in the town.’

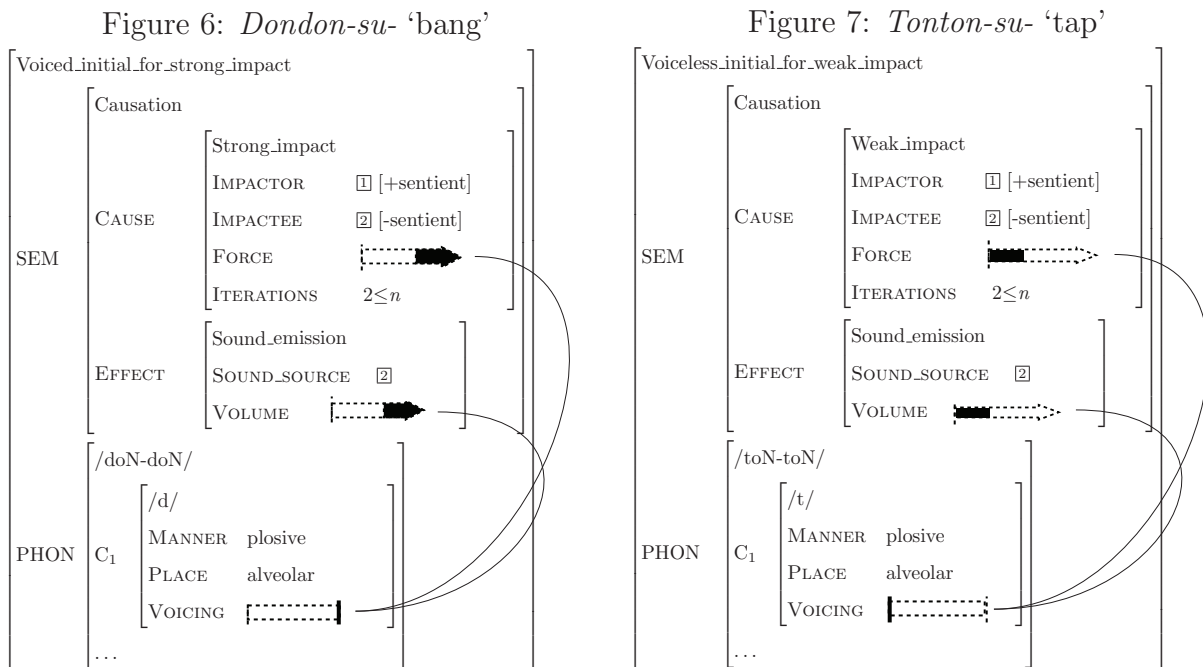
b. Inner\_state:

Kodomowa {(amarinimo/kanari) nonbirito/\*aserinagara} matio buraburasita.  
 kodomo -wa {(amarinimo/kanari) nonbiri -to/aseri -nagara} mati -o  
 child -TOP too.much/pretty leisure -QUOT/hurry -while town -ACC  
 burabura -si -ta  
 MIM -do -PST  
 ‘The child strolled {(too/pretty) leisurely/\*hurriedly} in the town.’

The unexpected non-gradability of these mimetic motion verbs indicates that not all semantic specifications have equal status. It appears that aimlessness is a prominent or critical part of the meanings of these mimetic verbs, but slowness and leisureliness are not. This information is represented by suppressing the backgrounded attributes in gray in Figure 5. It is hoped that future research will make clear, in a non-ad-hoc manner, what is prominent and what is not (see Boas 2008 for a related frame-semantic investigation of English motion verbs).

### 5.3 Mimetic Semelfactive Verbs

The voicing-based gradability contrast observed for mimetic semelfactive verbs can be ascribed to the unidirectional nature of the relevant attributes in their meanings, which is visualized in Figures 6 and 7.



As tested in (19), mimetic semelfactive verbs with voiced initials (e.g., *dondon-su-* ‘bang’) and those with voiceless initials (e.g., *tonton-su-* ‘tap’) represent forceful/loud and weak/quiet impact events, respectively. The successful occurrence of adverbs for different degrees (i.e., *amarinimo* ‘too much’, *kanari* ‘pretty’) indicates the gradability of these attributes. (Recall

that, as indicated by single question marks, the babytalkish nature of these verbs prevents them from obtaining full naturalness.)

(19) a. [+voiced]:

i. Force:

Kodomowa doao {?(amarinimo/kanari) hagesiku/??karuku} dondonsita.  
 kodomo -wa doa -o {(amarinimo/kanari) hagesiku/karuku} dondon  
 child -TOP door -ACC too.much/pretty forcefully/lightly MIM  
 -si -ta  
 -do -PST

‘The child banged the door {?(too/pretty) forcefully/??lightly}.’

ii. Volume: doao {?(amarinimo/kanari) urusaku/\*sizukani} dondonsita.

kodomo -wa doa -o {(amarinimo/kanari) urusaku/sizukani} dondon  
 child -TOP door -ACC too.much/pretty noisily/quietly MIM  
 -si -ta  
 -do -PST

‘The child banged the door {?(too/pretty) noisily/\*quietly}.’

b. [-voiced]:

i. Force:

Kodomowa doao {\*hagesiku/?(amarinimo/kanari) karuku} tontonsita.  
 kodomo -wa doa -o {hagesiku/(amarinimo/kanari) karuku} tonton  
 child -TOP door -ACC forcefully/too.much/pretty lightly MIM  
 -si -ta  
 -do -PST

‘The child tapped the door {\*forcefully/?(too/pretty) lightly}.’

ii. Volume:

Kodomowa doao {\*urusaku/?(amarinimo/kanari) sizukani} tontonsita.  
 kodomo -wa doa -o {urusaku/(amarinimo/kanari) sizukani} tonton  
 child -TOP door -ACC noisily/too.much/pretty quietly MIM  
 -si -ta  
 -do -PST

‘The child tapped the door {\*noisily/?(too/pretty) quietly}.’

The attributes FORCE and VOLUME are assumed to range from low to high, but not vice versa. This assumption accounts for the fact that degree intensification is possible for mimetic semelfactive verbs with initial voicing (e.g., *dondon-su-* ‘bang’). The forcefulness and loudness expressed by these impact verbs can be intensified because the directionality of this intensification is consistent with that of the two scales. In contrast, mimetic semelfactive verbs with voiceless initials (e.g., *tonton-su-* ‘tap’) are incompatible with degree intensification because the intensification of the weakness and quietness involved in these verbs would

result in a “countercurrent” in the relevant scales.<sup>6</sup>

The unidirectionality account gains additional support from non-mimetic semelfactive verbs. As illustrated in (20), degree intensification appears to be more acceptable for “strong” impact verbs than for “weak” impact verbs.

- (20) a. Battaawa sutoreeto totemo {kyooda/#keida}sita.  
 battaa -wa sutoreeto -o totemo {kyooda/keida} -si -ta.  
 batter -TOP straight.fastball -ACC very hard.drive/light.hit -do -PST  
 ‘The batter hit a very {hard drive/#light hit}.’
- b. Kodomowa nekoo {?dotuki/#kozuki}sugita.  
 kodomo -wa neko -o {dotuki/kozuki} -sugi -ta  
 child -TOP cat -ACC beat/poke -pass -PST  
 ‘The child {?beat/#poked} the cat too much.’

To recapitulate, the present fine-grained semantic descriptions of mimetic verbs in favor of Frame Semantics straightforwardly account for the seemingly unpredictable gradability of the three sets of [-STATE] mimetic verbs. We have demonstrated that gradability is not solely attributed to STATE components of coarse-grained event-structural representations but may reside in specific prominent frame elements (e.g., CHEERFULNESS, SPEED, PATH\_SHAPE, EFFICIENCY, FORCE, VOLUME that belong to the broad, ill-defined traditional conceptual category called “MANNER”. These findings are consistent with the fine-grained categorizations of verbs in frame-semantically informed Construction Grammar. The observed linguistic relevance of the fine-grained semantics of mimetic verbs is also significant in the context of mimetic typology, in which verbal uses of mimetics are generally believed to exhibit reduced semantic specificity compared to their adverbial counterparts (Dingemans 2011; Akita and Usuki, to appear).

## 6 Conclusion

In this paper, we have argued that the detailed frame-semantics of mimetic verbs accounts for their “exceptional” behaviors with respect to gradability (i.e., the availability of degree intensification readings in *totemo* modification and *sugi*-compounding). We would like to conclude the paper by stressing its empirical and theoretical implications.

First, the present study serves as an informative case study that systematically compares mimetic and non-mimetic items using a well-defined set of objective criteria. Primarily due

<sup>6</sup>Two alternative accounts, which may not contradict the present proposal, remain to be examined. One alternative assumes the neutral nature of mimetics with voiceless initials and the intensified nature of those with voiced initials. If this assumption is valid, then the two types of mimetics may be viewed as lexically related in a unidirectional manner: from voiceless to voiced. The other alternative instead assumes asymmetry in the phonological pole. In Japanese, voiced obstruents have “marked” status with respect to orthography (i.e., they are marked with a diacritic called “dakuten”) and distribution (i.e., they cannot stand word-initially in native non-mimetic lexemes). Given that this marked-unmarked contrast between voiced and voiceless obstruents gives rise to unidirectionality in the two-point closed scale of voicing (i.e., from voiceless to voiced), this phonological unidirectionality might sound-symbolically constrain the directionality of the relevant scales in the semantic poles as low to high. See Oseki (2013) and Akita (2014) for two semantic phenomena correlated with mimetic voicing.

to their imbalanced attention to mimetics, many previous studies have not elucidated what is really unique to mimetics. As this is among the most debated issues in recent explorations in the syntax and semantics of mimetics (Kita 1997, 2001; Tsujimura 2001, 2005, 2014; Kageyama 2007; Akita 2012, the present methodological demonstration will help to refine the empirical side of the study of mimetics.

Second, the semantic complexity of mimetics has generally been regarded as a peculiarity found in the periphery of the lexicon. However, as we have demonstrated, this “peculiarity” provides a rare fertile ground for the discussion of the grammatical relevance of encyclopedic semantics, which is of great concern for lexical semanticists and construction grammarians (see Akita 2012 for a related discussion). Another theoretical implication of this study resides in the “cognitive” nature of its approach to scale semantics, which has belonged almost exclusively to formal semantics (see Paradis 1997, 2001 for a notable exception). We expect that a similar investigation into the far richer semantics of mimetic adverbs will lead to a more substantive contribution to the discussion of what determines the scalar structure of words. The significance of these lines of research is doubled by the near absence of theoretical contributions from the century-long history of the study of mimetics.

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