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MANAMI NAGASAKI

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MANAMI NAGASAKI

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LIST OF GLOSSING ABREVIATION

ACC	Accusative case
ADV	Adverbial head
CAUS	Causative
COMP	Complementizer
COP	Copula
CP	Conjunctive participle
DAT	Dative case
DEC	Declarative mood
GEN	Genitive case
IDEO	Ideophone
IPF	Imperfective aspect
LOC	Locative case
NOM	Nominative case
NPST	Non-past tense
PF	Perfective aspect
PST	Past tense
QUOT	Quotative
RED	Reduplicant
TOP	Topic marker
1SG	First person, Singular
3FS	Third person, Feminine, Singular
3MS	Third person, Masculine, Singular
3SG	Third person, Singular

RÉSUMÉ

Cette recherche vise à explorer les idéophones, qui relèvent du symbolisme sonore et constituent une part significative de l'inventaire lexical du japonais. Alors qu'il a été considéré que les idéophones possèdent peu de morphologie (Childs, 1995), je montre que les idéophones japonais sont morphosyntaxiquement complexes, et je propose strictement une analyse selon une approche du type Item-and-Arrangement de la morphologie.

Le but ultime de cette étude est d'identifier les propriétés morphosyntaxiques de la réduplication des idéophones du japonais standard. Pour y parvenir, la recherche vise également à identifier les composants morphologiques, à proposer leurs fonctions morphosyntaxiques et sémantiques, ainsi qu'à comparer les structures internes des idéophones avec celles des quasi-idéophones. En limitant les objets d'analyse aux bases bimoraïques, l'étude s'appuie à la fois sur des jugements grammaticaux de locuteurs natifs et sur une revue de la littérature.

L'analyse est fomulé dans le cadre de la Morphologie Distribuée (Halle & Marantz, 1993, 1994), en particulier sur l'hypothèse de *Category-neutral root* (Chomsky, 1970; Marantz,1997). Je propose que les idéophones japonais sont composés de multiples morphèmes, dont un morphème réduplicatif et des morphèmes tonals, organisés de manière concaténative. Le morphème réduplicatif, RED, est une tête aspectuelle imperfective avec une sémantique d'extention : il projette un sens duratif en s'attachant directement à la racine idéophonique, et un sens itérative lorsqu'il s'attache à la base adverbiale. Quant aux têtes catégorielles, outre les suffixes idéophoniques *(-Q, -N, -ri*) qui projettent la catégorie adverbiale, les morphèmes tonals HL et LH projettent les catégories adverbiale et adjectivale, respectivement.

Je propose également que la structure des idéophones adjectivaux est distincte de celle des quasi-idéophones, malgré leur ressemblance formelle en surface: tandis que les idéophones sont dérivés des bases catégorielles neutres, les quasi-idéophones sont dérivés de noms, catégorisés par une tête fonctionnelle [n.-ø]. Ainsi, bien que la ressemblance tonale entre ces deux types d'idéophones découle d'une même réalisation phonologique de la tête adjectivale, leurs composants internes et le rôle sémantique du redupliquant diffèrent.

Mots clés : idéophones, redoublement, japonais, morphologie, syntaxe, morphologie concaténative, morphèmes tonals.

ABSTRACT

The study aims to explore ideophones, which refer to sound symbolism and constitute a significant part of Japanese lexical inventory. While ideophones have traditionally been considered to exhibit little morphology (Childs, 1995), I show that Japanese ideophones are morphosyntactiacally complex, and I propose strictly an analysis based on the Item-and-Arrangement approach to morphology.

The main purpose of this study is to identify morphosyntactic properties of reduplication in ideophones in Standard Japanese. To this end, the research also seeks to identify the morphophonological components involved, to propose their morphosyntactic and semantic functions, and to compare the internal structures of ideophones with those of quasi-ideophones. By limiting the analysis to bimoraic bases, the study relies on grammatical judgements of native speakers and a review of existing literature.

The analysis is grounded in the framework of Distributed Morphology (Halle & Marantz 1993, 1994), particularly the Category-neutral root assumption (Chomsky, 1970; Marantz, 1997). I propose that Japanese ideophones are composed of multiple morphemes, including a reduplicant morpheme and tonal morphemes, organized in a concatenative manner. The reduplicant morpheme, RED, is an aspectual imperfective head with the semantics of extension: it conveys a durative meaning when directly attached to an ideophonic root, and an iterative meaning when attached to an adverbial base. Regarding categorial heads, in addition to the ideophonic suffixes (*-Q, -N, -ri*), which project an adverbial category, the HL and LH tonal morphemes project adverbial and adjectival categories, respectively.

I also illustrate that the structure of adjectival ideophones is distinct from that of quasi-ideophones, despite their formal similarity at the surface: while ideophones are derived from category-neutral bases, quasi-ideophones originate from nouns, categorized by a functional head [n.-ø]. Thus, although the tonal similarity between these two types of ideophones results from the same phonological realization of the adjectival head, their internal components and the semantic role of the reduplicant differ.

Key words: ideophones, reduplication, Japanese, morphology, syntax, concatenative morphology, tonal morphemes.

INTRODUCTION

While ideophones may not be familiar to speakers of other languages, they are a significant part of the Japanese lexicon. They are used both in formal and informal contexts for various modes of communications and are not limited to childish speech. As Ivanova (2006) notes, Ideophones convey unique and subtle nuances of meaning that cannot be expressed in the same way by other words. Japanese native speakers use them naturally and appropriately from childhood, without necessarily learning them in school.

Despite the significant role that ideophones play in languages, their morphological analysis has been challenging, since they exhibit atypical linguistic phenomena within the grammar of these languages, and their lexical categories are not always explicit. While ideophones have been an intriguing subject in research, reduplication, which is one of the most remarkable universal phenomena in ideophones, has not been sufficiently analysed in concatenative morphology, and the identification of categorial morphemes remains unclear.

In this study, I attempt to provide an analysis of the concatenative and derivational structures of Japanese ideophones, which typically correspond to the morphosyntactic structures of Japanese words. Specifically, the study examines reduplicated forms of ideophones to identify the morphophonological and morphosyntactic properties of reduplication within the framework of Distributed Morphology (Halle & Marantz, 1993, 1994).

The first chapter is dedicated to explaining the nature of ideophones. Accompanied by examples of ideophonic words from other languages, I present the definition of ideophones and their prevalent grammatical properties across languages. The second chapter focuses on Japanese ideophones. By providing examples and figures from previous literature, I present the characteristics of Japanese ideophones from a semantic, a phonological and a morphological perspective. In the third chapter, I highlight some issues found in previous analyses. This chapter also presents the primary and secondary research questions of this study, along with the preliminary hypothesis. The fourth chapter discusses the frameworks and assumptions on which my research is based in order to propose a derivational analysis. Finally, the fifth chapter is dedicated to the analysis. Beginning with my proposal for morphological components of Japanese ideophones and their morphosyntactic and semantical roles, I provide a detailed examination of the internal structures of reduplicated ideophones and identify categorial morphemes.

This study focuses on the ideophones of Standard Japanese (which is spoken in the Tokyo region or for formal purposes), while acknowledging that ideophonic expressions exhibit some dialectal variations, particularly from a phonological perspective.

CHAPTER 1
IDEOPHONES

To begin, I present the main domain of the present work, "ideophones". This chapter aims to establish a notion of "ideophones" as defined in the literature, which I apply in this work (1.1). The subsection also briefly describes the cross-linguistic distribution and common characteristics of ideophones. The following subsection (1.2) focuses more on grammatical properties of ideophones which are observed in many languages. I will discuss the grammatical phenomena, particularly from a morphological and a phonological perspective.

1.1 Definition

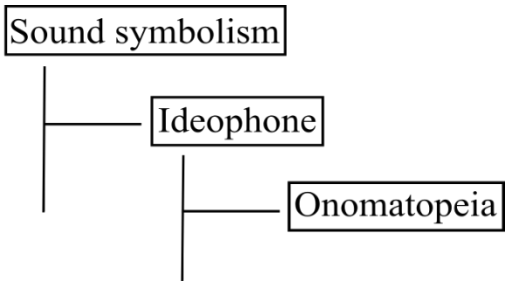
The ideophone is defined by Doke (1935, p.118) as "A vivid representation of an idea in sound. A word, often onomatopoeic, which describes a predicate, qualificative, or adverb in respect to manner, colour, sound, smell, action, state or intensity". While the linguistic sign is categorized as a symbolic sign[1], given that the link between meaning and form is conventional among speakers, albeit arbitrary (De Saussure, 1916), ideophonic words are expressions whose form has a strong iconic association with their meaning through sound. This natural resemblance between meaning and acoustic information is referred as sound symbolism[2].

First of all, it is worth noting that the term "sound symbolism" does not refer solely to "onomatopoeia", which denotes words that imitate sounds. As Akita (2009, p.10) points out, the term also refers to "words symbolizing something (audible or inaudible) by means of linguistic sounds". Thus, sound symbolic words encompass not only linguistic expressions for sounds, but also for manner and appearance, which are visual or tactile perceptions. While the former is exclusively conceptualized as "onomatopoeia", the latter is termed "ideophone" and it also includes onomatopoeia in accordance with the definition by Dingemanse (2011, p.25) : "Ideophones are marked words that depict sensory imagery". To put it another way, "ideophone" is a subclass of "sound symbolism", and "onomatopoeia" is a subclass of "ideophone" (Akita & Dingemanse, 2019; Dingemanse, 2018).

[1] Peirce (1931) principally distinguishes three types of signs: index, icon and symbol. The association between meaning and form is causal in indexical signs, based on similarity in iconic signs and arbitrary in symbolic signs.

[2] Thus, sound symbolism refers not to symbolic signs but rather iconic signs, since meaning and form are connected by resemblance.

Figure 1.1 Diagram of the subcategories of sound symbolism



Secondly, although there is a strong correspondence between meaning and sound in ideophones, this iconic association is not necessarily the same across languages. Dingemanse (2019, p.18) notes that "[…] ideophones are conventionalised words that combine iconic and arbitrary form-meaning mapping", and introduces the term "ideophone" as a language-general concept that manifests itself in language-specific ways. Indeed, although ideophones are a cross-linguistically universal and natural linguistic phenomenon (Diffloth, 1972; Voeltz & Kilian-Hatz, 2001), they do not manifest themselves to the same extent in all languages. While some languages have a very limited use and inventory of ideophonic expressions, others exhibit a substantial variety, significantly contributing to lexical richness of those languages. As Diffloth (1972) mentions, ideophones are not well-developed or assimilated in Indo-European languages, making it challenging for European language speakers to conceptualize the ideophone and this function. In contrast, ideophones seem to be more fully integrated in the grammar of other languages. For instance, a significant use of ideophones is observed and documented in African languages, as well as in some Asian languages (e.g., Japanese, Korean), South American (e.g., Quechua), some Australian (e.g., Jaminjung) and a few European non Indo-European languages (e.g., Finnish) (Voeltz & Kilian-Hatz, 2001).

Table 1.1 Examples of ideophonic words (adapted from Dingemanse, 2012, p.661)

Language (Source)	Affiliation (Location)	Examples of ideophones
Ngbaka Gbaya (Noss, 1986)	Ubangian, Niger-Congo (DRC Congo)	*kpuk* " a rap on the door", *tál-tál* "pure white", *loɓoto-loɓoto* "large animals plodding through mud", *kéŋgéŋge* "empty", *kiláŋ- kiláŋ* "in a zigzagging motion"
Semai (Diffloth, 1976; Tufvesson, 2011)	Mon-Khmer, Austroasiatic (Peninsular Malaysia)	*dhdŋɔh* "appearance of nodding constantly", *byɛ:k* "white", *pradul pradɛk* "noises of scattered small drops of rain", *blbʔəl* "painful embarrasseement"
Somali (Dhoorre and Tosco, 1998)	East Cusshitic, Afro-Asiatic (Somalia)	*shalalab* "sound of rain dripping", *juluq* "to gup down without chewing", *jac* "to crackle"
Korean (Lee, 1992)	Probable isolate	*potïl* "soft and tender", *palt'ak* "palpitating, jerking", *c'onc'on* "woven tightly", *ulakpulak* "unbalanced scary appearance"
Pastaza Quechua (Nuckolls, 1996)	Quechua IIB, Quechuan (Ecuador)	*dzing* "a sudden awareness or intuition, especially one that causes fright", *sa* "expanded or random movement from or within a locus"
Upper Necaxa Totonac (Beck, 2008)	Totonac-Tepehua (Mexico)	*kimkim* "a light flahing on and off", *ʔoŋɬuɬu* "woodpecker pecking on a tree", *liplip* "sparkling like a diamond or piece of glass
Siwu (Dingemanse, 2011)	Kwa, Niger-Congo (Ghana)	*gùdùù* "pitch dark", *gblogblogblo* "bubbling", *fũ̃fũ̃* "malleable", *kpɔtɔrɔ-kpɔtɔrɔ* "walking like a tortoise"

In research on sound symbolic words in these languages, the terms "expressives (Diffloth, 1972; Klamer, 1999)" or "mimetics (Akita, 2009; Kita, 1997)" are sometimes used instead of "ideophones". However, these terms are generally regarded as almost equivalent (Akita & Dingemanse, 2019; Watson, 2001). Although there may be a tendency to use the term "mimetics" for sound-symbolic words in Asian languages (e.g., Japanese, Korean), I will use the term "ideophone" throughout the present work, as it is the most widespread (Dingemanse, 2018).

Ideophones are sometimes considered as childish or informal. For instance, ideophonic words in English (e.g., bling-bling, fuzzy-wuzzy), which often exhibit reduplicative forms and rhythmic patterns similar to those in other languages, are frequently used in children's songs or comics (Belloni, 2022; Nuckolls, 1999). Similarly, some ideophonic words in Japanese are often regarded as belonging to childish use or child-directed speech (Akita, 2017; Kageyama, 2007; Rydblom, 2016). Despite of this observation, ideophones are a fully integrated part of the language and are used not only in colloquial contexts but also as formal, even literary, expressions in major modes of communication (Dingemanse, 2018).

For instance, in Japanese, ideophonic words are used by native speakers of all ages across various situation, both formal and informal, and in different modes of communication, including oral speech and writing. Ideophones allow speakers to convey specific information and represent subtle perceptions that are difficult to express otherwise (Ivanova, 2006). Except for some informal uses of ideophones, such as child-directed speech in Japanese, where nominal use of onomatopoeia can refer to the entity producing its sound (e.g., *wan-wan* (dog's bark) to indicate "dog"), ideophonic words possess meanings that are not easily conveyed by other vocabularies. Often, it is challenging to provide an explicit definition, paraphrase, or translation of ideophones into another language without accompanying iconic signs, such as gestures or facial expressions (Abubakari, 2017; Diffloth, 1972). While native speakers naturally and adeptly employ ideophones from childhood on, it can be quite difficult for non-native speakers to acquire those words and the rules defining them, and to grasp the mental mapping between sound-symbolic expressions and their associated concepts (Ivanova, 2006; Iwasaki et al., 2007). Understanding ideophones in a language requires not only an understanding of the social and cultural context (Childs, 2001), but also perceptions embedded in the language. As Nuckolls (1996, p.15) states, " [Sound symbolism] is a style of thinking about one's perception, one's language and one's alignment with the natural world". If so, ideophones may be a class of words explicitly related to the notion of linguistic determinism.

1.2 Grammatical properties

Although ideophones are not equally prevalent or represented in all human languages, we observe universal grammatical properties and common phenomena associated with ideophonic words.

Firstly, in addition to the characteristics of ideophones I described above (1.1), ideophonic words are typically considered to form an open lexical class (Akita, 2011; Childs, 1995; Dingemanse, 2019). This means that ideophonic words exhibit openness to the addition or creation of new words and combination with other morphemes. Evidence for this includes the size of the ideophone wordset and formation processes of new ideophonic words, which are similar to those other open classes (Dingemanse, 2019). In addition, ideophonic roots can consist of phonaesthemes, which are clusters of linguistic sounds that evoke a certain meaning, though their morphemic status is a matter of debate or definition (Anderson, 1992, p.49). European languages have many phonaesthemes in their lexicon, such as the "tw-" cluster which carries the meaning of "twisting" in words like "twist", "twirl" and "tweak" in English (Bolinger, 1950; Kwon & Round, 2015). Phonaesthemes should be regarded as distinct from ideophones since they are not depictive words (Dingemanse, 2019); however, they are often components of ideophonic words in some languages (Dingemanse, 2011; Egbokhare, 2001; Kwon & Round, 2015; Tufvesson, 2011). Regarding Japanese ideophones, Hamano (1986) made a substantial and essential contribution to the study of phonaesthemes

(or phonosemantics). Her work demonstrates that the Japanese ideophonic roots are composed by a combination of phonaesthemes (e.g., "*pari*", as illustrated in (1)).

(1) Phonosemantics of the root "*pari*" (= crispy sound, crispy texture or appearance)
C_1-/*p*/ : evokes breakable tense surfaces
V_1-/*a*/ : evokes flat and plane objects
C_2-/*r*/ : evokes breaking of objects
V_2-/*i*/ : evokes a small object and tenseness

Secondly, ideophones appear to be commonly used as adverbs in many languages (Elders, 2001; Watson, 2001). This is particularly evident when ideophones represent the mode or manner of an action or the imitation of sound (i.e., onomatopoeia). However, in many languages, ideophones are also frequently used as nouns, adjectives or verbs (Akita, 2009; Ameka, 2001; Lusekelo, 2013). In some languages, such as Ewe, many ideophonic words can function in multiple lexical categories, and their conversion from one class to another occurs without any overt morphological change (Ameka, 2001).

In addition, ideophonic words often show common morphosyntactic patterns across many languages, particularly in their adverbial and verbal forms. Regarding adverbial use, ideophones may involve a complementizer (2a), a quotative marker (2b), or a specific verb such as "say", "go" or "do" (2c) when they modify a verb.

(2) a. *É-fú así nu bé bóbóbó*
3SG-strike hand mouth COMP IDEO
"S/he raised an alarm and went "bóbóbó"." (Ewa; Ameka, 2001, p.33)

b. *Mai-wa kyoro-kyoro-to syuui-o kakunin shi-ta.*
Mai-TOP IDEO-RED-QUOT surrounding-ACC confirmation do-PST
"Mai looked around her surroundings restlessly." (Japanese; adapted from Akita, 2009, p.200)

c. *Mu ne pat-pat.*
3SG.SBJ say IDEO-RED
"S/he shook (with fear or cold)." (Wolof; Baglini, 2016, p.2)

For verbal use, ideophones often take a verbalizer morpheme or a dummy verb/light verb (Akita & Dingemanse, 2019), such as "make" (3a) or "do" (3b).

(3) a. *Watt'-sɨlk'ɨtt' adərrəg-ə.*
IDEO.swallow-gulped down make.PF-3MS
"He swallowed (it) completely and abruptly." (Amharic; Mulugeta & Yimam, 2022, p.106)

b. *Ryokoosya-ga kankooti-o uro-uro-suru.*
tourist-NOM sightseeing.area-ACC IDEO-RED-do
"Tourists wander about in the sightseeing resort." (Japanese; adapted from Akita, 2009, p.61)

Thirdly, we observe some common characteristics with ideophonic words from both morphological and phonological perspectives: ideophonic words often involve reduplication and certain prosodic features. Regarding reduplication, Sapir (1921, p.76) notes that "[T]he process is generally employed, with self-evident symbolism, to indicate such concepts as distribution, plurality, repetition, customary activity, increase of size, added intensity, continuance". Indeed, in sentences with non-ideophonic words such as "It was so so good" and "go go go!", the reduplication evokes a sense of intensity or continuity. It appears that reduplication which conveys meaning through its form plays an important role in sound symbolism and is often a feature of words derived from ideophonic roots. In Balto-Finnic languages, although reduplication rarely appears and is not used for grammatical purposes, it is occasionally involved in ideophonic word formation (Mikone, 2001).

I will discuss reduplication in ideophonic words in Japanese in Section 2.2.3. Here, I simply present a few examples of reduplication in ideophonic words from various languages.

(4) a. *a-álla ððɪnɨ̨ á-í ʒadʊʊŋ ʒadʊʊŋ.*
IPF-remain:3 heart:NOM IPF-say:3 IDEO-RED
"The person remains feeling worried." (Didinga; adapted from De Jong, 2001, p.128)

b. *gbɔ dzi blwuu blewuu.*
breathe heart IDEO-RED
"Be patient in a calm and soft way" (Ewe; adapted from Ameka, 2001, p.32)

c. *Pi-ka pwusul-pwusul nayly-ess-ta.*
rain-NOM IDEO-RED fall-PST-DEC
"It was drizzling." (Korean; adapted from Park, 2018, p.5)

Similarly to reduplication, prosody, such as tone and vowel and consonant quality, also plays a significant role in ideophonic word formation and meaning. For example, high tones can evoke smallness and sharpness, whereas low tones can suggest largeness and slowness (Westermann, 1927, quoted in Akita & Dingemanse, 2019). Dingemanse's description (2011, p.25) of ideophones as "marked words" implies that they exhibit language-specific phenomena that are relatively rare among all human languages. The observations that a particular phonological behavior occurs solely in ideophones further supports this description. Below, I present examples of phonological uncommonness typically found in ideophones from some languages.

(5) a. "onomatopoeic ideophones are skewed toward a larger proportion of disharmonic forms compared to cross-modal ideophones" (Korean; Kwon, 2018, p.1).

b. “Ideophonic adverb only attest High and Low as lexical tones […]. Tone patterns are often either High through out or Low throughout, and this tendency distinguishes them from other word classes.” (Mundang; Elders, 2001, p.98).

c. “ideophones form a phonological distinct group from other words in some languages […] whereby ideophones have distinct tone patterns.” (Bantu languages; Lusekelo, 2013, p.6).

d. “tone pattern betrays its non-ideophonic source.” (Siwu; Dingemanse, 2011, p.154).

In this way, just as ideophonic words tend to take a reduplicative form in many languages, they also tend to exhibit prominent and irregular phonological properties specific to each language.

CHAPTER 2
IDEOPHONES IN JAPANESE

In this chapter, I narrow the focus from general to specific by examining ideophones in Japanese. This chapter will first outline the significance of ideophonic words as members of the Japanese lexicon (2.1). Then, I will present the characteristics of Japanese ideophones from various linguistic perspectives (2.2): semantics (2.2.1), phonology (2.2.2.) and morphology (2.2.3).

2.1 Significance of ideophones

Japanese is one of the languages that possess a substantial amount of ideophonic words. There are dictionaries specifically for Japanese ideophonic words, one of which contains 4500 entries, a number that is comparable to or even exceeds the ideophone inventories in other languages with large ideophone collections (Dingemanse, 2018; Ono, 2007). As briefly mentioned in Section 1.1, ideophonic words in Japanese are used not only in child-directed speech, but also in daily communication, both informal and formal, including in media and in official speech. This is because many ideophonic words in Japanese, like those in other languages, are associated with unique concepts and convey meanings that non-ideophonic words cannot replace. In addition, by and large, while some forms are informal, most belong to the neutral or default register of the language. From a typological perspective, Japanese is classified as a "verb-framed language (Talmy, 1985)", meaning it encodes the path of motion in the verb (e.g., *hairu* (Jap) vs *come in* (Eng); cf. Akita, 2009; Matsumoto, 2003), but the manner of motion is in the adverb (Matsumoto, 2003). Ideophonic words in Japanese, which are frequently used as adverbs, play a crucial grammatical role in providing manner information about the verb.

(6)	a.	v. smile	*niko-niko (-to)*	*warau*
			IDEO-RED (-QUOT)	laugh
	b.	v. chuckle	*kusu-kusu (-to)*	*warau*
	c.	v. guffaw	*gera-gera (-to)*	*warau*
	d.	v. smirk	*niya-niya (-to)*	*warau*
	e.	v. grin	*nika-nika (-to)*	*warau*

I will discuss the details of ideophonic words in Japanese from a semantic, a morphological and a phonological perspective in the following section.

2.2 Linguistic properties

Given the highly distinctive properties of ideophones and their uncommon behavior within the grammatical systems of various languages, it is crucial to examine the prominent features and phenomena of Japanese ideophones across several components of the grammar. This approach enables us to understand the fundamental system in which Japanese ideophonic words are generated and how they interact with the core grammar of the Japanese language.

2.2.1 Semantic

2.2.1.1 Classifications and categories

In the literature (e.g., Akita, 2009; Hamano, 1986), Japanese ideophones are often categorised into three general subclasses based on the semantics that the words represent: phonomimes, phenomimes and psychomimes. These categories, along with their Japanese equivalents and semantic descriptions, are listed in Table 2.1 below, followed by examples.

Table 2.1 Semantic subclassification of ideophones in Japanese

General terms	Termes in Japanese	Semantics
phonomimes	*gisei-go*	Sound imitation (onomatopoeia) of animate objects
	gion-go	Sound imitation (onomatopoeia) of inanimate objects
phenomimes	*gitai-go*	Visual/Textual experiences
psychomimes	*gizyoo-go*	Emotion/Sensation

(7) Examples of each category as adverbs

a. Phonomime (*giseigo*); *wan* "dog's bark"
inu-ga wan-wan-to nak-u.
dog-NOM IDEO-RED-QUOT bark-NPST
"A dog barks."

b. Phonomime (*giongo*); *goro* "sound of thunder"
Kaminari-ga goro-goro-to nat-ta.
thunder-NOM IDEO-RED-QUOT sound-PST
"Thunder made a sound (=there was a thunder)."

c. Phenomime (*gitaigo*); *tsuru* "description of something sloppy and flat"
Kuruma-ga koori-no ue-de tsuru-tsuru-to subet-ta.
car-NOM ice-GEN top-LOC IDEO-RED-QUOT slip-PST
"A car slipped on the ice."

d. Psychomime (*gizyoogo*); *zuki* "description of throbbing sensation"
Kizu-ga zuki-zuki-to itam-u.
wound-NOM IDEO-RED-QUOT hurt-NPST
"Wound hurts."

These semantic subclassifications also interact with lexical categories. While ideophonic words from all semantic subclasses can function as adverbs (7), phenomime and psychomime categories are also available for predicative use. In particular, phenomimes and to a lesser degree psychomimes are more systematically and semantically related to adjectives.[3] Many psychomime words used as adjectives are considered ungrammatical (8c), though some are grammatical or widely accepted (8d).

(8) Ideophonic words as adjective

a. Phonomime (*giseigo*); *goro* "sound of thunder"
#Kaminari-ga goro-goro-da. (possibly used as child-directed speech)
thunder-NOM IDEO-RED-COP
"Thunder is making sound."

b. Phenomime (*gitaigo*); *tsuru* "description of something slippy and flat"
Kuruma-ga tsuru-tsuru-na koori-no ue-de subet-ta.
car-NOM IDEO-RED-COP[4] ice-GEN top-LOC slip-PST
"A car slipped on the flat ice."

c. Psychomime (*gizyoogo*); *zuki* "description of throbbing sensation"
#Kizu-ga zuki-zuki-da.
wound-NOM IDEO-RED-COP
"Wound is hurting."

d. Psychomime (*gizyoogo*); *mero* "description of deeply fascinated emotion"
Kare-wa kanojo-ni mero-mero dat-ta.
3MS-TOP 3FS-DAT IDEO-RED COP-PST
"He was madly in love with her."

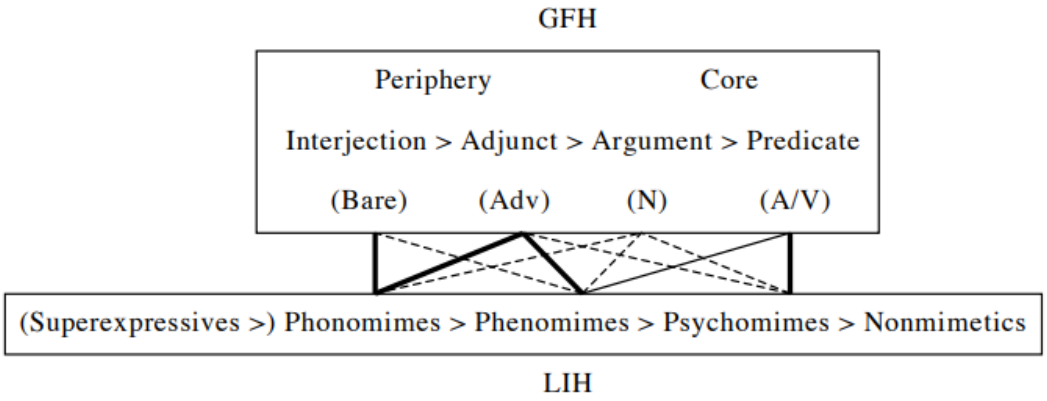
2.2.1.2 Iconicity mapping model

Akita (2009) proposes a mapping model between LIH (Lexical Iconicity Hierarchy) and GFH (Grammatical-Functional Hierarchy) for Japanese ideophones.

[3] Akita (2009) mentions that the psychomime category is related to the predicate, but this association is stronger rather as verb (in accompany with a light verb *-suru* "do") than adjective.

[4] Throughout my current work, I treat *-na* as an allomorph of the copula *-da* in its grammatical context, as discussed in Nishiyama (1999).

Figure 2.1 The iconic LIH-GFH mapping model (Akita, 2009, p.247)



The LIH orders semantic subclasses of ideophones according to their degree of iconicity from Superexpressives to Non-mimetics (i.e., Superexpressives > Phonomimes > Phenomimes > Psychomimes > Non mimetics). This hierarchy aligns closely with Dingemanse's (2012) "Implicational hierarchy of ideophone systems", which orders ideophones from Sound to Inner feelings and sensations (i.e., Sound > Movement > Visual patterns > Other sensory perceptions > Inner feelings and sensations). The LIH suggests that phonomimes are the most iconic, while psychomimes are the most arbitrary among the three main subclasses of Japanese ideophones. One argument supporting this hierarchy is that sound imitation (e.g., phonomimes) is morphosyntactically freer and represents the ideophonic class that children acquire most easily and rapidly before learning and assimilating other ideophonic classes within the framework of Japanese grammar (Akita & Dingemanse, 2019).

The GFH ranks grammatical functions according to their distance from the core of the clause (i.e., Periphery (Interjection >Adjunct) > Core (Argument > Predicate)). The correspondence between these two hierarchical models suggests that phonomimes and phenomimes strongly have a systematic relationship with adverbs, while psychomimes are more systematically related to predicates, particularly verbs (see 2.2.1.1). Additionally, adjectives seem to be also quite systematically realized within the phenomime category.

2.2.2 Phonology

2.2.2.1 Japanese strata and specific phonology

The "markedness" of ideophones, which is mentioned by Dingemanse, also applies to phonology. Japanese ideophonic words exhibit distinctive phonological properties that set them apart from non-ideophonic words.

Despite some controversial perspectives (Kwon, 2017), ideophones have recently been recognized as one of the lexical strata in Japanese (alongside Yamato-Japanese, Sino-Japanese, and Foreign) particularly from a phonological viewpoint, as proposed by Itô & Mester (1995). These strata are distinguished by three phonological constrains.

Firstly, the «*P constraint» forbids the presence of /p/ in environments other than the post-coda position.[5] Secondly, the «*NT constraint» mandates that a post-nasal obstruent must be voiced. Thirdly, the «*DD constraint» prohibits a sequence of voiced obstruents. According to the Table 2.2, which summerizes these constrains, while the Yamato-Japanese stratum is subject to all these constraints, the Foreign stratum appears impervious to them. Regarding the Ideophone stratum, the «*P constraint» distinguishes it from the Yamato-Japanese stratum which can be regarded as the default in Japanese grammar. Itô & Mester (1995) propose that each stratum is labelled with a feature such as [+Yamato], [+Sino-Japanese], [+Mimetic (Ideophone)] and [+Foreign], and that these features trigger their own specific rules that the lexicon must obey.

Table 2.2 Phonological constrains at each stratum (adapted from Itô & Mester (1995, p.820))

Yamato-Japanese	*P	*NT	*DD
Sino-Japanese	*P	---	*DD
Ideophone	---	*NT	*DD
Foreign	---	---	---

Another important and remarkable point about ideophones is imperviousness to the phonological operation known as “rendaku”, which often occurs in compound words or reduplicated words in Japanese. Under this operation, the first consonant of the second element becomes voiced (e.g., *benkyoo+tsukue=>benkyoo-zukue* “study desk”, *hana+hana=>hana-bana* “flowers”), provided that the second element does not contain any voiced consonant[6] (e.g., *hana+kotoba=hana-kotoba (*hana-gotoba)* “flower words”) and that the second element is from the Yamato-Japanese stratum. Thus, even when an ideophonic root like *fuwa* (description of fluffiness) is reduplicated, the reduplicated form does not undergo voicing (i.e., *fuwa+fuwa=>fuwa-fuwa*/**fuwa-buwa*).

[5] It means that /p/ is not allowed to appear at the beginning of words derived from the Yamato-Japanese and the Sino-Japanese strata, while it is possible in the Ideophone and the Foreign strata (e.g., *pika-pika* “flashing”, *purin* “pudding”, respectively).

[6] This phenomenon is referred to as *Lyman’s Law* (Lyman,1894).

2.2.2.2 Phonological form and iconicity

Ideophonic roots in Japanese can be either monomoraic or bimoraic: in other words, all ideophonic words are represented as CV or $C_1V_1C_2V_2$.[7] Their derived forms further contain affixes, which may consist merely of a moraic obstruent or a moraic nasals.[8] Following this convention, I henceforth use the archiphonemic symbols /Q/ for the moraic obstruent and /N/ for the moraic nasals.

Two segmental patterns of ideophonic roots are related to morphological distribution (which will be discussed in Section 2.2.3) and the level of iconicity. Ideophonic words derived from monomoraic roots are mostly used as adverbs, and a large number of them involves sound imitation (i.e., phonomime) (Akita, 2009; Hamano, 1986).[9]

(9) a. *Pi-pi-Q-to* *hue-ga* *nat-ta*
IDEO-RED-*Q*-QUOT whistle-NOM sound-PST
"Whistle beeped."

b. *Fu-fu-Q-to* *warat-ta*
IDEO-RED-*Q*-QUOT laugh-PST
"(subject) chuckled."

c. *To-N-to* *kata-o* *tatak-u*
IDEO-*N*-QUOT shoulder-ACC tap-NPST
"(subject) taps shoulder."

When these ideophonic roots derive nouns or verbs (often accompanied by a light verb), their use is usually limited to child-directed speech. Furthermore, adjectives derived from monomoraic roots seem to be very few and restricted to a few phenomimes.

On the other hand, words derived from bimoraic roots (especially in CVCV form rather than CVV form) are often employed not only as adverbs but also as adjectives. This corresponds to the observation that the majority of ideophones built from bimoraic roots are phenomimes (Akita, 2009)[10].

[7] Here, I represent root form as CV and $C_1V_1C_2V_2$ for simplicity, although there might be different analysis on the root form depending on researcher. For example, Hamano's analysis (1986) is based on rather monosyllabic and bisyllabic, and Nasu (2002) considers CVN as bimoraic root rather than CV+suffix.

[8] This moraic obstruent is also often presented as the obstruent geminates (e.g., Kawagoe, 2015)

[9] According to Akita's experiment (2009, p.32), 60% of CV-based ideophones are phonomines.

[10] According to Akita's experiment (2009, p.32), 60% of CVCV-based ideophones are phenomimes.

(10) a. *Fuwa-fuwa-na pan-o kat-ta*
IDEO-RED-COP bread-ACC buy-PST
"(subject) bought a fluffy bread."

b. Akachan-no hada-wa sara-sara-da
Baby-GEN skin-TOP IDEO-RED-COP
"Baby's skin is smooth."

c. Kono niwa-wa kusa-de boo-boo-da
This garden-TOP weed-with IDEO-RED-COP
"This garden is messed up with weeds." (adapted from Akita, 2009, p.168)

Hamano (1986) mentions that monomoraic roots have stronger iconicity than bimoraic roots.[11] As illustrated above, ideophonic words derived from monomoraic roots are chiefly sound imitations. On the other hand, some ideophonic words derived from bimoraic roots seem to have lost their sound symbolic meanings to some extent and some have become lexicalized as canonical words (i.e., non-ideophones). A type of ideophonic adverb known as "emphatic mimetics" in Akita (2009) takes the form «CVXCV-*ri*» where X is either /Q/ or /N/. Many adverbs take this form, for example, *sukkari* "completely" and *kukkiri* "clearly". However, these meanings do not necessarily correspond to the meaning of their roots, for example √*suka* conveys a physical or psychological state related to emptiness (e.g., *suka-suka* "empty"). Additionally, it is questionable in some cases, such as "*kuki*", whether such a root truly exists, since it does not derive any other forms (e.g.,**kuki-kuki*).

To sum up, while we have discussed how the semantics of the root plays a role in iconicity in Section 2.2.1, the phonological form of ideophonic roots (i.e., monomoraic or bimoraic) also appears to contribute to determining its level. This association is not isomorphic but rather a continuum and is consistent with the LIH-GFH model. This implies that CVCV forms (especially with phenomime and psychomime semantics) are grammatically closer to non-mimetic words and more integrated into the core domain of Japanese grammar.

2.2.3 Morphology

While Childs (1995) notes that there is generally little morphology in ideophones across languages, I believe that Japanese ideophones are worth analyzing from a morphological perspective, as they appear to display a quite systematic morphology at first glance: just as Japanese is considered an agglutinative language, ideophonic words appear consistent in being composed of a root and affixes in a concatenative manner. As

[11] As I previously noted in footnote 7, Hamano's analysis is rather based on monosyllabic/bisyllabic root: "It is the consequence of the strong iconicity of monosyllabic mimetic roots which defy conventionalization (Hamano, 1986, p.50)".

discussed in the previous section, ideophonic roots are either monomoraic or bimoraic. This distinction is significant in morphology as it affects the selection of suffixes associated with the root. In Japanese morphology, while some prefixes exist, the majority of affixes are suffixes, and this pattern also holds true for ideophonic words.

2.2.3.1 Monomoraic root derivation

As discussed in Section 1.3.2.2, a significant number of monomoraic roots semantically represent phonomimes (e.g., sound imitation), and their derived words are mostly adverbs. These words possess strong iconicity and exhibit a certain degree of flexibility in their forms. Below, I present some examples of derivations from the root /*pi*/.

(11) a. *Kikai-no oto-ga { piQ/piN/*pi } -to nat-ta.*
machine-GEN sound-NOM IDEO -QUOT sound-PST
"Machine made a sound like "*piQ/piN*."
b. *Kikai-no oto-ga { piiQ/piiN } -to nat-ta.*
c. *Kikai-no oto-ga { piQ-piQ/piN-piN/piiQ-piiQ/piiN-piiN } -to nat-ta.*
d. *Kikai-no oto-ga { pi-piQ/pi-piN } -to nat-ta.*

All phrases in (11) can be translated similarly, except the quotative clause for depictions of sound imitation. As illustrated by (11a), the root /*pi*/ cannot stand alone in a quotative clause and obligatorily requires a suffix, either -*Q* or -*N*. Example (11b) demonstrates that ideophonic adverbs can involve vowel lengthening, which contributes to the meaning of spatial or temporal extension (Hamano, 1986). Additionally, both (11a) and (11b) can be repeated as shown in (11c), with reduplication allowed more than twice (e.g., *piQ-piQ-piQ…-to*). Example (11d) also displays reduplicated forms, but only the root is reduplicated, and a suffix is added at the last position before the quotative marker.

Although some cases remain unclear (Nasu, 2007), Hamano (1986) suggests that the two suffixes -*Q* and -*N* carry subtle semantic differences: -*Q* conveys an image of an inflexible object and an action performed vigorously in a single direction, while -*N* suggests an elastic object that causes reverberation.[12] As illustrated, these suffixes may be present within the scope of reduplication, as shown in (11c). Here, reduplication simply indicates the repetition of sound in expressions of sound imitation. For instance, *piQ-piQ…* in (11c) describes a repetition of a short and dynamic sound, while *pi-piQ* in (11d) depicts a quick sequence of

[12] For instance, *puQ* evokes quick air splash but *puN* evokes rather air (smell) spreading. See Hamano (1986, Section 4.3) for more examples.

sounds, which can also be repeated (i.e., *pipiQ-pipiQ…*). Overall, these examples illustrate the necessity of suffixes and highlights the flexibility in base size and the scope of reduplications.

Another morpheme that can be associated with monomoraic roots is the quotative marker *-to*. As discussed in Section 1.2, the quotative marker (or complementizer) is commonly observed cross-linguistically with ideophones and is obligatory in Japanese when used with ideophones derived from monomoraic roots. We will briefly discuss it in Section 2.2.3.3.

2.2.3.2 Bimoraic root derivation

While some bimoraic roots have phonomime or psychomime semantics, many exhibit phenomime semantics. Thus, many bimoraic roots serve as instantiations not only of adverb but also of adjective, noun and verb. I provide examples of the root √*fuwa*, which is typically categorized as a phenomime, describing an image of fluffiness or lightness. Firstly, examples of the adverbial uses are provided below.

(12) Adverbs

a. *Fuusen-ga { fuwaQ/fuwaN/fuwa-ri/*fuwa }-to ton-da.*
balloon-NOM IDEO -QUOT fly-PST
"A balloon flew fluffily."

b. *Fuusen-ga { fuwaaQ/fuwaaN/??fuwaa-ri } -to ton-da.*

c. *Fuusen-ga{fuwaQ-fuwaQ/fuwaN-fuwaN/fuwari-fuwari/fuwaaQ-fuwaaQ/fuwaaN-fuwaaN}-to ton-da.*

d. *Fuusen-ga { fuwa-fuwaQ/fuwa-fuwaN } -to ton-da.*

e. *Fuusen-ga fuwa-fuwa (-to) ton-da.*

Similar to monomoraic roots, the bimoraic root √*fuwa* cannot be used alone as a word. However, *-Q* and *-N* are not the only suffixes that can appear with this root: the suffix *-ri* can also be a part of ideophonic adverbs (12a). Additionally, while examples (11b), (11c) and (11d) parallel (12b), (12c) and (12d) respectively in terms of vowel lengthening and/or reduplication, a reduplicated form without *-Q/-N* is also possible, as shown in (12e). This adverbial form is less iconic than the other forms illustrated in (12), where the repetition of the base with suffix *-Q/-N* or vowel lengthening can be repeated relatively freely in accordance with the frequency and mode of the event of the verb. In contrast, the repetition in *fuwa-fuwa* (12e) is limited to two occurrences[13] and conveys aspectual semantics (i.e., durativity) such as "continuation" and "atelicity" (Akita, 2009; Toratani, 2009). Below, I highlight this contrast again in (13).

[13] It means that more than two instances of reduplication, such as *fuwa-fuwa-fuwa,* is ungrammatical. However, the form *fuwa-fuwa fuwa-fuwa* is grammatical given that it involves word-level reduplication.

(13) Adverbs

a. *Fuusen-ga fuwaQ-fuwaQ-fuwaQ-to ton-da.*
balloon-NOM IDEO-RED-RED-QUOT fly-PST
"A balloon flew fluffily. (iconically, the event happened three times)"

b. *Fuusen-ga fuwa-fuwa(-*fuwa)-to ton-da.*
balloon-NOM IDEO-RED(-*RED)-QUOT fly-PST
"A balloon flew fluffily. (for a certain amount of time)"

In examples (14a) and (14b), the word *fuwa-fuwa* is used as an adjective in the attributive and predicative position, respectively. Contrary to the adverbial cases, where the bimoraic root may be in a simple or in a reduplicated form depending on the meaning, adjectives obligatorily have a reduplicated form. Furthermore, more than two reduplications are not grammatical for adjectives (i.e., **fuwa-fuwa-fuwa*) and neither is word-level reduplication (i.e., **fuwa-fuwa fuwa-fuwa*, cf. footnote13).

(14) Adjectives

a. *Fuwa-fuwa-na keeki-o kat-ta.*
IDEO-RED-COP cake-ACC buy-PST
"(subject) bought a fluffy cake."

b. *Kono keeki-wa fuwa-fuwa-da.*
this cake-TOP IDEO-RED-COP
"This cake is fluffy."

A bimoraic root can also be employed as a noun by taking the reduplicated form (15). As we see in Section 2.2.1.2, the nominal use of ideophonic words does not show strong productivity, as they are usually regarded as childish or child-directed speech, even if the words are not onomatopoeic. However, as in example (15), some words derived from bimoraic roots depicting phenomimes or psychomimes can be grammatically and formally employed as nouns.

(15) Nouns

Kono fuwa-fuwa-ga kimochiii.
this IDEO-RED-NOM comfortable
"This fluffiness is comfortable."

The reduplicated form of a bimoraic ideophone can also be used as a verb (16). According to Figure 2.1, the verbal use of ideophones is largely limited to roots with phenomimic and psychomimic semantics. Specifically, psychomimic roots exhibit strong productivity in deriving verbs (Akita, 2009[14]; Kakehi et al., 1996). In example (16), the verbal formation of an ideophone takes a light verb *-suru* "do". This is not the

[14] In Figure 6.1 , Akita (2009) mentions that psychomimic type of ideophone can behave as verb without exceptions.

canonical verb *suru* "do", which usually takes a complement object, but rather a verbalizer suffix that converts the base into a verb.[15] This verbaliser seems to associate only with the reduplicated form without other suffixes (*-Q/-N/-ri*) (17a); otherwise, a quotative marker *-to* is inserted and it is considered rather as an adverb (17b).

(16) Verbs

Kimochi-ga fuwa-fuwa-suru.
feeling-NOM IDEO-RED-do
"(subject) feel fluffy (=feel like dreaming)."

(17) a. *Watashi-wa shiai-tyuu doki-doki-shi-ta.*
1.SG-TOP match-during IDEO-RED-do-PST
"I was nervous during the match."

b. *Watashi-wa shiai-tyuu {dokiQ/doki-dokiQ}-to shi-ta.*
1.SG-TOP match-during IDEO -QUOT do-PST
"I was startled during the match."

Bimoraic roots can actually be verbal not only in combination with suffix *-suru* but also with other verbal suffixes[16] such as *-tsuku/-meku*[17], which can convey the meaning "become". I present some examples below.

(18) a. *Kare-ga watashi-o ira-tsuk-ase-ru*.
3MS-NOM 1SG-ACC IDEO-become-CAUS-NPST
"He makes me feel annoyed."

b. *Fuku-ga beto-tsuku*.
clothes-NOM IDEO-become
"Clothes get sticky."

c. *Ase-ga kira-meku*.
sweat-NOM IDEO-become
"Sweat sparkles."

d. *Machi-ga zawa-meku*.
city-NOM IDEO-become
"City gets noisy."

[15] For instance, a verbalizer *-suru* can derive verbs from a Sino-Japanese noun (e.g*., benkyoo* "n.study" +*suru* "v.do" => *benkyoo-suru* "v. study") and allows them to be inflected (Miyagawa, 1987). This verbalizer probably functions as an intermediator which allows lexemes of other strata than Yamato-Japanese to be integrated in the Japanese grammar system.

[16] Hamano (1986, Section 2.5.4) presents other verbal suffixes which can combine with ideophonic roots.

[17] Hamano (1986, Section 2.5.4.1) describes an interesting distribution for *-tsuku/-meku;* whereas *-meku* can also combine with non-ideophonic roots, *-tsuku* can combine exclusively with ideophonic roots and this is the only derivational suffix which can be affixed to p-initial ideophonic roots.

Unlike the verbalizer *-suru* "do", the root selection of *-tsuku/-meku* may not be restricted by semantic subclasses. This is evidenced by the fact that not only psychomimes can form verbs (18a), but also phenomimes (18b) (18c) and phonomimes (18d). However, the combination of an ideophonic root with *-tsuku/-meku* is not particulaly productive. It may be worth noting that these ideophonic verbs are derived only from bimoraic roots, and their meanings may not be transparently deducible from the root due to their high conventionality (Akita, 2009). In this verbal form, the ideophonic root is not reduplicated and is directly combined with a verbalizer without any other suffixes (*-Q/-N/-ri*) or the quotative marker *-to*. From this perspective, I estimate that these verbal forms are more integrated in the typical Japanese grammar than other ideophonic forms, and their morphological distribution is also similar to that of canonical verbs (i.e., non-ideoponic words).

2.2.3.3 Quotative marker

As we see in Section 1.2, the quotative marker is cross-linguistically often used in word formation with ideophones. In Japanese, the quotative marker *-to* seems sometimes obligatory and sometimes not, and the function of this morpheme has been frequently discussed in previous literature.

The quotative marker *-to* is usually obligatory for adverbs (see Section 2.2.3.1 and Section 2.2.3.2), except emphatic mimetic forms (e.g., CVXCV-*ri*) and reduplicated forms based on bimoraic roots without any other suffixes (e.g., CVCV-CVCV). When an ideophonic adverb is represented in such a way, the presence of the quotative marker becomes optional.

(19) a. *Fuusen-ga fuwa-fuwa (-to) ton-da.*
balloon-NOM IDEO-RED (-QUOT) fly-PST
"Balloon flew fluffily."
b. *Fuusen-ga fuwa-ri-fuwa-ri *(-to) ton-da.*
c. *Fuusen-ga fuwa-fuwa-Q/N *(-to) ton-da.*

Among the various discussions about this phenomenon, one significant remark is the analysis from a phonological perspective. Nasu (2002) proposes that the quotative marker *-to* obligatorily appears to satisfy a four-mora template (i.e., [$\mu\,\mu\,\mu\,\mu$]). This explains the presence of *-to* for non-reduplicated forms based on a bimoraic root with a suffix (e.g., *fuwa-ri *(-to)*)[18], and the optionality for emphatic mimetic forms (e.g., *fuNwa-ri(-to)*), which usually satisfy the template without *-to*. Another condition that requires *-to* is when

[18] However, words derived from monomoraic root (e.g., *piN-to*) are fully grammatical even though the presence of *-to* does not completely satisfy the four-mora template.

the accented foot is found in the final position of the prosodic word (Kawagoe, 2015; Nasu, 2002, 2007). In Japanese ideophonic words, the accent is usually on the vowel preceding the suffix (*-Q,-N,-ri*), and this accented foot at the end of the word is not a preferable phonological structure in Japanese grammar (20a) (Nasu, 2007). The quotative marker *-to* is thus regarded as a rescue strategy to avoid violating a phonological constraint (20b). Additionally, the prosodic structure composed of a heavy-light syllable at the end of the word can also be considered as a favoured structure in Japanese (Kawagoe, 2015).

(20) a. *[fu(waˈ-Q)], *[fu(waˈ-N)], *[fu(waˈ-ri)]

b. [fu(waˈ-Q)-to], [fu(waˈ-N)-to], [fu(waˈ-ri)-to]

From a morphosyntactic perspective, Akita & Usuki (2016) propose that in cases of optional *-to*, the deletion of *-to* occurs following the process of "quasi-incorporation". In other words, the bare form is tightly knit with the verb, whereas the *to*-marked form is a VP adjunct. An experiment by Akita & Usuki (2016: pp.22-23) provides strong evidence that the bare form is usually immediately followed by the verb, as illustrated in (21a). However, the farther the ideophone is positioned from the verb, the more demanding the presence of *-to* become (21b).

(21) a. *Watashi-wa mizu-o gabu-gabu nom-u.*
1SG-TOP water-ACC IDEO-RED drink-NPST
"I drink water uninterruptedly."

b. (*Gabu-gabu*(-to)) watashi-wa (gabu-gabu*?(-to)) mizu-o (gabu-gabu (-to)) nom-u.*

Although the quotative marker is not the main subject of the current research, a relevant observation is that the *to*-marked forms convey more iconicity than the bare form (Akita & Usuki, 2016; Hamano, 1986). Akita & Usuki (2016) argue that the meaning of the bare form shows less compositionality than its *to*-marked counterpart, and that this abstraction is a common phenomenon of incorporation.

In sum, *-to* seems required in the majority of cases for ideophonic adverbs and this requirement seems to be caused by phonological or morphosyntactic constraints. Thus, ideophonic adverbs derived from monomoraic roots, obligatory involving a suffix *-Q* or *-N*, always require *-to,* and this form holds a strong iconicity. Adverbs derived from bimoraic roots also require *-to,* but are less demanding with emphatic mimetic forms and reduplicated forms without suffix (i.e., *-Q,-N,-ri*). The association between these forms and iconicity is weakened in the absence of a quotative marker. In other words, the bare forms are not fully treated in the ideophonic domain and are rather semi-integrated in the core Japanese system.

2.3 Summary

In this chapter, we explored the properties of Japanese ideophones from semantic, phonological and morphological perspectives. Ideophones form one of four strata into which the Japanese lexicon is organized, and which exhibit stratum-specific phonological behaviors.

Ideophones can also each be classified according to semantic categories, which evoke different levels of iconicity, and exhibit different patterns of interaction with phonological forms and the lexical categories from which the words derive. In particular, I highlighted that monomoraic-root based ideophones are mostly adverbs and have phonomimic semantics. On the other hand, the majority of bimoraic-root based ideophones are phenomimes, which can derive adverbs as well as adjectives. This is summarised in Table 2.3.

Table 2.3 Synthesis of linguistic properties of Japanese ideophones

Semantics	Iconicity	Categories (mostly)	Phonological forms (mostly)
Phonomimes	+++	Adverb	CV
Phenomimes	++	Adverb, Adjective	CVCV
Psychomimes	+	Verb	CVCV

We also observed the word form and implicated morphemes according to the lexical category of the word. Adverbs exhibit a high degree of formal variation, while the other categories show more morphological restrictions as synthesized in Table 2.4.

Table 2.4 Synthesis of morphological ingredients within each category

Categories	Components	Reduplicant	Number of times for repetition
Adverb	*-Q, -N, -ri. -to,* vowel lengthening	Optional	Quite flexible
Adjective/Noun		Obligatory	2 times
Verb	*-suru* “do”	Obligatory	2 times
	-meku/tsuku “become”	None	None

CHAPTER 3
RESEARCH PROBLEM AND OBJECTIVES

In this chapter, I briefly present two previous studies on reduplicated words in Japanese. Firstly, I explore the analysis of the hierarchal model of iconicity in reduplicated words and the word formation of ideophonic words within a constructive framework (3.1.1). Secondly, I introduce the definition of quasi-ideophones and the compound analysis of quasi-ideophonic words (3.1.2). After that, I point out some problemes in these previous works and propose research questions that I will address through this work (3.2). Finally, I present my hypothesis, which aims to offer a new analysis of the internal structure of ideophonic words in Japanese (3.3).

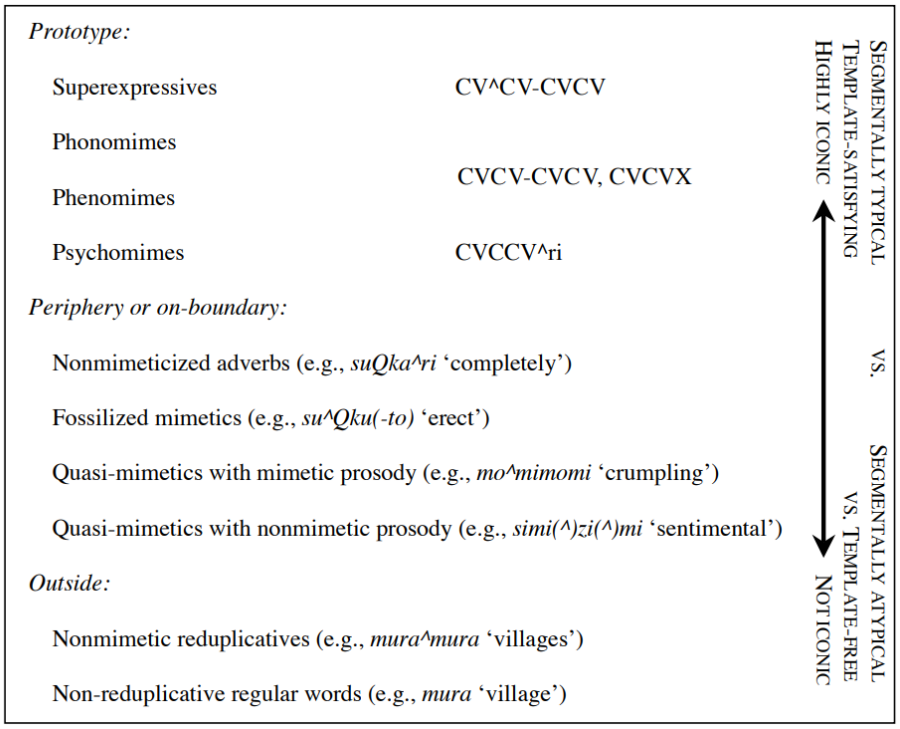
3.1 Review of literature

3.1.1 Analysis of the iconicity scale and the construction networks (Akita, 2009)

Akita's work (2009) sheds light on the mechanism of Japanese ideophones and their integration into Japanese grammar. One of his most appreciated contributions is an innovative perspective on the hierarchy model of iconicity in ideophones. As we saw in Figure 2.1, the iconic LIH-GFH mapping model demonstrates that ideophonic words possess different level of iconicity, depending on their inherent semantics and grammatical use. I acknowledge that the relation between their semantic classifications and iconicity in the mapping is not necessarily isomorphic but rather continuous. Moreover, given the influence of their phonologic forms (i.e., monomoraic/bimoraic roots) on the level of iconicity and the availability of grammatical use for each form, that ideophonic words derived from bimoraic roots have a wider range of lexical categories.

Figure 3.1 exhibits the range from ideophonic (prototype) words to non-ideophonic words derived form bimoraic roots, according to three criteria. According to Akita (2009), ideophonic words are classed as more highly iconic, more template-satisfying, and segmentally more typical than others. I particularly point out two observations: Firstly, there is a hierarchy among prototype words based on their semantics and form (as we have already seen). Secondly, the emphatic mimetics (CVXCV-*ri*) occupy a more peripheral position representing a blurred boundary, where quasi-ideophonic words (we will discuss in the following section) are classified.

Figure 3.1 The internal structure of the prototype category of Japanese mimetics (Akita, 2009, p.135)



Akita's analysis is conducted within the framework of Constructive Morphology, which was chiefly developed by Booij (2005). This framework proposes a morphological system in which large templates of forms are associated with a specific meaning, essentially reducing word-internal compositionality to a single step process. This perspective emphasizes the construction of meaning through morphological shape, with word structures and derivations handled within the pre-syntactic component of grammar.

"Template-satisfying" in Figure 3.1 is based on fifteen mimetic templates (e.g., CVCV-Q, CVCV-ri, CVˆ CV-CVCV[19], see Akita (2009, Sections 4.3 and 5.1)) which are treated as meaning-bearing forms. By proposing that each template is linked to specific aspectual meaning, this approach addresses the issue of the limited productivity of certain roots.[20] In addition, the construction networks proposed in his analysis, where derivations are made thorough polysemous or metonymic links, help explain the existence of complex words whose meanings appear non-compositional.

[19] Diacritic signifies the place of the accent.

[20] As I mentioned briefly at the end of Section 2.2.2.2, one of the examples is *kukkiri* "clearly", since other forms based on the root √*kuki*, such as *kuki-ri, kuki-kuki*, are not available. See more examples in Akita (2009, Section 5.3).

Although this approach addresses some weaknesses identified in traditional derivational analyses, I would like to point out a few issues. In the proposed network mappings, templates are linked with aspectual meanings, for example, the template CVCV-CVCV is labeled as "stative", while the template CVˆCV-CVCV is labeled as "durative". Then, the former is analysed as resulting from a metonymy-based derivation of the latter. However, the mapping does not explicitly indicate the lexical categories of each template unless they are assumed to be intrinsically implied by their semantic labels. I claim that syntax should concretely recognize lexical categories, since syntactic structures differ according to their lexical categories. Effectively, only adverbial instantiations can undergo extended reduplication (e.g., *fuwa-fuwa fuwa-fuwa*), whereas other instantiations cannot.

Another concern is the idea that reduplication is encompassed within the templates, whereas reduplication is often analysed as either a kind of compounding or as a suffix in derivation (depending on the approach). Moreover, particularly in ideophonic expressions, subtle differences in meaning can be conveyed through individual morphological and phonological components, and their formations exhibit a certain degree of structured flexibility and contractiveness. Given this, following a formal descriptive approach, I maintain that ideophonic words are derived from root morphemes, and grammatical morphemes, including reduplicants, are then affixed in a concatenative manner. Precisely, the word "*fuwa-fuwa*" is polymorphemic and isomorphic, whereas the template-based analysis treats it rather as monomorphemic. In addition, I am not sure whether the template-based analysis can adequately explain why some non-ideophonic words adopt the same ideophonic prosody as ideophones (e.g., *mo^mi-momi* "crumpling/massage" in Figure 3.1). If the same form and prosody result from ideophonic templates, it raises the question of why and how non-ideophonic words can be compatible with ideophonic templates.

3.1.2 Analysis of quasi-ideophones

3.1.2.1 Quasi-ideophone

Given a substantial number of Japanese words that take a reduplicated form, it may not be clear what defines the term "quasi-ideophones" or in which stratum they are classified, even for native speakers. However, it seems reasonable to identify quasi-ideophones as words that are derived from non-ideophonic roots but exhibit the same tonal patterns as ideophonic words (Akita, 2009; Kwon, 2017). Thus, since quasi-ideophones are fundamentally distinct from ideophones, their roots are not composed of phonaesthemes and do not convey sensory semantics.

Yet, the boundary between pure ideophonic words and quasi-ideophonic words can be blurred. This is because they both exhibit not only the same tonal patterns but also the reduplicated form based on a bimoraic root and their resistance to rendaku (see Section 2.2.2.1). Quasi-ideophonic words are mostly originally identified as belonging to the Yamato-Japanese stratum, yet they somehow share ideophonic properties in their formation. Quasi-ideophonic words are also discussed in Nishimura's work (2013) and I present some examples below.

(22) a. *ami* "net" *ami-ami* "net-like"
b. *shiwa* "wrinkle" *shiwa-shiwa* "wrinkly" (**shiwa-ziwa*)
c. *tsubu* "grain" *tsubu-tsubu* "grainy"
d. *shima* "stripe" *shima-shima* "striped" (**shima-zima*)
e. *kona* "powder" *kona-kona* "powdery" (*kona-gona*[21])
(adapted from Nishimura (2013, p.74))

3.1.2.2 Compound analysis (Nishimura, 2013)

In Nishimura's work, quasi-ideophonic words in Japanese are analysed as compound structures.[22] Nishimura defines compound words as consisting of at least two roots that are phonologically realised. He also admits that the reduplicant morpheme (RED) is not realisable as a word, given that RED does not have an independent phonetic realisation on the surface. However, he proposes that quasi-ideophonic words can be analysed as Japanese compound words from a morphophonological perspective. He introduces two main arguments to support his claim that quasi-ideophones follow a morphophonological compound pattern. Firstly, the RED in Japanese involves total reduplication, meaning that the RED realizes an entire copy of the phonetic representation of its base at the surface level. Secondly, quasi-ideophonic words exhibit a few phonological phenomena that are also observed in canonical compound words in Japanese.

Although it seems that his analysis primarily focuses on phonological perspectives, he also proposes a contrast in morphological structure between two types of reduplicated words, which he names "intensive/plural reduplication (IP-RDP)" and "mimetic reduplication (M-RDP)". The former designates words that convey intensive or plural meanings through reduplication, such as *yama-yama* "mountain-s" and *hito-bito* "people", while the latter refers to quasi-ideophonic words, as seen in examples (22). He proposes that, in the case of IP-RDP, the categorial information of the output is projected by its nominal base and follows the structural analysis in (23a). This base is positioned on the right in the compound

[21] In this case, *kona-gona* is also accepted. There might be a few exceptions where the reduplication can undergo *rendaku*, yet there are still regarded as quasi-ideophones because they exhibit the ideophonic tone.

[22] Note that Nishimura use the term "mimetic" to indicate "quasi-ideophone" in his work.

structure, conforming to the RHR (right-hand head rule, Williams, 1981), which is the basic structure of word formation in Japanese. In the case of M-RDP, by contrast, the RED functions as the categorial head and assigns an adjectival category to the compound structure (23b). In other words, quasi-ideophonic words are analysed as compound structures in which the RED is positioned on the right, making it the categorial head.

(23)

(Nishimura, 2013, p.86)

Another reason why Nishimura proposes these structures is based on a semantic perspective. He mentions that, in the case of M-RDP, the base is not the semantic head either. This is because the output (e.g., *shiwa-shiwa* "wrinkled") is a word denoting a state, not a type of the meaning of the base (e.g., *shiwa* "wrinkle").

However, I argue, in line with the typical definition for a compound, that RED still cannot be considered a constituent of a compound word. As Nishimura also implies, fundamentally RED does not exhibit the morphological behavior of a root. More precisely, RED does not possess lexical-conceptual meaning, nor can it serve as the base for affixation without being applied to a root itself. In fact, compounds create words that denote a subset of the head's denotation. For example, the compound word "soccer ball" denotes a subset (i.e., a hyponym) of the set denoted by its head "ball", which is a superordinate (i.e., a hypernym). These general characteristics of compounding do not align with the analysis in (23). Thus, I propose that quasi-ideophonic words are not the result of compounding but rather they are the product of a derivational process.

The scope of the discussion in his work on "mimetic reduplication" is limited to quasi-ideophones, and he does not say much about pure ideophones while he believes that the latter does not have a compound structure. I propose that RED is a suffix that may project different grammatical or semantic information, depending on its base, and thus create a new word. In other words, again, quasi-ideophones are derived words, not compounds.

3.2 Research Questions

The previous chapters indicate that Japanese ideophones (and possibly those of other languages), exhibit a higher level of iconicity than other types of words. They also exhibit different grammatical behavior than the core lexical strata of the language, but speakers can treat them as an interconnected resource within a single linguistic framework. As a result, ideophonic words are not only used as expressive elements (i.e., interjections) but can also be integrated into the structure at the phrasal level. Indeed, we observe some words, such as quasi-ideophones, existing at the fuzzy boundary of a continuum between pure ideophones and non-ideophones.

However, the previous literature does not propose a clear morphosyntactic analysis that integrates ideophones into Japanese grammar. It also remains unclear how the lexical category of ideophonic words can be identified and selected in syntax.

Following these observations, the current work focuses on the formation of ideophonic words derived from bimoraic roots with phenomime semantics. Phenomimes exhibit a wide range of lexical categories, including adverbs and adjectives. Furthermore, the morphophonological processes involved in their reduplicated forms preliminary seem, at this point, to overlap with the formation of quasi-ideophonic words.

The research aims to answer the question: What are the morphological and morphosyntactic properties of reduplication in ideophonic words in Japanese?

I attempt to provide a derivational analysis for both pure ideophonic words and quasi-ideophonic words, arguing that the reduplicant is a suffix.

To address this main question, several key steps are indispensable. Therefore, the research is guided by the following specific sub-questions:

a) What are the components of ideophonic words in Japanese?

b) What are their morphosyntactic and morphophonological properties?

c) In what ways are the structures of ideophonic and quasi-ideophonic words different (or similar)?

Acknowledging that there is dialectal variation within Japanese, the current study focuses exclusively on the grammar of Standard Japanese (which is primarily spoken in and around Tokyo as well as in formal contexts elsewhere). By addressing the main and sub-questions, this research provides a formal description of the morphosyntactic and morphophonological properties of ideophonic reduplication in Japanese. Specifically, I examine the phonological and semantico-syntactic properties of the morphemic components of Japanese ideophonic words. The study aims to shed light on the full potential of morphological analysis of ideophones and enables the identification of categorizing morphemes while investigating their internal morphotactic structure.

3.3 Hypothesis

Tonal patterns are strong systematic phenomena in Japanese ideophonic words: ideophonic words, that form through the reduplication of bimoraic roots, only exhibit either HLLL or LHHH tonal pattens. The HLLL pattern is observed in nominal and adjectival uses, while the LHHH pattern is observed in verbal and adverbial uses. The example below shows the LHHH pattern with *fuwa-fuwa* in adjectival use (24a) and the HLLL pattern with *fuwa-fuwa* in adverbial use (24b).

(24) a. L H H H
Kono kuriim-wa fuwa-fuwa-da.
this cream-TOP IDEO-RED-COP
"This cream is fluffy."

b. H L L L
Kuriim-o fuwa-fuwa-to maze-ru.
cream-ACC IDEO-RED-QUOT mix-NPST
"(Subject) mix cream fluffily."

The word *fuwa-fuwa* with an LHHH tone is also observed in (25). In (25), *fuwa-fuwa* does not indicate the manner of an action, but rather the consequence brought about by the action. Thus, while *fuwa-fuwa* in (24b) serves as a manner adverb, *fuwa-fuwa* in (25) is actually not an adverb but a resultative adjective. In ideophonic words, the morphophonological distribution for these two lexical categories seems systematic and transparent: they are distinguished not only by the particle, but also by differences in tonal pattern. Asserting that the particle *-ni* for resultative reading is a dative case marker, the base *fuwa-fuwa* in (25) likely possesses a nominal or adjectival category.

(25) L H H H
Kuriimu-o fuwa-fuwa-ni maze-ru.
cream-ACC IDEO-RED-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

Given that only the reduplicated form (based on bimoraic root) is used as a noun and adjective, one may suppose that the reduplicant morpheme is a candidate for a nominal or adjectival head. However, I propose that it is rather the tonal pattens that determine the lexical categories. Firstly, reduplicated forms can also be realized as adverbs. Secondly, adverbial and adjectival reduplicated forms are (apart from their syntactic distribution) distinguished solely by their tonal patterns. Relying on this observation, I also propose that the reduplicant morpheme is not a categorial head in quasi-ideophonic word derivation either, because both have the same tonal pattern, which serves as the categorial head. I suggest that these tones are attributed to the derivational structure of both pure- and quasi-ideohpones, creating a blurred boundary on the surface; however, their internal structures should be distinct, given that "*ɸuwa*'' in *ɸuwa-ɸuwa* is not a word whereas "*shiwa*" in *shiwa-shiwa* is a noun. I propose that the tonal patterns LHHH/HLLL are the tonal realization of categorial heads. This presents a morphophonological marked property of ideophones in Japanese, given that the lexical categories of non-ideophonic words in Japanese are usually not determined by phonological elements (i.e., Japanese is not a typical tonal language).

In the following chapter, I present the morphological and phonological framework which my analysis of Japanese ideophonic words (Chapter 5) is formulated in.

CHAPTER 4
FRAMEWORK AND ASSUMPTIONS

In this chapter, I present the theoretical framework and assumptions on which my analysis relies. I begin by briefly describing the generativist perspective I adopt, in particular the Minimalist Program (4.1) Then, I present the aspects of the theory that are most relevant to my research, beginning with morphosyntax (4.2) before moving on to morphophonology (4.3).

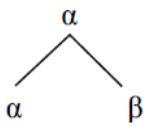
4.1 Universal Grammar

Universal Grammar (henceforth UG) is a theoretical approach to the language faculty that has been developed since Chomsky (1957) and on which my analysis is fundamentally based. Chomsky hypothesizes that humans biologically possess a specialized cognitive system exclusively for acquiring language (i.e., the language faculty), and this system consists of a universal architecture and language-specific rules (Chomsky, 1965). With the insight that language variation itself is limited and constrained (Greenberg, 1966; Rizzi, 1980), a general framework of universal Principles and Parameters replaced work with language-specific rules, since the late 1970s (Chomsky & Lasnik, 1993). Thus, the variation across languages is limited to various parametric choices within a restricted and principled theory.

In current generative theory, parameters are not regarded as abstract switches at once governing various aspects of the grammar; rather they are limited to binary choices in syntactic heads (Kayne, 2016), and/or the functional lexicon (Rizzi, 2010).

4.1.1 Minimalist Program

Since Chomsky (1993, 1995), the Minimalist Program has become a major and fundamental approach in generative linguistics. This program aims to express the properties of the grammar in terms of only the most economical and simple computations and operations, thus finding an "optimal design" that can account for the intricate and varied representations of human language. In this approach, structural rules in traditional generative approach are reduced to "merge" along with a few other operations (i.e., agree, copy). Merge enables the combination of two syntactic objects at the root level into a single syntactic unit.

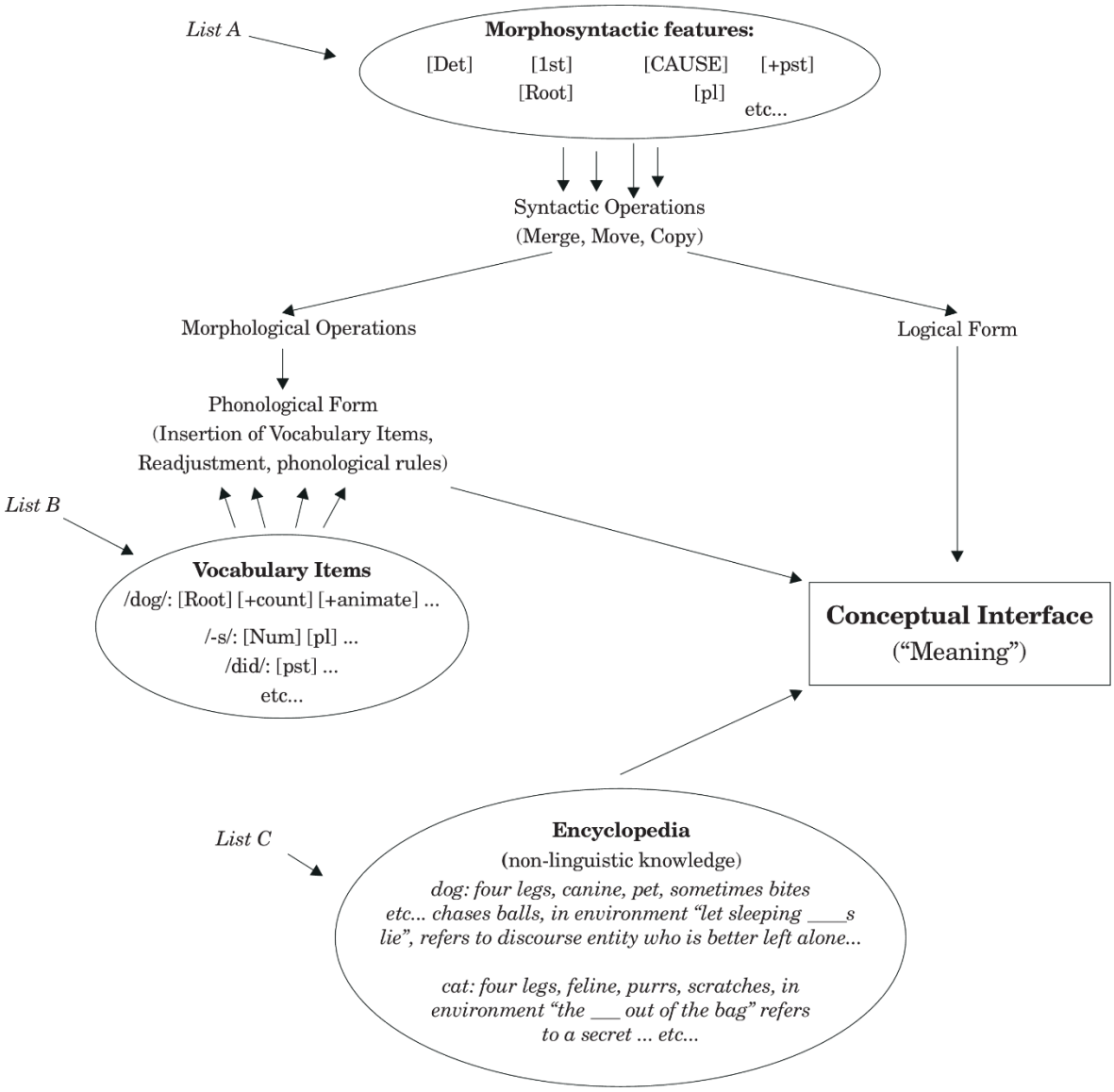
(26) a. MERGE { α } { β } => { α, β } b. 

Merge and other operations are carried out in syntax, which is part of the derivational grammar model proposed in the Minimalist Program. Syntactic structures are then transferred (i.e., spell-out) to the interfaces with two distinct linguistic components: Phonological Form and Logical Form. At these interfaces, the syntactic representations are mapped onto the articulatory-perceptual and the conceptual-intentional systems, respectively (Hauser et al., 2002). This grammar model is further elaborated in Distributed Morphology, a framework which incorporates a syntactic approach to word formation, and which I will present in the next section. In the next section, I present the basic properties of the morphological components of the grammar that I will assume.

4.2 Distributed Morphology

In Distributed Morphology (henceforth DM, Halle & Marantz, 1993, 1994), all meaning-bearing linguistic structure is generated within a single system (i.e. "syntax all the way down"). This perspective rejects the lexicalist hypothesis (Anderson, 1982; Chomsky, 1970), which traditionally conceives of words as lexical items, with new words derived in the lexicon. DM, however, does not share the same concept of a "lexicon" as the traditional lexicalist approach. In DM, the lexicon is not dynamic (i.e., not generative), but only contains individual morphemes which constitute the atoms of the syntactic derivation. Therefore, word-level structure, like phrasal-level structure, is produced by syntactic operations.

Figure 4.1 Architecture of grammar in DM (Harley & Noyer, 1999, p.3)



In DM, there are two kinds of morphemes: root morphemes and functional morphemes, which include categorial heads and feature bundles (List A), but they do not contain phonological features. In other words, these morphemes consist exclusively of syntactic and semantic properties, which can be seen as analogous to the *signifié* in Saussure's view, and this component is separated from the *signifiant*. After spell-out, morphemes are mapped to a phonological representation (i.e., late insertion) by a process called "Insertion of Vocabulary Items", where morphemes are associated with phonological exponents (List B). Thus, as the name of this framework implies, the various aspects of morphology are distributed across several points in

the architecture of grammar (Bobaljik, 2017). This framework hence embodies a piece-based syntactic and realizational approach to word formation (Embick & Marantz, 2008).

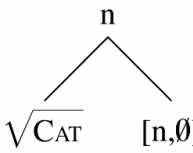
4.2.1 Category-neutral root

The category-neutral root is a theoretical hypothesis in DM which I will adopt in my analysis. This idea was initially suggested by Chomsky (1970) when he discussed the contrast between gerundive nouns and derived nouns in terms of productivity and semantic equivalence. In an attempt to draw a distinction between gerundives and derived nouns, Chomsky concluded that roots were category-neutral but categorized in the lexicon. Marantz (1997) reexamining Chomsky's observations and arguments adopts the category-neutrality of roots, but argues that categorization is syntactic. According to Marantz, roots are not lexically categorized; instead, lexical category is projected by a functional head with which the root combines in the syntax. Every root morpheme requires at least one categorial functional morpheme and cannot be spelled out as a word unless it is merged with a categorial head.

Therefore, root morphemes, even those like √cat or √dog, are not nouns by themselves. They are syntactically combined with a functional head [n.-ø] (phonologically not pronounced), which projects a nominal category to their structure, and only then are they spelled out as the nouns "cat" or "dog".

(27)

The Root $\sqrt{\text{CAT}}$ *as "noun"*



(Embick & Marantz, 2008)

4.3 Morpho-phonological framework

I devote this subsection to presenting two morpho-phonological frameworks: Autosegmental phonology (4.3.1) and Prosodic Morphology (4.3.2).

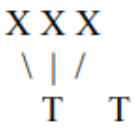
4.3.1 Autosegmental phonology

In the framework of autosegmental phonology (Goldsmith, 1976), phonological information is not all represented on a single tier of segmental sequence; instead, different kinds of phonological information appear on separate tiers. In other words, phonological representation consists of a multi-planar structure

rather than a single line structure. In this multi-planar structure, prosodic features (i.e., tone, stress, pitch), which are suprasegmental, have their own tier and behave independently of segmental features.

For instance, tones (e.g., Low, Middle, High) are represented on their own tier but are only at a later stage of the phonological derivation linked to the segmental tier. It is possible for these tones to float without linking (i.e., these tones do not appear in the output form) or to be associated with vowel segments at the time of output.

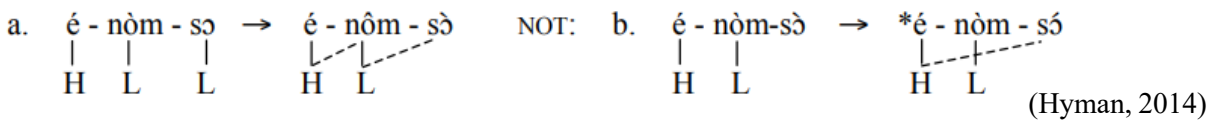
(28)



(Leben, 2006)

In the latter case, the association is not always isomorphic. As the model illustrates in (28), a tonal feature (T) can be associated with more than one segmental feature (X). This phenomenon is called “spreading”, which occurs on the suprasegmental tier due to well-formedness conditions. These universal phonological conditions require that all vowels be linked to at least one tone and that these association lines do not cross. Indeed, suprasegmental representation is also subject to the Obligatory Contour Principle, which prohibits two identical features from appearing consecutively.

(29)



(Hyman, 2014)

Besides spreading, tones may undergo other phonological processes such as shifting, anticipating, insertion, and deletion (Hyman et al., 2018). These phenomena are attested and have been described for a large number of languages and Japanese is no exception (Haraguchi, 1975; Kawahara, 2015; Poser, 1984; Rolle, 2018 etc.).

4.3.2 Prosodic morphology

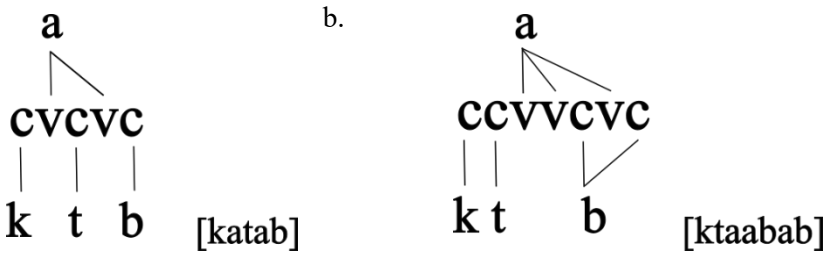
Building on the notion of autosegmental phonology, prosodic morphology was initially introduced by McCarthy (1979) and further elaborated by McCarthy & Prince (1999). Initially developed to address morphophonological challenges in the analysis of the word structure of Semitic languages and reduplication (McCarthy, 1979; McCarthy & Broselow, 1983 etc.), this theory is concerned with the interaction between

prosodic structure and morphological form, and provided an autosegmental understanding of non-concatenating morphology.

4.3.2.1 Templatic Morphology

Templatic Morphology, also known as root-and-pattern morphology, challenges traditional concatenative morphology. In Templatic Morphology, word formation involves prosodic templates (e.g., CVCVC, CVCC) within a structure. For instance, in the well-known example of Classical Arabic *katab* "write", the root consists of discontinuous consonants *ktb* and is associated with conceptual meaning. The consonants are then each associated with a C position of the prosodic template CVCVC, which determines the category and tense (and voice). The choice of vowels, finally, provides inflectional information. This is not analyzable in terms of traditional structuralist morphemes, defined as contiguous strings of phonemes with a meaning (Bloomfield, 1933). Prosodic morphology provides a way to maintain a morphemic Item-and-Arrangement view, by recognizing templates, as well as consonantal and vocalic elements as morphemes. These morphemes, which consist of different kinds of phonological content, are represented on distinct and independent tiers, with each segment mapped onto an appropriate position in the template.

(30) a. b.

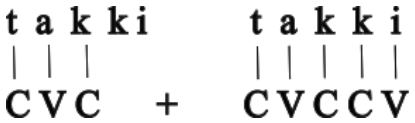


Thus, regarding word formation in generative grammar, prosodic morphology allows for the treatment of descriptively non-concatenative morphology as concatenative.

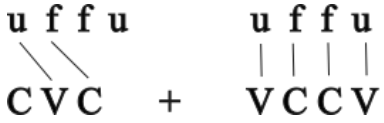
4.3.2.2 Reduplication

Prosodic morphology also provides the tools for an Item-and-Arrangement treatment of reduplication. Marantz (1982) mentions that "[reduplication is identified] as a morphological process relating a base form of a morpheme or stem to a derived form that may be analyzed as being constructed from the base form via the affixation (or infixation) of phonemic material which is necessarily identical in whole or in part to the phonemic content of the base form." He argues that reduplication is based on a template to which the phonological copy of the base (or root) is mapped and linked according to rules.

(31) a. takki “leg” => taktakki “legs”



b. uffu “thigh” => ufuffu “thighs”



(adapted from Marantz, 1982, p.447)

In the analysis in (31) of Agta, reduplication has a phonological exponent represented as the template CVC for plural meaning. The entire phonemic representation of the root (e.g., “takki”) is mapped one segment at a time from left to right onto the CVC template, such that “tak” is linked to the template and phonetically realized (pronounced). The phonological size of the reduplication can vary, such as a mora, a syllable, a metrical foot (McCarthy,1979).

In prosodic morphology, reduplication may also involve tones. The example of Naijá (32b) in Akinbo (2025) shows that the verb’s inherent tone patten (LH) is copied onto the reduplicant to indicate iterative events. By contrast, in words conveying irregular repetitive events (32c), the inherent tone is not copied. Instead, each tone, L and H, is stretched: the L tone spreads across all positions on the base, and the H tone does the same on the reduplicant. In other words, the aspectual meanings of words (such as iteration or durative) are differentiated by tonal patterns. However, as shown in (32c’), tonal copying still occurs even in irregular repetitive meanings when the reduplication follows the scope of “wàkà wáká”. In this case, the word (32c’) not only retains the irregular repetitive event but also conveys frequency.

(32) a. wàká (=walk) “Xed”
b. wàká wàká “Xed repeatedly”
b’. wàká wàká wàká “Xed repeatedly many times”
c. wàkà wáká “constantly Xing about”
c’. wàkà wáká wàkà wáká “constantly Xing about repeatedly many times”

(adapted from Akinbo, 2025, p.2)

4.4 Summary

This chapter presented the generativist perspective on the language faculty and theoretical framework I adopt in the current study. Accordingly, the analysis in the following chapters will be conducted within a piece-based, syntactic realizational approach to the word structure of Japanese ideophones. This approach is grounded in DM, considered alongside the autosegmental approach to morphophonology of prosodic morphology. In this spirit, I will treat the reduplication as the result of affixation of a morpheme whose

exponent is a CV-template, and I propose that tones may (in the relevant cases) constitute the exponents of morphosyntactic heads, i.e., morphemes.

CHAPTER 5
ANALYSIS

This chapter is dedicated to answering the research questions. In the first part, I present my analysis of the derivational structures of Japanese ideophonic words (5.1). This section consists of subsections analyzing adverbial forms (5.1.2) and adjectival forms (5.1.3). In each subsection, I examine the relevant morphemes and explain their grammatical functions and morphosyntactic properties. In the second part, I outline the derivational structures of quasi-ideophonic words (5.2) and illustrate how their components and structure differ from those of pure ideophonic words.

5.1 Analysis of ideophones

5.1.1 Proposal

In this first part, I present the derivational structures of Japanese ideophonic words. My key proposal is that these words are composed of multiple morphologically discrete morphemes, with segmental, tonal, or templatic exponents. I argue that the reduplicant morpheme functions as an aspectual head, while lexical category is assigned by a different morpheme. Below is an overview of my proposal regarding the morphemes that make up phonomime ideophonic words, stating the kind of exponent and morpheme.

(33) Proposal for morphological components and their grammatical functions
   a. Ideophonic root [phenomime]: Abstract image for visual or textual experiences
   b. Ideophonic suffixes (*-Q,-N,-ri*): Adverbial head
   c. Reduplicant morpheme: Aspectual head
   d. Tonal morpheme (LH): Adjectival head
   e. Tonal morpheme (HL): Adverbial head

In the following sections, I demonstrate why these elements should be considered structurally autonomous parts of ideophonic words and provide a detailed explanation of their grammatical and semantic roles based on their combinatory structure.

5.1.2 Adverbs

5.1.2.1 A note on quotative marker *-to*

The quotative marker *-to* is not an adverbial head. In general, it seems to function more as a complementizer C, but in Japanese, it may also serve to integrate ideophonic words into core Japanese grammar. I observe a parallel between *-na* and *-to*: *-na* is necessary when a *na*-adjective is in the attributive position (e.g., *fuwa-fuwa-na keeki* "a fluffy cake").

Japanese has two kinds of adjectives. One is called "*i*-adjective" or simply "(canonical) adjective", and these lexemes are exclusively from the Yamato-Japanese stratum. They possess their own system of inflexion[23] and the adjectival feature [+A] in that they can modify nouns without the intervention of any other morpheme. The other one is called "*na*-adjective" or "adjectival noun", and is principally derived from Sino-Japanese, Foreign and Ideophone.[24] These lexemes possess both categorical features [+N] and [+A] simultaneously (Miyagawa, 1987), but they lack their own system of inflexion and ability to modify nouns directly. From a morphosyntactic perspective, lexemes that are not of Yamato-Japanese stratum appear unable to independently modify other words in a phrase, because they are not part of the core Japanese grammar. Consequently, *-na* is required to mediate between these adjectives and the nouns they modify. In example (34), *-na* attaches to the base *kirei* "beautiful", which is already categorised as an adjectival noun, suggesting that *-na* is not a categorial head.

(34) *Kirei-na keeki-o kat-ta.*
beautiful-COP cake-ACC buy-PST
"(Subject) bought a beauful cake."

The quotative marker *-to* is used not only with ideophones but also in quotative clauses introduced by certain verbs, such as "say", for indirect speech, as in example (35a). In indirect speech, the quotative clause may not always be a full phrase but simply a word, and this word is already categorized independently of *-to*. In indirect speech, *-to* functions as a complementizer or its equivalent, forming part of the verbal constituent. I hypothesize that ideophones forming *-to* adverbs are also categorized independently of *-to*, and that *-to* plays a role similar to *-na*. Like *-na*, which acts as a connector for items that cannot independently form

[23] This means that roots are directly combined with an inflexional morpheme to represent tense.

[24] In fact, some adjectival nouns are derived from the Yamato-Japanese stratum, though most come from other strata. In contrast, (*i*-)adjectives are exclusively derived from the Yamato-Japanese stratum.

grammatical associations with other items in sentence, *-to* allows ideophonic items to integrate into verbal constituents.

(35) a. *Kare-wa atsui-to it-ta.*
3MS-TOP hot-QUOT say-PST
"He said that it was hot."

b. *Kawa-no mizu-ga sara-sara-to nagare-ru.*
river-GEN water-NOM IDEO-RED-QUOT flow-NPST
"The water of river flows smoothly."

5.1.2.2 Adverbs without reduplication

While focusing on simple forms, ideophonic words suffixed with *-Q, -N* and *-ri* serve as adverbs.

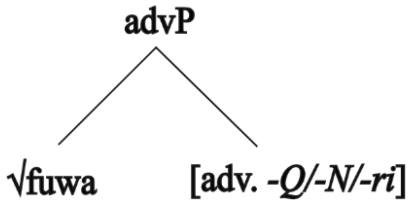
(36) *Fuusen-ga fuwa-Q-to ton-da.*
ballon-NOM IDEO-Q-QUOT fly-PST
"A balloon flew fluffily."
Event happened one time fast and vigorously

(37) *Fuusen-ga fuwa-N-to ton-da.*
ballon-NOM IDEO-N-QUOT fly-PST
Event happened one time smoothly (slowly) or flexibly

(38) *Fuusen-ga fuwa-ri-to ton-da.*
ballon-NOM IDEO-ri-QUOT fly-PST
Event happened one time and the nuance is rather neutral or descriptive

In (36), (37), and (38), the ideophonic adverb consists solely of a root and a suffix. Since *fuwa* cannot stand as a word on its own, I conclude that it is a root and cannot be categorized by a silent morpheme. Instead, I propose that the suffixes *-Q, -N* and *-ri* directly assign an adverbial category to the root.

(39)



5.1.2.3 Reduplication for iteration

Let us, next, turn our attention to adverbs that take a reduplicated form that include the suffixes *-Q*, *-N*, and *-ri*.

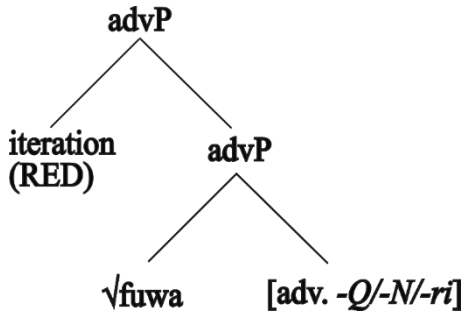
(40) *Fuusen-ga fuwa-Q fuwa-Q -to ton-da.*
ballon-NOM IDEO-Q IDEO-Q -QUOT fly-PST
"A balloon flew fluffily."
Event happened several times and each event goes fast and vigorously

(41) *Fuusen-ga fuwa-N fuwa-N -to ton-da.*
ballon-NOM IDEO-N IDEO-N -QUOT fly-PST
Event happened several times and each event goes smoothly (slowly) or flexibly

(42) *Fuusen-ga fuwa-ri fuwa-ri -to ton-da.*
ballon-NOM IDEO-ri IDEO-ri -QUOT fly-PST
Event happened several times and the nuance is rather neutral or descriptive

The adverbs in (40), (41), and (42) share the same structure: they involve reduplication targeting the scope of [Root-adv]. Based on the structure in (39), the adverbs in (40), (41), and (42) are already categorized prior to reduplication, and the process of reduplication does not alter their category. Furthermore, as observed in Section 2.2.3.2 (i.e., (13a)), the base can be repeated more than twice. These observations suggest that reduplication does not occur at the root level but rather at the word level. This proposition aligns with the concept of syntactic reduplication proposed by Travis (2001). Travis notes that reduplication in phrases, such as "They are very very very tired.", likely occurs in the Spec position and can be repeated multiple times. Similarly, I argue that the ideophonic adverbs in (40), (41), and (42) are generated in the same structural configuration. However, contrary to English "so" reduplication, which primarily conveys intensification, the semantics associated with ideophonic reduplication in (40), (41) and (42) pertains to frequency, i.e., event iteration.

(43)



Event iteration can be regarded as a subclass of "pluractional," which also includes, for example, intensity, durativity, and frequency (Newman, 2012). Pluractionals exhibit subtle and varied semantics depending on the language or morphological behavior; at their core, however, they denote multiplicity of action or event, or the succession of actions within an expanded temporal space (Newman, 2012). In the ideophonic expressions in (40), (41), and (42), the iterative semantics applied to the flying event can be attributed to the composition of RED with the adverbial modifier. In section 5.1.2.4, we will see that the RED head is not itself endowed with iterative semantics, as it gives rise to a durative reading when composed with the uncategorized root.

Another piece of evidence supporting the proposal in (43) is the oddness of the coexistence of word-level reduplication and a degree adverb.

(44) *Fuusen-ga totemo fuwa-Q -to ton-da.*
ballon-NOM very IDEO-Q-QUOT fly-PST
"A balloon flew so fluffily."

(45) *Fuusen-ga ??totemo fuwa-Q fuwa-Q -to ton-da.*
ballon-NOM very IDEO-Q IDEO-Q -QUOT fly-PST
"A balloon flew so fluffily."

Assuming that degree adverbs, like "very", are generated in a Spec position, the observation that reduplication for event-iterativity is incompatible with degree adverbs suggests that the relevant RED occupies that same Spec position. If this analysis holds, the finding supports my overall decompositional approach, and the relevant aspects of my concrete proposal.

5.1.2.4 Reduplication for duration

Next, I present other adverbial forms which involve reduplication.

(46) *Fuusen-ga fuwa-fuwa-Q-to ton-da.*
ballon-NOM IDEO-RED-Q-QUOT fly-PST
"A balloon flew fluffily."
Event happened one time for a certain duration fast and vigorously

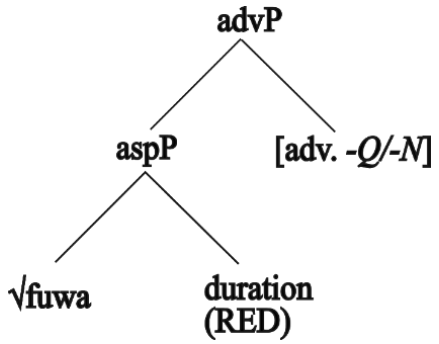
(47) *Fuusen-ga fuwa-fuwa-N-to ton-da.*
ballon-NOM IDEO-RED-N-QUOT fly-PST
Event happened one time for a certain duration smoothly (slowly) or flexibly

(48) *Fuusen-ga fuwa-fuwa-Q fuwa-fuwa-Q -to ton-da.*
ballon-NOM IDEO-RED-Q IDEO-RED-Q -QUOT fly-PST
Event repeated several times, and each event happened for a certain duration fast and vigorously

(49) *Fuusen-ga fuwa-fuwa-N fuwa-fuwa-N -to ton-da.*
ballon-NOM IDEO-RED-N IDEO-RED-N -QUOT fly-PST
Event repeated several times, and each event happened for a certain duration smoothly (slowly) or flexibly

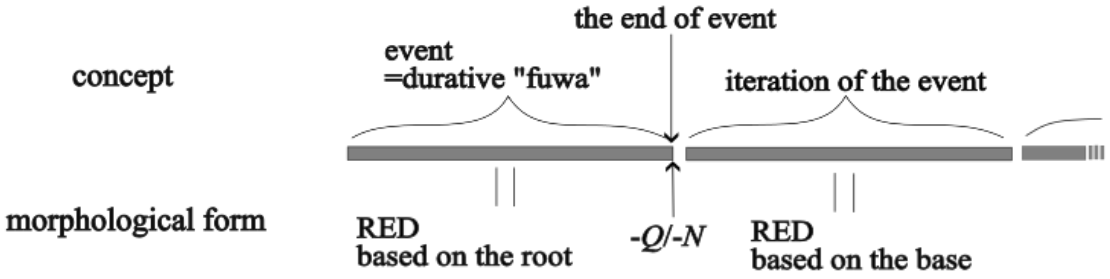
Contrary to the forms discussed in the previous section, examples (46) and (47) illustrate cases where reduplication targets only the root within its scope. This indicates that the reduplication occurs at the root level and is distinct from reduplication at the word level that we have discussed in the previous subsection (5.2.3). In this case, reduplication takes place before the suffix *-Q/-N* is attached.

(50)



Firstly, this reduplication corresponds to the phonological reflex correlating with durative semantics. The composition of the reduplicant morpheme RED with the uncategorized root results in a syntactically and semantically distinct modifier as compared to the reduplication in the Spec position discussed in the previous subsection. While the reduplication at the word level (43) evokes an iteration of the event, the reduplication at the root level (50) evokes an extended duration associated with the meaning of the root, such as *fuwa* in this case. In other words, it concerns the temporal extension of the individual event. Therefore, adverbs in examples (46) and (47) evoke a single durative event. In contrast, adverbs in examples (48) and (49), involve a second reduplication, *fuwa-fuwa-Q/-N*, which results from an iterative reduplication occurring in the Spec position. This reduplication targets the base, which already includes the durative reduplication. Consequently, the expression depicts events that occur multiple times, with each individual event persisting for a certain duration. In Figure 5.1, I illustrate the conceptual framework of ideophonic expressions (48) and (49) and the correspondence with their forms.

Figure 5.1 Conceptual image and form of morphemes



Secondly, an aspectual head can select a neutral ideophonic root. Although aspectual heads typically select verbal bases, I propose that the aspectual head in ideophones functions not for grammatical aspect but rather for Aktionsart, which refers to aspectual characteristics that are usually intrinsic to verbs (Vendler, 1957). According to Vendler, verbs can be categorized into four aspectual classes: States, Activities, Accomplishments and Achievements, and this classification is based on criteria such as dynamicity, duration and telicity. For example, "know" is a State verb, while "die" is an Achievement verb. These aspectual characteristics, which are used for classification, can be inherent semantic features of each verb or assigned by affixes. For ideophonic expressions, I claim that Aktionsart is encoded in their morphosyntactic structure. Concretely, the semantics of aspectually modified ideophones is akin to States or Activities, which share the features [+durativity] and [-telicity]. Thus, the base *fuwa-fuwa* evokes an entity or an event (which concerns a kind of fluffiness) that persists for a certain duration without a change or specific endpoint. Such an endpoint is established only when a suffix (*-Q/-N*) is attached, giving meanings of telicity and punctuality. Therefore, the addition of these suffixes transforms *fuwa-fuwa* into an expression equivalent to an Achievement, indicating the completion of an event. Thus, an expression like *fuwa-fuwa-Q/-N* expresses a telic event, whereas a form like *fuwa-fuwa* without these suffixes does not convey such boundedness. Furthermore, while *fuwa-fuwa-Q/-N* in examples (46) and (47) represents a single event, the iterative reduplication *fuwa-fuwa-Q/-N fuwa-fuwa-Q/-N* in examples (48) and (49) depicts multiple events occurring sequentially (at least two), based on the iconic nature of the reduplication.

(51) ??*Kuruma-ga tsuru-Q-to subet-te-iru.*
car-NOM IDEO-Q-QUOT slip-CP-Prog
"A car is slipping."

(52) ?*Kuruma-ga tsuru-tsuru-Q-to subet-te-iru.*
car-NOM IDEO-RED-Q-QUOT slip-CP-Prog

(53) *Kuruma-ga tsuru-tsuru-to subet-te-iru.*
car-NOM IDEO-RED-QUOT slip-CP-Prog

As illustrated above, the adverb without *-Q* in (53) is perfectly compatible with a verb in the present continuous tense from a semantic perspective. However, the examples in (51) and (52) are less felicitous, especially the phrase (51), since the lack of reduplication in the adverb creates a semantic discrepancy with the verb in the present continuous tense.

In parallel with the observation that the abstract meaning of an ideophonic root is itself a segment-by-segment phonaesthetic conglomerate (see Chapter 2), ideophonic words are built up incrementally by multiple components. From this perspective, the proposal that suffixes (*-Q, -N* and the reduplicant) contribute to Aktionsart is not surprising. Each of these suffixes add aspectual information to the root, which evokes solely an abstract concept. In the case of adverbs, especially, their presence and the order of affixation compositionally generate concrete aspectual information and precisely describe the motion of the event.

However, when it comes to the adverbs suffixed by *-ri,* the word formation does not seem to be as flexible with other suffixes.

(54) **Fuusen-ga fuwa-fuwa-ri-to ton-da.*
ballon-NOM IDEO-RED-ri-QUOT fly-PST
"A balloon flew fluffily."

(55) **Fuusen-ga fuwa-fuwa-ri fuwa-fuwa-ri -to ton-da.*
ballon-NOM IDEO-RED-ri IDEO-RED-ri -QUOT fly-PST

The adverb *fuwa-fuwa-ri* in (54) is ungrammatical, and consequently, *fuwa-fuwa-ri fuwa-fuwa-ri* in (55) is also not generated. From this observation, we can deduce that the suffix *-ri* cannot select an aspectual head, whereas *-Q/-N* can. Although *-ri*, like *-Q/-N*, functions as an adverbial head, they differ in terms of their morphosyntactic distribution. I summarize the semantic and morphosyntactic contrasts among the suffixes *-Q*, *-N,* and *-ri* in the Table 5.1 below. Akita's (2009) experimental results show the statistical likelihood of punctual and telic reading, relative to the choice of suffix.

Table 5.1 Contrasts among suffixes: *-Q*, *-N,* and *-ri*

Suffix	*-Q*	*-N*	*-ri*
Lexical category	Adv	Adv	Adv
Aspect (based on Akita, 2009, p.190)	Punctuality (≈90%) Telicity (≈90%)	Punctuality (≈60%) Telicity (≈60%)	Punctuality (≈60%) Telicity (≈60%)
Connotation (Hamano, 1986)	Vigorousness Forcefulness	Reverberation	Quietness
Morphosyntactic distribution	√_____ [asp]_____	√_____ [asp]_____	√_____

While acknowledging that the connotations of these suffixes are sometimes unclear and controversial, I generally agree with the connotation of *-Q* and *-N*. However, I propose that *-ri* does not necessarily convey quietness but rather provides a neutral or narrative description of the event. Notably, literature also suggests that *-ri* is less iconic than the other two suffixes (Akita, 2009). Based on these observations, *-ri* is not compatible with durative reduplication, and adverbs suffixed with *-ri* do not necessarily exhibit a nuanced aspectual structure as seen in (50), where Aktionsart is represented by suffixes.

5.1.2.5 Analysis with tones

Finally, we will investigate adverbs that do not contain any suffixes considered as adverbial heads, but that exhibit a specific tone pattern, as illustrated in (56) and (57).

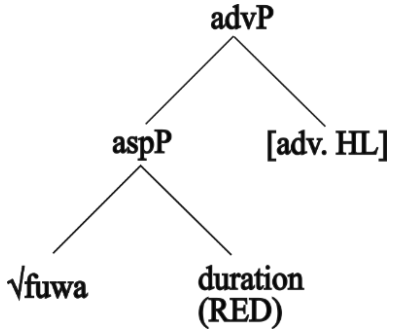
(56) H L L L
Fuusen-ga fuwa-fuwa-to ton-da.
ballon-NOM IDEO-RED-QUOT fly-PST
"A balloon flew fluffily."
Event happens for a certain duration (but less detailed)

(57) H L L L H L L L
Fuusen-ga fuwa-fuwa fuwa-fuwa-to ton-da.
ballon-NOM IDEO-RED IDEO-RED-QUOT fly-PST
Event happens for a certain duration (emphasis on duration or frequency)

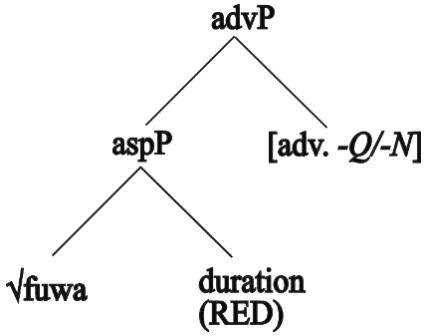
This case is particularly interesting and is one of the focal points of my work, because it demonstrates different morphological components compared to all the other adverbs we have previously discussed. The word *fuwa-fuwa* in (56) is undeniably an adverb. However, none of the adverbial heads I proposed are

associated with the word. If the analysis that reduplication is the phonological reflex of a durative aspect is correct, *fuwa-fuwa* initially appears to be merely a base without a category, essentially representing an incomplete derivation of the structure in (50). Therefore, as hypothesizing that the tone serves as the categorial head of the adverb in (56), I present the derivational structure in (58) below.

(58)

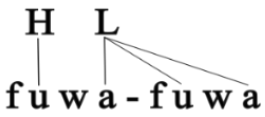


(50, repeated)



Applying the theory of autosegmental phonology and prosodic morphology, I argue that the tone here functions as a morpheme that contributes to word formation. In the adverb *fuwa-fuwa*, the HL tone transforms an uncategorized base into an adverb. Thus, an adverbial head is realized by the HL tone, which implements left-edged spreading after the linearization phase.

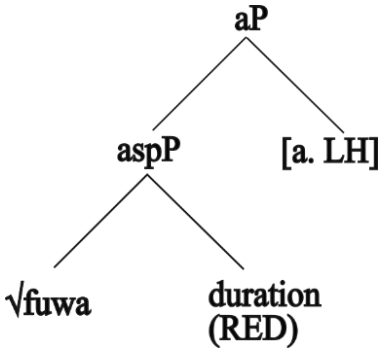
(59) [[[√fuwa]-RED]-HL]



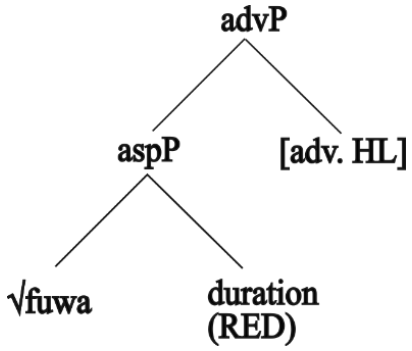
Japanese is not a typical tonal language like Mandarin or Vietnamese. Instead, Japanese is regarded as a pitch-accent language (Hyman, 2005; Kawahara, 2015; Rolle, 2018) where contrasts in pitch can play a significant role in lexical meaning. This pitch pattern (High/Low) or accent position does not usually affect lexical category, in contrary to English such as REcord (n) vs reCOrd (v), but rather serves to distinguish homonyms, such as *hashi* (HL) "chopsticks" vs *hashi* (LH) "bridge" (Hyman, 2016). I propose that while pitch or accent contrasts in Japanese are in generally considered as lexical tones, the tone observed in *fuwa-fuwa* (56) functions as a grammatical tone, attributing an adverbial property to the base. This phenomenon is irregular in word formation across lexical strata in Japanese, except in the case of ideophones. Again, I believe that this represents a morphophonological "markedness" unique to ideophonic expressions in Japanese.

The tonal morpheme HL in *fuwa-fuwa* (56) is also the only morphological ingredient that distinguishes it from the adjective *fuwa-fuwa* (this will be discussed in the next section). According to my analysis, the adverb *fuwa-fuwa* shares the same structure as its adjective counterpart, differing solely in the tonal morpheme LH (I repeat again the structure (58) below).

(60)

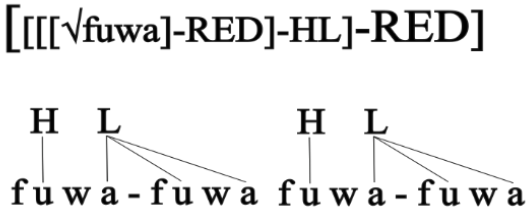


(58, repeated)



The reason ideophonic adjectives only occur in reduplicated form is not that the reduplicant projects the adjectival category. Rather, the reduplicated base conveys an abstract concept of "something durative (stative)", which has the potential to be realized as either an adverb or an adjective. The tonal category morphemes can attach to this aspectual base. Consequently, the adverb *fuwa-fuwa* (HL) discribes an event with a certain duration but without a clear endpoint, while *fuwa-fuwa* (LH) is an adjective. Furthermore, as with other adverbial structures that we have already discussed, the adverb *fuwa-fuwa* can be extended, as in (57), through additional reduplication at the Spec position. In this case, reduplication at the Spec position targets the Adverb Phrase as its scope. Thus, the HLLL tone pattern is repeated, rather than the L tone spreading continuously to the right edge.

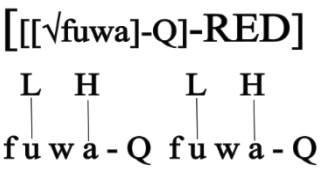
(61)



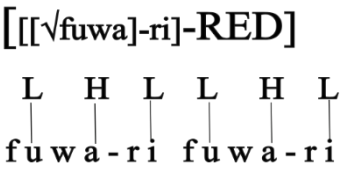
Regarding tones, we observe that not only the adverb *fuwa-fuwa* in (56) but also all the adverbial expressions discussed above exhibit specific tonal contrasts in their respective forms. For instance, *fuwa-Q* and *fuwa-N* in (36) and (37), respectively, display an H tone on the vowel /a/. This tonal feature is not due to a grammatical tone or a lexical tone inherent to the root, but rather it is lexically associated with the suffixes *-Q/-N*: the vowel preceding these suffixes receives an H tone (Kawagoe, 2015; Nasu, 2007). Conversely,

fuwa-ri in (38) shows a LH-L tone pattern (on each vowel, respectively), which is influenced by the inherent tone of the suffix *-ri*. Furthermore, when the reduplication occurs at the word level, the tonal pattern is also reduplicated. This observation confirms that the tonal morpheme HL with *fuwa-fuwa* is integrated within the Adverb Phrase, as the repetition of tone patterns in (61) parallels those in (62) and (63). Moreover, the HL tone is never observed in adverbs containing *-Q, -N* or *-ri*. This indicates that the HL morpheme and these suffixes cannot coexist within the same structure. This incompatibility strongly suggests that these four elements (*-Q, -N*, *-ri* and HL tone) function as adverbial heads. They are, therefore, in complementary distribution and are selected depending on the base to which they attach.

(62)



(63)



To summarize, I have proposed that an adverbial head in ideophonic expressions can be represented by four different forms *-Q,-N,-ri* and the tone pattern HL. Reduplication, rather than serving as a categorial head, functions as a kind of aspectual head that conveys the meaning of extension (durative or iterative depending on its compositional context, see below). These morphemes, along with the root, constitute the morphological components necessary to generate ideophonic adverbs. While the meanings associated with each morpheme differ slightly, their syntactic selection also varies. As discussed, *-ri* and the tonal morpheme HL have stricter selection properties: *-ri* can only select a root, whereas the tonal morpheme HL can only select an aspectual base. On the other hand, *-Q* and *-N* show greater flexibility, as they can select either a root or an aspectual base. Below, I propose a list of vocabulary items based on these observations.

(64)

[asp (extention)]	⇔	-RED
[adv^1]	⇔	*-ri*
[adv^2]	⇔	-HL
[adv^3]	⇔	*-Q/-N*

It is important to recall that *-Q* and *-N* are not realized randomly or due to phonological conditions. Based on the present analysis of adverbs, both are phonological realizations of an adverbial head and share the same grammatical selection. However, there is a subtle nuance that each contributes to the meaning of words. Also, I propose that the reduplication in examples (40) and (46), repeated below, is the same morpheme. This morpheme (RED) has some sort of extension semantics, giving compositionally rise to the various readings depending on the nature of its complement: when RED is applied high (i.e., after the event is

complete), it is interpreted as iterative (40); when RED is applied low (i.e., before the event is complete), it is interpreted as durative (46).

(40) *Fuusen-ga fuwa-Q fuwa-Q -to ton-da.*
ballon-NOM IDEO-Q IDEO-Q -QUOT fly-PST
"A balloon flew fluffily."
Event happened several times and each event goes fast and vigorously

(46) *Fuusen-ga fuwa-fuwa-Q-to ton-da.*
ballon-NOM IDEO-RED-Q-QUOT fly-PST
"A balloon flew fluffily."
Event happened one time for a certain duration fast and vigorously

5.1.3 Adjectives

5.1.3.1 Tonal morpheme as a head

To begin this section, I refer back to the example (25) from Chapter 3.

(25) *Kuriimu-o fuwa-fuwa-ni maze-ru.*
cream-ACC IDEO-RED-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

When it comes to adjectives, I reiterate that the categorial head is a tonal morpheme LH, deriving an adjective from an uncategorized base. This means that, as proposed in (58) and (60), both the adverb *fuwa-fuwa* and the adjective *fuwa-fuwa* originate from the same base, with neither being derived from the other. This might seem atypical since the derivation of adverbs from adjectives is a relatively widespread phenomenon in non-ideophonic expressions. In ideophonic words as well, some languages display the derivation of one category from another (Elders, 2001; Mulugeta & Yimam, 2022). It could also be hypothesized that nouns or adjectives are derived from adverbs or verbs, considering that most ideophonic words are adverbs. However, as observed in the previous chapter, it is also true that seeming categorial conversion of ideophonic words is not overtly marked in many languages (Abubakari, 2017; Ameka, 2001; Kanu, 2008). Furthermore, some researchers illustrate that, in ideophones, lexical words are not derived from another category but are rather root derivations[25] (Akinbo & Fwangwar, 2024; Ameka, 2001; Childs, 1989). Therefore, it is not far-fetched to propose that ideophonic adjectives in Japanese are not derived from adverbs, nor vice versa, but merely share the same underlying base.

[25] I use this term within Distributed Morphology, although the authors do not necessary use this term.

Fuwa-fuwa in (25) is spelled out as an adjective and can be selected by the dative marker *-ni*. In Japanese, it is possible that words suffixed with *-ni* are erroneously all regarded as adverbs, since *-ni* can also be realized as an adverbial marker that selects adjectival nouns.

(65) *heya-o* *kirei-ni* *souji-suru.*
room-ACC clean-ADV cleaning-do
"(Subject) clean the room properly."

(66) *heya-o* *kirei-ni* *souji-suru.*
room-ACC clean-DAT cleaning-do
"(Subject) clean the room (to make it clean)."

The sentences (65) and (66) are ambiguous because they are phonetically identical but semantically distinct: (65) indicates the manner of the event, whereas (66) indicates the result of the event. Thus, *-ni* in (65) functions as an adverbial head that converts the adjectival base into an adverb, while *-ni* in (66) relates the adjective to the verb as a resultative predicate. When an ideophonic base is associated with *-ni*, there is no semantic ambiguity, because ideophonic manner adverbs are not formed with *-ni* but with a HL tone (i.e., adv. *fuwa-fuwa*-HL/*-*ni*), and the sentence (25) only has a resultative reading. This suggests that *-ni,* when it appears with an ideophonic base such as *fuwa-fuwa,* is solely a dative marker deriving resultatives and not an adverbial head. From this perspective, the base must already be categorized as an adjective, presumably, by the tonal morpheme LH.

5.1.3.2 Infix *-Q* in ideophonic words

Now, regarding other forms of adjectives, we observe that *fuwa-Q-fuwa-Q* in (67) is ungrammatical, whereas *fuwa-Q-fuwa* in (68) is fully acceptable.

(67) **Kuriimu-o* *fuwa-Q-fuwa-Q-ni* *maze-ru.*
cream-ACC IDEO-Q-IDEO-Q-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

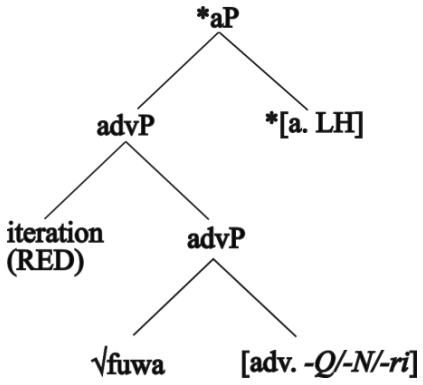
(68) *Kuriimu-o* *fuwa-Q-fuwa-ni* *maze-ru.*
cream-ACC IDEO-Q-IDEO-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

In Japanese phonotactics, it is not possible for a syllable closed by a geminate obstruent to appear in word-final position (Itô et al., 1996). Thus, gemination in word-final position never occurs in other strata but in ideophones (Kawagoe, 2015) and exclusively in adverbial uses. However, the ungrammaticality in (67) is

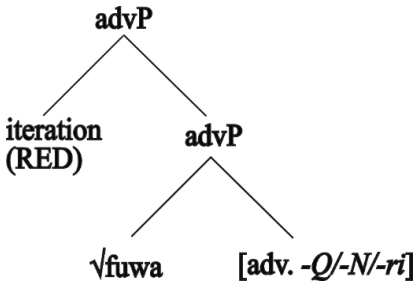
not simply due to the presence of -*Q* in the final position of an adjective (i.e., -*Q* before -*ni*). Rather, I argue that the word is not syntactically generated as an adjective.

The structure illustrated in (69), which would correspond to (67) with an LH tone, is to be ruled out. Recall that, in the proposal in (60), the adjectival head selects an aspectual but uncategorized base. In other words, if adjectival LH exclusively selects uncategorized constituents, adverbial -*Q* cannot occur within its scope. Therefore, the co-occurrence of adverbial -*Q* and adjectival LH in (67) is ruled out. This indicates that *fuwa-Q-fuwa-Q* is simply derived from the syntactic structure in (43) and functions as an adverb, incorporating word reduplication. The word naturally exhibits the LH-LH tone pattern due to the H tone associated with the suffix -*Q*.

(69)

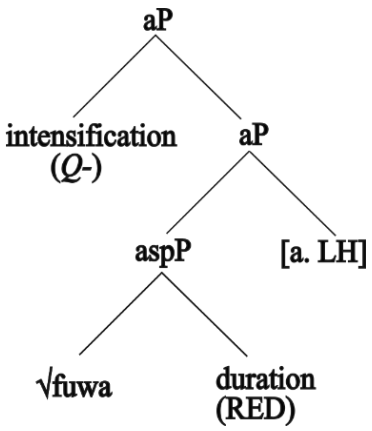


(43, repeated)



On the other hand, the word *fuwa-Q-fuwa* in (68) is grammatical as an adjective, exhibiting an LHHH tone pattern, even though a suffix -*Q* is involved. Following the same argument that adjectival head cannot select a categorized base, the presence of adverbial -*Q* alongside the adjectival instantiation of *fuwa-Q-fuwa* would be incoherent. Moreover, in (68) the suffix -*Q* does not seem to be in scope of the RED. Thus, I conclude that the -*Q* in (68) is not the adverbial head -*Q*. Additionally, since the -*Q* in (68) is not repeated, it must be merged in a higher position than the adverbial head -*Q* in (43), which is a position outside of RED. Therefore, I conclude that the -*Q* in *fuwa-Q-fuwa* is not the same -*Q* previously discussed, rather a prefix contributing an intensifying meaning. In other words, this -*Q* is not the adverbial head, but a prefix attached to the adjectival base [*fuwa*-RED-LH], as illustrated in (70).

(70)



This intensification marker *Q-* frequently appears in adjectives and some adverbs in Japanese. For example, the adjective *atsui* "hot" can become *aQtsui* to signify "very hot", and the adverb *totemo* "very" can transform into *toQtemo* for an intensified meaning. As observed, this morpheme *Q-* usually occurs after the first syllable (in the case of *fuwa-Q-fuwa,* we will shortly see why the *Q-* is pronounced in the medial position.) This placement is clearly a phonological operation, as *Q-* cannot appear in the initial position of any word (Kawagoe, 2015) and must relocate to a phonologically acceptable position, often resulting in infixation.

Two important points arise from this observation: Firstly, it appears that only *i*-adjectives can undergo this intensification with *Q-*. On the other hand, *na*-adjectives (adjectival nouns) are generally not modified by *Q-* affixation and instead rely on adverbs like *totemo* "very" for emphasis.[26] However, *na*-adjectives derived from the Ideophone stratum, such as *fuwa-fuwa,* show a consistent capacity for modification by *Q-*, which sets them apart from other *na*-adjectives. Secondly, while *Q-* cannot occupy the initial position of a word, it seems to favor specific phonological environments when inserted internally.

(71) Adjectives (*i*-adjectives)

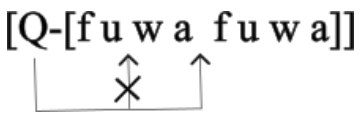
a. *atsui* "hot" => *aQtsui*
b. *usui* "thin" => *uQsui*
c. *yowai* "weak" =>??*yoQwai*
d. *tsurai* "tough" =>??*tsuQrai*

(72) Ideophonic adjectives (*na*-adjectives)

a. *heto-heto* "exhausted" => *heQto-heto*
b. *pasa-pasa* "dry" => *paQsa-pasa*
c. *fuwa-fuwa* "fluffy" => *fuwaQ-fuwa*
d. *kura-kura* "dizzy" => *kuraQ-kura*

[26] A possible explication for this might be the [+Sino-Japanese] feature. *Na*-adjectives, except ideophones, are largely derived from Sino-Japanese stratum, and I suppose that this feature prevents Q-insertion for morphosyntactic or phonological reasons.

When it comes to examples of adjectives, while the intensive forms of (71a) and (71b) are entirely acceptable, those of (71c) and (71d) sound unnatural. Similarly, for ideophonic adjectives, the forms in (72a) and (72b) are phonologically natural with *Q-* positioned immediately after the first syllable, whereas the forms in (72c) and (72d) show a preference for *Q-* placement after the second syllable. This phonological preference for *Q-* aligns with the explanation provided in previous works (Itô et al., 1996; Itô & Mester, 1995; Nasu, 2015). The intensification of *Q-* tends to appear in positions followed by consonants with lower sonority. In the case of *fuwa, Q-* is not possible adjacent to the semivowel /w/, instead it aligns adjacent to /f/.

(73) 

Therefore, I conclude that the adjective *fuwa-Q-fuwa* is not formed by simply adding the suffix *-Q* to the root, but rather an infixation derived from a prefix attached to the adjectival base, triggered by phonological constraints.

I will not elaborate on the phonological perspective, but I speculate that the position of the intensive marker is determined by preference, as opposed to by restriction. In examples like (71c) and (71d), where the second consonant is less obstruent, repositioning the intensive marker *Q-* is hardly acceptable. In these cases, the intensiveness of adjectives like *yowai* (71c) and *tsurai* (71d) is simply expressed by a degree adverb (e.g., *totemo*/*meccha* meaning "very" in formal/informal contexts). Regarding ideophonic adjectives, *Q-* seems to be able to move to the coda position of second syllable if that of the first syllable is phonologically inadequate. Otherwise, the words can also be modified by a degree adverb.

This observation draws a parallel with the emphatic form CVXCV-*ri*. As discussed in Section 2.2.2.2, this form exhibits semantic and morphosyntactic idiosyncrasies, which may call into question the validity of analyzing ideophones in terms of concatenative morphology. However, despite its limited productivity of some roots, I contend that the emphatic form is fundamentally derived from CVCV-*ri* adverbs. Below, I present some illustrative examples.

(74) a. *basa-ri => baQsa-ri* "drastically"
b. *jiwa-ri => jiNwa-ri* "gradually"
c. *peta-ri => peQta-ri* "(stuck) tightly "
d. *fuwa-ri => fuNwa-ri* "fluffily"
e. ??*shobo-ri => shoNbo-ri* "disappointedly "

As shown in example (74e), not all emphatic forms have a corresponding regular *-ri* form (or they are less acceptable), which might seem to challenge the hypothesis that emphatic forms are derived from the regular *-ri* structure. However, it remains evident that there is a certain flexibility in creating emphatic forms by adding the intensive marker *Q-* to *-ri* form base. This derivation is successfully attested in examples (74a) through (74d), both semantically and morphosyntactically. As previously noted, this *Q-* is distinct from the suffix *-Q* of an adverbial head and can surface as *N-* depending on phonological contexts. Specifically, in the examples in (74), the intensive marker appears as *Q-* when followed by a voiceless obstruent and *N-* when followed by a voiced obstruent, semivowel or other sonorants (e.g., nasals, liquids). Considering this line of thought, *Q-* and *N-* can be treated as phonologically conditioned allomorphs of the same intensive morpheme.

Nevertheless, the derivational analysis raises certain issues, particularly with semantic discrepancies (e.g., *suka-suka* "empty" vs. *suQkari* "completely"). Within the framework of Distributed Morphology, semantic expansion (i.e., metonymy) could be handled in the list of encyclopedia, where idiosyncratic meanings are stored. Some expressions, such as *suQkari* "completely", even resist the use of the quotative marker *-to*, behaving more like canonical adverbs with fixed meanings that are less easily derived. However, the fact that a considerable number of these emphatic forms lack a regular *-ri* form counterpart (Akita, 2009) highlights the need for further investigation. Yet, when focusing on productive word formation patterns, the hypothesis that the emphatic form derives from the regular *-ri* form maintains a degree of coherence, supported by the observed morphosyntactic behavior of the intensive marker.

5.1.3.3 *-N* implication in adjectives

Finally, despite the challenge, I address the adjectival form *ɸuwa-N-ɸuwa-N* (75). This form cannot be straightforwardly generated within the morphosyntactic structures I have proposed. Below, I present example usage of this adjectival form.

(75) *Kuriimu-o ɸuwa-N-ɸuwa-N-ni maze-ru.*
cream-ACC IDEO-N-IDEO-N-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

(76) **Kuriimu-o ɸuwa-N-ɸuwa-ni maze-ru.*
cream-ACC IDEO-N-IDEO-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

While *-N* has been described as an ideophonic suffix in various Japanese studies (e.g., Hamano, 1986; Nasu, 2007), and I have argued that *-N* is an adverbial head, it occasionally appears in ideophonic expressions with more flexibility. For instance, adverbs such as *fuwa-riN* "fluffily(?)" and *tsuru-riN* "slipperily/smoothly(?)"[27] are semantically nearly identical to their regular *-ri* forms, yet *-N* is suffixed after *-ri*. This positioning of *-N* is not fully accounted for in my present analysis. However, my core proposal, that the tonal morpheme LH serves as the adjectival head, holds true. In fact, the expression *fuwa-N-fuwa-N*, when used without a phrase, can be ambiguous between an adjective and adverb reading, as both may exhibit a tone pattern of LHH-HHH. However, when functioning as an adverb, the tone pattern may be a result of phonological adjustments for ease of pronunciation, as the word can be acceptably produced with an LHH-LHH tone pattern. This interpretation aligns with structure (43), where reduplication implies the meaning of an iterative event. Conversely, when *fuwa-N-fuwa-N* functions as an adjective, it is realized only with an LHH-HHH tone pattern. This tonal behavior suggests the structure (60), where the LH tonal morpheme assigns a categorical feature, and the reduplication conveys an aspectual meaning.

(77) a. L H H H H H
Kuriimu-o *fuwa-N-fuwa-N-ni* *maze-ru.*
cream-ACC IDEO-N-IDEO-N-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

b. *L H H L H H
Kuriimu-o *fuwa-N-fuwa-N-ni* *maze-ru.*
cream-ACC IDEO-N-IDEO-N-DAT mix-NPST
"(Subject) mix cream (to make cream fluffy)."

5.1.4 Section summary

To sum up, I identified the morphological components of ideophonic words and proposed corresponding morphosyntactic structures. My central argument is that the tonal pattern, not the reduplication itself, is responsible for determining the lexical category of ideophonic words selecting an aspectual base. Furthermore, I demonstrated the internal structure of adverbs containing multiple reduplications. I propose that the reduplication occurring closer to the root functions as an aspectual head at the word level, projecting a duration, whereas the additional reduplication reflects the scope of a categorized word (i.e., adverb) and operates at the phrasal level, expressing event iteration. The correlation between tonal patterns and the lexical category of words is consistent, and specific to ideophones. Such irregular tonal behavior of

[27] However, this form is not frequently used in formal situations but may appear in literary works and product names.

ideophones is observed in many languages (e.g., Elders, 2001; Kanu, 2008; Lusekelo, 2013). Moreover, previous studies on ideophones in other languages have documented tonal changes when a lexical category is assigned (S. Akinbo & Fwangwar, 2024; Childs, 1989). While acknowledging the need for further investigation into the cross-linguistic role of tone in ideophones, this study offers a strong lead through a derivational analysis of Japanese ideophones, aligning with the language's typical concatenative structure.

5.2 Quasi-ideophones

5.2.1 Reduplication in quasi-ideophones

As I proposed in the previous section, quasi-ideophones also have derivational structures, and I suggest that the blurry boundary is caused by a common suffix in their structure shared with that of pure ideophones. However, the internal structure of quasi-ideophonic words is distinct from that of pure ideophonic words, even if they appear identical on the surface.

(78) Ideophones

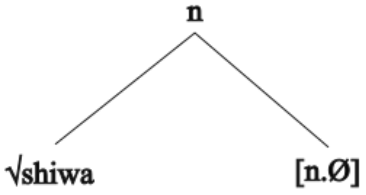
L H H H
fuwa-fuwa "fluffy"

(79) Quasi-ideophones

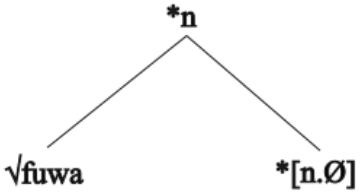
L H H H
shiwa-shiwa "wrinkly"

The key difference between them lies, firstly, in their lexical stratum: *fuwa* belong to the Ideophone stratum, while *shiwa* is from the Yamato-Japanese stratum. Secondly, quasi-ideophonic words are already categorized independently of tone. This is evident from the fact that the quasi-ideophonic words like *shiwa-shiwa* "wrinkly" are derived from the noun, *shiwa* "wrinkle" (e.g., see (22b)), which can stand as a word by itself. In contrast, the base *fuwa* of the pure-ideophonic word *fuwa-fuwa* "fluffy" does not exist as an independent word. Consistent with the category-neutral root assumption, *shiwa* is not intrinsically a noun. Rather, the noun *shiwa* results from the combination of the root and a functional head [n.-ø]. In short, as illustrated in (80), there is non-overt categorizing head n, which can select Yamato-Japanese roots but not ideophonic roots within their internal domain.

(80) a.



b.



We have, above, distinguished the durative and iterative aspects not in terms of a different aspectual morpheme, but in terms of difference regarding the semantic nature of its complement. Concretly, we

postulated one and the same morpheme with a semantic contribution that serves to extend the event. When applied within an event (i.e., to an imperfective complement), the result is durative. When applied from outside the event (i.e., to a perfective complement), the result is iterative. This reasoning naturally extends to object nominals.

Thus, I propose that the same aspectual head in quasi-ideophonic words conveys plurality. I suggest that the noun *shiwa* denotes a wrinkle, and its reduplicated form *shiwa-shiwa* expresses the plural concept of *shiwa*. Consequently, the adjective *shiwa-shiwa* "wrinkly" describes a state where multiple wrinkles exist rather than just a single wrinkle.

(81) a. *Fuku-ga shiwa-shiwa-da.*
clothes-NOM wrinkle-RED-COP
"Clothes are wrinkly." (=clothes have many wrinkles.)

b. *Ano doubutsu-wa shima-shima-da.*
that animal-TOP stripe-RED-COP
"That animal is striped." (=that animal has many stripes.)

c. *Kono aisu-wa tsubu-tsubu-ga hait-te-iru.*
this ice cream-TOP grain-RED-NOM enter-CP Prog
"There are grains in this ice cream." (=ice cream has many grains.)

d. *Nami-nami-no sen-o kak-u.*
wave-RED-GEN line-ACC write-NPST
"(Subject) writes a wavy line." (=line is formed by multiple waves.)

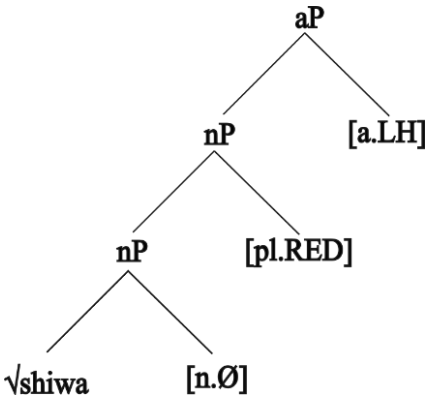
e. *Gara-gara-no fuku-o kir-u.*
design-RED-GEN clothes-ACC put on -NPST
"(Subject) wears clothes with many motifs." (=clothes have not only one motif)

Thus, I propose that aspectual RED is a morpheme whose semantics requires "extension" of the complement and whose realization reduplicates its complement. It derives durativity when applied to an uncompleted event, iterativity when applied to a completed event, and it derives plurality when applied to an objet nominal.

5.2.2 Analysis with tones

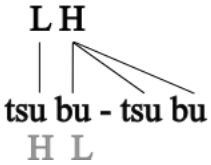
Given that the quasi-ideophonic adjectives exhibit an LHHH tonal pattern, I propose that the same morpheme, which realizes as the phonological form LH, also functions as the adjectival head in these structures.

(82)



While I propose that the adjectival head, which realizes the same phonological form, is involved in pure- and quasi-ideophonic derivation, the internal structures of the two are distinct. Firstly, as mentioned earlier, quasi-ideophonic expressions are derived from a nominal base, whereas pure-ideophonic expressions are not. Secondly, while the LH tone does not overlap with other tones in pure-ideophonic derivation, such overlap can occur in quasi-ideophonic derivation. As illustrated in the previous section, ideophonic roots do not possess lexical tones; instead, tones emerge when an adverbial head is attached. In contrast, nouns derived from the non-ideophonic strata exhibit lexical tones (see 5.1.2.5). For example, the noun *shiwa* "wrinkle" carries an LH tone, while the noun *tsubu* "grain" carries an HL tone. However, in the case of *tsubu* "grain", the reduplicated form exhibits an LHHH tonal pattern. This results from the adjectivization, where the structure incorporates the LH tonal morpheme.

(83) **[[[[tsubu]-Ø]-RED]-LH]**



In the previous subsection, I proposed that categorizing tonal heads are specific to ideophones and attach solely to an uncategorized base. However, the LH tone is realized as an adjectival head also with categorised, non-ideophonic bases, which I argue creates a blurry boundary between pure and quasi-ideophones on the surface. I suggest that the tonal realization of categorizing heads is conditioned not only by grammatical, but also by phonological properties of the base, since pure and quasi-ideophones share not only tonal patterns but also the same CV-form (bimoraic-root based reduplication). I leave a fuller exploration of this conditioning to further research.

5.3 Summary

In this section, I aimed to identify the morphological components of Japanese ideophones (limited to bimoraic phenomime roots) and quasi-ideophones, and to propose a concatenative morphological analysis of their structures within the framework of Distributed Morphology.

The first subsection (5.1) specifically addressed two subquestions: a) What are the components of ideophonic words in Japanese? b) What are their morphosyntactic and morphophonological properties? I proposed that ideophonic words consist of multiple morphemes: ideophonic roots, ideophonic suffixes *(-Q,-N,-ri*), reduplicant morphemes and tonal morphemes. The ideophonic suffixes are adverbial heads, with *-Q* and *-N* exhibiting strong iconicity and syntactic flexibility, whereas *-ri* primarily conveys simple descriptions of motion and has a more restricted morphosyntactic distribution. The reduplicant morpheme can combine directly with the ideophonic root without determining its category, and semantically "extends" the root denotation. I argued that aspectual semantics in ideophones emerges from their derivational structures. Specifically, the same imperfective aspectual morpheme with an extension semantics projects different meanings depending on its application to its various complement: it conveys a durative meaning when attached to ideophonic root and an iterative meaning as attaching to adverbial bases. Additionally, I proposed that tonal patterns (LH, HL) are the phonological realization of categorizing morphemes that project adjectival and adverbial categories, respectively.

The second section (5.2) addressed the subquestion: c) In what ways are the structures of ideophonic and quasi-ideophonic words different (or similar)? I argued that both are adjectivized by the same tonal morpheme (LH); however, the base of quasi-ideophones is initially categorized by a nominal head, whereas the base of pure-ideophones remains uncategorized. Given that the bases of quasi-ideophones are nominals, I propose that the combination with RED results in a plural semantics.

In summary, I have argued that reduplication in Japanese ideophones is a structure involving a morpheme with a CV-templatic realization and aspectual semantics. The various semantic categories of durativity, iterativity and plurality are compositionally derived as the combination of the same aspectual morpheme (i.e., its extension semantics) and the semantic (ontological) status of the denotation of its complments. Thus, in response to the main question "What are the morphological and syntactic properties of reduplication in ideophonic words in Japanese?*",* I conclude that in Japanese ideophones, the reduplicant morpheme is not a categorizing head but merely aspectual, with its exact semantic import determined compositionally.

CONCLUSION

This study has been dedicated to answering the question: "What are the morphological and syntactic properties of reduplication in ideophonic words in Japanese?" Focusing on ideophonic expressions derived from bimoraic roots with phenomime semantics, and restricting the analysis to Standard Japanese, I have provided a derivational analysis identifying their morphological components and morphosyntactic properties.

I demonstrated that the reduplicant morpheme in Japanese ideophones realizes an aspectual head. This aspectual head, I propose, has an extension semantics, giving rise to various meanings in composition with different kinds of complements: durative meaning when attaching to incomplete events (i.e., ideophonic roots), iterative meaning when attaching to complete events (i.e., adverbial bases), and plural meaning when attaching to object nominals (i.e., quasi-ideophonic bases). While ideophonic suffixes (*-Q, -N, -ri*) can directly combine with ideophonic roots and project an adverbial category, the reduplicant morpheme, which also directly attaches to ideophonic roots, does not project a category. Ideophonic words are categorized either by ideophonic suffixes or by tonal morphemes: HL for adverbs and LH for adjectives.

Additionally, I proposed structural differences between pure ideophones and quasi-ideophones. Although they exhibit surface similarity due to the sharing of the same tonal adjectival head (LH), quasi-ideophones result from categorial conversion, whereas pure ideophones are root-derivations.

While ideophones are not uniformly prevalent across all languages and exhibit certain morphological and phonological irregularities, this study sheds light on their analysis within a derivational Item-and-Arrangement type framework. Acknowledging that ideophones universally tend toward reduplication and tonal features, the identification of their morphosyntactic distributions and grammatical roles in this study makes a significant contribution to our understanding of their structural behavior. Furthermore, it helps clarify the underlying components and lexical categories that are not always overtly expressed in ideophonic forms.

The study is limited to Standard Japanese and expressions derived from bimoraic roots, and does, therefore, not take into account the cross-dialectal variation that is known to exist. Moreover, some aspects of the analysis remain opaque and require further clarification. In particular, a more detailed (morpho)phonological investigation is needed. A key future challenge will be to widen the empirical and analytical coverage in these directions.

For further research, it would also be valuable to analyze ideophones in other languages within a derivational morphological framework. In particular, it would be interesting to examine how reduplication and tone contribute to the formation of ideophonic words outside of Japanese, and how features specific to ideophones behave both in ideophones and in non-ideophones (in cases where equivalents to quasi-ideophones may exist). I believe that continued research on ideophones will yield essential insights into the nature of human language and enhance our understanding of the human language faculty.

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