Applying Theory and Research to Learning
Japanese as a Foreign Language
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Introduction

Recent years have witnessed a renewed interest in language education and language learning/acquisition due in part to increasing economic globalization. This focus on language learning encompasses recent efforts to categorize various aspects of language competence into grammar, sociolinguistics, discourse, and other linguistic areas. This is evidenced by the fact that, in the last few decades in particular, the field of applied linguistics has flourished. We consequently find ourselves immersed in the publication of an impressive number of books, encyclopedias, and handbooks, as well as the inauguration of several academic and professional conferences, societies, and journals. One such conference is the International Conference on Practical Linguistics of Japanese (ICPLJ) (http://www.sfsu.edu/~japanese/conference/), which provides a forum for the display of learned contributions in a variety of Japanese language-related disciplines — linguistics, psychology, education, language teaching, and speech communication — and for fostering intellectual exchange, discussion, and increased knowledge among those who are interested in the Japanese language.

Continuing over a long period of time and in many venues, language studies have increased in scope and quality, and the studies presented at the biennial ICPLJ have made significant contributions to language-related science, particularly in the area of Japanese. However, researchers everywhere need to know how to stay in touch with discoveries in various language-related disciplines and how experts in those disciplines assess those discoveries. Even if one knows that researchers in other disciplines are engaged in inquiries germane to one’s own, one may not know where to find work that is held in highest regard among knowledgeable scholars. It is, therefore, both a privilege and a pleasure to have edited this book, which is an edited collection of essays that present various critical issues of integrating linguistics into the foreign or second language (L2) classroom. The majority of the book’s chapters
were originally presented at the Fifth ICPLJ held at San Francisco State University in March 2006. As the editor of *Applying Theory and Research to Learning Japanese as a Foreign Language*, I believe that the book is one important place where interested parties can find research that effectively and reliably addresses the issues mentioned above.

The data, ideas, and overviews contained in the book represent a leading edge of research on Japanese linguistics. One of the main purposes of the book is to provide a forum in which to examine contributions in a variety of areas of Japanese linguistics to the teaching and learning of Japanese in the L2 classroom. The book has at least two continuing interrelated areas of benefit. To begin with, both researchers and teachers benefit from each other’s expertise and receive new insights that are applicable to their respective fields. Second and more important, the book serves as a forum to promote ways in which we can apply linguistic theory to the learning of Japanese as an L2. That is, what researchers have learned from both theory and practice can suggest what is important for the teaching of language; conversely, language educators have a great deal to offer linguists regarding the phenomenon of language. For that reason, the book’s main orientation is the integration of theoretical and empirical research findings in L2 development (including bilingualism) for application to educational practices so that the book appeals to researchers as well as practitioners.

As noted earlier, this volume is primarily comprised of a collection of chapters resulting from the proceedings of the conference. At the same time and at the risk of sounding somewhat contradictory, the book is not a mere collection of the papers presented at the conference in the sense that it is both coherent and self-sufficient. Thus, it would be more appropriate to state that although the book was largely inspired by ICPLJ, the contents were written and submitted independently of ICPLJ. The contributions are original manuscripts, and the book may be viewed as a useful addition to the growing literature on linguistics and L2 learning.

Issues surrounding L2 acquisition/learning (including bilingualism and bilingual education) in any language are fairly complicated. There is no doubt that individuals are capable of acquiring two or more languages at different stages of human development, particularly in childhood. Research investigating how adults acquire two languages also carries important insights into what is taking place during later stages of human development. From the fact that early and late bilinguals are faced with two languages in diverse stages of cognitive development we can predict differences in language processing between
these two groups. In the case of the Japanese language, unfortunately, far fewer studies (particularly those written in English) have been presented on L2 learners and bilingual children. Designed to address some of these gaps in the literature, therefore, the papers included in this book discuss various issues with regard to adult learners of Japanese as an L2 and English-Japanese bilingual children (children of Japanese heritage). This book thus provides the reader with a good sketch of the field of Japanese linguistics and its current concerns.

**Characteristics of the Japanese Language**

Many of the basic assumptions underlying conventional models in the field of linguistics derive from English, which is a right-branching (RB), head-initial (HI) language. The syntactic properties of left-branching (LB), head-final (HF) languages such as Japanese challenge these basic assumptions. In fact, the Japanese language is a potentially rich area for linguistic study. Typologically, Japanese is an Altaic language, in marked contrast to English or other Indo-European languages (Kuno, 1973). For instance, Japanese is an SOV language, namely, a language in which the basic word order of a transitive sentence (i.e., an “agent-operates-on-another-entity” sentence) is that of subject-object-verb. For example, an English sentence “John saw Bill” would be arranged as “John Bill saw” in Japanese. Japanese is also an agglutinative language (e.g., the verb root is followed by a series of affixes, adjusted by voicing assimilation to fit the root and other affixes) (Yamada, 1992). Moreover, whereas the use of determiners is generally obligatory with nominals (at least singular ones) in English, no such functional category exists in Japanese (Shibatani, 1990).

Also, whereas in English a preposition is a head of the phrase (e.g., ‘in San Francisco’), an equivalent particle (or case marker) appears at the end of the phrase in Japanese (e.g., “San Francisco de/ni”). Recall that an English sentence “John saw Bill” would be arranged as “John Bill saw” in Japanese. This is so because the head of the verb phrase “saw” comes at the end of the phrase, the predicate in this case. Japanese is thus characterized “postpositional” as opposed to “prepositional” (Kuno, 1973). Unlike English, moreover, in Japanese all case relationships can be represented by postpositional markers, such as the following:

\[
kino wa watashi wa machi e ikimashita.
\]

yesterday I [T] town to went

‘I went to the town yesterday.’
dare ga kinoo zemi de hanashi o shimashita ka?

Who [S] yesterday seminar at talk [O] gave [Q]

‘Who gave a talk at the seminar yesterday?’

Note: [O] is an object case marker (the accusative case, ACC); [Q] stands for an interrogative particle; [S] stands for the subject marker (the nominative case, NOM); and [T] stands for the topic marker or TOP.

While, as discussed later, the use of these case markers is sometimes optional (e.g., kinoo watashi ø machi e ikimashita or even kinoo watashi ø machi ø ikimashita: ‘I went to the town yesterday’), as seen in these two examples, two different types of particles mark the subject of a sentence for different purposes (the thematic/topic marker wa as opposed to the subject marker go).

Subtlety and ambiguity are also found in the structure of the Japanese language itself. As Clancy (1986) points out, for instance, if we do not take intonation contour into consideration, because negation appears as a verb suffix that comes at the very end of a sentence, the speaker can negate a sentence at the final moment, inferring the listener’s reaction [e.g., “machi e itta to omou” (‘[I] think [he/she/they] went to the town’) as opposed to “machi e itta to omowa nai” (‘[I] do not think [he/she/they] went to the town’)].

This is generally true of other cases, as well. For example, neither a syntactic nor a morphological cue is available to distinguish the difference between a head-final NP with a relative clause (e.g., basu ni notta kodomo [basu = ‘bus,’ ni = object marker, notta = ‘took,’ kodomo = ‘child’]: ‘the child who took a bus’) and a simple sentence (e.g., basu ni notta: ‘ø took a bus’), except for the availability of the information after the verb. Therefore, the listener cannot identify whether the sentence he or she hears is a relative clause or not, until the head NP becomes available at the very end (Yamashita, Stowe, & Nakayama, 1993). In this regard, it is appropriate to mention that one way of understanding the communication process is in light of encoding and decoding. Encoding means the process of turning a message into certain linguistic forms, such as word(s), phrase(s), or sentence(s). The individual who encodes and sends messages and meanings is an encoder. Decoding, on the other hand, refers to the process of trying to understand the meaning of word(s), phrase(s), or sentence(s) sent by the encoder. The individual who decodes the messages and meanings sent by the encoder is a decoder. Overall, therefore, we need to consider the impact of distinctive features of a particular language (e.g., word order, branching directions, and occurrences of empty categories)
not only on how the speaker/encoder produces that language but also on how the listener/decoder processes what he or she hears.

Moreover, because Japanese has case markers, unlike English, a relatively free word order is allowed. For example, while they are both acceptable, a sentence with right dislocation, “anata ni ookiku natte hoshii mon, okaasan wa” (‘ø wants you to grow up a big boy, Mama’), is sometimes used instead of “okaasan wa anata ni ookiku natte hoshii mon” (‘Mama wants you to grow up a big boy’). Thus, case marking, which was mentioned earlier, and word-order flexibility are the norm in Japanese. [It should be noted, however, that English does have some case markers. For instance, even when an object case marker is not attached to pronouns, they are in many cases case-marked pronouns (e.g., The girl saved us. This tie becomes him).]

To make matters more complicated, however, in naturally occurring Japanese discourse, case markers are occasionally omitted (e.g., “anata ookiku natte hoshii mon, okaasan”: ‘ø wants you to grow up a big boy, Mama’); the subject and/or object can be omitted as well (e.g., “ookiku natte hoshii mon”: ‘[I] want [you] to grow up a big boy’). In other words, zero forms (ø) can be prevalently used when a character has been established not only in a preceding clause but also in the context; there is no need to use a full nominal expression or a pronoun. When telling stories, for example, Japanese narrators tend to opt for dispensing with nominal references to entities that they assume to be in the focus of listeners’ consciousness (Downing, 1980). Unfortunately, however, these ellipses consequently result in considerable ambiguity. In addition to flexible word order, therefore, as Clancy (1980, 1992) and Hinds (1984) argue, the rare use of pronominal references further spurs ambiguity in Japanese. Although no causal relationships between some syntactic features and particular cultural aspects are implied, the aforementioned syntactic features of the Japanese language are well suited for implementing a subtle communicative style.

**Critical Issues in Linguistics Including Language Acquisition/Learning**

Let me discuss some critical issues in the field of linguistics. The first question surrounds issues associated with language acquisition/development, including that of an L2. For instance, in the 1940s and 1950s, learning an L2 was seen as a “habit” that learners were expected to develop and maintain (e.g., Skinner, 1957). Ever since Chomsky (1965) began to develop the theory of linguistic universals,
however, researchers have been interested in the human biological endowment that enables us to discover the framework of principles and elements common to attainable human languages. In the field of L2 learning, a great deal of research had been carried out even before the Chomskyan Revolution (e.g., Fries, 1972; Lado, 1957). After the revolution, however, researchers came to recognize the enormous complexity of L2 learning and its many facets (e.g., Richards, 1974), and, consequently, investigations into this domain of knowledge have become a great deal more diverse and sophisticated.

Formal theories of language developed by these researchers are concerned with an analysis of the abstract underlying structure of language. Those who propose different paradigms for understanding language acquisition, however, insist that environmental influence on language development not be overlooked. More specifically, while the formal Chomskyan (nativist) approaches take the position that language is relatively independent of other cognitive domains, the functional (empiricist) approaches claim rather that the interplay between domain-general cognitive/learning mechanisms and the environment accounts for language development [see MacWhinney (1999) for a review]. Functional theories are particularly concerned with understanding language in the contexts in which it is used (e.g., learning socially determined rules of interaction in the process of language acquisition). In other words, whereas formal theories primarily place their emphasis on analyzing the child’s (or the language learner’s) developing linguistic competence in syntax and phonology, functional theories are essentially concerned with semantics and pragmatics.

The second question is how language is used in society. In addition to the aforementioned typological peculiarities, it is important to examine how the language used in a society reflects widely accepted social norms and, conversely, how those social norms shape language use. Although speech acts and politeness are purported to share some universal features (Brown & Levinson, 1987), they may vary cross-culturally as well as cross-linguistically. To answer these intricate questions, we need to identify cross-linguistically common — possibly universal or quasi-universal — characteristics in terms of the development of language processing strategies. At the same time, we also need to know whether different language processing strategies are used by those who speak different languages. Thus, we must take both developmental and cross-linguistic issues into consideration simultaneously. We must now consider that L2 learners seek to gain insight into social, political, cultural,
psychological, cognitive, and interactional processes entailed in learning an L2.

As previously mentioned, the Japanese language is a highly contextualized language; the speaker must be fully aware of (1) whether the relationship with the listener is intimate, or (2) whether the communication is impersonal. High context groups like the Japanese are often described as living in a “sea of information” that is widely shared (Hall, 1977, 1989). This culture-specific phenomenon has often been associated with the distinction between “inside” and “outside.” To use an illustration, if a person whom the speaker addresses (or a person the speaker refers to) belongs to the speaker’s circle, that person is an insider. Someone’s immediate inside circle is usually the family. A second inside circle might be the office circle (e.g., fellow workers in a department of a company). On the other hand, if the person is outside of the speaker’s circle, then the person is an “outsider.” The concept of “inside” as opposed to “outside,” widely accepted in Japanese society, accounts for representations of the language used in the society. While this is a rough description, within the inner circle informal forms of speech are used (note that there also possibly could be a certain type of hierarchy even within the inner circle in which the speaker expresses his or her respect to the hearer, using honorifics). On the other hand, when the speaker addresses an outsider, the speaker is more likely to use formal forms of speech.

Although a great deal has been written about linguistic politeness in Japanese (e.g., Shibatani, 1990), we can still offer insightful perspectives on this sociolinguistic dimension. There has been relatively little investigation into how Japanese honorifics are explained within the framework of the four Gricean maxims (Grice, 1975), the general principles that are considered to underlie the efficient use of language. The maxim of quantity is a case in point; it suggests that the utterances be only as informative as required for the current purposes of the conversational exchange. However, we may be able to contend that the Japanese linguistic politeness phenomena, such as polite utterances to outsiders, deviate from or even violate the Gricean framework, which, as mentioned earlier, precludes unnecessarily informative contributions. The Gricean maxims do not necessarily take into account language-particular features. Instead, we should emphasize the importance of considering cultural variation, through the exploration of influences of both typologically and socioculturally distinctive features on language acquisition/development and language processing. Works on discourse and pragmatics thus contribute to the investigation of meaning that a culture encodes in its
language, a topic in which linguists and anthropologists share a great interest.

This Volume

The nature of the aforementioned issues, and the manner in which this book addresses them, are clearly articulated in the following fifteen chapters, providing overviews of current research conducted by their authors and other researchers in various fields of Japanese linguistics. In the first chapter “How does it Hurt, *Kiri-kiri* or *Siku-siku*: Japanese Mimetic Words of Pain Perceived by Japanese Speakers and English Speakers,” Iwasaki, Vinson, and Vigliocco explore some phonologically characteristic features as well as such related problems as the lexicon. These researchers examine whether native English speakers with no prior experience of learning the Japanese language can infer the meanings of Japanese mimetic words of pain. As mentioned earlier, those who are in various areas of linguistics, such as formal linguistics, psycholinguistics, sociolinguistics, and anthropology, search for linguistic universals. Iwasaki, Vinson, and Vigliocco’s chapter exemplifies the world of language universals on the one hand and language-specific features on the other. Through this experiment the researchers try to uncover both cross-linguistically shared and language-specific aspects of sound symbolism that are present in the Japanese mimetic words. They explore and study diverse peoples, languages, and social and cultural settings in order to identify crosslinguistic differences.


The next six chapters (Chapters 4-9), which are related to syntax, have much to offer their intended audiences, who, in turn, will find these chapters intriguing. In “Functions of *garu* and *te-iru*: A Re-Examination” (Chapter 4) Johnson examines the use of auxiliary verbs based on data from such written materials as weblogs and letters. The subsequent two chapters, Chapter 5: “Language Change and Language Pedagogy” by Tsujimura and Okamura and Chapter 6: “A Non-canonical Transitive Construction in Japanese” by Hirakawa, both focus on issues associated...
with transitive and intransitive verbs, that is, the verbs used in the “agent-operates-on-another-entity” type sentences and the verbs used in the “agent-conducts-itself” type sentences, respectively. Chapter 7 by Nakayama and Kano (“JFL Learners’ Interpretation of Zibun and Zibunitachi”) deals with the Japanese reflexive pronoun zibun (self), which is used for all persons and genders, in the context of Japanese-as-a-foreign-language (JFL) learning. The next two chapters consider particles (case markers). In their chapter “The Acquisition Process of Japanese Case Particles by JSL Learners” (Chapter 8) Su, Yoshimoto, and Sato analyze how Japanese-as-a-second-language (JSL) learners acquire the usage of the Japanese case particles o and ni. Likewise, in her chapter “Implications of Natural Speech Data for Teaching Japanese Particles” (Chapter 9) Kabata examines three Japanese particles, kara, ni, and ga based on a collection of telephone conversations between native speakers of Japanese.

The next two chapters deal with semantics and pragmatics from different perspectives. Makino, who has repeatedly broken new ground in different aspects of Japanese-language teaching in the United States, sets the stage for research on cognitive linguistics. In his chapter “Shift in Number Assignment in Japanese Discourse” (Chapter 10), Makino focuses on a Japanese number marker tachi, an optional plural marker attached to personal pronouns (i.e., the Japanese equivalents of the English “we,” “you,” and “they”) and to human nouns (e.g., the Japanese equivalents of the English “children,” “males,” and “females”). Here, he also recalls the issues of ambiguity omnipresent in the Japanese language, which has pluralizing markers that are in many cases optional. In English, on the other hand, there is a formal feature marking pluralization in most nouns (except for mass nouns, for example). In other words, the plural is marked, whereas the singular is unmarked. Makino describes how tachi shifts from the unmarked status to the marked status and vice versa in a given discourse.

In “Emotivity of Nontraditional Katakana and Hiragana Usage in Japanese” (Chapter 11), Hudson and Sakakibara concern themselves with writing as notational system. Mastery of any language often includes writing skills, and in the case of Japanese, it includes Hiragana (i.e., the cursive form of Japanese syllabary used for conjugation endings, function words, and native Japanese words) and Katakana (the square form of the Japanese syllabary normally used for loanwords and foreign names) writing systems. Hudson and Sakakibara analyze the emotivity of nontraditional Katakana and Hiragana usage. The aforementioned eleven chapters are thus worth the attention of anyone who is interested in many
complex issues surrounding such various relationships as between phonology and lexicon, between syntax and semantics, and between syntax and morphology.

The next four chapters are concerned with extended discourse but again, from different perspectives. Like other chapters (e.g., Nakayama and Kano’s Chapter 7) Minami’s chapter (Chapter 12: “The Development of Narrative Discourse Patterns in the Learning of Japanese as a Foreign Language”) examines adult JFL learners’ oral personal narratives in order to track the nature of the development of their narrative abilities. The goal of his study is to determine whether JFL learners become able to utilize appropriate discourse strategies for producing native-speaker-like narratives as their language proficiency levels increase.

Japanese is both “topic-prominent” and “subject-prominent,” in contrast to languages that are characterized as “subject-prominent” languages (e.g., English) (Shibatani, 1990). The subject on first mention (i.e., new information) is marked by the particle ga (subject marker) whereas the subject that serves as the theme or topic of the sentence (i.e., old or given information) is marked by wa (thematic or topic marker) (Hinds, 1984; Kuno, 1973; Maynard, 1990). As explained earlier, however, the marking of case relationships is optional in Japanese. Furthermore, Japanese is a language with a low frequency of pronouns and the extensive use of nominal ellipsis. That is, extensive ellipsis of case markers is grammatically acceptable and, moreover, sometimes pragmatically appropriate.

Yamura-Takei and Fujiwara’s chapter (Chapter 13: “Japanese Native Speakers’ Intuition of ZERO Use: An Account by Centering Theory”) attempts to theoretically and empirically explicate native Japanese speakers’ intuition about the use of ellipsis in creating a natural and coherent discourse. In her chapter “Revisiting the ‘Given A Constraint’: Analysis of Japanese Written and Spoken Narrative” (Chapter 14), Takeda identifies some divergences from the constraints and the differences between the spoken and written narratives. Minami’s concluding chapter, “Active Imaginations: Verb Forms in Narratives Told by English-Japanese Bilingual Children” (Chapter 15), follows the methodology established by Slobin (1991, 1997, 2000) [see also Berman & Slobin (1994)] which uses Mercer Mayer’s *Frog, where are you?* (1969), a wordless storybook consisting of a set of 24 pictures. Because of different kinds of narrative discourse contexts (e.g., narrating the contents of a pictured story vs. narrating past experiences in a less structured setting), direct comparison of the results reported in these four chapters might not be appropriate. Having had some exposure to storybooks, the
children described in Chapter 15 might have been familiar with particular rhetorical forms of stories. It is therefore likely that they demonstrated more advanced skills in storybook narration. Conversely, because advanced skills may rarely appear in spontaneous speech, examining Japanese-language learners’ talking about the past (Chapter 12) may underestimate their mastery of a variety of linguistic means and rhetorical devices. Despite these cautionary remarks, all four chapters included in the discourse/narrative section will provide interesting areas of study.

As summarized above, the book touches on a deliberately wide spectrum of domains of linguistic knowledge (phonology/phonetics, morphology, lexicon, semantics, syntax, and discourse), context of language use (interactive conversation, narrative), research orientations (linguistics, psycholinguistics, social psychology, sociolinguistics), and age groups (children and adults). Most papers conclude with a clear summary or conclusion of the main points of the paper, which the reader of this book will find to be very helpful given the often complex set of phenomena and broad implications for the diverse theories being discussed. Each paper represents a stand-alone examination of research in a specific sub-domain of Japanese linguistics. Yet the book as a whole seeks to reflect the major trends in current investigations into the contexts of where and how the Japanese language is being taught and learned. The present volume reflects a considerable amount of research carried out on Japanese linguistics not only in Japan but also in the United States. It also nicely captures linguistic phenomena that, notwithstanding some universal features, reveal tremendous cross-cultural and cross-linguistic variation. This book thus provides an excellent introduction to contemporary studies of Japanese linguistics. Even for those already engaged in this area of linguistic research, I believe that, as a resource, this book offers a view into innovative and exciting lines of research in this field and, moreover, will inspire many new directions for future research.

Many people were involved in the making of this book. I would like first and foremost to thank those who helped make ICPLJ successful. Last, but of course not least, I am grateful to all the contributors to the volume for their professionalism and goodwill in putting up with my constant reminders about deadlines and demands for rewritings.

Finally, I cannot emphasize enough that empirical and theoretical research on language has recently experienced a period of extensive growth. The dawn of the new millennium witnessed the arrival of an impressive number of books as well as the inauguration of several professional conferences, societies, and journals. Questions of quality and the diversity of language studies continue to present problems for
researchers, such as how to stay in touch with discoveries in various language-related disciplines and how to assess those discoveries effectively. Even if one knows that researchers in other disciplines are engaged in inquiries germane to one's own, one may not know where to find work that is held in highest regard by scholars who have positions to assess it. It is thus imperative to integrate theoretical concepts and empirical research findings in L2 development, so that they can be applied to educational practice. As the editor of Applying Theory and Research to Learning Japanese as a Foreign Language, I sincerely hope that this volume, which is taking steps to address these problems, will be of interest to linguists, psychologists, educators including foreign-language teachers, and speech communication specialists.

References


PART I:

PHONOLOGY/PHONETICS/LEXICON
Abstract
This study examines the extent to which English speakers with no prior experience of learning Japanese can infer the meanings of Japanese mimetic words of pain. In so doing, we uncover both cross-linguistically shared (possibly universal) and language-specific aspects of sound symbolism present in the Japanese mimetic words. We found that English speakers interpreted reduplicated words very similarly to Japanese speakers in many semantic dimensions (aching, bothering, continuous, affecting wide areas), suggesting the potentially universal effect of reduplication. In contrast, only Japanese speakers are consistently sensitive to voiced-voiceless consonant contrasts (associating words beginning with voiced consonants as more intense, aching, suppressing, and numbing pain). It is important to distinguish between Japanese language-specific sound symbolism and sound symbolism shared between Japanese and the learners’ first language when teaching Japanese as a second/foreign language.

Introduction
While many Japanese linguists and educators agree that mimetic words in Japanese (giongo/gitaigo) are essential for Japanese learners to acquire (e.g., Makino & Tsutsui, 1991, among others), these words are often perceived as unimportant fringes, being marginalized in linguistics
How does it Hurt, *Kiri-kiri* or *Siku-siku*?

(Hamano, 1998) and rarely introduced in Japanese textbooks (Mikami, 2004). Yet, it is evident that mimetic words are indispensable when it comes to vivid and precise descriptions and narratives in Japanese (Kakehi, 2001; Tamori, 2002).

In particular, mimetic words become indispensable when situations involve semantic domains often referred to by mimetic words (such as sounds, motions, pain, and emotions). In health and medical situations, the use of mimetic words of pain such as *kiri-kiri* and *zuki-zuki* is essential. According to Osaka (2001), mimetic words referring to tactile sensations and pain constitute a large part of the inventory of Japanese mimetic words (along with auditory and visual mimetic words). A mimetic word of pain conveys a bundle of features related to pain. For example, Kakehi, Tamori and Schourup (1996) define *tikuri* (*chikuri* in their transcription method) as ‘the manner of feeling a sharp stinging or pricking sensation, as when the skin is pierced by a sharp object’ and *kiri-kiri* as ‘the state of feeling a sharp, stabbing pain.’ In addition, word forms imply that *tikuri* is a momentary pain because the word ending –*ri* generally indicates completion and that the reduplication as seen in such words as *kiri-kiri* indicates continuous pain (e.g., Hamano, 1998; Tamori & Schourup, 1999). For Japanese speakers, the use of a mimetic word is the most efficient way of describing pain since the specific types of pain (e.g., area, intensity) can be readily understood (Mizutani, 1974; Osaka, 2001). Osaka et al. (2004) even showed that when hearing mimetic words of pain (*gan-gan, zuki-zuki kiri-kiri tiku-tiku, zukin-zukin, hiri-hiri*), Japanese speakers’ brain areas related to pain perception (i.e., anterior cingulated cortex) are activated.

Despite the importance of mimetic words referring to pain, learning these words may pose problems because they refer to the internal subjective sensation of pain. Unlike mimetic words of sound or motion, a learner cannot directly observe what these words refer to. Hence, learners may need to rely on translation equivalents in their first language when learning these words. Though learning new words by associating them with their translation equivalents in the native language is an important component in second language (L2) learning (de Groot, 1992), translations of mimetic words are rarely single words, and one-to-one word association is not readily possible. These words also lack other properties that would help L2 vocabulary learning, such as concreteness, frequency, and cognates (de Groot & Keijzer, 2000). The words’ meanings are hardly concrete (Kakehi, 1993), and they are not cognates of any words in the native language at least if the learners’ native language is English. The frequency of use of these mimetic words of pain in print is also low; for
example, *tiku-tiku* appeared only 8 times in hiragana and 26 times in katakana in Asahi Newspapers from 1985 to 1998 while a common word such as *itami* ‘pain’ (in kanji) appeared 5,971 times [although newspapers are the print medium in which the use of mimetic words is the least frequent (Schourup, 1993)].

However, these mimetic words presumably reflect sound symbolism (i.e., certain sounds symbolically represent some meanings; e.g., the vowel /a/ representing largeness and /i/ smallness). Some sound-symbolic relations may be language-specific but others may be universal (e.g., Hinton, Nichols, & Ohala, 1994). Though some aspects of sound symbolism that Japanese native speakers feel exist within the mimetic words may be the consequence of learning mimetic words of similar meanings that share word forms in Japanese (e.g., Jorden, 1982), it is plausible that some aspects of mimetic words of pain in Japanese reflect more or less universal sound symbolism. If so, then not all aspects of these words of pain need to be learned from scratch, and L2 learners of Japanese may be able to decipher certain aspects of the types of pain the words refer to by the ways the words sound—even if it is difficult to learn to produce the words. Identification of such aspects will undoubtedly clarify what needs to be focused in L2 instruction. Hence, the current study investigates to what extent Japanese mimetic words of pain embody universal, or at least cross-linguistically shared (between Japanese and English speakers) sound symbolism. Specifically, we examine whether and to what extent English speakers with no prior knowledge of Japanese can grasp the imagery of different aspects of pain indicated by Japanese mimetic words referring to pain, adopting methods employed by Iwasaki, Vinson, and Vigliocco (2005).

Though there is no study specifically addressing Japanese mimetic words of pain besides Osaka et al.’s (2004), there have been several studies on the sound symbolism of Japanese mimetic words. Hamano (1998) identified sound-meaning relationships among Japanese mimetic words across various semantic domains. Hamano first divides Japanese mimetic words into two types, based on the roots: CV-based (consisting of single consonant and single vowel, such as *pi, pii, piQ, piN*) and CVCV (such as *pokaQ, pokaN, pokapoka*). Hamano uses /Q/ and /N/ to refer to phonemic representations of syllable-final moraic obstruents and nasals (see, for example, Vance, 1987), and we adopt her method of transcription below since it accurately reflects the Japanese sound system. Hamano argues that CV-based words are more iconic in that the word forms bear more resemblance to their referents than CVCV-based words which are more lexicalized and arbitrary. She notes, for example, that
suffix /N/ has the meaning of ‘lingering effect’ and ‘elasticity’, and /Q/ relates to ‘abrupt, short, and forceful movements’ (1998, p. 70) in both CV- and CVCV-based words. Furthermore, Tamori and Schourup (1999) discuss similarities between sound symbolism found in Japanese and in English.

There are empirical studies examining the extent to which English speakers could infer the meanings of the Japanese mimetic words. Iwasaki et al. (2005) studied sound mimetic words, which are presumably more iconic than most other mimetic words. They found that English speakers with no prior experience of studying Japanese inferred some aspects of the sound qualities (whether or not the sound is continuous, high-pitched, or sharp) and qualities of objects that make the sounds that the words referred to (whether or not the objects are large, heavy, or thick). They also noted some aspects for which English speakers diverged from Japanese speakers’ perceptions. In particular, they differed in the perception of whether or not the words refer to pleasant or beautiful sounds, a difference that was mostly attributed to differential perceptions of voiced vs. voiceless consonants between the two groups of speakers.

However, mimetic words in other semantic domains such as those referring to manners are less concrete and less iconic. The sound-meaning relation is not as transparent as in the case for sound mimetic words. It has been reported that Japanese children first learn sound mimetic words and then only later learn mimetic words of manner (Herlofsky, 1998; Ishiguro, 1993). Yet, Oda (2001) found that even mimetic words of manner possess iconicity in that the articulatory sensations that occur when producing these words in speech resemble the meanings of these words. He asked speakers of other languages (primarily English speakers) to match the mimetic words of tactile sensations or body movements that they heard to translation equivalents presented with drawings. He found that a group of speakers who articulated the words by imitating Japanese speakers’ models chose correct mimetic words significantly more often than the group who only heard the words and thus supported his hypothesis that the meanings of mimetic words are iconic to the articulatory sensations. It is foreseeable then that mimetic words of pain also possess sound-symbolism and iconicity that speakers of other languages may have access to.
Method

Participants

Twelve native Japanese speakers and 18 native English speakers participated in this study. Both Japanese and English speakers were residing in London and participated in the study for monetary compensation. Japanese speakers (11 women, 1 man, ages from 21 to 49, median of 29) had lived in England for periods ranging from 2 months to 10 years with a median length of stay 1.46 years. English speakers (14 women, 4 men, ages from 21 to 55, median of 31) had no prior experience of learning Japanese.

Task, Procedure and Materials

Materials. We gave a questionnaire containing 13 mimetic words of pain listed in (1). The definitions of these words from Kakehi et al. (1996) are given in the Appendix as well as the frequency of occurrence of these words in newspapers according to the lexical database (Amano & Kondo, 2000).

(1) zukiN, zuki-zuki, zukiQ, ziN, ziN-ziN, tikuQ, tikuri, tiku-tiku, siku-siku, hiriQ, hiri-hiri, kiri-kiri, gaN-gaN

Of the 13 words, 3 words (ziN, ziN-ziN, gaN-gaN) have presumably more iconic CV-based roots and the other 10 words have CVCV-based roots. If CV-based words are more iconic, English speakers’ semantic judgments are expected to be more similar to Japanese speakers’ judgments for these words than for CVCV-based words. The segments in the CV-based words and CVCV-based words used in the current study have sound-symbolic features indicated in (2) and (3) respectively, adopting what may be relevant to pain from Hamano (1998).

(2) C in CV: tactile nature of surface and the type of movement
/z/ continuous smooth movement; heavy, large, coarse
/g/ hard solid surface
V in CV: size of affected area
/i/ straightness
/a/ large area, conspicuousness
(3) C\textsubscript{i} in C\textsubscript{1}V\textsubscript{1}C\textsubscript{2}V\textsubscript{2}: tactile nature of object
/z/ quietness, heavy, large course
/t/ lack of surface tension, subduedness, light, small, fine
/s/ quietness, light, small, fine
/h/ weakness, softness, unreliability
/k/ hard surface, light, small, fine

V₁ in C₁V₁C₂V₂: Initial shape of movement
/w/ +protrusion, +small
/i/ +line, tenseness

C₂ in C₁V₁C₂V₂: Type of movement
/k/ breaking up, swelling, expanding, emission from inside, puffing out, surfacing, in-out movements,
/r/ rolling, fluid movement

V₂ in C₁V₁C₂V₂: Resultant shape and size of movement
/i/ +line, tenseness
/w/ +protrusion, +small

For each word, the participants were asked to rate their senses related to 14 features of pain selected with reference to Takeuchi (1997), shown in (4), on semantic differential scales (Osgood, 1976) with 7 levels as indicated in the format shown in (5).

(4) Semantic dimensions of pain used in the questionnaire

<table>
<thead>
<tr>
<th>In English</th>
<th>In Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp–dull</td>
<td>鋭い–鈍い</td>
</tr>
<tr>
<td>Continuous–momentary</td>
<td>連続的–瞬時</td>
</tr>
<tr>
<td>Intensive–weak</td>
<td>激しい–弱い</td>
</tr>
<tr>
<td>Numbing–not numbing</td>
<td>しびれる–しびれない</td>
</tr>
<tr>
<td>Aching–not aching</td>
<td>うずく–うずかない</td>
</tr>
<tr>
<td>Stimulating–not stimulating</td>
<td>刺激される–刺激されない</td>
</tr>
<tr>
<td>Bothering–not bothering</td>
<td>気になる–気にならない</td>
</tr>
<tr>
<td>Burning–not burning</td>
<td>焼け付く–焼け付くようなではない</td>
</tr>
<tr>
<td>Stinging–not stinging</td>
<td>刺すような–刺すようなではない</td>
</tr>
<tr>
<td>Beating–not beating</td>
<td>脈打つ–脈打つようなではない</td>
</tr>
<tr>
<td>Suppressing–not suppressing</td>
<td>圧迫する–圧迫しない</td>
</tr>
<tr>
<td>Tearing–not tearing</td>
<td>引き裂くような–引き裂くようなではない</td>
</tr>
<tr>
<td>Localized-wide area</td>
<td>局所的–広範囲</td>
</tr>
</tbody>
</table>
Japanese speakers were given printed words, both in katakana and in hiragana. This is because the choice of orthography can affect the image that the word evokes (Iwahara, Hatta, & Maehara, 2003) and the presentation of both orthographies is less likely to bias their perceptions. English speakers were given audio-recorded stimuli (recording of a female speaker from the Tokyo metropolitan area). Auditory presentation to Japanese speakers was avoided because it was foreseeable the Japanese speakers would base their judgments on the qualities of sound/voice rather than their knowledge of these words. In order to ensure that the Japanese speakers’ judgments reflect their semantic representations of these words in their mental lexicon, we presented printed words to them.

**Tasks and procedures.** Japanese speakers were given the questionnaire written in Japanese, and English speakers were given the questionnaire written in English. Their tasks were to make judgments regarding the 14 semantic dimensions shown in (4) and give ratings in the format shown in (5) above; the questionnaire consisted of 14 pages, with one page for each of 13 stimulus words, following one page of practice ratings (rating the pain they experience when they have a toothache); this was to familiarize the participants with the format of the scales and the task. English speakers listened to digitized audio files presented on a computer, and they listened to each word as many times as they desired by clicking numbered icons corresponding to each word on the computer screen.

**Analyses.** The participants’ responses were later converted to -3 to +3, with the values indicated on the left in (4) and (5) (e.g., *sharp*) as +3. The means of the two groups of ratings were calculated for each word and for each dimension. Cross-linguistic correlations were computed using Pearson correlation coefficients for both individual words and for semantic dimensions. We also analyzed effects of reduplication, voiced consonants, and types of vowels. To examine the effects of reduplication in each language group, the mean ratings for each semantic dimension for 6 reduplicated words (e.g., *zuki-zuki, hiri-hiri*) and those for 7 non-reduplicated words were compared by two-tailed t-tests within each language group. Likewise, in order to examine the effects of voiced consonants, the mean ratings for each semantic dimension for 5 words with initial voiced consonants (e.g., *zuki-zuki, gaN-gaN*) and those for 6
words with initial voiceless consonants (e.g., *siku-siku, kiri-kiri*) were compared by two-tailed t-tests (the words beginning with /h/, which do not have voiced counterparts, are excluded in this analysis). For the examination of the effects of vowels, words were divided into three groups: 5 words containing /i/ as the only vowel (e.g., *ziN, hiri-hiri*), 4 words containing /i/-/u/ sequences (e.g., *tiku-tiku, siku-siku*), and 3 words containing /u/-/i/ sequences (e.g., *zukiN, zuki-zuki*). The mean ratings for each semantic dimension within the respective groups were submitted to one-way analysis of variance (ANOVA) for each language group, with the 3 levels of vowel types as the independent variable. All statistical tests were conducted at an alpha level of .05. Finally, multidimensional scaling was conducted (separately for each language) to give an overall impression of the similarity between mimetic words on the basis of all the scaling dimensions considered together.

Results

Correlations for Words

The ratings for eight words by Japanese speakers and those by English speakers were significantly correlated, namely, *tikuQ* (\(r = .882\)), *kiri-kiri* (\(r = .623\)), *ziN* (\(r = .611\)), *tikuri* (\(r = .578\)), *zukiQ* (\(r = .571\)), *gaN-gaN* (\(r = .494\)), *zukiN* (\(r = .491\)), and *siku-siku* (\(r = .471\)). Among the three CV-based words, *ziN* and *gaN-gaN* were among these eight words, and they were ranked third and sixth. They do not have particularly high correlation coefficients as compared to CVCV-based words, suggesting that CV-based may not be more accessible to English speakers. The similarity of ratings between English speakers and Japanese speakers for the most highly correlated word *tikuQ* is shown in Figure 1, in which Japanese speakers’ ratings are indicated by dark bars and English speakers’ ratings by light bars. Both speakers felt that the word *tikuQ* refers to a momentary non-intense sharp pain that is localized and non-aching.
Interestingly, however, the word for which English and Japanese speakers’ ratings were the least correlated was *tiku-tiku*, which shares the CVCV root *tiku* with *tikuQ*. These ratings are illustrated in Figure 2. English speakers did not feel that *tiku-tiku* refers to as continuous pain as Japanese speakers do, did not feel that it refers to stinging pain, and felt that it refers to pain that occurs internal to the body, while Japanese speakers rated the two words extremely similarly overall. It is evident that the meanings of these words involve much more than the sum of the contributions of each of the sound segments in the words listed in (2) and (3). The difference between *tikuQ* and *tiku-tiku* is primarily that the former contains /Q/ and the latter has a reduplicate form. It is not surprising then that English speakers rated *tiku-tiku* referring to much more intense pain, on the basis of associating the longer word with more intensity and slightly more continuous pain than *tikuQ*. The fact that Japanese speakers did not rate *tiku-tiku* as intense as English speakers and rated it as referring to external pain might be related to lexicalized meanings of these words that they learned through experience.