Onomatopoeia, Translation and Relevance

Abstract

It is generally acknowledged that onomatopoeia poses challenges for translation. However, there is little research into the translation of onomatopoeia in Pragmatics. This study seeks to examine the nature of onomatopoeia and its implications for translation from the perspective of Relevance Theory, addressing, in particular, the following questions: (i) Can notions from pragmatics help to account for the perceived challenges involved in translating onomatopoeia? (ii) Does the Relevance-Theoretic notion of *showing–meaning* affect translation of onomatopoeia? (iii) What other factors result in difficulties in translating onomatopoeia and why? To this end, a corpus-based analysis of onomatopoeia was conducted using user-generated data provided by Cookpad Inc. Findings show that the Relevance-Theoretic notions of the *showing-meaning* continuum and perceptual resemblance can indeed help account for the perceived challenges in translating onomatopoeia. Findings also show that stylistic aspects, such as types of expressions and text types, also impact on the translation of onomatopoeia.

1. Introduction

Onomatopoeia is generally understood as words that are a vocal imitation of an action or object with which the expression is associated. Typical examples include English words such as *bang*, *pop*, *meow*, or Japanese *gangan*, *zaazaa*, and *piyopiyo*. These expressions are often considered to communicate vague impressions and feelings based on our sensory experience. While the term *onomatopoeia* is often used to refer to linguistic forms that are used by virtue

of the association between their phonological form and the sound-based characteristics of an object or action, there are other types of expression that are used by virtue of the association between their phonological properties and the non-sound-based characteristics of what these expressions are used to describe. Such expressions are particularly prevalent in Japanese and examples include *phenomimes* such as *kirakira* (sparkling), *pikapika* (flashing), or *nebaneba* (sticky), and *psychomimes* such as *wakuwaku* (a feeling of excitement) or *dokidoki* (a feeling of excitement and nervousness).[1] As such, some scholars use terms such as *ideophones* or *mimetics* to include these non-sound-based expressions. However, in this study, the term *onomatopoeia* is used as a term of convenience to refer to any type of onomatopoeic expression.

The fact that there is a close association between the phonological properties of an expression and what it represents has led scholars to argue that onomatopoeia would pose a challenge to de Saussure's notion of the arbitrariness of language (cf. Akita and Dingemanse 2019). In particular, the nature of sound association has led scholars to argue for sound symbolism, which assumes a systematic link between sound and meaning. As Akita and Dingemanse (2019) report, research into onomatopoeia has often focused on what onomatopoeia is, how onomatopoeia is integrated phonetically, morphologically, and morphosyntactically into linguistic structures, and how onomatopoeia seems to have a systematic link to meaning (or *iconicity* in semiotic terms).[2] Iconicity, in particular, has been drawing scholarly attention of late. However, despite a rich body of literature on onomatopoeia, little attention has been paid to the role of onomatopoeia in communication from the perspective of pragmatics. Indeed,

[1] In this classification, sound-based onomatopoeia is often categorized as a *phonomime*.

[2] There is also a rich body of literature on onomatopoeia and language acquisition (e.g. Imai, Kita, Nagumo and Okada 2008, Nygaard, Cook and Namy 2009, Wrembel 2010, Kantartzis, Imai and Kita 2011, Laing 2014, 2017, 2018, 2019, to name but a few).

there have been very few studies on onomatopoeia in Relevance Theory, except for my own (Sasamoto & Jackson 2016, Sasamoto 2019) analyses of onomatopoeia, which draw on Wharton's (2003, 2009) work on interjections[3].

Furthermore, even less attention has been paid to issues surrounding translating onomatopoeia in pragmatics. The fact that onomatopoeia is so intricately linked to our sensory experience and communicates something nebulous indicates that onomatopoeia could pose challenges in communication across languages, including for language learners and translators (cf. Flyxe 2002). However, while the perceived difficulties involved in translating onomatopoeia could be seen as an indication that onomatopoeia is linked to communication of subtle and nebulous impressions and non-propositional effects, there are very few studies in pragmatics on the topic of onomatopoeia and translation. Furthermore, most previous studies, which are found not in pragmatics but in translation studies, are focused on literary translation and there are few empirical studies that examine real-life data on translation of onomatopoeia.

Against this backdrop, this study is an attempt to investigate the nature of onomatopoeia and its implications for translation from the perspective of Relevance Theory. In particular, I will aim to answer the following questions: (i) Can notions from pragmatics help to account for the perceived challenges involved in translating onomatopoeia? (ii) Does the Relevance-Theoretic notion of *showing–meaning* affect translation of onomatopoeia? (iii) What other factors result in difficulties in translating onomatopoeia and why? I will begin by presenting what has been discussed in previous studies on onomatopoeia in translation studies. Section 3

[3] Meinard (2015) also discussed the difference between interjections and onomatopoeia from the perspective of pragmatics.

will provide an overview of the Relevance-Theoretic analysis of onomatopoeia, and this will be followed by a corpus-based analysis of onomatopoeia in Section 4. Findings from the corpus analysis will be presented in Section 5 and discussed in terms of Relevance Theory in Section 6. I will conclude that the perceived difficulties in translating onomatopoeia can be explained from the perspective of Relevance Theory, in particular, using the notion of the *showing–meaning* continuum. The findings from the corpus study will support the idea that expressions with less of a *meaning* aspect lead to perceptions that onomatopoeia is difficult to translate.

2. Onomatopoeia and Translation

In recent years, approaches to translation phenomena from the perspective of pragmatics have started to attract scholarly attention (cf. Tipton and Desilla 2019), especially to "explain and account for meaning-generation in translation and interpreting processes, products and their reception" (Tipton and Desilla 2019: 1). Furthermore, since the ground-breaking works by Ernst-August Gutt (1991, 1996, 2005, 2006, 2010, to name but a few), some key studies which take the Relevance-Theoretic perspective have been published in the areas of Translation Studies, such as, for example, Translation Technology and Translation Process Research (Alves 2006, Alves and Gonçalves 2003; 2007; 2010; 2013; 2015), Interpreting (Blakemore and Gallai 2014, Gallai 2016; 2019), and Audiovisual Translation (Bogucki 2004; 2009a, b; 2020, Braun 2016; 2018) (see Glallai 2019 for a fuller discussion on translation and cognitive pragmatics). However, even though the complexity of the translation process is well documented, there are few studies on translation of onomatopoeia,

despite the fact that it is often argued that onomatopoeia poses challenges for language users such as translators and language learners alike (cf. Flyxe 2002, Inose 2008, Bartashova and Sichinskiy 2014) as onomatopoeia is often used to communicate nebulous feelings and impressions which are difficult to put into concrete terms. For example, Inose (2008) describes onomatopoeia as follows:

> Japanese onomatopoeic and mimetic expressions, although used very frequently in all levels of the language, are considered to be among **the most difficult challenges** for those learning Japanese, and for translators.
>
> Inose (2008: 97, my emphasis)

Such perceived difficulties in translating onomatopoeia have been discussed in terms of phonological differences between two languages (Flyxe 2002), style/register (Flyxe 2002, Bartashova and Sichinskiy 2014), and lack of equivalence (Flyxe 2002, Inose 2008, Bartashova and Sichinskiy 2014).

The assumption that onomatopoeia is difficult to translate due to the lack of equivalence and hence consistency caused the focus of onomatopoeia research in translation studies to be placed on translation techniques, and scholars often take a taxonomic approach to classifying the different techniques used across literary texts. In this context, omission has been used as evidence for the challenge involved in translating onomatopoeia (c.f. Inose 2008).

At this point, it is worth paying attention to the notion of omission. It is interesting to see how the lack of equivalence and hence consistency seems to be used as a proxy for difficulty in the analysis of the translation of onomatopoeia. However, omission is generally considered as

an accepted translation technique, although different terminologies could be used. For example, Baker (1992) calls it *omission*, while Newmark (1988) calls it *reduction*. Omission would also be part of what Gutt (1991) calls *indirect translation*, where translators may adopt different solutions to bridge the cognitive environment of the source text audience and that of the target text audience.[4] Furthermore, in some schools of thought in translation studies, consistency might not always be desirable for stylistic reasons. For example, Newmark (1991) mentions that some translators may avoid certain expressions because they are trained to seek elegant variations, especially in literary texts. This shows a lack of consensus on the terminology for the phenomena, and on views on consistency. However, as the term *omission* has been applied most often in the studies that focus on translation of onomatopoeia, and as the lack of consistency has been used as a proxy for difficulty in studies that are concerned with onomatopoeia, this study will also assume that consistency could be used as a proxy for difficulty and will adopt the term *omission* for convenience and for the consistency with previous studies on the translation of onomatopoeia[5].

In studies on onomatopoeia translation, a high rate of omission of onomatopoeic terms is reported across literary translation (cf. Edström (1989) and Hayase (1978)). For example, Kubo (1995) reports that a high number of onomatopoeic expressions (78%) were left untranslated in the works of Kenji Miyazawa, a renowned children's author and poet. Similar studies have been conducted for Japanese–Spanish (Inose 2008), which reports an omission rate of 19.3%, Chinese–English (Casas-Tost 2014), which shows an omission rate of 32.6%, and for Japanese–English (Minashima 2004), which found an omission rate of 16.3%.[6] While

[4] I would like to thank an anonymous reviewer for pointing this out.
[5] However, this should not be taken as implying this study's reliance on Baker's theoretical understanding of translation. In fact, as a study that takes Relevance Theory as its theoretical foundation, this study takes a similar approach to that of Earnst-August Gutt's series of work (See, for example, Gutt 1991, 2010).
[6] Flyxe (2002) reports a relatively low omission rate of 5.9% for Swedish-Japanese.

these studies indeed show that translating onomatopoeia often involves a relatively strong reliance on the translation technique of non-translation or omission, their literary-translation-oriented approach does not clearly explain why onomatopoeia is omitted from translation and how it is compensated for (or not).

Furthermore, the high rate of omission does not necessarily mean the translation of onomatopoeia is indeed challenging. To find out whether onomatopoeia is indeed a challenge for translators, I conducted a corpus-based analysis of onomatopoeia using user-generated data provided by Cookpad Inc (see Sasamoto 2019).[7] Random samples were categorized according to their degree of lexicalization as proposed by Flyxe (2002)[8], developed from Tamori and Schourup (1999), and analyzed for target text (TT) expressions that were used to translate fifteen onomatopoeic expressions in the source text (ST). The findings showed that a relatively high percentage of consistent translation is used for most forms of onomatopoeia, except for a few less lexicalized (and more mimetic) terms.[9] This indicates that the absence of a direct equivalence in terms of lexical items does not necessarily result in difficulties for translators. Still, it cannot be overlooked that onomatopoeia is commonly considered to be a challenge for translators. Why is that the case? The current study is an attempt to investigate the nature of onomatopoeia and its implications for translation from the perspective of cognitive pragmatics. However, before turning to specific questions of translation and onomatopoeia, I will introduce notions from Relevance Theory that allow for a cognitively grounded account of onomatopoeia.

[7] Findings from Sasamoto (2019) will be presented in Section 5 and discussed in Section 6, where they are relevant to the findings of this study.
[8] In his analysis of translation of onomatopoeia between Japanese and Spanish, Flyxe (2002) develops an account based on mimeticity and degree of lexicalization. I will come back to this in Section 4.
[9] See Appendix for the findings from Sasamoto (2019) on omission rates.

3. Onomatopoeia and Relevance

Despite the complex role it plays in communication, there was very little work on onomatopoeia in Pragmatics until Wharton (2009) drew a parallel between interjections and onomatopoeia in his work on non-verbal communication in terms of the Relevance-Theoretic notion of the *showing–meaning* continuum. As acknowledged in Relevance Theory (Sperber and Wilson 1995, 2015, Wharton 2009), communication is not just a matter of presenting a verbal clue and the communicator can exploit both coded (indirect) and non-coded (direct) evidence for communication. Imagine a communicator wants to convey that he is busy washing-up. He could, on the one hand, provide coded evidence, by producing an utterance "I am in the middle of doing the dishes". On the other hand, he could also draw attention to what he is doing by providing direct evidence that he is washing the dishes by raising his hands in washing-up gloves. The former is a case of *meaning* while the latter is a case of *showing*. [10] Note that these are not mutually exclusive–one could say "I am in the middle of washing-up" while showing gloved hands with soap bubbles streaking down the elbow. Hence, as Wharton (2009) argues the showing-meaning distinction should be seen as a continuum, as it provides both direct and indirect evidence, in the same way as interjections.[11]

Drawing on Wharton (2009), I argue that onomatopoeia has both *showing* and *meaning* elements and can communicate a very vague apparently non-propositional interpretation by

[10] Wharton, in his series of work, analysed a range of phenomena including facial expressions, gestures, expressives and prosody, as cases of *showing* (Wharton 2003, 2008, 2009, 2016 to name but a few). Padilla Cruz (2019) also suggests the possibility that slurs, insults and expressive expletives like *damned* or *fucking* could be analysed in a similar manner.

[11] Meinard (2015) also discussed onomatopoeia in relation to interjections.

virtue of *perceptual resemblance* (See Sasamoto & Jackson 2016, Rohan et al. 2018, Sasamoto 2019).[12] That is, in addition to the *meaning* aspect of onomatopoeia, which provides indirect and thus coded evidence of the speaker's intention for communication, onomatopoeia's *showing* element provides direct evidence for communication. Direct evidence necessarily involves perceptual resemblance where the communicator exploits the resemblance between the phonological form of an expression and the sensory experience they wish to share with the hearer, while indirect evidence provides access to the lexical contents of the expression. This way, the *showing* aspect of onomatopoeia brings about an *impression/feeling* that resembles what would be perceived in a different sensory domain.

Let us take the example of the English word *buzz.* Imagine a musician played to a huge audience at a concert and her performance was received with enthusiasm. Next day, she might say "I'm still buzzing after last night". Obviously, she is not making a sound like a bee. Instead, she is exploiting the phonological properties of the word *buzz* /bʌz/ in order for the hearer to access the impression of her mental state. That is, the sound of the word *buzz* and what it represents has a relationship by virtue of perceptual resemblance. At the same time, the coded element of the expression, which means "to make a low continuous humming sound like that of a bee", according to the Merriam Webster Dictionary,[13] triggers the recovery of the interpretation of the musician's state of mind. By providing these two types of evidence which involve assumptions related to continuous and steady excitement, the onomatopoeia provides quick and dirty access to (extremely weak) non-propositional effects (or impressions) that resemble the sensory experience. As onomatopoeia carries a hybrid

[12] In the literature that holds the underlying sound-symbolism assumption, the resemblance or similarity between an aspect of a linguistic form and what it denotes is often called *iconicity*. However, in Relevance Theory, it is acknowledged that any two representations can be used by virtue of resemblance, ranging from perceptual resemblance to interpretive resemblance, allowing for humans' capability of entertaining different types of resemblance without limiting it to iconicity. For this reason, I will use the term *perceptual resemblance*.
[13] https://www.merriam-webster.com/dictionary/buzz

nature of direct and indirect evidence as described above, it enables the communicator to convey meanings ranging from highly lexicalized to extremely vague and nebulous.

This explanation of onomatopoeia in terms of the *showing–meaning* continuum and perceptual resemblance enables us to explain why translating onomatopoeia appears to pose challenges. Onomatopoeia necessarily involves the *showing* aspect that is based on perceptual resemblance, which contributes to the communication of intangible impressions that are expressed as an array of non-propositional effects.[14] The fact that onomatopoeia involves communication via both non-coded and coded evidence is what results in perceived challenges for translators. That is, translating onomatopoeia would require translation of both coded and non-coded elements so that such intangible feelings communicated via the hybrid nature of onomatopoeia could be conveyed in the target language. To find out how such a challenge is addressed in translation, I conducted further analysis on the parallel corpus data mentioned above and analyzed the findings within the framework of Relevance Theory. In the next section, I will present the methodology and findings.

4. Corpus Analysis of Onomatopoeia

4.1 Methodology

4.1.1 Data

[14] See Sperber and Wilson (2015) for a fuller account of impressions.

As mentioned in Section 2, previous studies on the translation of onomatopoeia often focused on literary texts written by authors who are, by nature, professional language users. In contrast, this study used a parallel corpus consisting of user-generated recipes in Japanese as the ST and their English translation as the TT,[15] courtesy of Cookpad Inc. This allowed for the analysis of real-life language use by ordinary language users.

Cookpad Inc. was founded in Japan in 1997 and is one of the most popular cooking websites in Japan. According to its own website, Cookpad has over 3,520,200 recipes in Japanese and over 59,000,000 users in Japan.[16] As of the end of June 2021, it was offering its service in thirty-four languages (and variants).[17] Using bilingual data provided by Cookpad Inc., a parallel corpus was built to compare the use of onomatopoeia and its translation. The parallel corpus consists of approximately 16,000 recipes, containing 3,371,255 words in Japanese and 3,981,680 words in English.

4.1.2 Corpus Analysis

SketchEngine's corpus query system was used for text analysis to identify how onomatopoeia in Japanese is translated into English. Once the parallel corpus had been built, a word list was created to identify onomatopoeia used in this corpus; in total, 202 lemmas of ST onomatopoeia were found. Some lemmas had a number of phonological and morphological variants in the ST (e.g. *torori*, *Torotoro*, *torottoro*, *toroori*, etc.). For the purpose of this study, these variants were treated under a single lemma. The full list of lemmas is given in the Appendix.

[15] The original, user-generated Japanese recipes were translated into English by Japanese translators and checked by English native speaker translators (Harashima, personal communication).
[16] https://info.cookpad.com/service_product/japan
[17] https://info.cookpad.com/service_product/overseas

All 202 ST lemmas were categorized into three groups according to Flyxe's (2002) categories of lexicalization of onomatopoeia (see 4.1.3 below): (1) highly lexicalized onomatopoeia, (2) mid-range onomatopoeia, and (3) least lexicalized onomatopoeia or high mimeticity). Five expressions with the highest frequency from each category were selected. For each expression, random samples of their uses were analyzed. For the sampling, the Sample Size Calculator from Survey System was used,[18] the Confidence Interval (CI) was set at 4, and the Confidence Level (CL) was set at 95%. Table 1 shows the list of expressions in each category as well as the total frequency and the size of the random sample analyzed for each expression.

Table 1: Five expressions from each category with total frequency and the size of the random sample[19]

	Lemma	Total frequency (n)	Random sample (n)
Group 1	shiQkari	5018	536
	taQpuri	3124	504
	shiQtori	1669	442
	saQpari	939	366
	shinnari	927	365
Group 2	torotoro	3120	503
	fuwafuwa	3024	501
	sakusaku	1994	462
	saQ	1177	398
	karikari	1000	375
Group 3	pachipachi	73	65
	gā	48	45

[18] www.surveysystems.com/sscals.html

[19] /Q/ represents geminate consonants. Note that a number of factors are involved in this classification and there are some borderline cases.

	puchipuchi	39	37
	dōn	23	23
	gangan	17	17

Once randomized samples had been selected, each onomatopoeia in the ST was compared with the TT, and a list was compiled of the expressions used to translate each item, together with the frequency of each TT expression. To confirm the difficulty and/or consistency in translating onomatopoeia, any TT expressions used more than five times were also noted, on the assumption that if an expression is used frequently, this would indicate that the translation of that particular term was more consistent than previously considered.

Once the list of TT expressions had been compiled, attention was turned to cases where the onomatopoeic term was omitted, as omission cases are often used to support the notion that onomatopoeia is difficult to translate (see Section 2). Each case of omission was examined in terms of processing effort to identify why it was omitted.

4.1.3 Analytical Framework

Having identified the expressions to analyze and run corpus queries, the ST and TT expressions were examined in terms of (a) omission and the *showing–meaning* continuum, (b) reasons for omissions, (c) omission and expression type and (d) omission and text type to answer the three research questions of this study presented in Section 1.

(a) Omission and the *showing–meaning* continuum

Flyxe (2002) analyzed the translation of onomatopoeia in terms of the degree of mimeticity and lexicalization. Flyxe (2002: 56) defined lexicality as how established a word is in the lexicon, while mimeticity is how "a word is a direct imitation of a sound, state or condition". As Flyxe (2002) explained, the lexicality and mimeticity forms a continuum, and he described the semantic and syntactic features of Japanese onomatopoeia on the continuum as shown in Figures 1 and 2.

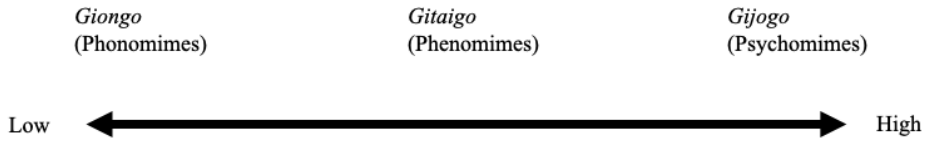

Figure 1: Degree of lexicalization – semantic (based on Flyxe 2002: 57)

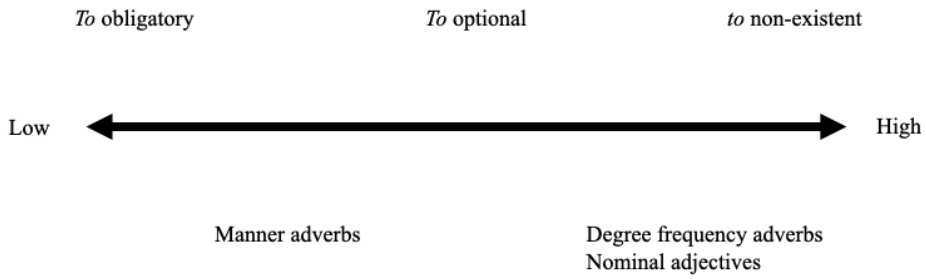

Figure 2: Degree of lexicalization – syntactic (based on Flyxe 2002: 57)

Flyxe (2002) also classifies onomatopoeic expressions ending with *ri* as well as ones that take a *suru*-verb form as highly lexicalized cases.[20]

Note that Flyxe's (2002) continuum is not essentially identical to the *showing–meaning* continuum which is used as the basis for this study, as the *showing–meaning* continuum is not a matter of mimeticity. In fact, the current study does not make any distinction between the source of resemblance, be it sound-based or emotion-based onomatopoeia, so the degree of lexicalization in terms of semantic features in Figure 1 is not particularly relevant in this study. However, Flyxe's (200) continuum based on syntactic features is useful when distinguishing highly lexicalized onomatopoeia and less lexicalized onomatopoeia, as we could reasonably argue that highly lexicalized onomatopoeia would have strong *meaning* elements (or strong indirect, coded evidence) while less lexicalized (and hence more mimetic) expressions would have a strong *showing* (or strong direct evidence) element. This study therefore synthesized Flyxe's syntactic features of expression and the continuum of lexicalization and mimeticity when grouping onomatopoeic expressions found in the corpus.

(b) Reasons for omissions

I argued in Sasamoto (2019) that reasons for omissions can be explained in terms of processing effort and consideration for relevance, namely, (i) consideration of immediate context (or lexical consideration), as illustrated in examples (1) to (3), (ii) consideration for context, as shown in (4) and (5), and (iii) socio-cultural factors, as illustrated in (6) and (7).[21]

[20] As Flyxe (2002) acknowledges, there are some overlapping cases, and the degree of lexicalization is not always clear-cut. As such, the classification applied in this study should also be seen as for guidance only.
[21] In each example, the ST is given in (a), the literal translation is given in (b), and the TT is given in (c). Accusative: ACC, copula: COP, onomatopoeia: ONO, Quotative: QUO, Subject marker: SUB, topic marker: TOP.

(1) a. moyashi o satto yudete, mizuke o kiri, 1 ni kuwaete mazeru.
Bean-sprouts ACC ONO boil and, moisture ACC strain, one to add and mix
b. Parboil the bean sprouts quickly, strain and add Step 1 and mix evenly.
c. Parboil the bean sprouts, strain and add Step 1 and mix evenly.

(2) a. ika o sabaki, […] hyomen o puchipuchi tsumayoji de sashite,
Squid ACC clean surface ACC ONO toothpick with pierce
sukasho ana o akeru.
a few places hole ACC open
b. Clean the squid […], and pierce some holes in a prickling manner in the surface using a toothpick.
c. Clean the squid […], and pierce some holes in the surface using a toothpick.

(3) a. tongari koon o biniru bukuro ni irete, bou de gangan kudaku.
Tongari Corn ACC vinyl bag in put in, stick with ONO crush
b. Put the Tongari Corn in a plastic bag and use a rolling pin to break them into pieces vigorously.
c. Put the Tongari Corn in a plastic bag and use a rolling pin to smash them .

(4) a. Puchipuchi shokkan ga tanoshii kinua o oishiku sarada de tabetakute.
ONO texture SUB fun quinoa ACC deliciously salad with want-to-eat
b. I wanted to eat a delicious salad to enjoy the fun popping texture of quinoa.
c. I wanted to eat a delicious salad to enjoy the fun texture of quinoa.

(5) a. Furai pan o tsuyobi de gaa to nessuru kore ga pointo desu!

Frying pan ACC high-head with ONO QUO heat-up this SUB point COP

b. Heat a pan vigorously over high heat. This part is important!

c. Heat a pan over high heat. This part is important!

(6) a. Zeppin ★ honestuki chikin ga doon to, okuchi de horohoro ni torokemasu. ♪

Exquisite with-bone chicken SUB ONO QUO, mouth in ONO to melt

Umami ga gyoshuku sareta kantan & honkakueki chikin karee ♥

Umami SUB condense passive easy & authentic chicken curry

b. Boom! this delicious bone-in chicken melt in your mouth. It's an easy, yet authentic and flavorful chicken curry .

c. This delicious, gorgeous bone-in chicken thigh will melt in your mouth. It's an easy, yet authentic and flavorful chicken curry.

(7) a. namagome o tsukau baai wa, koko de ire itameru (toganakute OK) (ﾟ∀ ﾟ) o 彡

Uncooked rice ACC use case TOP here at put in fry (without rinsing ok)

sonomama doon ✱ gohan o tsukau baai wa mada iremasen.

As it is ONO cooked rice ACC use case TOP yet not-add

b. If using uncooked rice add it at this point and cook (You don't need to rinse). Boom, put it right in! If using cooked rice do not add it at this point.

c. If using uncooked rice add it at this point and cook (You don't need to rinse). If using cooked rice do not add it at this point.

In the case of the lexical content illustrated in examples (1) to (3), the information that is conveyed by the use of a particular onomatopoeic expression in the ST is readily available

from other lexical items in the same utterance unit. This suggests that retaining the onomatopoeia in the TT would create extra processing effort without reward for the reader. Similarly, in examples (4) and (5), the information that is conveyed by the use of a particular onomatopoeic expression in the ST is readily available from the context beyond the lexical items in the utterance unit (existing and accessible assumptions). Again, in such cases, retaining the onomatopoeia in the TT would create extra processing effort without reward for the reader. Finally, in cases where the socio-cultural aspects of Cookpad are such that there are huge differences in style between the ST and the TT, as shown in examples (6) and (7), some onomatopoeic expressions were omitted. This was observed where the source text was written in a very strong social-media-conscious style while the English version of Cookpad does not have particularly strong social-media features. The six cases in this category are all related to the onomatopoeic word *dōn*, which is used like a sound effect to what is being depicted in the rest of the lexical content, creating a more interactive style which is suitable for the strong social-media nature of Cookpad in Japan. Table 2 shows the number of each type of omission for each expression.

Table 2: Summary of the number of cases of omission (originally reported in Sasamoto 2019)

lemma	Lexical consideration	Consideration for context	Socio-cultural factors
saQ	114	28	0
gā	33	4	0
puchipuchi	4	13	0
dōn	3	0	6
gangan	5	0	0

(c) Omission and expression type

The cases of omission were further analyzed in terms of expression type: manner of cooking and texture of food. The purpose of this was to determine whether the type of onomatopoeia would affect the type of omission.

(d) Omission and text type

Finally, cases of omission were examined in terms of text type to determine whether the function of the text would impact on the type of omission. Cookpad recipes consist of four sections: *Steps*, *Description*, *Advice*, and *History*. *Steps* and *Advice* fall under the category of *procedural discourse* (cf. Wharton 2010), as both sections focus on the cooking process and provide instructions for the reader while *Description* and *History* fall under *descriptive discourses*, as these sections are used to provide descriptions or the background of the dish, such as: *this is perfect for a hot summer day* or *this is what my mum served every Sunday.*

5. Findings

In this section, I will present quantitative findings from the analysis of the parallel corpus, which forms the basis for the theoretical underpinning of what appears to be the trend in each category, rather than to provide a strictly quantitative argument. First, the difference between the groups in terms of omission and consistency rate was analyzed to compare the translatability of the onomatopoeia and the degree of lexicalization of each group. Figure 3 shows the rate of consistent translation per expression in each group (Group 1: highly lexicalized, Group 2: mid-range, Group 3: less lexicalized)).

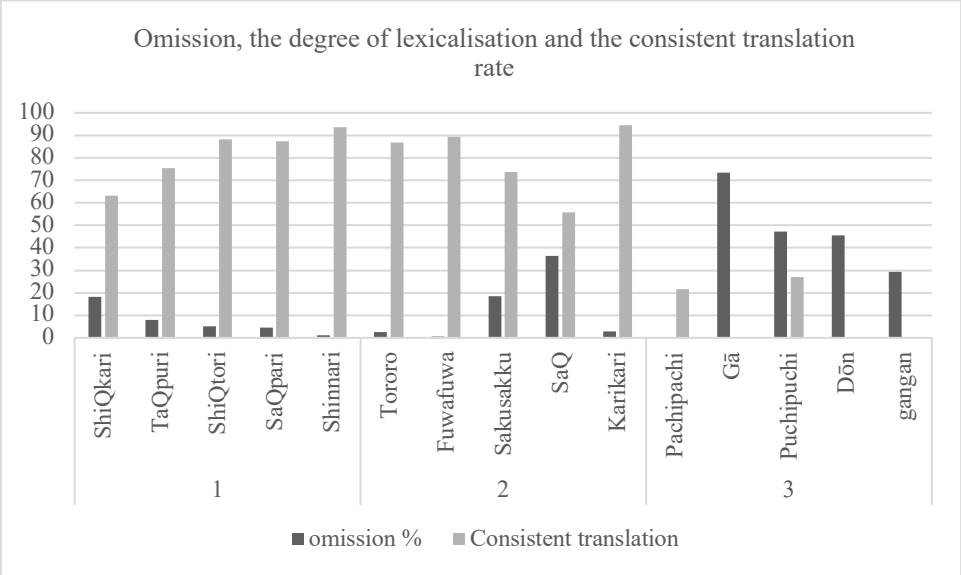

Figure 3: Omission, the degree of lexicalisation and the consistent translation rate

Next, Table 3 provides a summary of omission rates.

Table 3: Summary of omission rate per group

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	5	36.91	7.38	42.48
Group 2	5	60.79	12.16	234.34
Group 3	5	195.42	39.08	725.24

And finally, ANOVA tests were conducted to compare differences between groups. The results are shown in Table 4.

Table 4: ANOVA results for omission cases

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*

Between groups	2921.47	2	1460.73	4.37	0.04	3.89
Within groups	4008.23	12	334.02			
Total	6929.70	14				

Next, Table 5 presents a summary of the consistency of translation in each group.

Table 5: Summary of consistency rate per group

Groups	*Count*	*Sum*	*Average*	*Variance*
Group 1	5	407.82	81.56	151.66
Group 2	5	399.89	79.98	240.50
Group 3	5	48.57	9.71	180.66

Finally, Table 6 shows the results of ANOVA tests on the differences between the groups in terms of consistency.

Table 6: ANOVA test for consistent-translation cases

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between groups	16837.14	2	8418.57	44.09	2.95	3.89
Within groups	2291.27	12	190.94			
Total	19128.41	14				

The results of the two ANOVA tests show that the differences across the three groups are statistically significant for omission cases, as shown by the *P*-value of 0.04. However, cases

of consistent translation involving expressions that are used more than five times did not show any statistical significance, with the *P*-value being 2.95.

Next, in order to determine if there is a statistically significant difference between type of expressions and omission rates, a *t*-test was used. Expressions were divided into two groups: manner onomatopoeia and texture onomatopoeia. Table 7 shows the rates of consistent translation and omission per expression type.

Table 7: Omission and expression type

Onomatopoeia (manner)	**Consistency (%)**	**Omission cases (%)**	**Onomatopoeia (texture)**	**Consistency (%)**	**Omission cases (%)**
shiQkari	63.99	18.20	shiQtori	88.23	4.99
taQpuri	75.40	7.97	saQpari	87.43	4.64
saQ	55.78	36.36	shinnari	93.70	1.11
pachipachi	63.077	0	torotoro	86.68	2.61
gā	0	73.33	fuwafuwa	89.22	0.48
dōn	0	45.45	sakusaku	73.8	18.40
gangan	0	29.41	karikari	94.4	2.94
			puchipuchi	27.03	47.22

Tables 8 and 9 show the results of *t*-tests for omission cases and consistent-translation cases respectively.

Table 8: *t*-test results for omission cases per expression type

	Manner Onomatopoeia	*Texture Onomatopoeia*
Mean	30.10	10.30
Variance	613.58	254.73
P-value	0.05	

Table 9: *t*-test results for consistent-translation cases per expression type

	Manner Onomatopoeia	*Texture Onomatopoeia*
Mean	36.89	80.06
Variance	1223.77	498.84
P-value	0.01	

The result shows that the *P*-value for omission was 0.05, while the *P*-value for consistency was 0.01. This shows that there is a statistically significant difference between the two groups of onomatopoeia.

Finally, Figure 4 shows whether or not the type of omission is influenced by the type of text in relation to reasons for omissions. In Figure 4, *lexical* refers to the case of omission due to consideration of immediate context (or lexical consideration), while *non-lexical* refers to the case of omission due to consideration for context beyond lexical (immediate) context:

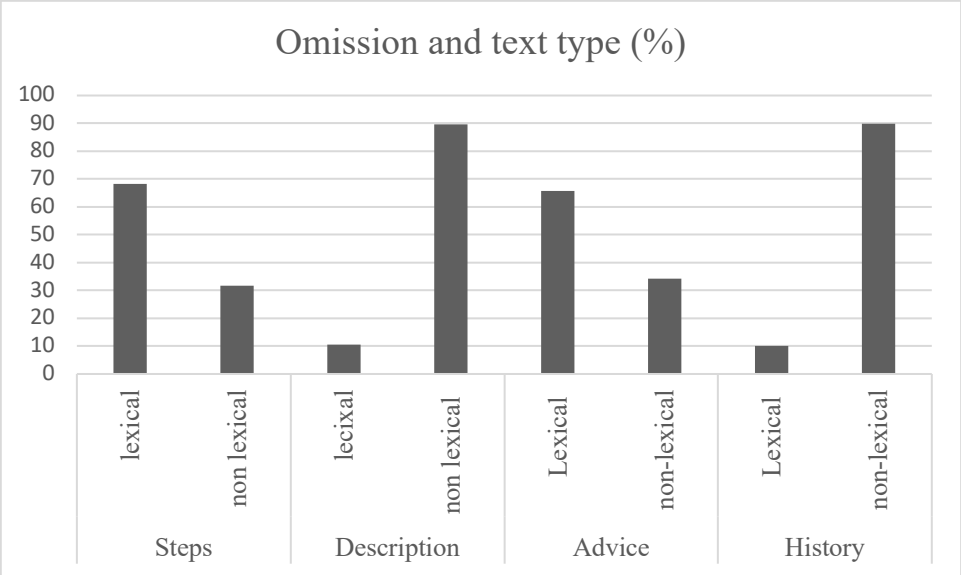

Figure 4: Omission and text type

As Figure 4 shows, there are more omissions by virtue of consideration for the lexical context in procedural discourse (*Steps* and *Advice*), while descriptive discourse (*Description* and *History*) seems to involve more omissions by virtue of consideration for non-lexical context.

In the next section, I will examine the findings presented in this section within the framework of Relevance Theory.

6. Discussion

In this section, I will discuss the findings reported in Section 5 within the framework of Relevance Theory to identify whether or not the degree of lexicalization and position on the *showing–meaning* continuum might have implications for translating onomatopoeia.

6.1 Omission and the *showing–meaning* Continuum

As discussed in Section 4.1.3, Flyxe's (2002) classification of onomatopoeia in terms of the degree of lexicalization was applied to examine whether the degree of *showing*-ness would affect translation. The findings above (Figure 3 in particular) show that expressions that are categorized in Group 1 and Group 2 have mostly consistent translations which use a set number of expressions. In contrast, expressions categorized in Group 3 seem to have less consistent translations and also more omissions. This suggests that the more lexicalized the onomatopoeia, the more consistent the translation can be. That is, onomatopoeia with a stronger *meaning* element seems to be translated with a set of TT expressions, leading to a relatively consistent translation.

This is not surprising considering that the *meaning* element is *coded* after all. This is not to say that all coded elements can be translated without any difficulty, but at least there would be some basis on which to identify an appropriate linguistic form for translation of the ST onomatopoeic term. The *showing* element, in contrast, is a vehicle to deliver impressions via the perceptual resemblance between the sensory experience and the phonological form of the word. In the case of phonomimes (i.e. sound-based onomatopoeia), a phonological form and the sound of the object it is used to describe have a more direct relation compared to cross-modal cases where the phonological form of an expression is exploited to describe something that is not sound-based. When two languages have different phonological systems, it would be difficult to find an appropriate onomatopoeic expression for such a direct link between the phonological form and the sensory experience.

The statistical findings, albeit on a small sample size, also support this analysis. Findings of the ANOVA tests show that the differences between the three groups of onomatopoeia (1:

highly lexicalized, 2: mid-range, 3: less lexicalized) are statistically significant in terms of the rate of omission, but not in terms of the rate of consistency. At a glance, Group 3 looks particularly different, so a *t*-test was done to compare Group 1 and Group 2. The result indicates that there is no significant difference either in the omission rate or in the consistency rate between Group 1 and Group 2. This suggests that unless the *meaning* element is particularly weak, translation could be reasonably consistent.

6.2 Omission and Expression Type

Next, omission cases were analyzed in terms of expression type to determine whether factors other than *showing*-ness could also affect translation. The findings show that the type of expression also influences both the rate of omission and the rate of consistent translation. All onomatopoeic expressions examined in this study were divided into two groups: onomatopoeic expressions for manner and onomatopoeic expressions for texture/taste. Onomatopoeic expressions for manner are those that modify actions involved in the cooking process, e.g. *shiQkari*, *taQpuri*, *saQ*, *gangan*, while onomatopoeic expressions for texture/taste, e.g. *shittori*, *sappari*, *torotoro*, *fuwafuwa*, describe the food itself. From the initial observations presented in Table 7, it is clear that onomatopoeic expressions for manner seems to have a higher rate of omission and a lower rate of consistent translation, while onomatopoeic expressions for texture seems to have less omission and more stable translation. Again, the results of a *t*-test support this despite the small sample size, as the *P*-values are 0.05 for omission rate and 0.01 for consistency rate, indicating that the difference between the two groups is statistically significant.

The question here is *why* that is the case. Notice that more than half of the expressions categorized as onomatopoeic expressions for manner are phonomimes and hence Group 3. This probably follows from the fact that phonomimes are, by definition, sound-based onomatopoeia which would be less likely to be used to describe the taste or texture of food. As discussed in 6.1, in the case of phonomimes, the link between the phonological form and the sound typically associated with the object it is used to describe has a more direct relation compared to phenomimes and psychomimes, which are a result of humans' exploiting the phonological form to describe the object. When onomatopoeia is used by virtue of a strong perceptual resemblance between the phonological form and the sensory experience, it seems more likely to result in omissions.

However, this is not the case for expressions that are not sound-based. Take the example of *saQ*, which is a Group 2 expression and not a phonomime. It still has a relatively high rate of omission, which is likely a result of the consideration of relevance, as discussed in the previous section. This suggests that different factors play a role in omission. In some cases, omission is linked to the source of perceptual resemblance, and in other cases, it is linked to consideration of relevance.

6.3 Omission and Text Type

Finally, let us turn to the issue of omission of onomatopoeia and text type. The findings of this corpus analysis indicate that text type also influences translation and the likelihood of onomatopoeia being omitted from TTs. As we saw in Figure 4, in procedural discourse (*Steps* and *Advice*), the consideration of lexical context seems to lead to omissions of onomatopoeia,

while the opposite is true for descriptive discourse (*Description* and *History*) where the consideration of non-lexical context seems to result in omissions. Why is this the case?

As explained in 4.1.3 (b), omission cases that are a result of the consideration of lexical context are those where the meaning delivered by the use of onomatopoeia in the source text is encoded by another lexical item in the target text. An example of such an omission is *saQ* in *saQ to yuderu* in the ST, which is often translated as *parboil* in English. *saQ* is an onomatopoeic expression often used to express the swiftness of an action with a light-handed manner. The English word *parboil* already includes the notion of such swiftness and lightness, and including a direct equivalent of *saQ* in the translation in the TT would simply mean that the reader would have to recover an extra meaning that is already covered by another lexical item. That is, omission in this case is the best possible way to deliver the speaker's intention without causing unnecessary processing effort.

In cases of omission resulting from consideration of non-lexical context, what is communicated by the use of the onomatopoeia in the ST is not delivered via another lexical item in the TT. However, the hearer can recover the equivalent meaning within the context without relying on lexical content. For example, as we saw in 4.1.3, in *furai pan o gaa to nessuru*, the onomatopoeia *gaa* was omitted from the TT, where the ST was translated as *Heat a pan over high heat*. *Gaa*, if translated literally, would be an adverb like *vigorously*. However, the context of heating a pan over high heat already allows the hearer to access such vigorousness of the heat, and inclusion of the adverb (or other "equivalent" expression) in the TT would yet again result in extra processing effort for no reward.

So, why is omission as a result of consideration of lexical context more prevalent in the procedural discourse while omission as a result of consideration of non-lexical context is more prevalent in the descriptive discourse? The relevance-Theoretic analysis predicts that relevance of procedural discourse lies in how it provides the reader/hearer with instructions to complete some actions. The easier it is for the reader to follow the instruction, the more relevant it is, unless there is extra reward to balance out the extra processing effort. In contrast, the relevance of descriptive discourse would lie in the way it enables the hearer to recover the range of cognitive effects based on the description of the experience the author/speaker is presenting. Let us consider this further.

The analysis presented in this study predicts that it is reasonable for procedural discourse to contain a number of onomatopoeic expressions as they are particularly useful when communicating impressions in Japanese, as onomatopoeia allows for communication of the whole sensory experience without relying on too many words. Both *showing* and *meaning* aspects of onomatopoeia contribute to the communication of cooking methods and process, where a good understanding of full cooking process is essential. This suggests that more precise terminology in the target text is required to ensure that what is communicated via both *showing* and *meaning* elements is delivered to the target text readers. As a result, specific cookery vocabulary would be employed without the need to rely on the direct equivalence of onomatopoeia. This leads to more cases of omission as a result of consideration of lexical context in the procedural discourse. In contrast, the relevance of descriptive discourse lies in the cognitive effects evoked by such description. In such discourse, both *showing* and *meaning* aspects contribute to the recovery of the mental

imagery,[22] or cognitive effects evoked via the description. Unlike in the procedural discourse, there is no need to give a precise action-by-action instruction. Instead, the description has to communicate the overall picture of the events. This would indicate that there is less need to be precise about the cooking process itself while the recovery of overall impressions through the description becomes more important. As a result, what is communicated via the use of onomatopoeia can be left to inference from the non-lexical context.

7. Conclusion

This study set out to investigate the nature of onomatopoeia and its implications for translation from the perspective of pragmatics. Namely, this study aimed to answer the following questions: (i) Can notions from pragmatics help account for the perceived difficulties involved in translating onomatopoeia? (ii) Would the *showing–meaning* nature affect the translation of onomatopoeia? (iii) What other factors result in difficulties in translating onomatopoeia and why?

The findings of this study show that notions from pragmatics can indeed help account for the commonly perceived challenges involved in translating onomatopoeia. In particular, we saw that the nature of onomatopoeia that involves both *showing* and *meaning* aspects of communication leads to the common perception that onomatopoeia poses challenges for translation. Onomatopoeia involves both coded and non-coded elements, both of which contribute to the communication. However, not all onomatopoeia has an equal degree of

[22] The notion of *mental imagery* (cf. Barsalou 1999) is relatively new within relevance theory and was introduced by Robyn Carston in her work on metaphor. See Carston (2018) for a fuller discussion.

showing. Some expressions are more lexically established (and hence have a stronger *meaning,* or coded, element), while others might have a higher degree of mimeticity and a stronger *showing* element. Following Flyxe's (2002) degree of lexicalization and mimeticity, I analyzed corpus data that suggested that the more lexicalized the onomatopoeic term is, the more consistent the translation can be. Putting this into Relevance-Theoretic terms, and to answer question (ii), this suggests that onomatopoeia with a stronger *meaning* element does not seem to pose a challenge to translators, contrary to what has been suggested in previous studies. In contrast, if an onomatopoeic expression is less lexically established but has a stronger mimetic aspect, it has a stronger *showing* element, which could lead to a less consistent translation.

I have also shown that there are other factors such as the type of expression that lead to the perceived difficulties in translating onomatopoeia. As we have seen, sound-based onomatopoeia is more likely to pose challenges for translators compared to non-sound-based onomatopoeia, such as taste- or texture-based onomatopoeia. According to Relevance Theory, humans are capable of entertaining any representation by resemblance. This in turn means that there is no need to distinguish sound-based onomatopoeia and non-sound-based onomatopoeia. However, this does not mean that representations based on resemblance could not have a varying degree of directness. Sound-based onomatopoeia, for example, would have a more direct link between their phonological form and the sound typically associated with the objects they are used to describe compared to non-sound-based onomatopoeia, where humans *exploit* the phonological form to describe the object. That is, when the resemblance is a result of humans' cognitive processing, rather than the direct correspondence between phonological form and phenomenon, the expression involves a stronger wordness (or how established it is as a lexical item) and is therefore less likely to

result in omissions in the target text. I have also shown that text type influences omission. On the one hand, omission as a result of the consideration of lexical context is more in the procedural discourse while omission as a result of consideration of non-lexical context is more common in the descriptive discourse. This difference could stem from where relevance lies: relevance of procedural discourse lies in the way the text provides the reader/hearer with instructions to complete some actions. The easier it is for the reader to follow the instruction, the more relevant it is. In contrast, the relevance of descriptive discourse would lie in how it enables the hearer to recover the range of cognitive effects based on the description of the experience provided by the author. This difference in the way each text type achieve its relevance results in the difference in types of omissions.

While the findings presented here help to answer the questions I set out to answer, there are limits to this study. For example, although the sample size is much bigger than in previous studies, only a limited set of onomatopoeic terms was examined. This resulted in somewhat limited statistical validity. However, the ultimate aim of this paper was to see if notions from a pragmatic theory could provide an explanatory framework for an empirical study, and this study indeed demonstrates how a cognitively grounded theory could work hand in hand with an empirical, data-driven approach.

There are further implications that arise from this study. In terms of implications for Translation Studies, the findings point to the possibility for the need of translator training in cross-linguistic pragmatics. In particular, the findings suggest that it is indeed important to recognise aspects of communication beyond immediate (or lexical) context, which would further raise translators' awareness of cross-linguistic pragmatic competence.

Finally, there is also an implication for Relevance Theory. Discussions on communication by virtue of resemblance within the Relevance-Theoretic literature have been largely limited to *interpretive* resemblance. Not only does this study open up the avenue of discussion to *perceptual* resemblance, it also suggests that humans' involvement in identifying the resemblance between perception and representation could also affect the "directness" of the link between the source experience and the representation we entertain in the utterance-interpretation process. This needs to be explored further.

References

Akita, Kimi & Mark Dingemanse. 2019. Ideophones (mimetics, expressives). In: *Oxford Research Encyclopedia of Linguistics 23*. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acrefore/9780199384655.013.477

Alves, Fabio. 2006. A relevance-theoretic approach to effort and effect in translation: Discussing the cognitive interface between inferential processing, problem-solving and decision-making. In: *Proceedings of the International Symposium on New Horizons in Theoretical Translation Studies*. Hong Kong: Chinese University of Hong Kong Press, 1-12.

Alves, Fabio. & Jóse Luiz V.R. Gonçalves. 2003. A relevance theory approach to the investigation of inferential processes in translation. In Fabio Alves (ed.), *Triangulating Translation: Perspectives in Process Oriented Research*, 3-24. Amsterdam: John Benjamins (Benjamins Translation Library 45).

Alves, Fabio. & Jóse Luiz V.R. Gonçalves. 2007. Modelling translator's competence. Relevance and expertise under scrutiny. In: Y. Gambier, Miriam Shlesinger & Radegundis Stolze (eds.), *Doubts and Directions in Translation Studies*. 14-55. Amsterdam: John Benjamins.

Alves, Fabio. & Jóse Luiz V.R. Gonçalves. 2010. Relevance and translation. In: Yves. Gambier & Luc van Doorslaer (eds.), *Handbook of Translation Studies*, Volume 1, 279-284. Amsterdam: John Benjamins.

Alves, Fabio. & Jóse Luiz V.R. Gonçalves. 2013. Investigating the conceptual-procedural distinction in the translation process. A relevance-theoretic analysis of micro and macro translation units." *Target* 25(1): 107-124.

Alves, Fabio. & Jóse Luiz V.R. Gonçalves. 2015. Investigating the conceptual-procedural distinction in the translation process. A relevance-theoretic analysis of micro and macro translation units. In: Maureen Ehrensberger-Dow, Susanne Göpferich & Sharon O'Brien (eds.), *Interdisciplinarity in Translation and Interpreting Process Research,* 109-126. Amsterdam: John Benjamins.

Baker, Mona. 1992. *In other words: a coursebook on translation*. London: Routledge.

Barsalou, Lawrence, W. 1999. Perceptual symbol systems. *Behavioral and Brain Sciences* 22. 577–660.

Bartashova, Olga A. & Anton E. Sichinskiy. 2014. Japanese–English Onomatopoeic and Mimetic Parallels: The Problem of Translatability. *Journal of Siberian Federal University. Humanities & Social Sciences* 2. 222–229.

Blakemore, Diane & Fabrizio Gallai. 2014. Discourse markers in free indirect style and interpreting. *Journal of Pragmatics* 60: 106-120.

Bogucki, L. 2004. The constraint of relevance in subtitling. *Journal of Specialised Translation* 1: 71-88.

Bogucki, L. 2009a. Pragmatic considerations in translating films. In Piotr Cap (ed.), *Pragmatics Today*, 255-262. Berlin: Peter Lang.

Bogucki, L. 2009b. Amateur subtitling on the Internet. In Jóse Díaz-Cintas and Gunilla Anderman(eds.), *Audiovisual Translation: Language Transfer on Screen*., 49-57. Basingstoke: Palgrave Macmillan.

Bogucki, L. 2020. *A Relevance-Theoretic Approach to Decision-Making in Subtitling*. Cham: Palgrave Macmillan.

Braun, Sabine. 2016. The importance of being relevant? A cognitive-pragmatic framework for conceptualising audiovisual translation. *Target* 28(2): 302-313.

Braun, Sabine. 2018. The importance of being relevant? A cognitive-pragmatic framework for conceptualising audiovisual translation. In Yves Gambier and Sara Ramos Pinto (eds.), *Audiovisual Translation. Theoretical and Methodological Challenges*., 121-132. Amsterdam: John Benjamins.

Carston, Robyn. 2018. Figurative Language, Mental Imagery, and Pragmatics. *Metaphor and Symbol* 33 (3). 198–217. DOI: 10.1080/10926488.2018.1481257.

Casas-Tost, Helena. 2014. Translating Onomatopoeia from Chinese into Spanish: A Corpus-

Based Analysis. *Perspectives* 22 (1). 39–55.

Edström, Bert. 1989. Japanese Onomatopoetic Words: A Research Note. *Orientaliska Studier* 65. 35–52.

Flyxe, Martin. 2002. Translation of Japanese Onomatopoeia into Swedish (with focus on lexicalization). *Africa & Asia* 2. 54–73.

Gallai, Fabrizio. 2016. Point of view in free indirect thought and in community interpreting. *Lingua* 175-176: 97-121.

Gallai, Fabrizio. 2019. Cognitive pragmatics and translation studies. In: *The Routledge Handbook of Translation and Pragmatics*. Eds. Rebecca Tipton and Louisa Desilla. Abingdon: Routledge, 51-72.

Gutt, Ernst-August. 1991. *Translation and Relevance: Cognition and Context*. Oxford: Blackwell.

Gutt, Ernst-August. 1996. On the nature of implicit information in literary translation: A relevance-theoretic perspective. *Target* 8: 239-256.

Gutt, Ernst-August. 2005. On the significance of the cognitive core of translation. *The Translator* 11(1): 25-49.

Gutt, Ernst-August. 2006. Approaches to translation: relevance theory. In Keith Brown (ed.), *Encyclopedia of Language and Linguistics* (2nd edition). Amsterdam: Elsevier.

Gutt, Ernst-August. 2010. Relevance and Translation: On the Value of a Good Theoretical Foundation of Translation. In: Ewa Wałaszewska, Marta Kisielewska-Krysiuk, & Agnieszka Piskorska, A. (eds.), *In the Mind and across Minds: A Relevance-Theoretical Perspective on Communication and Translation*, 292-310. New Castle: Cambridge Scholars.

Hayase, Mitsuaki. 1978. Characteristics Of Japanese Onomatopoeia Observed Through The English Translation. *Kanssai Gaikokugodaigaku Kenkyu Ronshu* 28. 117–127.

Imai, Mutsumi, Sotaro Kita, Miho Nagumo & Hiroyuki Okada. 2008. Sound Symbolism Facilitates Early Verb Learning. *Cognition* 109 (1). 54–65. DOI: https://doi.org/10.1016/j.cognition.2008.07.015.

Inose, Hiroko. 2008. Translating Japanese onomatopoeia and mimetic words. In: Anthony Pym and Alexander Perekrestenko (eds.), *Translation research projects 1*. Tarragona: Intercultural Studies Group, 97–116.

Kantartzis, Katerina, Mutsumi Imai & Sotaro Kita. 2011. Japanese Sound-Symbolism

Facilitates Word Learning in English-Speaking Children. *Cognitive Science* 35 (3). 575–586.

Kubo, Atsuko. 1995. Miyazawa Kenji no Onomatope no Sekai [The world of onomatopoeia in Miyazawa Kenji's Work]. *Kobe Kaisei Review* 34. 17–30.

Laing, Catherine E. 2014. A Phonological Analysis of Onomatopoeia in Early Word Production. *First Language* 34 (5). 387–405. DOI: https://doi.org/10.1177/0142723714550110.

Laing, Catherine E. 2017. A Perceptual Advantage for Onomatopoeia in Early Word Learning: Evidence from Eye-Tracking. *Journal of Experimental Child Psychology* 161. 32–45. DOI: https://doi.org/10.1016/j.jecp.2017.03.017.

Laing, Catherine. 2018. A Role for Onomatopoeia in Early Language: Evidence from Phonological Development. *Language and Cognition* 11 (2). 173–187.

Laing, Catherine E. 2019. Phonological Motivation for the Acquisition of Onomatopoeia: An Analysis of Early Words. *Language Learning and Development* 15 (2). 177–197.

Meinard, Maruszka Eve Marie. 2015. Distinguishing Onomatopoeias From Interjections. *Journal of Pragmatics* 76. 150–168. DOI: https://doi.org/10.1016/j.pragma.2014.11.011.

Merriam Webster Dictionary https://www.merriam-webster.com/dictionary/buzz

Minashima, Hiroshi. 2004. Nihhongo no Onomatope [Onomatopoeia in Japanese]. *Fukui Daigaku Kyoiku Chiiki Kagakubu Kiyou* 60. 97–115.

Newmark, Peter. 1991. *About translation*. Vol. 74. Multilingual matters.

Newmark, Peter. 1988. *A textbook of translation*. London: Prentice Hall International.

Nygaard, Lynne C. Allison E. Cook & Laura L. Namy. 2009. Sound to Meaning Correspondences Facilitate Word Learning. *Cognition* 112 (1). 181–186. DOI: https://doi.org/10.1016/j.cognition.2009.04.001.

Padilla Cruz, Manuel. 2019. Qualifying Insults, Offensive Epithets, Slurs and Expressive Expletives. A Relevance-Theoretic Approach. *Journal of Language Aggression and Conflict* 7(2). 156-181.

Rohan, Olivia, Ryoko Sasamoto, & Rebecca Jackson. 2018. Argumentation, Relevance Theory and persuasion An analysis of onomatopoeia in Japanese publications using manga stylistics. International Review of Pragmatics, 10 :219-242.

Sasamoto, Ryoko. 2019. Onomatopoeia and Relevance Communication of Impressions via Sound. London: Palgrave MacMillan

Sasamoto, Ryoko & Rebecca Jackson. 2016. Onomatopoeia - Showing-word or Saying-word? Relevance Theory, lexis, and the communication of impressions'. Lingua, 175 :36-53.

Sperber, Dan & Deirdre Wilson. 1995. *Relevance: communication and cognition,* 2nd ed. Oxford: Blackwell.

Sperber, Dan, & Deirdre Wilson. 2015. Beyond Speaker's Meaning. *Croatian Journal of Philosophy* 15 (2). 117–149.

Tamori, Ikuhiro & Lawrence Clifford Schourup. 1999. *Onomatope: keitai-to imi [Onomatopoeia: form and meaning]*. Tokyo: Kuroshio Shuppan.

Tipton, Rebecca & Louisa Desilla. 2019. T*he Routledge handbook of translation and pragmatics*. Oxon/New York: Routledge.

Wharton, Tim. 2003. Interjections, Language, and the "Showing/Saying" Continuum. *Pragmatics and Cognition* 11 (1). 39–91.

Wharton, Tim. 2008. "Meaningnn" and "Showing": Gricean Intentions and Relevance-Theoretic Intentions. *Intercultural Pragmatics* 5(2). 131-152.

Wharton, Tim. 2009. *Pragmatics and Non-Verbal Communication*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511635649.

Wharton, Tim. 2010. Recipes: Beyond The Words. *Gastronomica: The Journal of Food and Culture* 10 (4). 67–73.

Wharton, Tim. 2016. That Bloody So-And-So Has Retired: Expressives Revisited. *Lingua* 175-176. 20-35.

Wrembel, Magdalena. 2010. Sound Symbolism in Foreign Language Phonological Acquisition. *Research in Language* 8 (1). 1–14. DOI: https://doi.org/10.2478/v10015-010-0013-6.

Appendix

1. A full list of onomatopoeia found in Cookpad parallel corpus (first appeared in Sasamoto 2019)

aQ[23]sari	koQkuri	jinwari	pakipaki	betobeto
ahaha	kotsukotsu	sū	bakubaku	perapera
uQkari	koQsori	sukasuka	pakupaku	perori
uQsura	koQteri	suQ	basabasa	hokahoka
uQtori	kotokoto	zuQ	pasapasa	pokapoka
gā	konekone	suQkari	batan	hokuhoku
kachikochi	korikori	suQkiri	pachipachi	bokoboko
gaQ	korokoro	zuQshiri	paQ	bosoboso
gatsugatsu	gorogoro	suQpori	paQ	posoposo
gaQtsuri	kongari	surusuru	haQkiri	potapota
karaQto	kon-mori	sō	hafuhafu	hoQ
karari	sakusaku	sorosoro	barabara	poQ
garigari	zakuzaku	taQpuri	parapara	hoQkuri
karikari	sasaQ	damadama	baribari	hoQkori
gangan	zaQkuri	taratara	paripari	boQteri
gizagiza	saQsa	daradara	pikapika	poQteri
kichin	saQ	chachaQ	hitahita	potsupotsu
giQshiri	zaQ	chanto	pitapita	potopoto
kiQchiri	saQpari	choichoi	biQkuri	poripori
kiQchiri	sarasara	chokichoki	biQshiri	poripori
gitogito	zarazara	chonchon	piQchiri	horohoro
gyūgyū	shikoshiko	chirichiri	piripiri	boroboro

[23] The first part of geminate consonants is represented by/Q/.

kira	shiQkari	chin	fukafuka	poroporo
girigiri	shiQkuri	tsubutsubu	bukubuku	howahowa
kiriQ	jiQkuri	tsuyatsuya	pukupuku	honnori
guigui	jiQ	tsuruQ	busubusu	ponpon
kutakuta	shiQtori	dōn	purupusu	honwaka
guchafucha	shimijimi	dokidoki	puchipuchi	honwari
guQ	ja	doQsari	fuQkura	maQtari
kuQkiri	shakishaki	doQshiri	puQkuri	muQchiri
kutsukutsu	shakushaku	doQpuri	futsufutsu	munyu
gutsugutsu	shabushabu	dobaQ	butsubutsu	mufu
guragura	sharishari	torori	putsuputsu	mokomoko
guriguri	jarijari	dorori	furifuri	mochimochi
kurukuru	ju	tonton	furufuru	moQtari
guruguru	shuwa	dondon	purupuru	mofumofu
kukruri	juwa	naminami	fuwafuwa	yuQkuri
gururi	shunshun	nikoniko	betabeta	yuQtari
kurun	shiwashiwa	neQtori	bechabecha	yuruyuru
gun	jiwajiwa	nebaneba	beQtori	waiwai
gokugoku	shinnari			

2. Omission rate and consistency of translation (based on findings from Sasamoto 2019)

Group	Lema	Frequency (n)	random sample (n)	Total no of expressions used to translate (n)	No of expressions used more than five times (n) (a)	The frequency of (a) (n)	Percentage of (a) in a random sample	Omission cases (%)
1	shiQkari	5018	536	75	10	343	63.99	18.20

	taQpuri	3124	504	59	8	380	75.40	7.97
	shiQtori	1669	442	24	4	390	88.24	4.99
	saQpari	939	366	29	5	320	87.43	4.64
	shinnari	927	365	14	5	342	93.70	1.11
	torotoro	3120	503	39	9	436	86.68	2.61
	fuwafuwa	3024	501	30	7	447	89.22	0.48
2	sakusaku	1994	462	26	9	341	73.81	18.40
	saQ	1177	398	18	5	222	55.78	36.36
	karikari	1000	375	9	2	354	94.40	2.94
	pachipachi	73	65	12	3	41	63.08	0.00
	gā	48	45	4	0	0	0.00	73.33
3	puchipuchi	39	37	7	1	10	27.03	47.22
	dōn	23	23	9	0	0	0.00	45.45
	gangan	17	17	8	0	0	0.00	29.41