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Framing risk metaphorically:

Changes in metaphors of COVID-19 over time in Japanese

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Abstract

As a case of the metaphorical framing of risk, this chapter aims to explore metaphors of COVID-19 in Japanese, focusing on changes in metaphorical sources over time and their social backgrounds based on an analysis of metaphorical expressions in utterances directly quoted in newspaper articles. The three principal metaphor types found were OPPONENT in WAR framing, NATURAL PHENOMENON in DISASTER framing, and PATH in JOURNEY framing. The temporal change in the number of examples of each metaphor was closely linked to the "waves" of new infections. The results suggest that a temporal analysis of metaphorical framing can lead to a deeper understanding of perspective changes in risk discourse.

Keywords: metaphor, discourse, framing, change, COVID-19, pandemic, Japanese, risk, cognitive linguistics

1. Introduction

Metaphors are important in communication and cognition as they express, reflect, and reinforce different ways of making sense of particular aspects of our lives (Semino, Demjén, and Demmen 2018:625). Risk is an inevitable part of our social lives, and a number of studies have focused on metaphorical discourse on issues that are potentially linked to risk, such as climate change (Asplund 2011; van der Hel, Hellsten, and Steen 2018), economics (Morris et al. 2007; Bickes, Otten, and Weymann 2014), immigration (Fine and Christoforides 1991; Charteris-Black 2006), and disease (Semino et al. 2017; Semino, Demjénm and Demmen 2018). This chapter explores what metaphors we use to conceptualize the risk we are confronted with, in this case, the COVID-19 pandemic.

Discourse on the topic of the COVID-19 pandemic in Japanese can be characterized as *risk discourse*. According to Ädel, Östman, and Höög (in this volume), risk discourse refers to information, advice, and opinions that deal with explicit and implicit text types, topics, and issues concerned with matters of risk and related concepts. Since the concept of coronavirus is risk-associated, metaphorical discourse on the topic of coronavirus is naturally an instance of risk discourse.

Moreover, it involves discourse-framing of the coronavirus through the highlighting function of metaphors. Metaphors that allow us to highlight one aspect of a concept in terms of another will necessarily hide the other aspects of the concept (Lakoff and Johnson 1980:10). This central function of metaphor is often referred to as *framing* (Burgers, Konijn, and Steen 2016; Boeynaems et al. 2017; Semino, Demjén, and Demmen 2018). Entman (1993) provides an overarching definition of framing that aims to reconcile the different uses of the term in different disciplines: faming is "select[ing] some aspects of a perceived reality and mak[ing] them more salient in a communicating text [...] to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation" (Entman 1993: 52). Metaphors can fulfill one or more of the functions of framing because they foreground a particular problem definition, give a causal interpretation, address a problem evaluation, and/or promote a possible problem solution (Boeynaems et al. 2017:119). For instance, framing immigration as a natural disaster (Charteris-Black 2006) portrays immigration as something negative (problem definition), which causes serious trouble (causal interpretation) and is difficult to control (problem evaluation). Investigating what metaphor is used in the discourse on social issues allows us to analyze the frame in which people capture them and what aspect of the issue they focus on.

Previous studies on metaphors of COVID-19 have coherently reported, irrespective of language or register, that the metaphorical framing through the concept of war (*e.g.*, "the *fight* against an invisible *enemy*") is most commonly observed in discourse around the current pandemic (Wicke and Bolognesi 2020; Bates 2020; Chapman and Miller 2020; Rajandran 2020; Seixas 2021; Gui 2021; Komatsubara in press a). While war metaphors of threat are highly conventional in public discourse and efficiently structure our ability to reason and communicate (Flusberg, Matlock, and Thibodeau 2018), people do not always adopt a preconceived way of thinking, and they sometimes choose alternative metaphors to frame the risk, such as monster, storm, tsunami (Wicke and Bolognesi 2020), journey, sports, and people (Olza et al. 2021). Investigating how metaphors vary in the pandemic context leads us to find contextual factors in choosing a metaphor and reveal how people understand risk through metaphorical framing.

Variations in metaphors can occur both synchronically and diachronically (Nerlich and Hellsten 2004; Burgers and Ahrens 2020). Changes in metaphors over time are of particular interest because the way metaphors change can reveal how conceptualizations of social issues change over time (Burgers 2016). We have experienced rapid changes in every aspect of our lives during 2020-2022, causing us to repeatedly reframe the pandemic. This chapter provides an analysis of the changes in metaphors of COVID-19 in Japanese based on examples sampled at a monthly interval from March 2020 to March 2021. To investigate changes in metaphors over time and their social background, attention was paid to metaphorical expressions observed in utterances directly quoted in newspaper articles. This made it possible to describe when the metaphors were used and who used them. The fluctuating distributions of the three principal metaphorical sources of OPPONENT, NATURAL PHENOMENON, and PATH indicate how people reshape their conceptualization of emergent risk in the pandemic by choosing different metaphors.

Based on the empirical investigation, this chapter discusses how choices of metaphor reflect diverse perspectives around a rapidly changing pandemic context.

The remainder of this chapter is structured as follows. Section 2 explains the material and framework of the identification and description of metaphors. Section 3 outlines the descriptive results about trends in the metaphorical framing of COVID-19, and Section 4 discusses changes in principal metaphorical sources over time in relation to the rise and fall of new infections.

2. Methods

2.1 Material

A total of 2,593 newspaper articles that include the keyword *koronauirusu* 'coronavirus', one of the most common expressions referring to COVID-19 in Japanese, were extracted from Kikuzo II Visual, the largest newspaper article database by Asahi Shimbun Company. To trace the timeline of the pandemic in Japan, 13 arbitrary dates were sampled at a monthly interval from March 2020 to March 2021 (Figure 1). The arrows in Figure 1 indicate the spikes in the number of new infections.

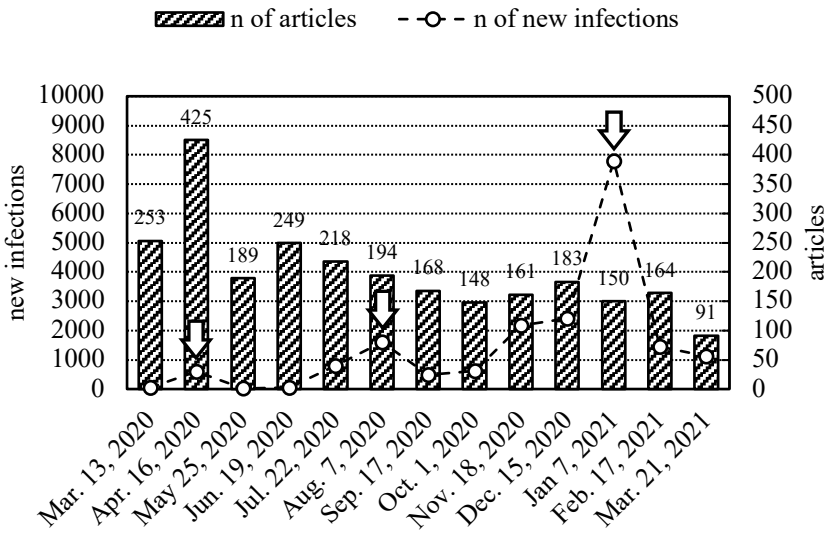

Figure 1: Changes in the number of new infections and articles including the keyword *koronauirusu* 'coronavirus'

The timeline of the sampling period can be summarized as follows. Since the first case was reported in January 2020, the number of new infections increased, and on March 13 the National Diet passed an

amendment to the Special Measures Act for an influenza outbreak to include COVID-19. The number of new infections approached its first peak in April, and then Prime Minister Shinzo Abe declared a nationwide state of emergency on April 16. The spike in the number of articles in April (Figure 1) shows that the state of emergency had drawn significant public attention. After the state of emergency was lifted on May 25, the rate of increase in new infections remained at a low level, and the "self-restraint" request not to travel across prefectures was lifted on June 19. The high record of new infections on July 22 signaled the coming of "the second wave" of the pandemic, which peaked on August 7. After the Suga administration came to office on September 17, the government began campaigns to boost consumer spending and help the economy recover from the losses caused by the pandemic[1]. However, Japan saw a record number of new infections on November 18, and the campaigns were partially stopped on December 15. The government declared a state of emergency again on January 7, 2021. Vaccinations for healthcare workers started on February 17, and the second state of emergency was lifted on March 21[2].

To collect examples of metaphors, we focused on directly quoted utterances (*e.g.*, interviews and opinions) in each article because they describe when the metaphors were used and who used them. For example, in (1), we can identify the name (*i.e.*, "Koji Endo") and the job (*i.e.*, "the representative of an after-school-care center in Osaka") of the speaker of the quoted utterance.

(1) Koji Endo, the representative of an after-school care center in Osaka, said, "Many institutions have to endure hardship with a sense of mission for *protecting* children." (*The Asahi Shimbun*, evening edition, April 16, 2021; English translation and italics added by the author)

We manually excluded articles whose topics were irrelevant to the pandemic even though they included the keyword *koronauirusu*. Directly quoted translated utterances (*e.g.*, a comment by President Trump translated into Japanese) were also excluded because our focus was to investigate metaphorical discourse in Japanese.

2.2 Identification of metaphors

[1] In Japan, government policies have strongly motivated the measures that should be taken to stimulate the economy. In contrast, according to Lance et al. (in this volume), many citizens in New York City report being asked to be individually responsible for stemming the spread of COVID-19 and for patronizing local stores to stimulate the economy. This contrast might indicate that Japan and the US differ in common attitudes regarding who should be responsible for economic recovery from the pandemic.

[2] Facts and statistics on the pandemic in Japan described in 2.1 are based on reports by the Ministry of Health, Labour and Welfare (https://www.mhlw.go.jp/), the Cabinet Office (https://www.cao.go.jp/), and the Japan Broadcasting Corporation (NHK) (https://www.nhk.or.jp/). (Retrieved on May 20, 2021)

To exhaustively identify the metaphorical expressions, we adopted the basic strategies of the Metaphor Identification Procedure (MIP; Pragglejaz Group 2007). First, we divided discourse into lexical units and then identified the meaning in the context of each lexical unit in discourse. We then used the dictionary *Supa Daijirin 3.0* (by Sanseido) to establish the basic meaning (*i.e.*, more concrete, more physical, and more precise meaning) of the lexical unit. Finally, if the basic meaning is distinct from the meaning in context and the contextual meaning could be understood by referring to the basic meaning, we coded the lexical unit as metaphorical. The words highlighted in boldface in (2) are examples identified as metaphorical by this procedure.

(2) *Mie-zaru* ***teki****=to-no* ***tatakai****=ni* ***kachinuka****-nakereba.*
see-NEG enemy=with-POSfight=in win-must
'[We] must *win* the *fight* against the invisible *enemy*[3].'
(Yuriko Koike, Governor of Tokyo, March 13, 2020)

To apply this method to Japanese, it is necessary to define criteria to determine a lexical unit in discourse because words are not separated with spaces in Japanese. The basic principle is that a morpheme is a lexical unit, but grammatical morphemes, called *joshi* and *jodoshi* in Japanese linguistics, such as *to* 'with' and *zaru* 'not' in (2), were excluded from the analysis of the identification as we focused on content words, which directly express specific meanings. Derivatives and compounds that consist of multiple morphemes, such as *kachinuka* (an inflected form of the compound *kachinuku*, which consists of two verbs: *katsu* and *nuku*) in (2), were regarded as established lexical units if we found their entries in the dictionary.

To capture statistical trends in metaphorical framing, we considered multiple lexical units that had a coherent metaphorical meaning as a single example of metaphor. Therefore, the unit for counting examples was an utterance (i.e., a series of lexical units from the beginning to the end of a quotation) not a word. For instance, *teki* 'enemy', *tatakai* 'fight', and *kachinuka* 'win' in (2), can be counted as 3 separate metaphorical lexical units according to MIP, but these lexical metaphors share the same metaphorical source and give rise to the framing of the pandemic through the concept of war; thus, we counted them as a single example of a war-framed metaphorical utterance.

[3] Boldface in Japanese examples and italic in English translation indicate that the expressions are metaphorical. The notations of glossing in this chapter follow *The Leipzig Glossing Rules* (Comrie et al. 2015). In particular, segmentable morphemes are separated by hyphens, clitic boundaries are marked by equal signs, and when a single object-language (Japanese, in this case) element is rendered by several metalanguage elements, these are separated by periods.

We identified 199 examples of such metaphorical utterances of the COVID-19 pandemic observed in direct quotations in the 2,539 Japanese newspaper articles selected.

2.3 Description of metaphors

To capture semantic patterns of metaphorical framing, we adopted the cognitive linguistic view of metaphor, referred to as Conceptual Metaphor Theory (CMT; Lakoff 1993; Kövecses 2010). According to CMT, metaphors are defined as *mappings* across different domains in conceptual structure. Expressions such as "He *shot down* all of my arguments" are regarded as linguistic manifestations of conceptual metaphors; in this case, of ARGUMENT IS WAR[4]. This conceptual metaphor involves mapping aspects of the *source* domain of WAR onto those of the *target* domain of ARGUMENT.

In our case, the target domain is the situation around the COVID-19 pandemic, which is very complicated in that it involves political, economic, social, and cultural factors as well as epidemiological ones (Seixas 2021: 2-3). Regardless of the metaphor used to frame the situation, the coronavirus itself should be an essential element of the target domain because the coronavirus is obviously the fundamental factor causing any kind of risks in the pandemic. In analyzing what source concept was mapped onto the concept of coronavirus, we discuss aspects of the metaphorical framing of the pandemic.

Coronavirus metaphors can be either direct or indirect. Some metaphorical utterances directly mention the coronavirus. For instance, in (2), the coronavirus is construed as OPPONENT in war through the explicit metaphorical expression *teki* 'enemy'. However, others have described aspects of the pandemic situation where the metaphorical meaning of the coronavirus itself remains implicit. For instance, the utterance in (3) includes a metaphorical expression *mochikoma* (an inflectional form of the compound verb *mochikomu* 'bring'), a metaphorical verb that indirectly introduces a metaphorical meaning to the designated concept of the object noun (i.e., *korona* 'coronavirus') as a movable physical object such as a laptop or book[5]. We considered (3) to be an example of framing the coronavirus as PHYSICAL OBJECT, in that spreading the coronavirus metaphorically corresponds to bringing a physical object.

(3)	*Korona=o*	***mochikoma**-zu=ni*	*ki-tekudasai.*
	coronavirus=ACC	bring-NEG=in	come-please

[4] We follow the general convention in CMT to use small capitals for concepts (*e.g.*, WAR) and for the formulation of conceptual metaphors (*e.g.*, ARGUMENT IS WAR).

[5] The collocational analysis of the verb *mochikomu* 'bring' by Sketch Engine, a corpus analysis tool bundled with the multilingual web corpora, showed that *mono* 'stuff', *pasokon* 'laptop', and *hon* 'book' were the most frequently occurring words as the object noun of the verb in literal use.

‘Please come without *bringing* the coronavirus.’

(Toshizo Ido, Governor of Hyogo, June 19, 2020)

To achieve the inductive generalization of metaphorical framing, we initially undertook a lexical semantic description of the metaphorical utterances. Then, we classified them into the types of metaphor usually employed in relation to the COVID-19 pandemic based on previous literature as follows: OPPONENT in WAR (Bates 2020; Seixas 2021) or in SPORT (Olza et al. 2021; Semino 2021; Gui 2021), NATURAL PHENOMENON, especially NATURAL DISASTER (Wicke and Bolognesi 2020; Semino 2021), PATH (or DIRECTION) in JOURNEY (Rajandran 2020; Olza et al. 2021; Semino 2021), PHYSICAL OBJECT (Komatsubara in press a), ANIMAL (Olza et al. 2021), and NEIGHBOR (or GUEST) (Olza et al. 2021, Komatsubara in press a). For example, we initially described the source concept of coronavirus as a movable object in (3), a chain-like object in (4), and a machine-like object in (5), and then classified them into the PHYSICAL OBJECT metaphor.

(4) *Rensa=o* ***tachikiru****-koto=ni* *churyokushi-teki-ta.*
chain=ACC cut.off-NMLZ=in try-PRF-PST
‘[We] have made an effort to *cut* the chain [of the patient clusters] *off*.’

(Kenji Shibuya, Senior Advisor of the WHO, April 16, 2020)

(5) ***Seigyofunona*** ***mono*** *dewa-nai.*
uncontrollable thing TOP-NEG
‘[The pandemic is] not an *uncontrollable thing*.’

(Keiichiro Kudo, Director of the Medical Policy Office of Iwate, January 7, 2021)

We classified 199 examples of metaphorical utterances into six types of metaphorical sources. The next section outlines the results of the descriptive analysis.

3. Trends in metaphorical framing

Table 1: Metaphorical sources of the coronavirus

Source and Example	n	Percentile
OPPONENT *e.g.*, *mie-zaru* ***teki****=to-no* ***tatakai*** ‘*fight* against an invisible *enemy*’	85	42.7 %
NATURAL PHENOMENON *e.g.*, *dai-i-****ppa****=no* ***tachiagari*** ‘the *rise* of the first *wave*’	31	15.6 %

PATH *e.g.*, ***saki=****ga* ***mie-****nai* '[we] cannot *see* the *road ahead*'	31	15.6%
PHYSICAL OBJECT *e.g.*, *korona=o* ***mochikoma-****zu=ni* 'not *bringing* coronavirus *over*'	21	10.6%
ANIMAL *e.g.*, *korona=o mazu* ***fujikome=****te* '*caging* coronavirus first'	17	8.5%
NEIGHBOR *e.g., korona=to* ***kyouzonshi-****nagara* '*living together* with coronavirus'	14	7.0 %
Total	199	100

Table 1 summarizes the trends in six types of metaphorical sources of the coronavirus: OPPONENT, NATURAL PHENOMENON, PATH, PHYSICAL OBJECT, ANIMAL, and NEIGHBOR. First, we most frequently observed metaphorical utterances framing the coronavirus as an OPPONENT, which was mostly realized as an ENEMY in WAR such as (2) and (6) and as a COMPETITOR in SPORTS in a few examples, such as (7). The trend toward WAR framing is consistent with the suggestion in previous studies that WAR is a predominant metaphorical source in public discourse on social issues (Karlberg and Buell 2005; Flusberg, Matlock, and Thibodeau 2018).

(6) *Kanko=no* ***kusen****=ga* *tsuzuku* *Okinawa*
sightseeing=POS hard.fight=NOM continue Okinawa
'Okinawa where [they] keep on *fighting* for sightseeing [business]'
(Anonymous, Godo Shusei Co., Ltd., April 16, 2020)

(7) *Nihon=ga* *"****wan-chimu****"=to* *natte* ***tachimuka****-tteiku.*
Japan=NOM one-team=QUOT become confront-go
'Japan will *confront* [the coronavirus] as "*one team*".'
(Masahiko Murakami, The president of a restaurant chain, March 13, 2020)

Second, among the NATURAL PHENOMENON metaphors, WAVE metaphors in the DISASTER framing, typically introducing an image of a TSUNAMI, such as in (8), occupied approximately 80% of the examples of this type. In addition, as illustrated in (9), conventional expressions such as *dai-i-****ppa*** 'the first *wave*', *dai-ni-****ha*** 'the second *wave*', *dai-sam-****pa*** 'the third *wave*' were common in the data. We also observed a few examples of FIRE metaphors as a variation of the NATURAL PHENOMENON metaphor, which, according to Semino (2021), can be versatile in communication about the COVID-19 pandemic, such as ***hi****-dane* '*fire*-seed' and ***kusuburu*** '*smolder*'.

(8) *Fuyuba=ni-wa* *honto=no* *"**nami**"=ga* ***oso**-ttekuru*
winter=in-TOP real=POS wave=NOM hit-BEN
kanosei=ga *aru.*
possibility=NOM exist
'Possibly, the real "*wave*" might *hit* in winter.'
(Shuichi Nishimura, Sendai Medical Center, September 17, 2020)

(9) *Dai-i-**ppa**=no* ***tachiagari**=to* *doto=to* *ninshikishi-teiru*.
CLF-one-wave=POS rise=with same=QUOT recognize-RES
'[We] recognize that [it] is equivalent to the *rise* of the first *wave*.'
(A staff member of the Fukuoka City Office, July 22, 2020)

Third, the PATH metaphor based on JOURNEY framing was used productively as much as the NATURAL PHENOMENON metaphor. This metaphor can be divided into two subtypes: OBSTACLE and LANDSCAPE. Strictly speaking, OBSTACLE and LANDSCAPE are not paths but elements around a path, but we labeled them PATH metaphors, since they are closely associated with the PATH framing, and more broadly, with the JOURNEY framing. For example, (10) shows that *konnan* 'hardship', which refers to the coronavirus in context, is metaphorically an OBSTACLE, and it is included as an element in JOURNEY framing, as indicated by the metaphorical expression *norikoeru* 'get over'. An example of LANDSCAPE metaphor is (11), in which JOURNEY framing indicates how people make efforts to deal with the coronavirus and resolve the problematic situation. The metaphorical expression *tachidomaru* 'stop' does not imply that the coronavirus interrupts the path of the journey like *norikoeru* 'get over' in (10), so the coronavirus is not portrayed as an OBSTACLE but rather as an element of the LANDSCAPE in the JOURNEY.

(10) *Yushi=nado,* *kono* *konnan=o* ***norikoeru*** *tairyoku*
loan=such.as, this hardship=ACC get.over strength
'[We need] strength, such as a loan, to *get over* this hardship'
(Tomizaemon Niiyama, Cooperative Association of Dogo Onsen, September 17, 2020)

(11) *I-kkagetsu=hodo* *mae=ni* ***tachidomaru*** *hitsuyou=ga* *a-tta*.
one-month=about before=in stop need=NOM exsit-PST
'[We] needed to *stop* about a month ago.'
(Yoshihito Niki, visiting professor at Showa University, December 20, 2020)

Fourth, PHYSICAL OBJECT is a heterogeneous category that includes various subtypes like STUFF, as in (3), CHAIN, as in (4), and MACHINE, as in (5). Fifth, ANIMAL metaphors are similar to the OPPONENT metaphor, in that they share the conceptual property of animacy, but they differ in terms of humanity. For example, both *tsubuse* 'crush' in (12) and *fujikomete* 'caging' in (13) imply that the coronavirus is not

construed as human.

(12) *Hirogaru* *mae=ni* ***tsubuse**-ba* *konzetsu-deki-ta*.
spread before=in crush-COND eradicate-can-PST
'[We] could eradicate [the coronavirus] if we crushed it before spreading.'
(Taro Yamamoto, Professor at Nagasaki University, March 13, 2020)

(13) *korona=o* *mazu* ***fujikomete*** *wakuchin=o* *kaihatsushi*
coronavirus=ACC first caging vaccine=ACC develop
'*Caging* the coronavirus first and developing vaccine'
(Kenichi Tokuyasu, Nakasu Cooperative Association, September 17, 2020)

Finally, NEIGHBOR metaphors personify the coronavirus in a similar manner as OPPONENT metaphors do, but they do not suggest that it should be eradicated. We do not know exactly when the "war on COVID-19" will end and probably cannot avoid living with the coronavirus for a long time. As an example of admitting this fact in political discourse, Yuriko Koike, the Governor of Tokyo Prefecture, in May 2020 advocated the slogan *wizu-korona* 'with coronavirus', in which the meanings of the word *wizu* 'with' prompted inhabitants to construe the coronavirus as an accompanying person. It has become a well-known phrase in Japan (Kajiwara et al.2022) and might have motivated the utterances framed by the NEIGHBOR metaphor, such as (14), (15), and (16), whose speakers are all ordinary people, such as students or office workers. In this respect, politicians seem to be at least partially responsible for the metaphorical framing of NEIGHBOR in everyday discourse.

(14) *Shin-gata* *coronauirusu=no* *mit-tsu=no* ***kao**=o* *shiro-u*
new-type coronavirus=POS three-CLF=POS face=ACC learn-let.us
'Let's learn the three *faces* of the new-type coronavirus.'
(Mari Yamaguchi, junior high school student, May 25, 2020)

(15) *Korekara=wa* *korona=to* ***kyozonshi**-nagara*
in.the.future=top coronavirus=with live.together-as
'[We will] *live together* with the coronavirus in the future.'
(an office worker, May 25, 2020)

(16) *Korona=to* ***tonari-awase**=no* *seikatsu=wa* *tsuzuku*
coronavirus=with next.to-fit=POS life=TOP continue
'[We must] continue to live *next to* the coronavirus.'
(a college student, September 17, 2020)

The theoretical aim of this study is to investigate how changes in metaphors over time reflect changes

in the framing of the social situation over time. Figure 2 shows the temporal changes in the monthly frequency distributions for the six types of metaphorical framing.

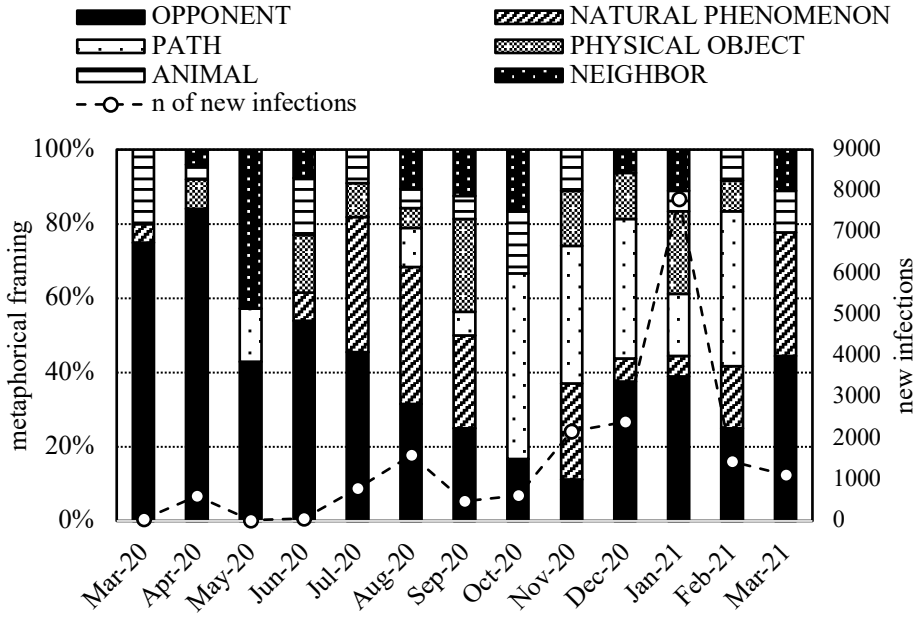

Figure 2: Changes in metaphorical framing over time

A prominent tendency was the continuous decrease in the percentile of OPPONENT metaphors from April to November, except for the transition from May to June. The dominance of OPPONENT metaphors in April seems to reflect an increase in war-framed discourse under the first declaration of the state of emergency. In addition, OPPONENT metaphors approached another (lower) peak in January, when the state of emergency was declared again. These two peaks indicate that OPPONENT metaphors were used relatively often during the state of emergency although the results are based on only 199 examples.

The essence of the results shown in Figure 2 can be captured in a binary fashion, as shown in Figure 3, which groups OPPONENT, ANIMAL, and NEIGHBOR metaphors into ANIMATE metaphors (n = 117) and NATURAL PHENOMENON, PATH, and PHYSICAL OBJECT metaphors into INANIMATE metaphors (n = 82).

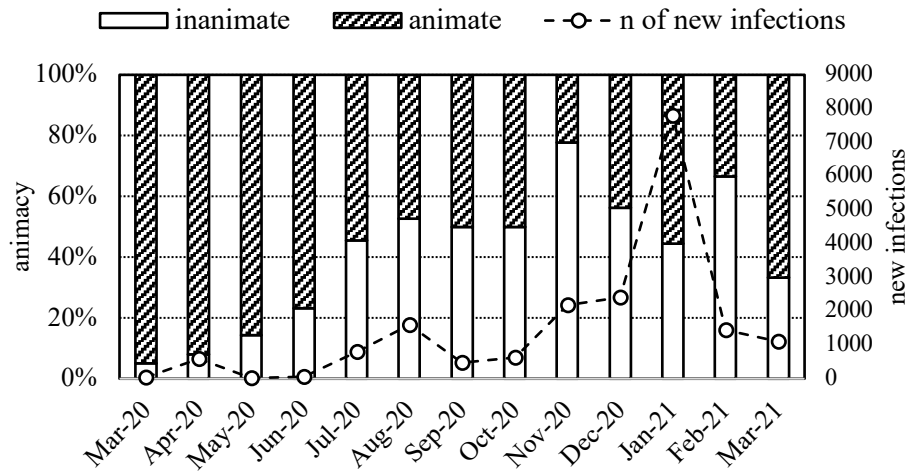

Figure 3: Changes in the animacy of metaphorical sources over time

Figure 3 shows that INANIMATE metaphors reached their first peak in August, in which the second wave of new infections also reached its peak. During the latter half of the entire period, INANIMATE metaphors seemed to be an alternative to ANIMATE metaphors, which mainly comprised OPPONENT metaphors. This suggests that there might be a trend in which people initially tended to regard the coronavirus as something to be defeated, such as an ENEMY in WAR; however, as it became clear that the pandemic would not end quickly, they switched their framing to a less interactive one, in which the coronavirus was characterized by INANIMATE concepts, such as NATURAL PHENOMENON in DISASTER and PATH in JOURNEY.

4. Changes in metaphors over time

The three concepts—OPPONENT, NATURAL PHENOMENON, and PATH—were the principal metaphorical sources for framing the coronavirus, as shown in Section 3. This section explores the details of changes in these three metaphors over time and discusses how people changed their framing of risk and responsibility during the pandemic.

4.1 Risk as OPPONENT

We showed that OPPONENT metaphors of the coronavirus, mainly consisting of ENEMY metaphors in the WAR framing, were dominant in the data (Table 1). These results seem consistent with previous studies that have reported that WAR metaphors are preferred in addressing social issues, such as drugs

(Alexandrescu 2014), climate change (Asplund 2011), and poverty (Almond, Hoynes, and Schanzenbach 2011).

This type of metaphor was predominant, especially in the initial period, with OPPONENT metaphors occupying 75% of the examples in March 2020 and 84% in April (see Figure 2). Flusberg, Matlock, and Thibodeau (2018) have argued that WAR metaphors are commonplace because they structure social issues by introducing the widely shared schematic knowledge of war (*e.g.*, disease as an enemy, doctors and medical experts as commanders, healthcare teams as allies, and medical treatments as weapons) and activate the sense of urgency and anxiety associated with the vivid emotional valence of war. These rhetorical functions of war metaphors seem to be at play in the predominant use of OPPONENT metaphors in the initial period, as illustrated in the utterance by a politician in (2).

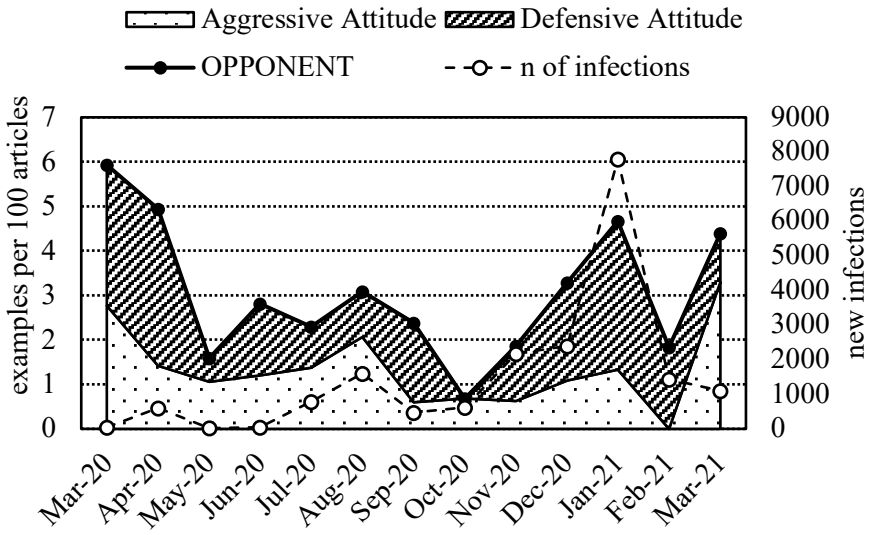

Figure 4: Changes in OPPONENT metaphors over time

While Figure 2 describes the change in the relative frequency of metaphors in the data, the line graph in Figure 4 shows the change in the absolute number of OPPONENT metaphors per 100 articles. The number of monthly examples was standardized by the number of articles in that month because the number of metaphorical utterances is expected to increase in proportion to the data size. As indicated in Figure 1, there were three spikes in the number of new infections in April, August, and January, corresponding to the peaks of the first, second, and third waves, respectively. We found a similar shape for the curves in the line graphs of OPPONENT metaphors and new infections during the periods July–September and December–February. In addition, the frequency of OPPONENT metaphors decreased substantially in May as the number of new infections decreased. These observations indicate that OPPONENT metaphors were used productively at the peaks of new infections and less productively in the troughs.

Focusing on the two main attitudes towards one's OPPONENTS in the WAR framing, OPPONENT

metaphors can be further divided into two types: aggressive (n = 35) and defensive (n = 50). Some OPPONENT metaphors indicate an aggressive attitude toward the coronavirus (*i.e.*, the viewpoint of seeing the coronavirus as something to be eradicated), such as *uchikatsu* 'defeat', *teki* 'enemy', and *tatakai* 'fight', which were typically used by politicians. Under the second state of emergency declaration in January 2021, Prime Minister Yoshihide Suga tried to impress on Japanese people that the Tokyo Olympics will be proof that they *defeated* the coronavirus, using the metaphor in (17), in which the expressions *uchikatsu* 'defeat' implies that people should take an active role in the "war on COVID-19." The metaphorical expression *korona=ni uchikatsu* 'defeat the coronavirus' was a phrase that former Prime Minister Shinzo Abe repeatedly used under the first state of emergency declaration in April. Using aggressive OPPONENT metaphors, politicians seemed to try to convey "a sense of risk and urgency" (Flusberg, Matlock, and Thibodeau 2018: 4).

(17) *Jinrui=ga* *shin-gata-koronauirusu=ni* ***uchika**-tta akashi*
mankind=NOM new-type-coronavirus=ACC defeat=PST proof
'[Tokyo Olympics will be] proof that mankind will have *defeated* the new coronavirus.'
(Yoshihide Suga, Prime Minister of Japan, January 7, 2021)

(18) *Shokuin* *mo* *kansen* *kara* ***mamora**-naitoikenai.*
staff TOP.also infection from protect-must
'[We] also must *protect* the staff from infection.'
(The manager of an adult day care center in Sapporo, March 13, 2020)

However, the majority of OPPONENT metaphors indicate a defensive attitude (*i.e.*, the viewpoint focusing on the preventive measures and the recovery), such as *mamru* 'protect', *dameji* 'damage', and *dageki* 'blow [by the coronavirus]'. In particular, during the first and second states of emergency in April and January, defensive metaphors accounted for approximately 70% of the examples of OPPONENT metaphors in the two months. As illustrated in (18), doctors and medical experts tended to use defensive metaphors, which might reflect the toughness of the healthcare situation.

In summary, the number of OPPONENT metaphors tended to change in proportion to the number of new infections when focusing on the period around the two state of emergency declarations in April and January. While politicians preferred aggressive metaphors, doctors and medical experts often used defensive ones, which played a major role during the state of emergency periods.

4.2 Risk as NATURAL PHENOMENON

Figure 5 shows how the number of NATURAL PHENOMENON metaphors changed over time. During the period from June to August, there was a prominent increase coupled with the rise of new infections, which

was usually labeled as *dai-ni-**ha*** 'the second *wave*'. This conventional labeling about the rise and fall of the number of new infections is based on the WAVE metaphor, the most frequent subtype under NATURAL PHENOMENON. When looking back at the period from March to May in 2020, we may call it "the first wave," but WAVE metaphors were rarely used before "the second wave," probably because the WAVE metaphor is only apt when the target concept is something periodic. The second spike in November, the beginning of "the third wave," seems to indicate that people were fully conscious of the periodic nature of the pandemic.

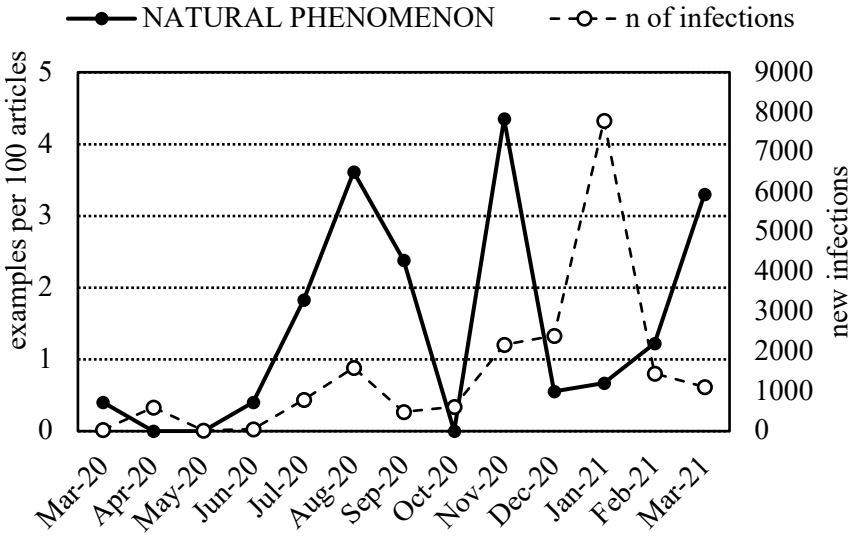

Figure 5: Changes in NATURAL PHENOMENON metaphors over time

In addition to conventional WAVE metaphors, several examples of more deliberate NATURAL DISASTER metaphors, such as in (8) and (19), have also been observed. It is possible that the concept of NATURAL DISASTER is a particularly effective metaphorical source in Japanese because Japan has frequent natural disasters, such as typhoons, earthquakes, and tsunamis, which provide an experiential basis for such metaphors.

(19) *Korona* ***saigai*** *niyotte* *komat-teiru* *hito-tachi*
coronavirus disaster by suffer-PROG person-PL
'People who are suffering from the *disaster* [caused by] coronavirus.'
(Taro Yamamoto, Reiwa Shinsengumi Party founder, June 19, 2020)

The explicit metaphorical framing using the concept of NATURAL DISASTER was not very common in the data, but it is worth noting that the framing can appropriately describe several aspects of life during the pandemic and avoids incongruity between the OPPONENT metaphor and reality. First, in this framing,

one does not have a way to attack the coronavirus as we cannot attack natural disasters. Second, the framing suggests that the coronavirus is an entity that cannot be controlled as natural disasters cannot be controlled. Third, the coronavirus is not construed as a volitional entity in the framing because natural disasters are inanimate. Fourth, the framing implies a sense of resignation: one cannot stop the coronavirus as one cannot stop natural disasters from happening. Finally, the framing also implies the need for restoration, for once it happens, restoration of our social, economic, and psychological lives is required.

According to Charteris-Black (2006), NATURAL DISASTER metaphors relating to water (floods and tidal waves) were common in the conceptualization of immigration in right-wing discourse in Britain (*e.g.*, "Britain also faces a further massive and unnecessary *wave* of immigration from Eastern Europe"), implying that immigration was excessive and out of control. Moreover, "flood" metaphors often became hyperbolic and were extended to "crisis" metaphors (*e.g.*, "[...] it is no longer feasible to pretend that the *crisis* does not exist"). These observations on WAVE metaphors in the DISASTER framing seem to be compatible with our discussion above and suggest that framing via WAVE is potentially linked to conceptualization with the related image of crisis.

In summary, similarly to the case of OPPONENT metaphors, the number of examples of NATURAL PHENOMENON metaphors had rapidly increased as the number of new infections during the period labeled "the second wave" of the pandemic. We found that WAVE metaphors, the most frequent subtype of NATURAL PHENOMENON metaphors, began to be used after the second wave. Specifically, metaphors that deliberately construe WAVE as NATURAL DISASTER might have the advantage of avoiding incongruity between OPPONENT metaphors in the WAR framing and the realities of the coronavirus.

4.3 Risk as PATH

Figure 6 shows the changes in the number of PATH metaphors over time. The metaphor of PATH is part of the JOURNEY framing (Lakoff and Johnson 1980: 90). While JOURNEY framing is pervasive in everyday language, as in "*Look* how *far* we've *come*" and "We can't *turn back* now" (Lakoff 1993), the concept of JOURNEY is also an apt metaphorical source of risk in many cases because trouble can happen in a journey, such as getting lost, getting mugged, feeling sick, or feeling anxious, and these troubles take central roles in framing risk metaphorically.

Most examples of PATH metaphors were found in the latter half of the period, whose peak was in November, the beginning of "the third wave." This is probably because people did not presume, at least in the initial stage, that the pandemic would last for years as a journey does. The increase in JOURNEY framing during the third wave suggests that people at this stage began admitting that the pandemic would last for a long time.

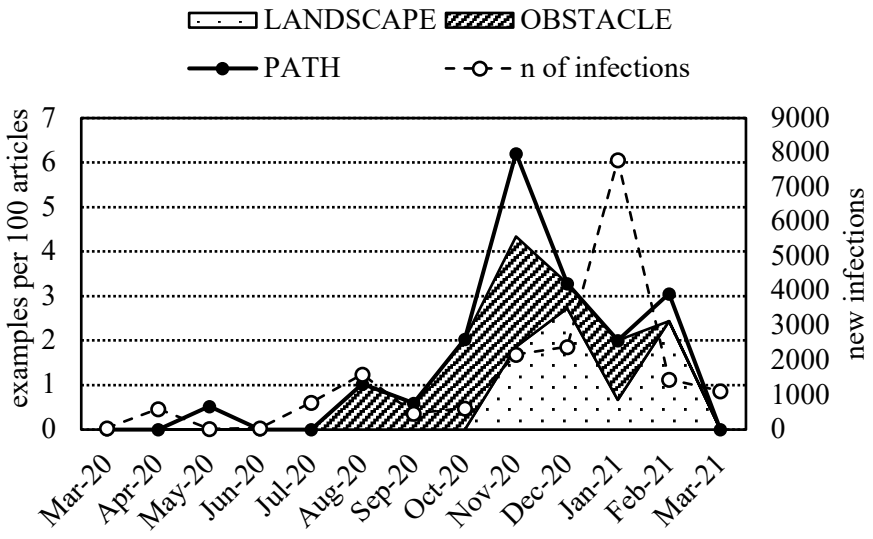

Figure 6: Changes in PATH metaphors over time

As described in Section 3, PATH metaphors were divided into OBSTACLE and LANDSCAPE metaphors. Typical examples of OBSTACLE metaphors were related to poor visibility, in which the coronavirus seemed to be construed as an obstacle on a bad road, such as *mitose-nai* 'cannot see through' in (20) and *saki=ga mie-nai* 'cannot see the front' in (21). These metaphorical utterances suggest a sense of anxiety as travelers feel anxious when they cannot clearly see their route.

(20) *Itsu* *moto=no* *jotai=ni* *modoru=no-ka* ***mitose**-nai.*
when former=POS state=to return=POS-Q see.through-NEG
'[I can]not *see* when [the situation] returns to the former state.'
(Hiroyasu Tamura, Public Relations Department of Hato Bus, October 1, 2020)

(21) ***Saki**=ga* ***mie**-nai* *kurushisa=ga* *a-tta.*
front=NOM see-NEG suffering=NOM exist-PST
'[I] suffered from [the fact that I] could not *see* the *front*.'
(Rie Asai, Koto[a music instrument] player, November 18, 2020)

While OBSTACLE metaphors were dominant during the period from July to October, LANDSCAPE metaphors (e.g., *susumu* 'move', *chikazuku* 'approach', and *iriguchi* 'entrance') increased after November, following the increase in OBSTACLE metaphors. This might suggest that the coronavirus was initially construed as one that interferes with travelers but then became one that coexists with them.

In studies of metaphors in medical discourse (Semino et al. 2017; Hendricks et al. 2018), JOURNEY framing has been regarded as an alternative to WAR framing, although they are not necessarily incompatible. Hendricks et al. (2018) argued that while WAR framing is more likely to strengthen the

inference that a cancer patient feels guilty if she does not recover, JOURNEY framing is more likely to strengthen the inference that she can make peace with their cancer situation. Analogically, it can be the case here that the WAR framing is more likely to induce people to feel guilty if they do not improve the pandemic situation, while JOURNEY framing is more likely to encourage them to believe that they can make peace with, or at least get used to, the pandemic situation.

In summary, PATH metaphors increased after the beginning of the third wave, which may indicate that people admitted that the pandemic would last for a long time. Multiple examples of OBSTACLE metaphors described a sense of anxiety from the pandemic, but it was suggested that a JOURNEY framing through PATH metaphors might be more likely to free people from the sense of responsibility for improving the pandemic situation than a WAR framing through OPPONENT metaphors.

4.4 Metaphorical framings of responsibility

We have discussed how the principal metaphorical framings of risk changed during the pandemic and what the changes imply. Since discourse dealing with risk typically relies on and refers to different beliefs about or attitudes toward responsibility (Ädel, Östman, and Höög, in this volume), the notion of responsibility is also an important analytical layer to consider regarding the implications of the metaphorical framings.

According to Ädel, Östman, and Höög (in this volume) and Solin and Östman (2016: 6–7), there are three types of responsibility: (i) sociocultural responsibility refers to responsibility related to societal and group ideologies and the values and practices of the culture and community; (ii) interpersonal responsibility is responsibility in relation to one's co-participants in a communicative setting, such as family relationships or workplaces; and (iii) responsibility to self is responsibility in relation to one's 'internalized', subconscious values and attitudes.

The three types of metaphorical framings, WAR, NATURAL DISASTER, and JOURNEY, lead to different metaphorical understandings of sociocultural responsibility in the pandemic. The shared schematic knowledge of WAR evoked by the OPPONENT metaphors involves obligations to attack the foes and help the allies, which closely relate to the sociocultural responsibility for active participation in measures against the coronavirus, especially during the periods under states of emergency when the OPPONENT metaphor was most productively used.

The NATURAL DISASTER framing has a different consequence for understanding of responsibility at the sociocultural level, in that it strengthens the inference that the coronavirus cannot be attacked nor controlled, and thus the focus is on recovery from the pandemic. The JOURNEY framing backgrounds the concept of responsibility because it conceptualizes the pandemic as a part of our lives in a way similar to that of viewing life as a journey in everyday language, based on the basic conceptual metaphor LIFE IS A JOURNEY (Lakoff and Johnson 1980).

Metaphorical framings affect the understanding of responsibility at the interpersonal and individual (or self) level as well as the sociocultural level. The WAR framing structures our interpersonal behaviors in that it strongly restricts interactions between people, and not meeting with and socially distancing from other people are considered duties in the *fight against the enemy*. However, alternative framings can promote different understandings of responsibility. For example, the NATURAL DISASTER framing may view the social restrictions as efforts to restore our daily lives.

Altering the way of thinking of responsibility in the WAR framing of the coronavirus would be a serious issue, especially for businesspeople in Japan. Because the positive commitment to measures against the risk of the coronavirus in business (*e.g.*, closing their stores) results in another risk, that of loss of benefit, they sometimes found themselves in a state of social conflict between stopping their business to *fight against* the coronavirus and continuing operating to economically *survive* the pandemic (Komatsubara in press b). The changes of metaphorical framings over time might reflect the way people keep trying to figure out what they should do around the rapidly changing pandemic situation.

5. Conclusion

Based on an empirical investigation of Japanese utterances directly quoted in newspapers, we found that OPPONENT, NATURAL PHENOMENON, and PATH were the principal metaphorical sources in the data. Through an analysis of how the frequency of these three metaphors changed over time, we argued that trends in metaphorical sources were closely linked to the rise and fall in the number of new infections, especially during the periods around the peaks of the "waves" of new infections.

Changes in metaphors reflect changes in focal aspects of risk and responsibility in the pandemic context. The observed metaphorical utterances were largely conventional, and people probably used these metaphors unconsciously (Lakoff and Johnson 1999) in many cases. However, a series of coherent metaphors form a metaphorical framing, which introduces a set of intellectual and emotive implications about the target concept of the metaphor. In this respect, a metaphor analysis of risk discourse, focusing on temporal change, is beneficial for investigating how people change their attitudes toward risk and responsibility over time.

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