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Title	COVID-19 myth busters in world languages : a case for broader impacts of linguistic research during the COVID-19 crisis
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Author	Lee, Seunghun J.(Kawahara, Shigeto) Won, Daehan 川原, 繁人
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Abstract	新型肺炎コロナウイルスの世界的流行を受け、言語学のコミュニティの一部では、「我々の専門知識を、この世界的問題に対して何かしらの形で役立てることはできないだろうか」という問題が議論されるようになってきた。本論文では、この問題意識を背景とした、我々のアウトリーチ活動を紹介する。具体的には、WHOが発信している「コロナウイルスに関するデマ情報のまとめ」を出来るだけ多くの言語に翻訳し、無料で公開することで、コロナウイルスに対する正しい知識を多くの人に、それぞれの人の母語で届けるという取り組みを行っている。2020年11月の時点で、109の言語への翻訳が完了している。この試みは、現在のコロナウイルスの感染拡大を防ぐ役目を担うだけでなく、公衆衛生の基礎知識を多くの言語に翻訳することで、将来的に起こりうる新たな感染流行を防止する可能性を持つ。より一般的な観点からは、本試みを「言語学の研究成果を社会還元する一例」として位置づけることができる。 As soon as it became clear that the COVID-19 pandemic was a global situation, one question that sprung up among the linguistic community is whether there is any way in which we can use our research expertise to address problems related to the pandemic. In answer to this question, this paper reports on our ongoing multi-lingual initiative, “COVID-19 Myth Busters in World Languages,” in which we translate the list of myth busters related to COVID-19 issued by WHO into as many languages as possible, including a number of minority languages. As of November 2020, our list includes up to 109 languages. This initiative has the potential to lessen the further spread of the current COVID-19 pandemic, as well

	as to function as a preventive measure for a future pandemic by sharing basic information about public health. From the most general perspective, we situate the current project as a case in which we can make use of our expertise for the welfare of society, having broad impacts that go beyond the linguistics community.
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COVID-19 Myth Busters in World Languages: A Case for Broader Impacts of Linguistic Research during the COVID-19 Crisis[1]

Seunghun J. Lee (International Christian University / University of Venda)
Daehan Won (Studio C-clef)
Shigeto Kawahara (Keio University)

日本語要旨：新型肺炎コロナウイルスの世界的流行を受け、言語学のコミュニティの一部では、「我々の専門知識を、この世界的問題に対して何かしらの形で役立てることはできないだろうか」という問題が議論されるようになってきた。本論文では、この問題意識を背景とした、我々のアウトリーチ活動を紹介する。具体的には、WHOが発信している「コロナウイルスに関するデマ情報のまとめ」を出来るだけ多くの言語に翻訳し、無料で公開することで、コロナウイルスに対する正しい知識を多くの人に、それぞれの人の母語で届けるという取り組みを行っている。2020年11月の時点で、109の言語への翻訳が完了している。この試みは、現在のコロナウイルスの感染拡大を防ぐ役目を担うだけでなく、公衆衛生の基礎知識を多くの言語に翻訳することで、将来的に起こりうる新たな感染流行を防止する可能性を持つ。より一般的な観点からは、本試みを「言語学の研究成果を社会還元する一例」として位置づけることができる。

1 Many people have offered indispensable help for the development of this inherently collaborative initiative. Since the list is too long to be contained in one footnote, we provide our acknowledgement information in Appendix B and Appendix C. We thank Donna Erickson for proofreading the draft of this paper. All the links to external websites contained in this paper were last accessed and checked in November 2020.

Abstract: As soon as it became clear that the COVID-19 pandemic was a global situation, one question that sprung up among the linguistic community is whether there is any way in which we can use our research expertise to address problems related to the pandemic. In answer to this question, this paper reports on our ongoing multi-lingual initiative, "COVID-19 Myth Busters in World Languages," in which we translate the list of myth busters related to COVID-19 issued by WHO into as many languages as possible, including a number of minority languages. As of November 2020, our list includes up to 109 languages. This initiative has the potential to lessen the further spread of the current COVID-19 pandemic, as well as to function as a preventive measure for a future pandemic by sharing basic information about public health. From the most general perspective, we situate the current project as a case in which we can make use of our expertise for the welfare of society, having broad impacts that go beyond the linguistics community.

1. General Background

One general issue that comes up every so often in the linguistics community is whether—and how—linguistics research can have broad impacts that go beyond our scholarly community. In response to this question, some researchers are actively seeking ways in which results of linguistic research can be utilized for the benefit of society. The National Science Foundation (NSF) has also started emphasizing the importance of "broader impacts" of linguistic research.[2] To the extent that our research is partly supported by tax money directly or indirectly, it seems fair, at least to us, to assert that linguists should make an effort to contribute to the welfare of society.[3] The concept of "contributing to the welfare of society" may be one that is hard to define, and different scholars have different ways to approach this question; however, in the present context, it suffices to ask ourselves, "can linguistic research make this world a better/safer place to live"?

2 See: https://www.nsf.gov/pubs/2007/nsf07046/nsf07046.jsp

3 We are aware that not all linguists would agree with this statement, and we do not intend to impose our take on this issue on other scholars in the field.

These questions were made more pressing than ever to us during the COVID-19 pandemic; we find that it is a good time to ask ourselves why we are doing what we are doing in the face of the crisis that the whole world is suffering from. For example, in June 2020, *Linguistic Vanguard* announced call-for-papers for a special issue on "COVID-19 linguistics." One possible topic of this special issue listed in the announcement was "[how to make] use of linguistic expertise to address problems connected to the COVID-19 crisis" (quoted from their flyer). Similarly, the *Journal of Psycholinguistic Research* announced call-for-papers on the influence of COVID-19 on psycholinguistic research in May 2020 (Javier et al. 2020). To put the question in a concrete term, we can ask ourselves whether there is any way in which we can use our research expertise to address problems related to the COVID-19 pandemic. In response to this question, we would like to answer positively. We illustrate our answer by reporting our ongoing initiative, "COVID-19 Myth Busters in World Languages," which we believe instantiates a clear answer to this question.

2. COVID-19 Myth Busters in World Languages

This project is a multi-lingual, collaborative initiative to translate the list of myth busters related to COVID-19 issued by WHO[4] into as many languages as possible, including a number of minority languages. These translations are all made available in one place on the main project website (https://covid-no-mb.org), and there is an accompanying twitter account (https://twitter.com/CovidNoMB). The importance of this initiative lies in the fact that speakers of some of these languages do not have easy access to the information written in English. However, in order to minimize the spread of the current pandemic to the extent possible, it is critical that accurate information related to COVID-19 be conveyed to the speakers of many languages in an accessible manner in their native languages. In the face of the current global pandemic, such

4 The original text is available from the following website: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters.

information should ideally be translated into all languages that are currently spoken on the planet; realistically, it should be done for as many languages as possible.[5]

More generally speaking, information regarding public health—e.g. how to wash hands in a proper manner, as well as how (not) to sneeze or cough—is often yet to be translated into their community languages in a manner that is accessible to speakers of many underresouced languages. The spread of COVID-19 has quickly inspired various groups of people to address this problem. As soon as it became clear that COVID-19 was a global situation, various projects sprung up to inform the public. Translations Commons provided a web-based template that can be used to create a poster with five points that are basic for keeping COVID-19 at bay: (1) “Wash your hands,” (2) “Cough in your elbow,” (3) “Don't touch your face,” (4) “Keep distance,” and (5) Stay home.[6] The virALLlanguages project shares videos explaining COVID-19 in languages from Cameroon.[7] Making available such general information related to public health issues in their respective native language not only has the potential to contribute to minimize the further spread of COVID-19, but may also function as a preventive measure for a future pandemic which may happen again.

Viewed from another general perspective, translating myth busters on COVID-19 addresses one of the gaps in information sharing. Governments and organizations as well as projects mentioned above have been translating basic information about COVID-19 and prevention methods against COVID-19. The Endangered Languages

5 One may wonder whether we can relegate this task to machine translation, whose technology has been making remarkable progress in recent years. For the limitation of machine translation in this context, however, see the following Wired article (https://www.wired.com/story/covid-language-translation-problem), although their demonstration is admittedly informal.

6 https://translationcommons.org/covid19multilingual/

7 http://virallanguages.org/

Project serves as a clearing house for multilingual information.[8] Parenting resources during the COVID-19 pandemic recommended by WHO have also been translated by volunteers and organized by a team of Oxford researchers.[9] There is a non-profit group which has been translating general information regarding public health in languages spoken in Guatemala, with the following slogan: "everyone—no matter where they were born or what language they speak—should have the highest quality health care."[10] Myths related to COVID-19 were not part of these official narratives even though these myths may promote behaviors that would result in the spreading of the virus. In the era of unavoidable presence of fake news, it was timely to make accurate information available for speakers of underresouced languages. The importance of our initiative was quickly recognized by some media soon after we made our results publicly available; the list of such media coverage appears in Appendix A.

Some examples of the myths discussed by WHO are provided in (1):

(1) Some examples of the myths related to COVID-19 issued by WHO
    1. Exposing yourself to the sun or to temperatures higher than 25C degrees DOES NOT prevent the coronavirus disease (COVID-19).
    2. You can recover from the coronavirus disease (COVID-19). Catching the new coronavirus DOES NOT mean you will have it for life.
    3. Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort DOES NOT mean you are free from the coronavirus disease (COVID-19) or any other lung disease.

We are constantly expanding our coverage; as of November 2020, the list includes up

8 https://endangeredlanguagesproject.github.io/COVID-19/
9 https://www.covid19parenting.com/
10 http://www.wuqukawoq.org

to 109 languages; some of these languages are shown in (2), and the growth curve of the number of languages covered in this project is provided in Figure 1. Translation into many other languages is currently ongoing. Since the comprehensive list of the languages covered is constantly updated, we would like to direct the interested readers to the main website for the most updated coverage (https://covid-no-mb.org).

(2) Languages that have been translated as of November 2020 (non-exhaustive)

Acehnese, Angami, Arabic, Aragonés, Assamese, Asturiano, Bamum - Şûpămə̀m, Basaá, Bengali, Bodo, Burmese, Catalan, Chinese simplified, Chinese traditional, Drenjongke (Bhutia), Dutch, Dzongkha, English, Ewe, Finnish, French, German, Greek, Gurenɛ, Hausa, Hungarian, Indonesian, Iraqw, isiNdebele, isiXhosa, Italian, Japanese, Japanese Sign Language, Jinghpaw, Kam, Kiribati, Korean, Kurdish (Sorani), Lepcha, Likpakpaln, Low German Plattdüütsch , Malay, Malayalam, Mapudungun, Meeteilon, Mizo, Nepali, Northern Sotho, Norwegian, Nuosu Yi, Português Brasileiro,

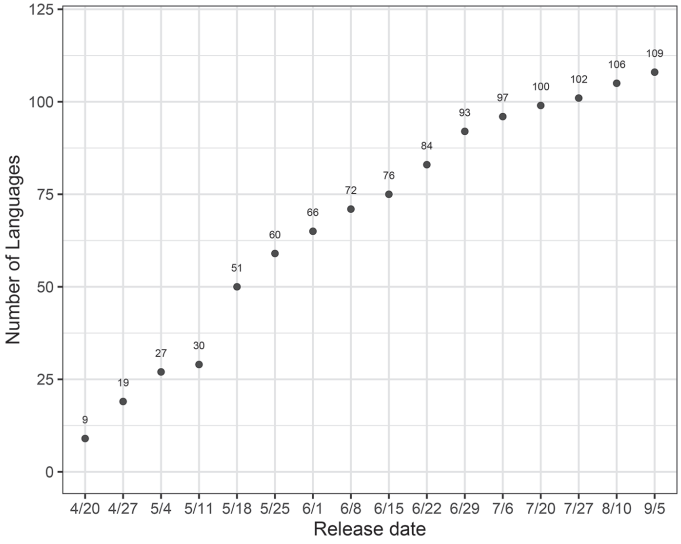

Figure 1: The growth curve of the number of languages covered in the initiative.

Romanian, Russian, Serbian, Sesotho, Shona, Siswati, Spanish, Swahili, Swedish, Tagalog, Tamil, Telugu, Thai, Tshiluba, Tshivenda, Twi, Uzbek O'zbekcha, Vietnamese, White Hmong, Xitsonga, Yoruba

We deploy a simple web interface, making use of colors and pictures to maximize the intelligibility and accessibility of the translations. Pictograms are added to draw attention to the information in the text. The web interface presents images that can be downloaded for sharing. Those who prefer a PDF file of all the images can also download the entire PDF file. A sample from the translation in Drenjongke (Bhutia, Sikkim/India) is provided in Figure 2. The pink text placed at the top is a translation of the title "Breaking myths regarding the coronavirus (adopted from WHO)." Numbers correspond to each myth, and the name of the language is written vertically on each image.

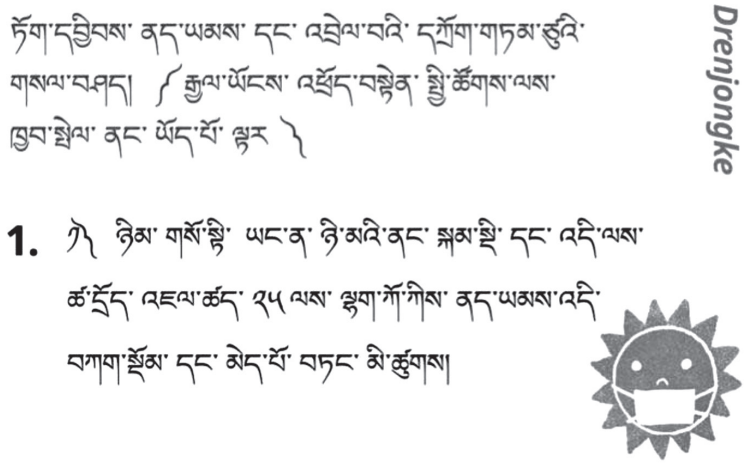

Figure 2: A sample illustration from the Drenjongke translation.

For some languages, audio versions of these myth busters are available since members of some speech communities are not used to seeing their own language in the written

form. Some languages have their own script (Lepcha or Nuosu Yi), but the script is not always widely read. The audios, made available on Youtube, have been popular for languages such as Angami (Nagaland, India) and Bodo (Assam, India).

Those who wish to contribute to expanding our coverage by translating the instructions into a new language can simply fill out a Google doc form, following the link that is provided in (3). These forms are available in English, French and Spanish. We hope that this paper itself encourages some readers to help expand the current coverage.

(3) The link to the submission form
https://docs.google.com/forms/d/e/1FAIpQLSergLVY0AEnlBjylXFrZ6y9c1aa_SDmIJVPZkefk9dpMtE4ag/viewform

3. Challenges we faced during the translation process

We faced several challenges during the translation process. First of all, translating some technical terms (e.g. the term “COVID-19” itself, UV lamps, thermometer) turned out to be difficult for some of these languages. In these cases, translators used multiple strategies; they simply used the English words, they transliterated the English words into their language and then added an explanation, or they used terminology that is as close as possible in their own language.

Setting up images with scripts that are not universally supported by all programs presented another set of challenges, and we addressed them by creating a PDF document using a guide image that allowed us to adjust the font size and margins of texts. The designer (the second author) then used images taken from the PDF file for the shareable images.

There are languages for which there are no scripts which are widely readable by

speakers; e.g. Lepcha and Drenjongke (Bhutia). There are even languages which do not possess an orthographic system, in which case we are encouraging them to submit sound files.

For the Japanese sign language, we exclusively make use of videos, which can be viewed on Youtube (https://www.youtube.com/watch?v=eeM70iqRsOo). The preparation of these materials faced some challenges as well. The amount of available information was considerably less for sign languages than other spoken languages, and new medical-related terms needed to be translated. To enhance the visibility and intelligibility, additional images were created to highlight visual cues in the presentation. The list of myths was rearranged so as to make it easier for signers to handle multiple topics. The result of these efforts can be considered to be a success: the video was viewed more than 3,000 times within three weeks after it was first made publicly available. It has been viewed about 4,000 times as of November 2020.

4. Conclusions

For this project, the myths were translated by volunteers who were genuinely interested in seeing their language in the list. When the project began with a few colleagues, we did not expect it to have resulted in such a long list of languages. We note that translation may not be the core of linguistic research, but the linguistics research community as a whole shows outstanding varieties in terms of researchers' linguistic and cultural backgrounds. Indeed, this project has been supported by a number of professional linguists, whose names can be found on the project website, as well as in Appendix B of this paper. Moreover, we have connections to speakers of communities with a diverse range of cultural and linguistic backgrounds, who have offered much needed help for this project (again, see Appendix B). Speakers of minority languages have long been providing us with important data for the development of linguistic theories; we believe that this is an excellent opportunity to

do what linguists can do to show our appreciation.

References

Javier, R.A., Lamela, M., Faber, A. *et al*. (2020). Special Issue on the COVID-19 Pandemic and Psycholinguistic Research: A Call for Papers. *Journal of Psycholinguistic Research* 49, 351–354, https://doi.org/10.1007/s10936-020-09704-9

Appendix A: The media coverage

The Tokyo Newspaper "Reaching out to speakers of minority languages" (2020/05/01). 東京新聞『コロナ情報　少数民族に届け』
https://www.tokyo-np.co.jp/amp/article/16968

A Wired article "Covid-19 Is History's Biggest Translation Challenge":
https://www.wired.com/story/covid-language-translation-problem/

A Korean article "A designer who faced the COVID-19 challenge" **코로나 19를 마주한 디자이너 ② 스튜디오 씨클레프**:
http://www.dnmd.com/html/dh/magazine01_view?idx=537&mode=lastest

Research activities related to COVID-19 at Keio University:
https://www.research.keio.ac.jp/external/pr/covid-19.html

Multilingual portal site for Olympic 2021:
https://www.2020games.metro.tokyo.lg.jp/multilingual/examples/index.html

Appendix B: The list of contributors

Triya Mutia & Zulfadli A. Aziz (Acehnese), Anjusha C. M. (Aḍiya), Engela de Villiers (Afrikaans), Jyoti Kumari (Angika), Mona Hassan Ahmed Sawy & Thajudeen A. S. (Arabic), Bidisha Buragohain (Assamese অসমীয়া), Solange Pawou Molu (Bamum – Ṣûpămɔ̀m), Mamta Yadav (Banarasi Bhojpuriv), Makasso Emmanuel-Moselly (Basaá), Anwesha Roy (Bengali), Manoj Baro (Bodo), Ne Myo Aung (Burmese), Guillem Belmar Viernes (Catalan), Byunggyu Kang & Hsu Chun Hua (Chinese 繁體), Alexander Angsongna (Dàgáárè), Kunzang Namgyal (Drenjongke/Bhutia), Josephine Matser (Dutch), Fuminobu Nishida (Dzongkha), Pascal Kpodo (Ewe), Tommi A. Pirinen (Finnish), Céleste Guillemot (French), Markus Pöchtrager (German), Pocket Theatre Cyprus Θέατρο Τσέπης (Greek), Samuel Awinkene Atintono (Gurenɛ), Muhammad Sulaiman Abdullahi (Hausa), Sophie Srishti Richa (Hindi), Vixay Vue (White Hmong), Judit Katalin Hollos (Hungarian), Zulfadli A. Aziz (Indonesian), Chrispina Alphonce (Iraqw), Rami Attappady (Iruḷa), Giuseppe Magistro (Italian), Kunihiko Kuroki 黒木邦彦 (Japanese), Ai Minakawa 皆川愛 (Japanese Sign Language 日本手話), Keita Kurabe & Lu Aung (Jinghpaw), Daniel TY Yang (Kam), B. S. Shivakumar (Kannada), Tomás Alberto Méndez López (K'iche'), Juan Ajsivinac (Kaqchikel), Tekonnang Timee (Kiribati), M. Rajakrishna & K. Maruthi Rao (Kolami), Kyoungwon Jeong 정경원 (Korean), K. Suryanarayana (Koya), Hemn Mahmood Aghabawa (Kurdish/Sorani), Valli Chinnaraj, Paloor (Kurumba), Pushpa Thomas

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