

Intuitions of native Japanese Sign Language signers on mouthing words with multiple pronunciations

Mouthings in sign languages are defined as mouth movements that are derived from spoken languages, as opposed to “mouth gestures” that do not appear to be related to spoken language (Boyes Bream 2001). Some of the critical roles that mouthings play are disambiguation, or “to specify or complement the meaning of the sign” (Schermer 2001: 277). If the sign’s meaning is potentially ambiguous, the signer may specify which word is being expressed by mouthing a spoken word. For example, in American Sign Language, PIECE and CAKE both may be signed in similar ways, so the signer may mouth “*piece*” or “*cake*” during manual production to disambiguate.

In spoken/written Japanese, many written words have two or more possible readings, because of the Japanese’s history of importing Chinese logographic symbols (known as ‘*kanji*’) along with Chinese pronunciations that are wholly unrelated to words native to Japanese. As a result, there may be several possible readings for a specific logograph - Chinese-derived or natively Japanese. Readings of *kanji* based on Chinese-derived pronunciations are called *on-yomi* and those based on native Japanese pronunciations *kun-yomi*. For example, the character for “west” (西) could be read *nishi* (kun-yomi), *sei*, or *sai* (both on-yomi), depending on the morphological environment where it is used.

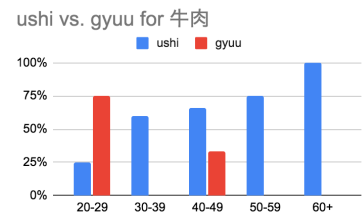
The guiding question of this study is how native Japanese Sign Language (JSL) users negotiate *kun-yomi* and *on-yomi*. Do they use multiple readings for certain *kanji*? Or do they choose one of them for a signed lexical item and apply it across all morphological environments without switching between the two? For example, would they mouth *nishi* for all instances of the JSL sign for “west,” or would they show a mix of *nishi* and *sei/sai*, depending on the compound word? Given that Oka & Bono (2019) have shown that older native JSL signers mouth less than younger generations, another question addressed by this study is whether the results would be impacted by the age of the signer. We hypothesize that native JSL users will strongly favor only one reading for all instances of a sign, regardless of the morphological environment, and that reading will usually be the more familiar kun-yomi, and that older generations will favor zero mouthing or kun-yomi. If our hypotheses are correct, they could be used as evidence that, despite being derived from spoken language, a mouthing may be divorced from the actual spoken word and become “frozen” with the manual sign, and there is no need to change the mouthing according to the morphological environment of the sign.

This experiment tested 24 native JSL signers, 12 male and 12 female, who varied in age between 20 to 70 years. A native JSL signer interviewed all of the participants using elicitation questions. In particular, the participants were asked to sign out 10 pairs of pictures, the first one representing the morphologically simple word, such as *cow* (牛: *ushi*) and the second one representing a morphologically complex word

such as *beef*, which is literally “cow” + “meat” in Japanese (牛肉: *gyuuniku*). The interviews were conducted on Zoom, and the specific mouthings for the target words were analyzed from the recordings.

Our findings confirmed our hypothesis that native JSL signers favored kun-yomi readings even when the spoken Japanese analogue would say it in the on-yomi reading. For example, the word *cow* (牛) is read *ushi* in spoken Japanese, and almost every signer mouthed at least an approximation of *ushi* when producing the manual sign. However, when they were prompted to sign out *cow+meat* (beef: 牛肉), which has a Japanese reading of *gyuuniku*, rather than mouthing the on-yomi *gyuu*, 16 out of 24 signers (67%) still mouthed *ushi*, and then *niku*. In total, for items that have the corresponding spoken Japanese in the on-yomi form, the signers favored the kun-yomi reading 60% of the time, and the on-yomi reading only 16% of the time. The remaining 24.4% did not produce any mouthing or used a different strategy such as classifier constructions.

Another interesting finding was that there were 3 instances where the younger generations used more on-yomi readings, while the older generations showed a marked preference for kun-yomi readings. The chart (on right) shows the mouthing results for the “cow” component of “beef” (牛肉: *gyuuniku*). Almost every signer above the age of 50 mouthed *ushi*, while 75% of the 20-29 age bracket mouthed *gyuu*. The discrepancy, also found in two other word pairs, suggests that while native JSL signers generally prefer kun-yomi readings for mouthings, this phenomenon may see a diachronic change in the years ahead.



In sum, our findings suggest that while a mouthing may be derived from a spoken language, it may become divorced from how the spoken word is used in certain morphological environments and provides support for the approach that a mouthing is frozen and linked to a sign’s lexical entry. However, future research is also needed to control for the modality of the interview, as it was done remotely on Zoom, and to test whether knowledge of *on-yomi* Japanese readings influence JSL mouthing production.

References

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