

Numeral Variants and Their Diachronic Changes in Japanese Sign Language, Taiwan Sign Language and Korean Sign Language



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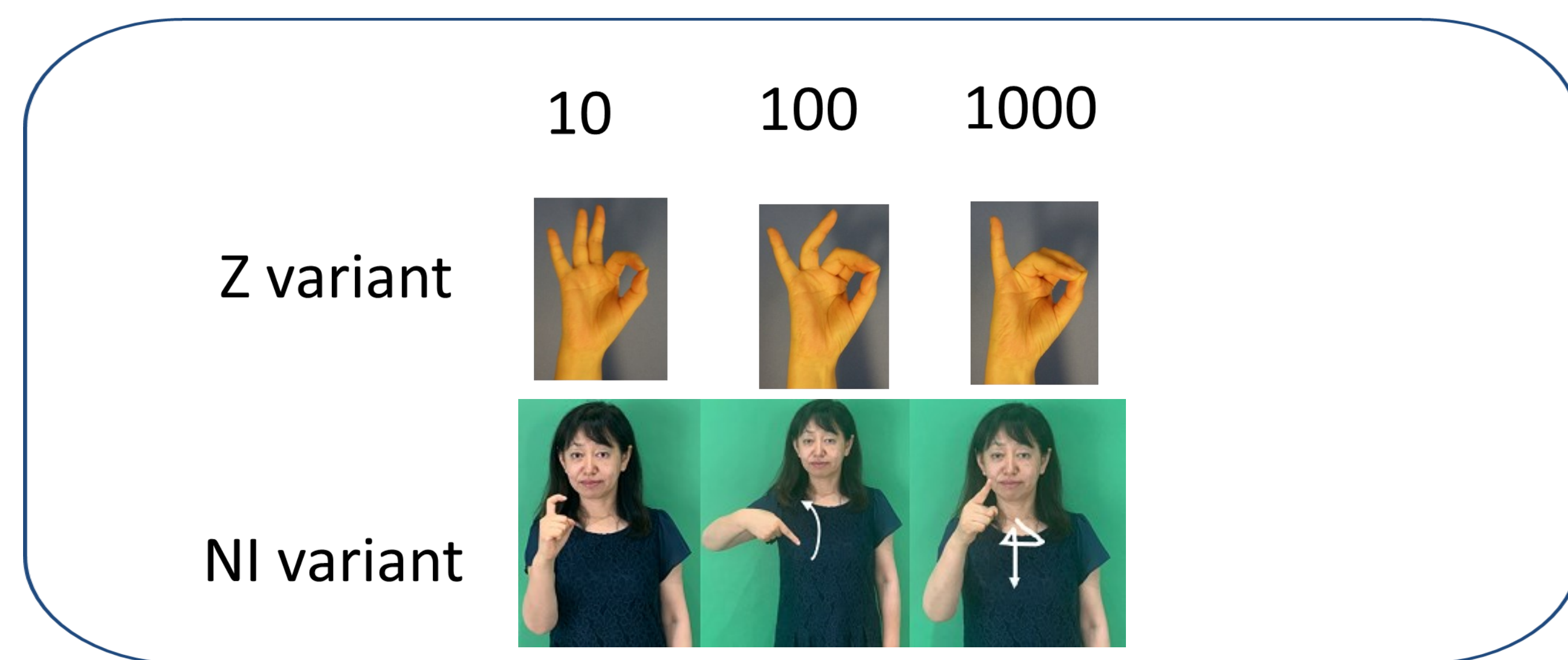
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Project Aim

This study is on diachronic changes in the number systems of Japanese Sign Language (JSL), Taiwan Sign Language (TSL), and Korean Sign Language (KSL), which together are called the JSL family (Fischer & Gong 2011), focussing on the numbers 10, 100, and 1000. There are few historical comparative studies on sign languages, so it is challenging to produce a methodology for this kind of research. This study has used historical papers from the 1930s to the 1960s as well as fieldwork data to see how the languages have changed. This is a new research project aiming to examine diachronic changes across three related languages.

Two numeral paradigms in JSL

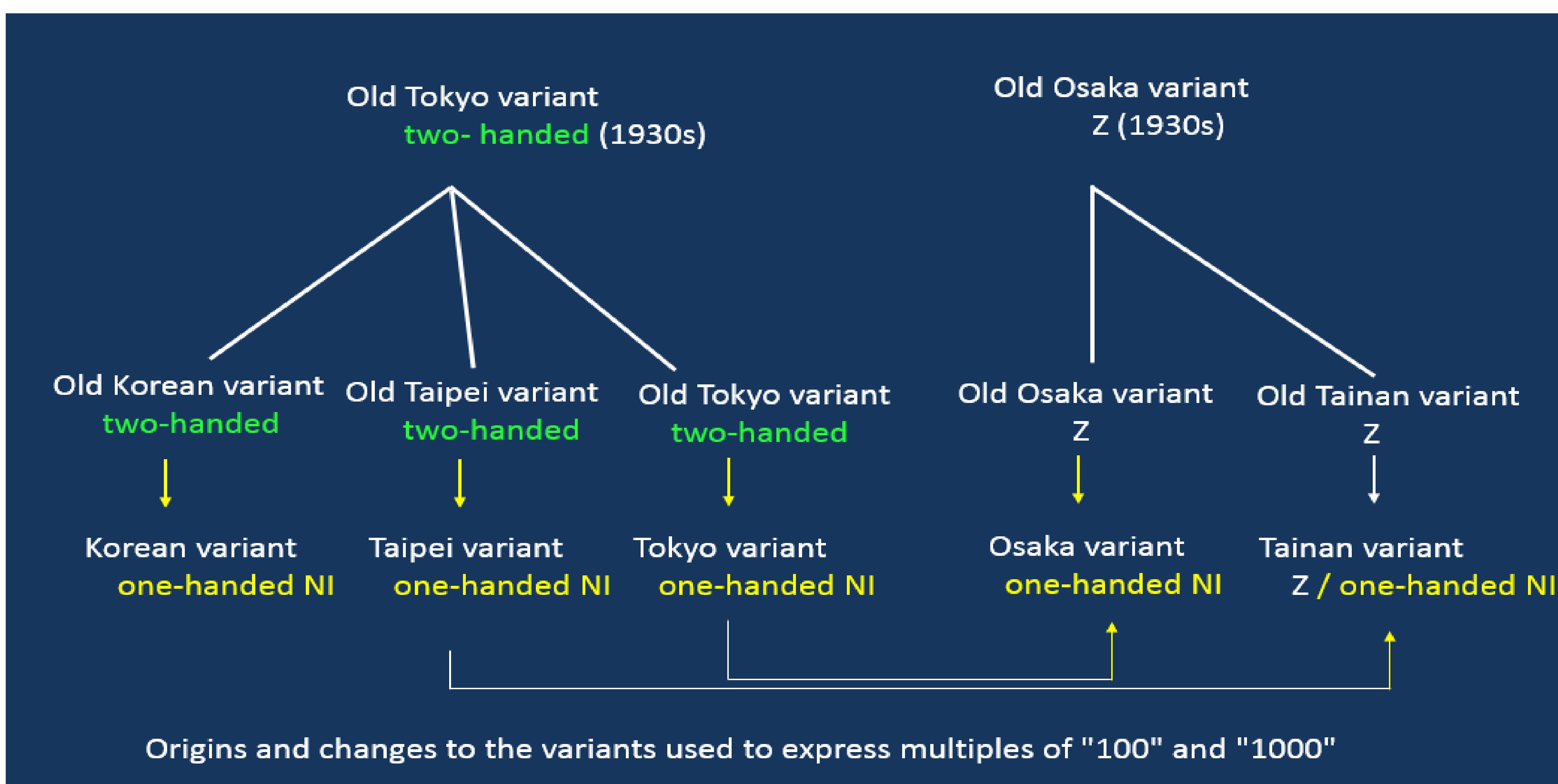
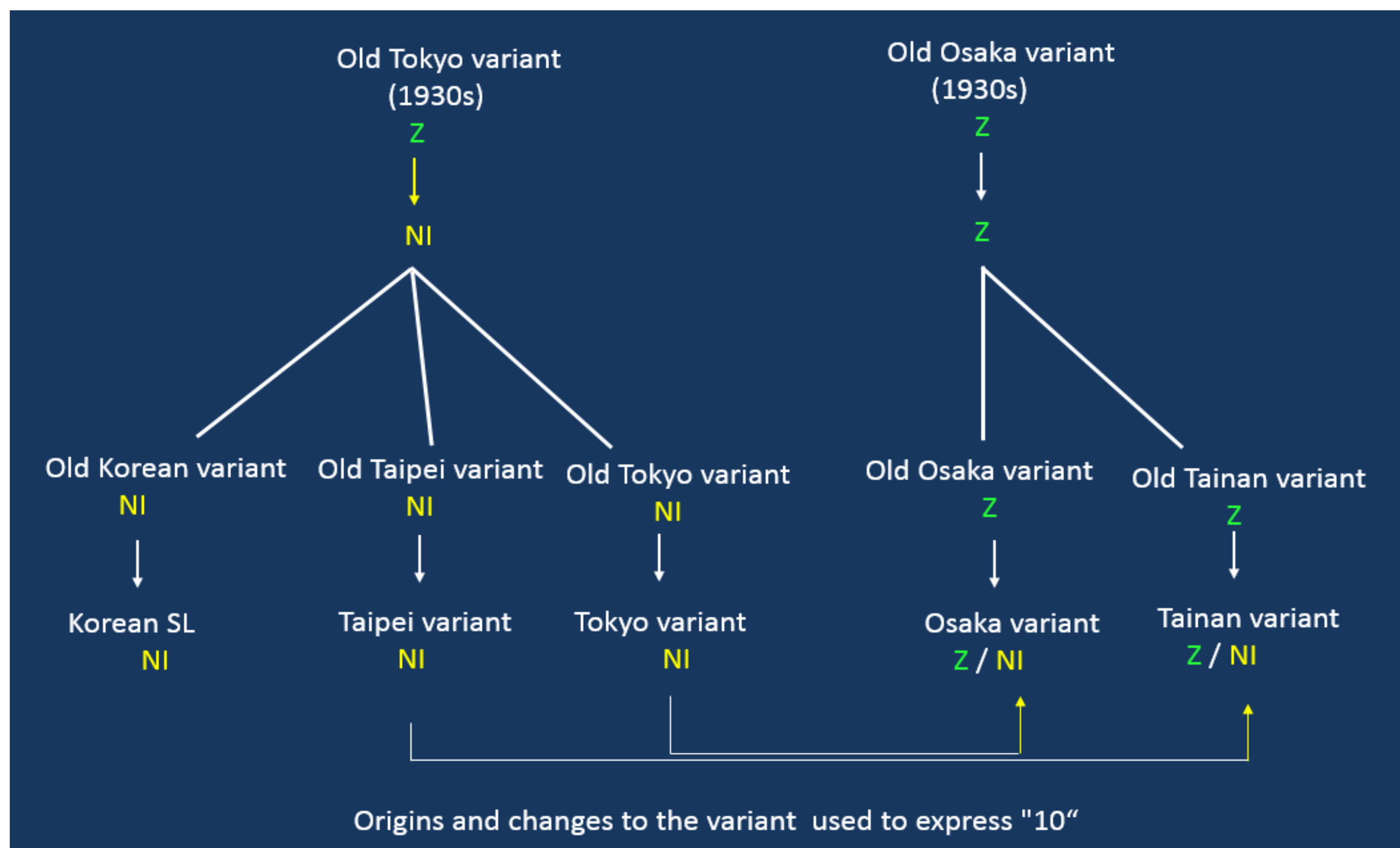
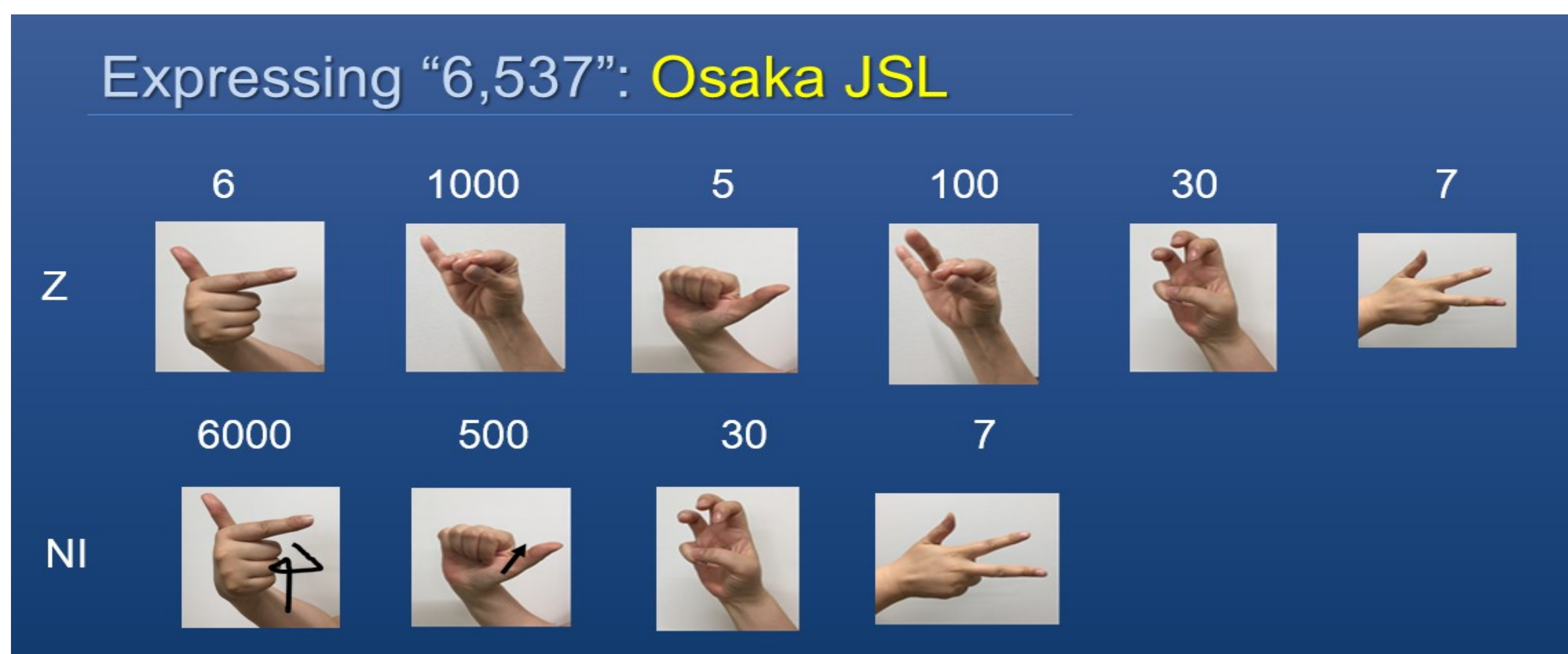
Number of zeros (Z variant) and numeral incorporation (NI variant): The Z variants are based on how many zeros appear in the number when it is written in the Arabic form. The NI variants use a range of ways of incorporating numerals: the first is digital, the second is based on taking money out of a wallet, and the third is based on the Kanji (Chinese character) symbol for '1000'.



Data and method

Historical materials from Japan were gathered, and fieldwork data were collected in Japan, Korea and Taiwan from October 2017 to August 2018. A 1937 paper on the Osaka variant was consulted, which said that teachers from the Osaka deaf school moved to Tainan, bringing the Z variant with them. A 1963 paper from Tokyo also formed part of the historical materials.

In Japan, the fieldwork took place in Tokyo(10 participants), Osaka(10) and Hakodate (6). In Taiwan, data were collected from Taipei(10) and Tainan(9), while in Korea fieldwork was carried out in Seoul(4), Busan(6) and Jeju(4). Pairs of participants did a matching game and a bargaining game.



Findings

- The expressions of "10" and its multiples developed differently from those of "100" and "1000" and their multiples.
- The NI variants are prevalent across South Korea because they were used by teachers at the deaf school in Seoul. Teachers and students from that school then returned home, or moved to regions elsewhere in the country, leading to the dispersion of these variants.
- These include changes from two-handed to one-handed expressions in Tokyo, Taipei and Korea, replacement of a sequential compound system with a numeral incorporation system in Osaka.
- The Z variant from Osaka was taken to Hakodate and Tainan by teachers of deaf children. But Osaka shifted to the NI variant. Hakodate uses a mixture of the two variants, and younger signers use the NI variant more.

Overall, the data show an increasing prevalence of the NI variant and decline in use of the Z variant. Possible reasons for this: multiples of the Z variant take longer to articulate than the NI variant, which uses numeral incorporation. Could it be that signers increasingly prefer NI over Z because NI is more efficient?

- The two forms of the NI variant from 1930s Tokyo are evident in modern Seoul and Taipei.
- Signers in Tokyo, Seoul and Taipei used two hands for these in 1930, and now one hand. The previous research also shows that lexical items tend to change from two-handed signs to one-handed signs over time (Battison 1978).



"100" (left) and "1000"(right) with two hands and one hand

Acknowledgements

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References

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