The Hong Kong Sign Language Browser

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Abstract

This paper describes the design of the Hong Kong Sign Language Browser which was established for providing accessible online resources on the lexical variations of HKSL in order to support the promotion of sign language and other sign-related services in the local community. With continuous funding support from the government since 2012, local Deaf organizations and Deaf signers of diverse backgrounds are invited to contribute their sign language knowledge in the data collection and evaluation process. Each year Deaf informants proficient in HKSL are invited to CSLDS to provide signing data to a pre-defined list of lexical targets. Their signing data are analyzed and variants are identified. These video data are then placed in an online platform for local Deaf organizations for rating and comments, and they can contribute data as well if there are additional variants not yet covered in the initial round of data collection. Once finalized, the lexical variants are placed in the Hong Kong Sign Language Browser for free public access. For each lexical target, each variant is indicated by a different color. Variants that are more commonly used and seen by Deaf organizations are listed first whereas the least common variants are listed last.

Keywords: sign language browser development, Hong Kong Sign Language, Deaf community involvement

1. Introduction

The Hong Kong Sign Language Browser (HKSL Browser) is an online database that aims at documenting lexical variants in HKSL for community use. It was established by the Centre for Sign Linguistics and Deaf Studies (CSLDS) of the Department of Linguistics and Modern Languages at The Chinese University of Hong Kong (CUHK) in 2012 with continuous funding support from the Labor and Welfare Bureau of the Hong Kong Special Administration Region Government. At present, there are 1,524 lexical targets with a total of 4,544 variants.

2. Objectives of Browser

The major objective of establishing the HKSL Browser is to provide publicly accessible online lexical resources for promoting HKSL in the local community and supporting the development of sign-related services such as sign interpretation and Deaf education. As a natural language, HKSL exhibits a considerable degree of lexical variations across signers, and these variants stem from differences of the signers' age and educational backgrounds, or are the natural outcomes of phonological processes (Sze, Lo, Lo & Chu 2012, 2013). Although variation is a normal linguistic phenomenon, many Deaf people in Hong Kong are worried about the existence of variations, which led to unnecessary conflicts among themselves from time to time. Hence, educating the Deaf community about the need to respect and document variation is another objective of the HKSL Browser. To ensure a wide coverage of variations in the Browser, local Deaf organizations and Deaf signers of diverse backgrounds are invited to take part in the data collection and evaluation process.

Although the HKSL Browser aims at documenting lexical variations, its design and data collection procedure are not intended to facilitate vigorous sociolinguistic research. In a typical sign language variation corpus that is research-oriented, selection of informants and data types are carefully controlled to ensure an adequate coverage of social factors that may possibly underlie linguistic variation. In the British Sign Language Corpus (Schembri, Fenlon, Rentelis, Reynolds & Cormier 2013), for instance, the Deaf informants were recruited from 8 different cities across the United Kingdom, representing a balanced mix of men and women of different age ranges, family backgrounds (e.g., whether their parents were deaf and hearing), job types and ethnic groups. In addition, they all participated in the same data elicitation tasks including story-telling, free conversation, answering interview questions, and producing a limited set of lexical targets (102 key concepts). However, as our major objective is to produce online lexical resources for the general public for supporting sign language related services, we prioritize the wide coverage of lexical entries and variants over a strict control of common sociolinguistic variables of the signing informants in our data collection process. As we will point out later in this paper, we invite Deaf informants who are known to be fluent HKSL signers and are active members in the local community, and all the lexical variants placed in the Browser are confirmed by local Deaf organizations to be authentic, existing signs currently in use in the community. While the entries are useful for linguistic analysis at the lexical level, the background information offered by the Deaf organizations at least offer some preliminary data on the distributions of the variants which may benefit future sociolinguistic research.

3. Data Collection

The data collection procedure consists of two parts: initial elicitation and formal shooting. For each round of data collection, Deaf fluent signers of different age ranges and different education backgrounds are invited to an interview during which our deaf researchers elicit the target signs from them through either pictures (e.g., lexical targets that can be pictorially represented) or group discussion (e.g., legal or medical concepts that require prior explanation and clarification before data elicitation). Ensuring the diverse backgrounds of the informants is of vital importance as we want to collect as many lexical variants as possible. The elicited data are then coded in ELAN and the Deaf informants will be invited to come to our research centre again for a formal shooting. For informants who do not want to be a signing model for privacy reason, their lexical variants will be demonstrated instead by one of our Deaf researchers in the formal shooting sessions. Efforts will be made to ensure that the signing replication is as exact as possible.

When ready, the formal video clips of these lexical variants will be uploaded to an internal online platform for the Deaf informants to check whether the signs are fine. Figure (1) is a screenshot of this Video Checking Platform. The informants can indicate if the video clips correctly illustrate their signing (particularly if their signs are demonstrated by our Deaf researchers rather than themselves being the signing model). They can indicate if the clips are correct or incorrect. They can also indicate if the signs are natural HKSL signs, or signed Chinese. Further comments can be added if necessary.

Figure 1: Screenshot of the Video Checking Platform

Clips that are unwanted by the Deaf informants will not be uploaded to the Browser. After the clips are checked, they will be further analyzed. The range of variants will be sorted out in our database, and their differences will be noted internally. The variants include both separate variants and phonological variants. Separate variants are those that are not phonologically related, and phonological variants share a certain degree of similarity in terms of the phonological parameters. This will be double-checked by another linguistically-trained researcher, with further discussion among several other Deaf colleagues if necessary.

The checked clips will then be uploaded to an evaluation platform called the Questionnaire Platform. For each lexical variant, there is a list of questions regarding its usage and distribution. Invitation is sent to all the Deaf organizations in Hong Kong, but participation is on a voluntary basis and a small amount of honorarium is offered as a token of gratitude for their participation. The participating organizations will be given a log-in account for completing the questionnaires. Their answers to the questions will be summarized and incorporated in the Browser for public viewing. Figure (2) is a screenshot of the first page of the questionnaire where all the variants are listed. To fill in the questionnaire for each sign, the informant needs to click the button on the right.

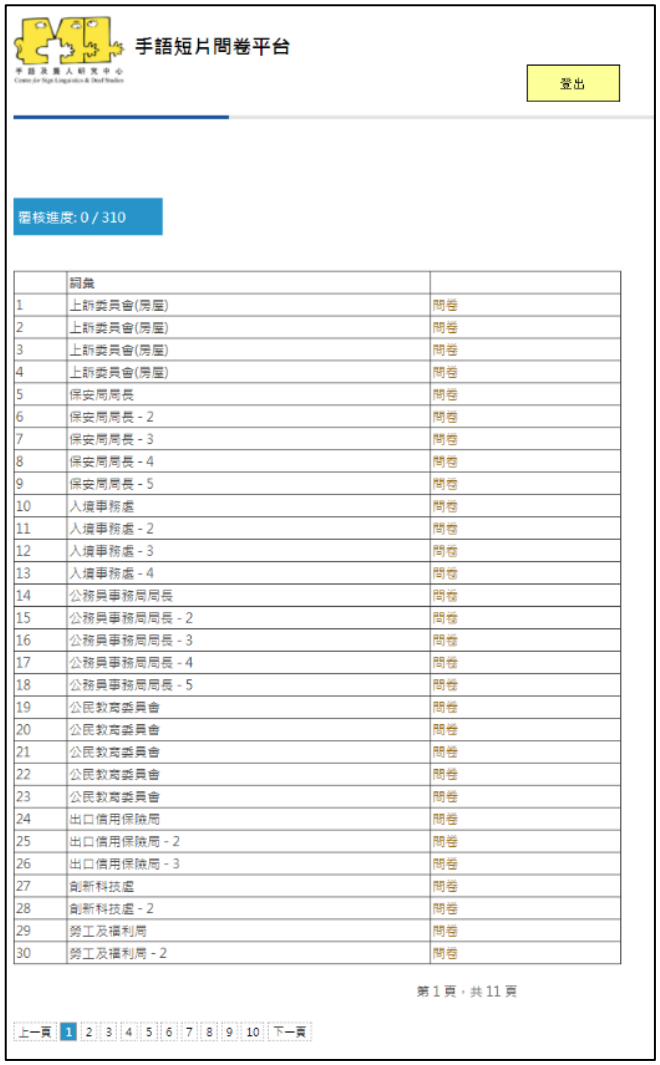

Figure 2: Screenshot of the Questionnaire Platform

These questions concern whether the informants have used or seen the signs before, whether they know the origin of the signs, and the background of signers who use these signs.

The Questionnaire Platform is an important component in the HKSL Browser as it collects feedback from different Deaf organizations to help us determine how common the variants are among local Deaf signers. Variants that are not used by any organizations and are seen by fewer than two organizations will not be listed in the Browser. The background information provided by the Deaf Organizations, e.g., whether the variant is a loan word from other sign languages, whether the variant is more commonly found among older or younger signers, etc., can help researchers and the general public to have a rough idea about the distribution of the variants. The signing preference of the participating Deaf organizations can be shown in the questionnaire results as well. Such information is found to be particularly useful to signing interpreters as they can now choose the appropriate variants when serving different parties. Besides, if the Deaf organizations notice that a variant has not yet been included in the Questionnaire Platform, they can upload a video clip as a suggestion and we will invite them to send a Deaf representative to do the formal shooting in the next round of data collection.

Figure (3) is a flow chart showing the sequence of questions on the Questionnaire Platform

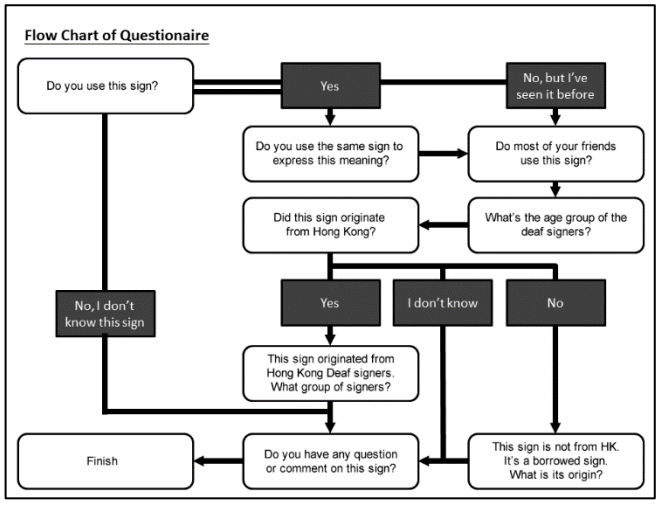

Figure 3: Flow chart of the questioning sequence on the Questionnaire Platform

Figure (4) is a screenshot showing the beginning of the Questionnaire. The video on the top is the target variant. The questions are presented in both written Chinese and HKSL on the left side of the platform. The answer of one question would lead to the next appropriate question, following the questioning flow chart presented in Figure (3).

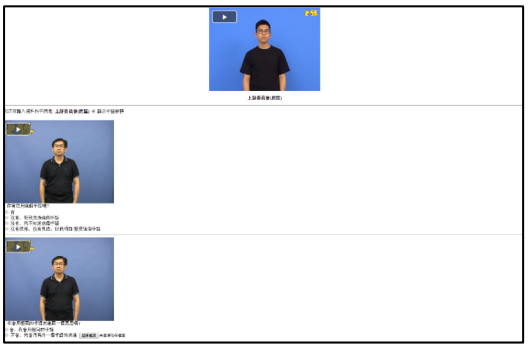

Figure 4: Screenshot of the Questionnaire Platform

4. Display of lexical variants in the Browser

After gathering all the data from the Questionnaire Platform, a Deaf researcher will help record the handshape features of the variants and the videos will be uploaded to HKSL Browser eventually. On the first page of the HKSL Browser, the purpose of the database (Figure (5)) and the explanation of lexical variations (Figure (6)) are offered in both written and signed language.

Figure 5: Introductory page of the HKSL Browser

Figure 6: Explanation of signing variation

Signs can be searched through written Chinese (i.e., no. of strokes involved), semantic categories (e.g., legal related concepts, transportation, education), and handshapes. The variants of each lexical target are represented by different colors, and they are ordered from left to right according to the degree of acceptability. Signs that are used and seen by

more Deaf organizations are placed earlier. Figure (7) shows that there are five variants for the target concept “mini-bus”, represented by different colors.

Figure 7: A sample of the lexical variants

For each variant, viewers can check the result of the questionnaires by clicking the link below the video. Another link is also provided for people to offer their comments to the signs. Figure (8) shows the questionnaire result page.

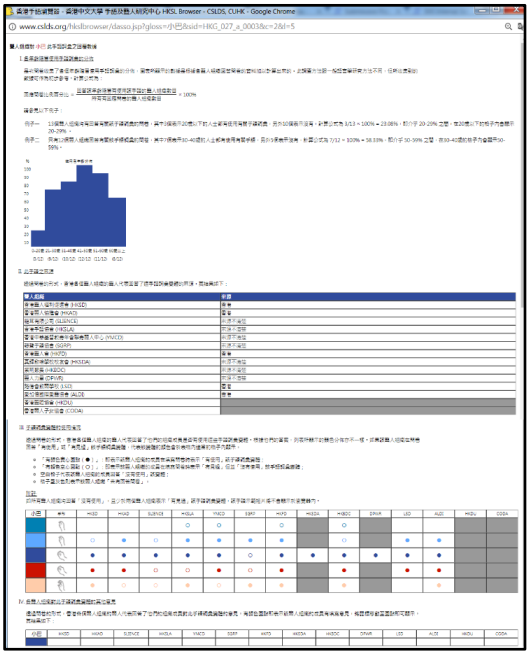

Figure 8: A sample of the questionnaire

5. Conclusive remarks

To sum up, the data collection and evaluation procedure of the HKSL Brower are designed to involve the Deaf signing community as much as possible and opportunities are provided for Deaf signers to contribute their sign language knowledge. Essentially, the HKSL Browser is the result of the concerted efforts of Deaf individuals as well as Deaf organizations in the community. It provides an open but monitored platform for Deaf signers to share and compare their lexical knowledge, which gradually helps to cultivate a sense of mutual respect and understanding among stakeholders with regard to lexical variations in HKSL. At present, there are 1,524 lexical targets with a total of 4,544 lexical variants. Since its first release in 2013, the Browser has been visited by 43,330 individuals (i.e., individual IP addresses). The total number of visits stands at 71,054, and the total number of sign viewing is 320,607. Every year CSLDS applies for government funding to expand the HKSL Browser. The new entries cover both daily signs and signs for specific purposes. For example, a specific set of signs related to the Olympic Games were added in 2016 to provide references for the TV interpreters for the sport events. In recent years, an increasing number of signs related to legal, social and political issues are added in response to the government’s commitment in increasing sign interpretation in public domains such as news and the Legislative Council meetings. Planning for other specialized areas is also underway for the sake of developing interpretation training programmes as well.

7. Acknowledgement

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8. References

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