Optimality Theory for Hong Kong Sign Language loan words

Introduction

As any natural language, Hong Kong Sign Language (HKSL) borrows words from its contact languages – sign or spoken – to express concepts for which no lexical signs yet exist. Sign languages lend words from across modalities, a phenomenon which, unfortunately, hitherto has not yet been attested for the world's spoken languages. HKSL's loan words can be divided into categories based on their source language and borrowing strategy. Source languages include American Sign Language (ASL), Japanese Sign Language (JSL), Chinese Sign Language (CSL), written Chinese, Cantonese, English, and Korean. Borrowing strategies are direct loans, (partial) iconically motivated signs (e.g., SALAD, Figure 1), (partial) Signed Chinese/English/Korean (e.g., TOAST, Figure 2), character signs (e.g., INTRODUCE, Figure 3), fingerspelling, and initialisation (e.g., CAPPUCCINO, Figure 4).

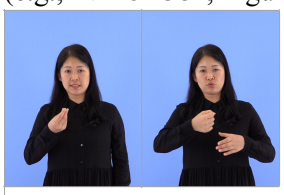

FIGURE 21: SALAD (沙律)

Signed Chinese for 沙 *sā* 'sand'; visual representation of stirring a spoon in a bowl; loan mouthing of 沙律 *sā léut* 'salad.'

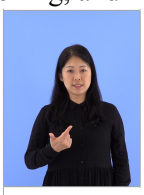

FIGURE 38: TOAST (多士)

Native HKSL sign MANY for 多 'many'; mouthing of 多士 *dō sih* 'toast.'

Figure 44: INTRODUCE (介)

Visual representation of the character 介.

FIGURE 54: CAPPUCCINO

Initialisation using the fingerspelling of C; mouthing of *cappuccino*.

What is interesting about the intra-modal direct loans is that HKSL adopts mouthing of the Cantonese translation equivalents. For example, CONCEPT (Figure 5) is a loan from ASL; HKSL adds mouthing of the Cantonese 概念 *koi nihm* 'concept.' The added mouthing facilitates the understanding of the borrowed sign. For intra-modally borrowed verbs (e.g., the ASL loan COMMUNICATE, Figure 6), the accompanying non-manuals are native HKSL aspectual markers (i.e., protruding lips).

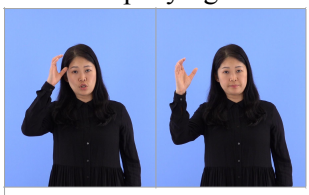

Figure 5: CONCEPT$_{ASL}$

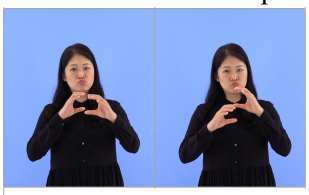

Figure 6: COMMUNICATE$_{ASL}$

However, there is only a negligible correlation between source language and adaptation strategy. Broadly speaking, Chinese loans are adapted as Signed Chinese or character signs, and English loans make more use of fingerspelling and initialisation. These patterns are unsurprising and uninteresting: Deaf people rely on visual information, i.e., the written form of a language. What is more important is that there is no discernible consistent relationship between the source language of a loan word and the borrowing strategy applied. In other words, there is no direct relationship between a loan word's source language and the cross-modal adaptation strategy used to render the loan word in HKSL.

Optimality Theory

It is therefore that I propose an Optimality Theory approach to capture and analyse the patterns in the dataset in a systematic and rule-based manner. These are the faithfulness and markedness constraints:

Faithfulness Constraints

1	Ident (modality)	Input and output are identical in terms of modality.
2	Ident (mouthing)	Sign language output resembles the mouth movements of the spoken language input.
3	Max (visual)	Visual properties of the input are maximally present in the output.
4	Uniformity	Output should preserve number of segments present in input.
5	Match (word < > sign)	Words in the input can be represented by existing, corresponding signs.

Markedness Constraints

6	* >2 signs	Output should not consist of more than two signs.
7	Agree (semantics)	Output should show a transparent relationship between referent and linguistic expression.

In the following tableaux, I use the examples of WATSONS and TOAST to show how the constraint ranking renders a cross-modal loan into HKSL. The constraint ranking of the tableau shows that faithfulness constraints are ranked higher than markedness constraints. This means that HKSL attempts to render loan words as faithful as possible.

屈臣氏 'Watsons'	1	5	3	4	7	6	2
direct loan	*!						
character sign			***!		*		
fingerspelling						*!	
➡ initialisation							
Signed Chinese +mouthing		***!			*		
Signed Chinese −mouthing		***!			*		*
partial Signed Chinese		**!			*		
iconic sign				*!			
iconic + Signed Chinese		*!					

FIGURE 58: WATSONS (屈臣氏)

WATSONS There are no sign equivalents for the Chinese 屈, 臣, or 氏, which is why *Signed Chinese* candidates are disqualified. None of the three characters can be visually represented using a *character sign* without violating sign-phonological constraints. *Fingerspelling* all segments of *Watsons* would violate constraint 6. An *iconic sign* would violate constraint 4 by merging the three segments present in the input. The *fingerspelling* and *initialisation* candidates do not violate constraint 7 because *Watsons* is a name that forms a direct semantic association with the referent.

多士 *dō sih* 'toast'	1	5	3	4	7	6	2
direct loan	*!						
character sign			**!		*		
fingerspelling			*!		*		
initialisation			*!		*		
Signed Chinese +mouthing		*!			*		
Signed Chinese −mouthing		*!	*		*		*
➡ partial Signed Chinese					*		
iconic sign				*!			
iconic + Signed Chinese			*!				

TOAST full *Signed Chinese* candidates violate constraint 5 because there is no HKSL sign equivalent for the character 士. The two candidates that incorporate iconic, new signs violate constraint 4 by not fully representing all input elements in the output. The winning candidate, *partial Signed Chinese*, violates this same constraint but to a lesser extent because all input elements are still represented through the mouthing of source language *dō sih*.

Conclusion

In conclusion, the OT approach shows that there are clear rules (or constraints) that govern cross-modal loan word adaptation in HKSL. The pattern the OT analysis exposes is one that favours source-faithful renditions over the usually favoured modality-specific iconic word-formation strategies common in sign languages.