

## Rightward movement of wh-elements in Japanese Sign Language: A preliminary study (English)

Under the generative framework (Chomsky 1995a/b, 2000, 2001, 2004 etc.), the derivation of a wh-sentence is considered to involve overt or covert movement of a wh-operator to the sentence peripheral position, i.e., wh-movement. Theoretically, the operation of movement itself can be either rightward or leftward. However, there is a puzzling dichotomy between sign and spoken languages when wh-elements are overtly displaced from their original positions: the wh-final construction is common in sign languages (Zeshan 2006, Cecchetto et al. 2009, etc.), contrary to spoken languages where overt wh-movement is leftward. Hence, one of the major theoretical issues concerning wh-sentences in sign languages is whether the wh-final construction are derived by rightward wh-movement (Cecchetto et al. 2009, Neidel et.al. 1998), or by an operation different from wh-movement (Petronio and Lillo-Martin 1997 (henceforth P&L-M)). In the latter approach, it is claimed that in American Sign Language (ASL) (P&L-M) and in Brazilian Sign Language (LSB) (Quadros 1999), wh-words are actually raised to  $C^0$  which has the [+focus] feature in the sentence final position. This derives the 'Focus Double' construction, where non-phrasal wh-expressions (e.g. *WHO* and *WHAT*) as well as non-wh-words (e.g. a verb or the negative head) appear in the final position.

In previous research of Japanese Sign Language (*Nihon Shuwa*), which is an SOV language, it has been pointed out that wh-finals are common in matrix sentences (1), particularly when the non-manual marker (henceforth, NMM) for wh-questions does not spread over the entire sentences (Morgan 2006, Fischer and Gong 2010, Kimura 2011, Akahori and Oka, 2011). Few studies of embedded wh-constructions, however, have been conducted. The current paper presents a preliminary analysis of JSL wh-sentences, in particular, those containing indirect wh-questions selected by verbs such as *WANT-TO-KNOW* and complement clauses selected by the so-called bridge verbs. In the wh-sentences examined here, the wh-NMM ( $NMM_{WH}$ ) co-occurs with the wh-expressions, whereas NMM for interrogatives ( $NMM_Q$ ) co-occurred with the sentence final finger pointing. The data is provided by a native signer whose parents and siblings are also deaf, originally from Okinawa.

The current study reveals that the final wh-elements in JSL behave in the same way as those in ASL/LSB in that they cannot be phrasal (2). Furthermore, JSL disallows the non-wh Focus Double construction (3). Wh-doubles, however, are possible in JSL (4), where the 'weak' wh-word appears in-situ, while the final wh-word is pronounced with a larger and clearer movement. This phonological difference suggests that the weak form in-situ is not a word, but a copy of the item overtly moved rightward. The initial-wh and wh-in-situ (unaccompanied by any copy/double) are rejected by our informant (5-6).

As shown in (7-14), the distributions of wh-words in the embedded contexts are basically same as in the matrix sentences. The analysis of the data indicates that movement of wh-words must overtly take place toward the final position in JSL. Hence, the rightward movement of wh-elements should be considered as an option available in SOV languages which do not have the Focus Double construction. (495 words)

NMM<sub>TOP</sub>: head nod and pause, NMM<sub>WH</sub>: raised eyebrow, NMM<sub>Q</sub>: opening eyes wide, #: phonologically weak

- (1) **Matrix wh-FINAL**: \_\_\_\_\_TOP    \_\_\_WH \_\_\_Q  
TANAKA IX<sub>3(TANAKA)</sub> MAKE WHAT IX<sub>3(TANAKA)</sub> ‘What does Tanaka make?’
- (2) **Matrix wh-FINAL (phrasal wh)**:\*TANAKA IX<sub>3(TANAKA)</sub> BUY BOOK WHICH IX<sub>3(TANAKA)</sub> ‘Which book does Tanaka buy?’  
\_\_\_\_\_TOP    \_\_\_WH \_\_\_Q
- (3) **Matrix non-wh-DOUBLE**: \*TANAKA IX<sub>3(TANAKA)</sub> COME SCHOOL COME IX<sub>3(TANAKA)</sub> ‘Tanaka COMES to school.’  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_WH \_\_\_Q
- (4) **Matrix wh-DOUBLE**: TANAKA IX<sub>3(TANAKA)</sub> #WHAT MAKE WHAT IX<sub>3(TANAKA)</sub> ‘What does Tanaka make?’  
\_\_\_\_\_WH    \_\_\_\_\_TOP    \_\_\_Q
- (5) **Matrix wh-INITIAL**:\*WHAT TANAKA IX<sub>3(TANAKA)</sub> MAKE IX<sub>3(TANAKA)</sub>  
\_\_\_\_\_TOP    \_\_\_WH    \_\_\_Q
- (6) **Matrix wh-IN-SITU**:\*TANAKA IX<sub>3(TANAKA)</sub> WHAT MAKE IX<sub>3(TANAKA)</sub>
- (7) **wh-DOUBLE with long-distance wh (wh-FINAL in the complement clause & wh-FINAL in the matrix)**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_WH \_\_\_Q  
TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY INCREASE WHAT] IMAGINE \*(WHAT) IX<sub>3(TANAKA)</sub>  
‘What does Tanaka imagine the library increases?’
- (8) **wh-TRIPLE with long-distance wh (wh-DOUBLE in the complement clause & wh-FINAL in the matrix)**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_WH    \_\_\_\_\_WH \_\_\_Q  
TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY WHAT INCREASE WHAT] IMAGINE \*(WHAT) IX<sub>3(TANAKA)</sub>
- (9) **wh-INITIAL in the complement clause**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_Q  
\*TANAKA IX<sub>3(TANAKA)</sub> [WHAT LIBRARY INCREASE] IMAGINE IX<sub>3(TANAKA)</sub>
- (10) **wh-IN-SITU in the complement clause**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_Q  
\*TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY WHAT INCREASE] IMAGINE IX<sub>3(TANAKA)</sub>
- (11) **wh-FINAL in the indirect wh-question**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH  
TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY INCREASE WHAT] WANT-TO-KNOW IX<sub>3(TANAKA)</sub>  
‘Tanaka wants to know what the library increases.’
- (12) **wh-DOUBLE in the indirect wh-question**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH    \_\_\_\_\_WH  
TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY WHAT INCREASE WHAT] WANT-TO-KNOW IX<sub>3(TANAKA)</sub>
- (13) **wh-INITIAL in the indirect wh-question**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH  
\*TANAKA IX<sub>3(TANAKA)</sub> [WHAT LIBRARY INCREASE] WANT-TO-KNOW IX<sub>3(TANAKA)</sub>
- (14) **wh-IN-SITU in the indirect wh-question**:  
\_\_\_\_\_TOP    \_\_\_\_\_WH  
\*TANAKA IX<sub>3(TANAKA)</sub> [LIBRARY WHAT INCREASE] WANT-TO-KNOW IX<sub>3(TANAKA)</sub>

**Selected References:** Chomsky, Noam (2000) Minimalist Inquires: The framework. In Martin, Roger, David Michaels, Juan Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89-115. Cambridge, MA: MIT Press./Cecchetto, Carlo, Carlo Geraci, and Sandro Zucchi. (2009) Another Way to Mark Syntactic Dependencies: The Case for Right-Peripheral Specifiers in Sign Languages. *Language* 85:2, 278-320. /Fischer, Susan and Qunhu Gong. (2011) Variation in East Asian Sign Language Structures. in Diane Brentari (ed.) *Sign Languages*. Cambridge University Press: Cambridge, UK. 499-518./Morgan, Michael W. (2006) Interrogatives and Negatives in Japanese Sign Language. in Ulrike Zeshan (ed.) *Interrogative and Negative Constructions in Sign Languages*. Ishara Press: Nijmegen: The Netherlands. 91-127./Neidel, Carol, Dawn MacLaughlin, Robert G. Lee, Benjamin Bahan and Judy Kegl (1998) The Rightward Analysis of wh-Movement in ASL: A Reply to Petronio and Lillo-Martin. *Language* 74:4, 819-831./Petronio, Karen and Diane Lillo-Martin. (1997) Wh-Movement and the position Spec CP’ evidence from American Sign Language. *Language* 73: 18-57./Quadros, Ronice Müller de. (1999) *Phrase structure of Brazilian Sign language*. Doctoral dissertation. Pontificia Universidade Católica do Rio Grande do Sul.