

## **Transparency and Modality: Second Language Acquisition of Placement in ASL**

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In learning how to express placement events (e.g. “the woman put the cup on the table”) in a second language (L2), learners must not only learn the appropriate vocabulary in the target language but may also need to reorganize semantic distinctions within their conceptualization of placement events. Many learners transfer semantic boundaries from the L1 onto the L2, resulting in non-native like use of placement verbs [1, 2]. Moreover, there is evidence from co-speech gesture that even when learners use target-like speech, the mental reorganization of this domain to align with the L2 system may be incomplete [1]. Currently unknown is whether target-like placement descriptions are equally challenging in a different-modality L2 as in a same-modality L2. Sign languages are often highly iconic [3] and placement descriptions tend to involve handshapes reflecting visual properties of their referents. This concrete link between elements of the world and their linguistic encoding may facilitate acquisition of placement verbs in a signed compared to a spoken L2. Furthermore, once (partially) acquired, the L2 semantic distinctions may come to influence the L1 and this, too, could differ as a function of language modality.

The current study investigated whether hearing intermediate L2 learners of American Sign Language (ASL) show difficulty acquiring target-like placement descriptions in a language that is typologically different from their native language, English. We also asked if there was evidence of bidirectional transfer, that is, whether learning ASL affected placement descriptions in the native language. Unlike English, which uses a general placement verb ‘put’, ASL combines general placement verb roots (*MOVE/PUT*) with different handshapes depending on properties of the figure object (Figures 2 and 3). We hypothesized that the iconicity and semantic transparency of ASL placement expressions would result in the L2 learners exhibiting more varied verb use with distinctions based on object properties, compared to expectations from spoken L2 learning. Based on previous work finding L2 ASL influences on general co-speech gesture use in the native language [4, 5], we also expected the learners to gesture more in English about the object being placed (the figure object) and less about the general direction of the placement action compared to non-signing native English speakers.

Eight L1 English-L2 ASL language users were administered a director-matcher task, in which they described the placement of 25 common objects to a confederate. The participants completed the task in ASL and in English (order was counterbalanced across participants). We also tested eight monolingual English speakers and two Deaf, native ASL signers on the same task. We analyzed speech, sign and gestural expressions of placement from the task and compared the results between groups. In ASL, both native and L2 signers primarily used the verbs *MOVE* and *PUT* (Table 1). Both groups also generally incorporated handshapes showing handling of the figure object, suggesting that the L2 learners’ semantic organization in ASL is similar to what we expect Deaf signers to look like based on the literature and to the two native signers tested here (Table 2). In English, monolinguals as well as L2 learners preferred the general caused motion verb *put* (Table 3). However, the gesture results showed more gestures about the figure object than about direction in the L2 signers (Figure 1). Statistical tests revealed a marginally significant effect of group ( $z = -1.714$ ,  $p = 0.087$ ). These results suggest that the acquisition of target-like placement distinctions may be less challenging for L2 learners of a signed compared to a spoken language, all else being equal. In addition, the results offer some evidence that learning the distinctions relevant to placement in the L2 may come to affect how placement is conceptualized in the L1 as well. These findings suggest that semantic reorganization in the placement domain may differ as a function of modality, but more work is needed to determine whether a similar pattern of acquisition and effect on the L1 is observed in a spoken L2 with semantic transparency in placement verbs that is comparable to ASL.

## References

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**Table 1. Verb frequencies in ASL by non-signers and L2 signers**

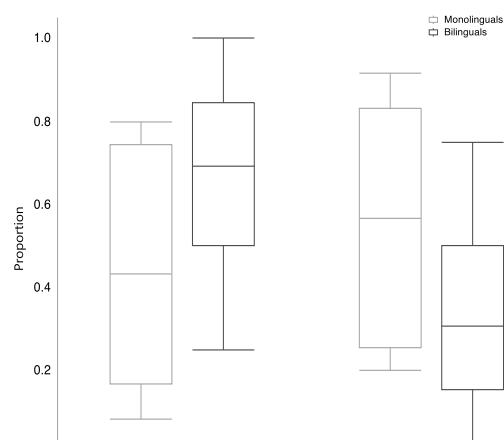
	Native signers		L2 Signers			
	Mean (N)	%	SD	Mean (N)	%	SD
Move	.67 (33)	.24	.35(64)	.29		
Put	.19 (9)	.21	.35(66)	.17		
Hang	.10 (5)	.03	.05 (9)	.05		
Drape	.02 (1)	.03	.03 (6)	.04		
Go	.02 (1)	.03	.00 (0)	.00		
Be-On	.00 (0)	.00	.18 (32)	.21		
Set	.00 (0)	.00	.04 (8)	.08		

**Table 2. Classifier incorporation by verb and group<sup>1</sup>**

	Native signers		L2 Signers			
	Mean (N)	%	SD	Mean (N)	%	SD
Move	.89 (29)	.04	.72 (37)	.36		
Put	1.00 (9)	.00	.90 (62)	.16		
Hang	.17 (1)	.24	.90 (8)	.22		
Drape	1.00 (1)	-	1.00 (6)	.00		
Be-on	NA		NA	.25 (6)	.38	
Set	NA		NA	1.00 (8)	.00	

**Table 3. Verb frequencies in English by monolingual non-signers and L2 ASL-English bilinguals**

	Non-signers		L2 signers			
	Mean (N)	%	SD	Mean (N)	%	SD
Put	.69 (129)	.17	.63 (120)	.24		
Move	.09 (16)	.04	.14 (27)	.18		
Place	.07 (13)	.18	.08 (15)	.12		
Hang	.07 (14)	.04	.06 (11)	.04		
Set	.06 (11)	.09	.04 (8)	.08		
Be	.02 (3)	.04	NA	NA		
Drape	.01 (2)	.03	.02 (3)	.03		
Other	.02 (3)	.02	NA	NA		
Stick	NA		NA	.02 (4)	.04	



**Figure 1. Proportion figure object and path/direction gestures in ASL-English bilinguals vs. English monolinguals**

<sup>1</sup> 'GO' is excluded from the table because it cannot incorporate a classifier

Lay    NA            NA    .01 (2)        .02



**Figure 2.** Native ASL signer describing the placement of a bowl on a table, using the verb MOVE with an incorporated classifier handshape showing how a bowl-like object is handled.



**Figure 3.** L2 signer describing the placement of plates on a table, using the verb PUT, incorporating the sign for PLATE