Learning ASL as a late second language depends on the strength of the first language foundation

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Highlights

- **LANGUAGE FOUNDATION STRENGTH**: Of all the participants who learned ASL as a late second language, the deaf and hard of hearing (DHH) signers with the lowest scores for English comprehension also scored the lowest for ASL comprehension (Fig. 4 & 5).
- **UNPREDICTABLE VARIABILITY:** DHH signers who learned ASL as a late second language had the most varied results on the English reading comprehension task, despite all participants reporting English as a first language (Fig. 4).
- **PARENTAL HEARING STATUS:** Deaf early ASL/English bilinguals performed well on both the English and the ASL tasks (Fig. 4 & 5). The majority of these participants had *hearing* parents (Table 1).

Background

- Using only spoken English with deaf and hard of hearing (DHH) children is sometimes justified with the claim that the window for learning English is *shorter* than for American Sign Language (ASL) (Sugar & Goldberg, 2015).
- Others argue that because spoken language is less accessible than signed language, using only spoken English has negative consequences for language development (Hall, Hall & Caselli, 2019).
- Many DHH people therefore learn ASL as a late second language (De Meulder, 2018). However, studies suggest that second language learning depends on first language skill (Sparks et al. 2008).

Does a DHH person's skill in English as a first language support learning ASL as a second language?

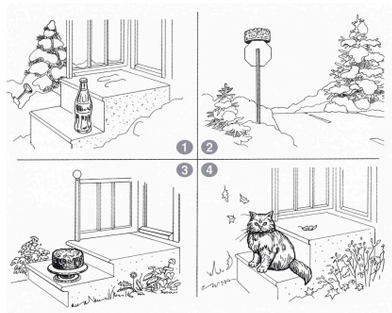
Participants, Table 1

Group (n)	DHH L2 (n=11)	Hearing L2 (n=9)	Deaf Early Bilinguals (n=7)
Hearing status	Mild to profound	Hearing	Profound
1st language	English	English	English & ASL
2nd language	ASL	ASL	—
Age started signing Avg, (Range)	18.5 (15-25)	17.7 (15-22)	0.4 (0-3)
Yrs signing Avg, (Range)	3.5y (2-6y)	4.5y (2-8y)	24.1y (22-26y)
Parental hearing status	6 H 3 DHH 2 mixed	9 H	5 H 2 DHH

Tasks

English Reading Comprehension, Fig. 1

PIAT-R Subtest (Markwardt, 1989)



"A cake is sitting on the step."

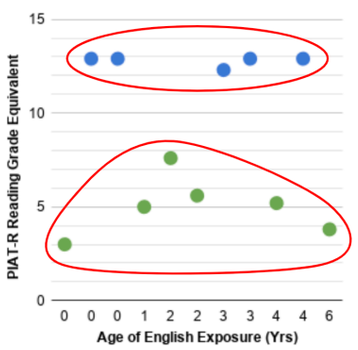
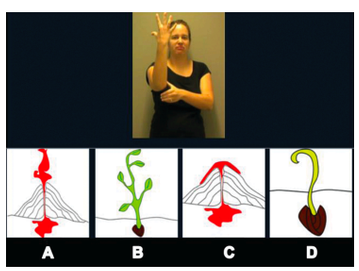


Fig. 2 Individual scores on the reading task by DHH signers who learned ASL as a late second language, ordered by reported age of English exposure.

Both tasks are multiple-choice comprehension tasks that were chosen because they are visually accessible to all participants (Figs. 1 & 3).

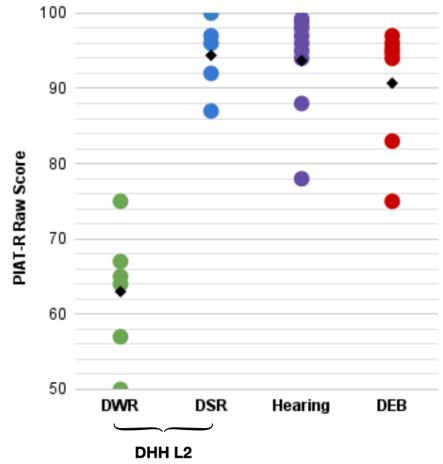
- DHH signers who learned ASL as a late second language formed two clusters on the reading task (Fig. 2): deaf stronger readers (n=5) & deaf weaker readers (n=6).
- Yet, deaf stronger & weaker readers were not significantly different in their age of first exposure to English (Strong $Mdn_{age/start}$=3y; Weak $Mdn_{age/start}$=2y; Mann-Whitney U=13.5, p=0.857, n.s.).
- Deaf stronger readers, deaf weaker readers & hearing signers did not differ significantly in their years of ASL experience (Kruskal-Wallis, $H(3)$=1.6, p=0.449, n.s.).

ASL Comprehension, Fig. 3 *ASL-CT (Hauser et al., 2016)*



Results

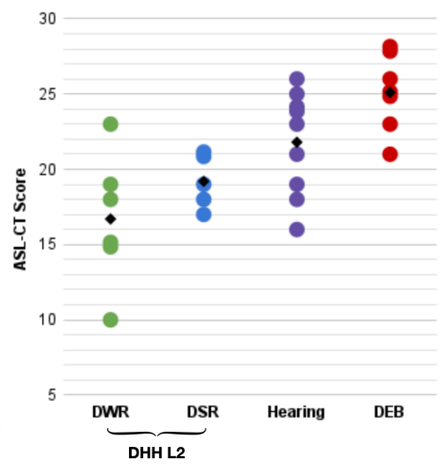
English Reading Comprehension (*PIAT-R*), Fig. 4



Deaf weaker readers (Mdn 64.5) scored significantly *lower* on the reading task than all other groups:

- Deaf stronger readers (Mdn 96; Mann-Whitney (M-W) U=30, p=0.008)
- Hearing signers (Mdn. 96; M-W U=0, p=0.002)
- Deaf early bilinguals (Mdn. 95; M-W U=0.5, p=0.004)
- Similar results from deaf early bilinguals and hearing signers suggests that success on the task does not depend on access to sound-based phonology.

ASL Comprehension (*ASL-CT*), Fig. 5



Deaf weaker readers (Mdn 16.5) scored significantly *lower* on the ASL task than two other groups:

- Hearing signers (Mdn. 23; M-W U=8.5, p=0.034)
- Deaf early bilinguals (Mdn. 25; M-W U=1.5, p=0.007)
- Deaf stronger readers (Mdn. 19) fell between deaf weaker readers (M-W U=21, p=0.317) and hearing signers (M-W U=12, p=0.184).

The window for DHH people to learn ASL is not longer than it is for English.

Early, accessible language may lead to better outcomes in either first language acquisition or second language learning.

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