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The phonology of French Sign Language (LSF) : non-sign repetition and discrimination tests

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I. The assessment of LSF skills : a short review

No specific test operational enough that assesses linguistic abilities in LSF.
Two tests developed: lack of several methodological features for the first one (too long for caretakers to administer, need to have a strong linguistic knowledge, etc. ; TELS, 2001) and failure to adapt the second one (LSF Receptive Skills test adapted from BSL Receptive Skills test, 2010).
As a result, caretakers, teachers and others transpose vocal tests to SL tests without taking into account the linguistic specificities of SL

Coutin et al., 2010 ; Niederberger et al, 2001; <http://www.signlang-assessment.info/>

II. Assessment of phonological skills in sign language

In vocal languages, the non-word repetition and non-word discrimination are good markers of phonological abilities.
Accordingly, non-sign repetition and non-sign discrimination should be a reliable marker of signed phonological abilities.

Several tests have been created in order to test phonological abilities :

- Non-sign repetition test in British Sign Language
- Language Receptive phonology task in the Sign Language of the Netherlands
- Phonological awareness tasks in the Quebec Sign Language

Marshall & al., 2006 ; Hermans & al., 2009 ; Aubin, 2008 ; Parisot & al., 2012

III. Developmental disorders in sign language

Language disorders are not exclusive to speech perception: SLI exists also in deaf signers (phonological disorders, difficulty within grammar constructions, production of small sentences with limited grammar, heterogeneity of results).
Atypical development can stem from a variety of causes, for instance language impairment or late acquisition of SL.

Marshall et al., 2006 ; Morgan et al., 2007 ; Mason et al., 2010 ; Woll & Morgan, 2012 ; Herman et al., 2013

IV. The current study : to elaborate an assessment tool in order to assess phonological skills in LSF

Participants

- 5 DCDP : Deaf signing Children of Deaf signing Parents, aged from 5;8 to 9
 - 2 deaf children with language disorder
- 11 DCHP : Deaf signing Children of Hearing Parents, aged from 4;8 to 8;10
- 20 HCHP : Hearing Children of Hearing Parents, aged from 4;8 to 9

Procedure

- *Phonological material*

A non-sign is a sign that doesn't exist and has no signification, but which is built according to languages phonotactic rules

Non-signs are used to ensure that children process tasks without relying on their lexical abilities

Phonological parameters assessed in both experiments : handshape - location - movement - orientation - contact - manual manner - facial expression

- *Non-sign repetition test*

36 non-signs

3 levels of complexity, defined according to age of acquisition of each parameter involved in the non-sign

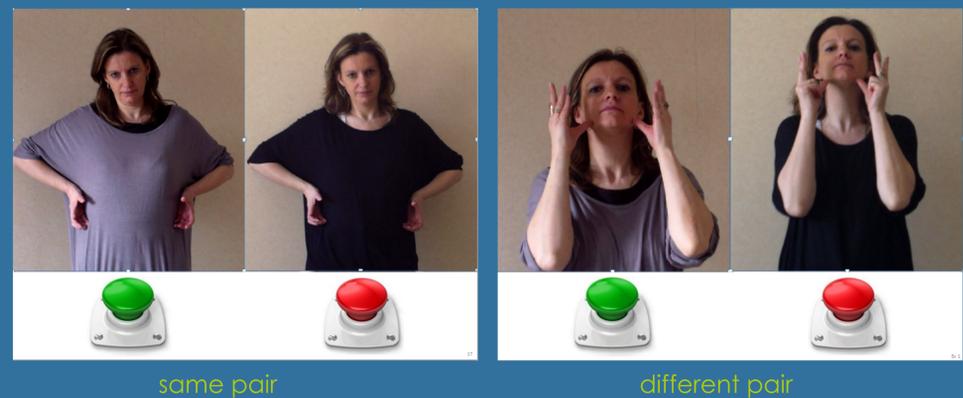


- *Non-sign discrimination test*

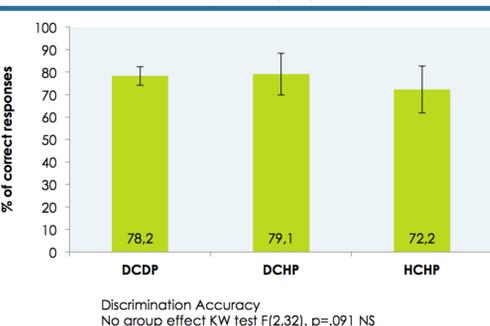
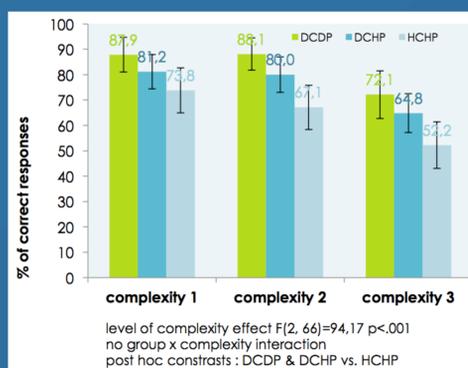
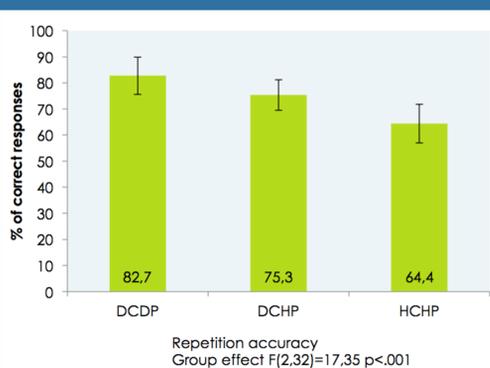
56 non-sign pairs

AX discrimination task

Only one parameter modified in each pair of stimuli



V. Main results



	DCDP	DCHP	HCHP
Less reliable parameter for repetition	facial expression 28,3%	handshape 40,3%	handshape 61,4%
	manual manner 22,2%	movement 35,6%	movement 51,4%
Most reliable parameter for repetition	location 11,7%	location 13,1%	orientation 24,4%
	orientation 3,9%	orientation 12,8%	location 15,8%

Results can be discussed in terms of :

- **Sign language development and mastery.** Location parameter is the first mastered by young toddlers (Chen-Pichler, 2012)
- **Sign language disorder :** 2 deaf children with language disorder in DCDP group. Their results are lower than what would be expected for this group
- **Perceptive salience of stimuli :** hand palm orientation seems to be the most easily perceive

VI. Conclusions and perspectives

Conclusion

The first test to assess phonological features of LSF
Phonological skills depend on sign language knowledge, linguistic environment and sign language development

Perspectives

1. Need to enhance our test which is still experimental : some stimuli have to be improved and more deaf children should be tested
2. Need to describe more accurately phonological acquisition for LSF
3. Need to assess the reliability of phonological skills and their impact in the future language development
4. Evaluate the potential to use this tool to diagnose language disorder