

Bilingual Deaf readers and writers

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2 observations and 1 question

- Deaf children most usually have poorer literacy outcomes than hearing children, presumably because they have to learn to read and write in the face of reduced access to sound.
- Deaf people who have good sign language skills have better reading and writing skills.
- **Why?**

Signed languages

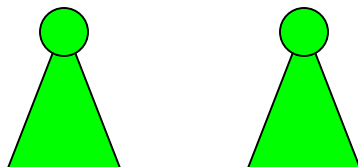
- There is no universal sign language: each country has its own sign language.
- Some countries have more than one sign language,
 - **Spain:** Spanish SL, Catalanian SL, Galician SL;
 - **Belgium:** Flemish Belgian SL, Belgian French SL, German SL;
 - **Switzerland:** Swiss-German SL, Swiss-French SL, Swiss-Italian SL;
 - **Finland:** Finnish SL, Finnish-Swedish SL.

Languages in the UK

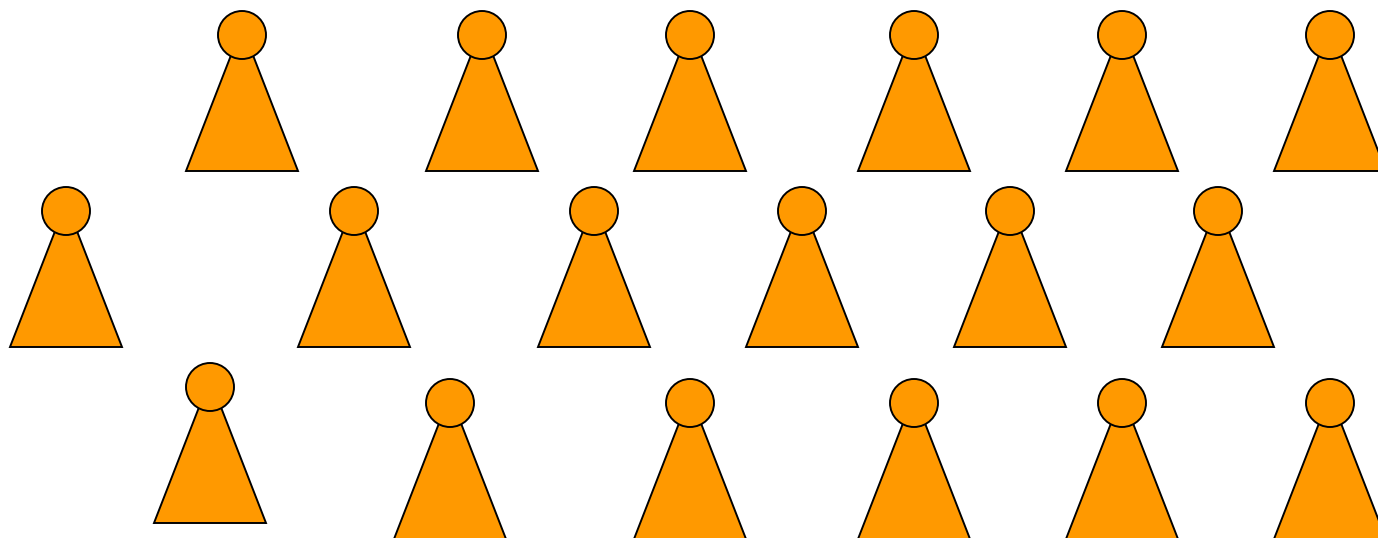
Ethnologue (2015)

Spoken languages	No. users	Signed languages	No. users
English	55,600,000 L1; 1,500,000 L2		
Scots	90,000 L1; 1,500,000 L2		
Welsh	508,000		
		BSL	77,000 L1; 250,000 L2
Irish	116,000		
Angloromani	90,000		
Scottish Gaelic	58,700		
Vlax romani	4,100		
Traveller Scottish	4,000		
Cornish	0 L1; emerging L2		
Polari	L2 only		
Welsh romani	unknown		

Deaf children's language learning background



5-10%: Born to Deaf families - “native signers”



90-95%: Born to hearing families, language experience mixed, generally delayed

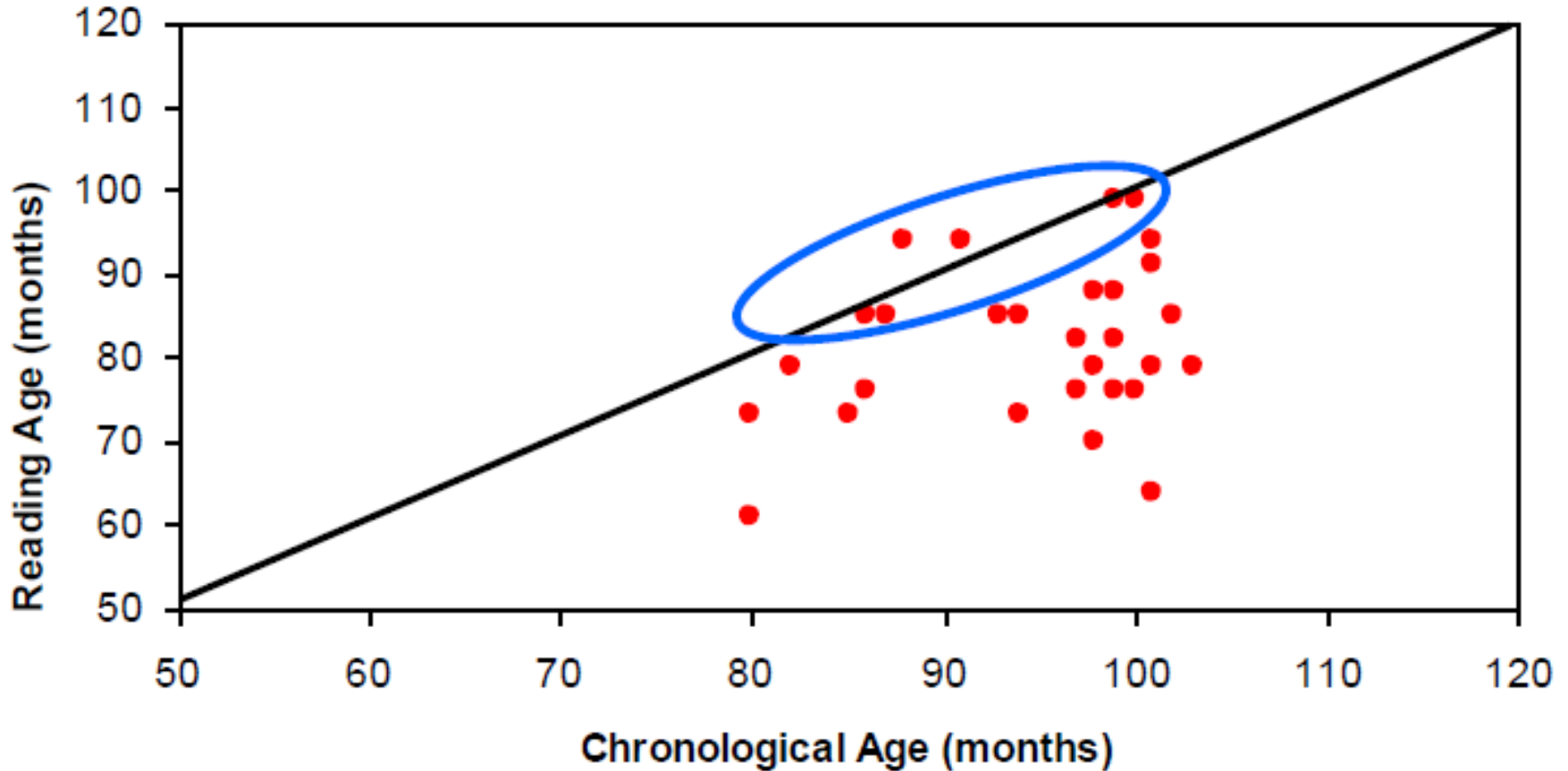
Latest CRIDE figures (2014): deaf children's school language

Language	Total	%
Spoken English	30,324	86.9
BSL	641	1.8
Other sign language	147	0.4
Other spoken language	243	0.7
Spoken English together with BSL	2,545	7.0
Spoken English and other sign language	735	2.1
Other combinations	338	1.0

Deaf children's literacy achievement

- Conrad (1979)
 - 468 deaf school leavers in UK:
 - mean reading age of 9 years
 - Only 2.4% of profoundly deaf were reading age-appropriately
- A better picture since:
 - cochlear implantation?
 - universal newborn hearing screening?

Deaf children's reading: Mean CA = 7;10; mean RA= 6;10

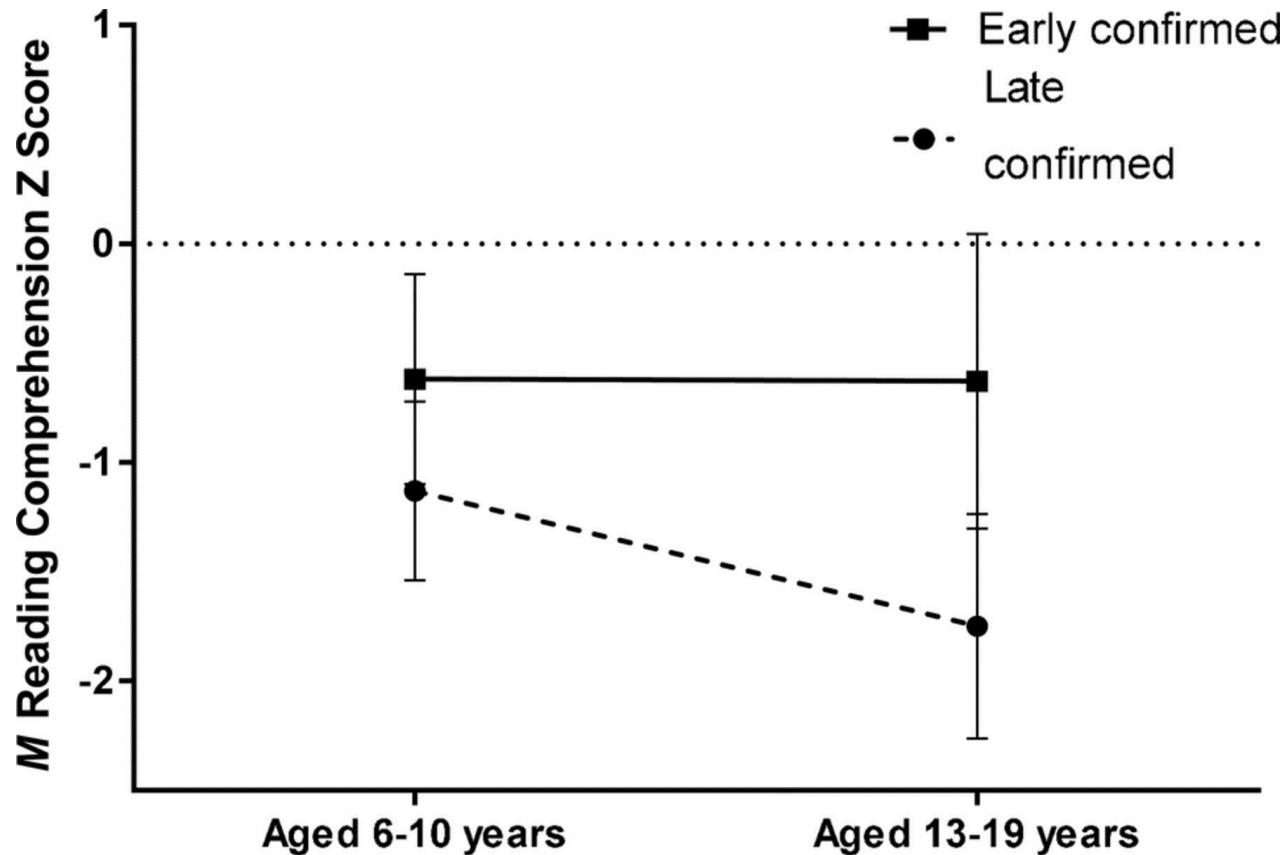


Kyle & Harris, 2006; 2010

Impact of universal newborn hearing screening

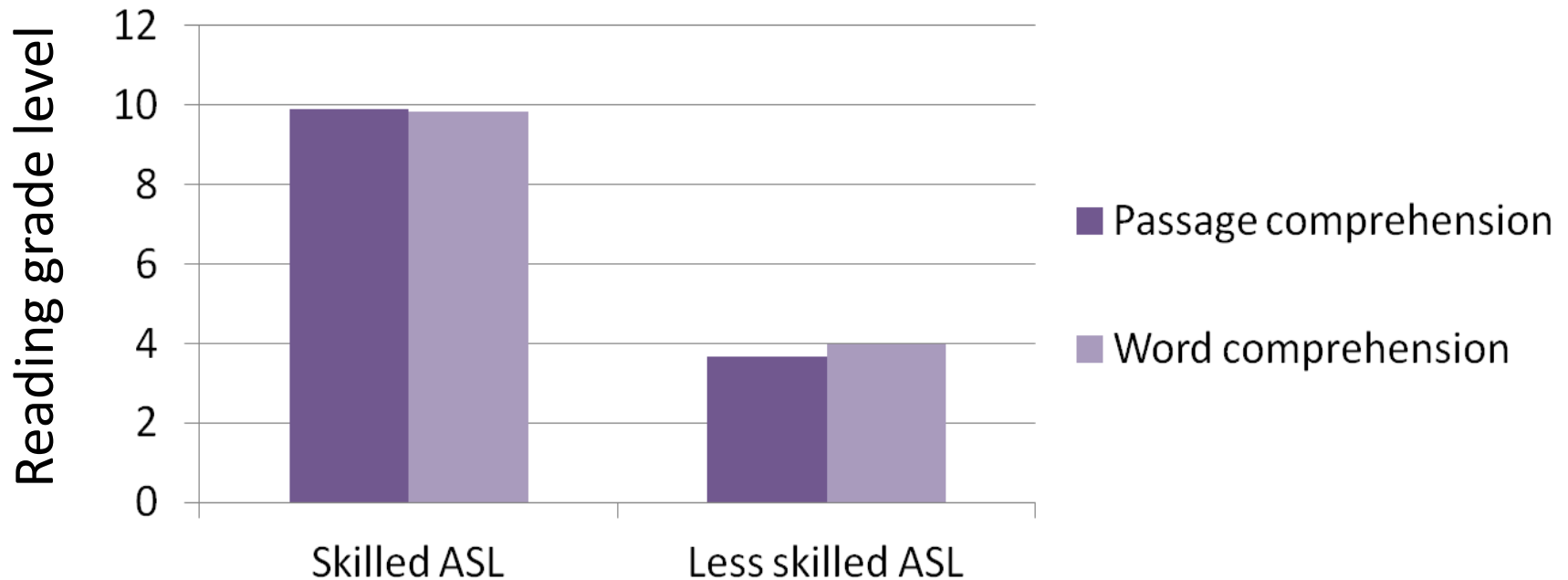
Pimperton et al (2014). *Archives of Disease in Childhood*.

Unadjusted mean reading comprehension z-scores in children with permanent childhood hearing impairment at age 6–10 years and 13–19 years by age of confirmation of hearing impairment.



Sign language skill and reading

Mayberry (2010)



Delayed sign language acquisition may be responsible for low reading achievement in deaf population.

But how would knowing a sign language help with literacy acquisition?

- Linguistic Interdependence Theory

(Cummins, 1989, 1991)

- When semantic and phonological features exist in different language forms, a student's first language can be used to bridge the gap.

- But how does this work when:

- phonologies of speech and sign are so different,
- when sign languages have no orthography?

(Mayer & Wells, 1996)

What can transfer from BSL
to written English?

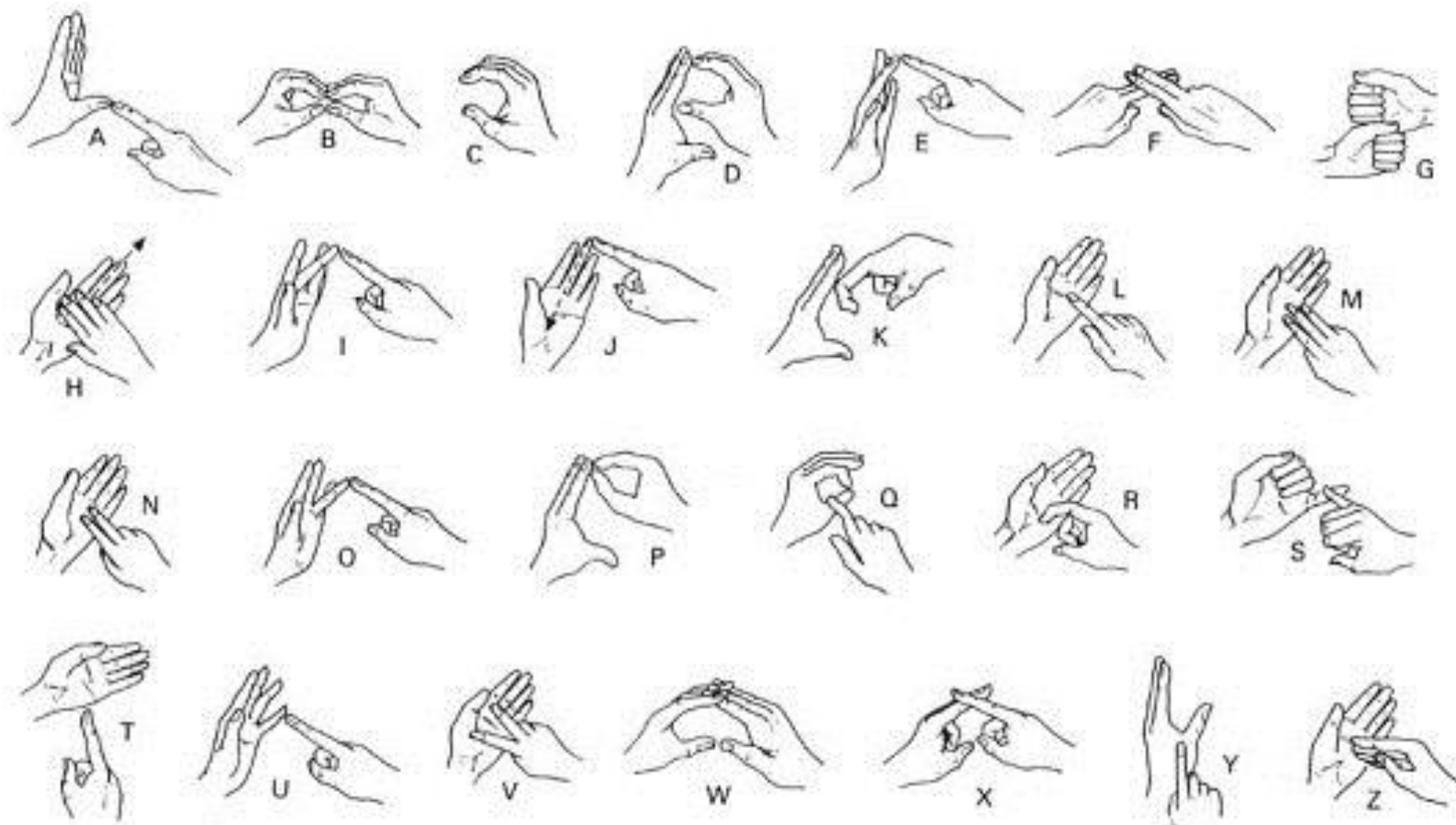
Obviously:

- Literacy builds on language skills
- Signed languages are full natural languages

But more specifically?

A first possible link between sign language and written language

- Fingerspelling



Transition from ASL fingerspelling to print

Haptonstall-Nykaza & Schick (2007)

- “Chaining” – teachers of the deaf link words written on the blackboard with both sign and fingerspelling.
 - i.e. making explicit those complex relations of sign, fingerspelling, and print.
- Study taught deaf children printed words in two conditions:
 - signs matched with printed words
 - signs matched with printed words and fingerspelling



Children learnt more words in this condition.

A second possible link between BSL and written English

- Mouthing, e.g. BATTERY, UNCLE



Predictors of reading ability in deaf children

Kyle & Harris (2011)

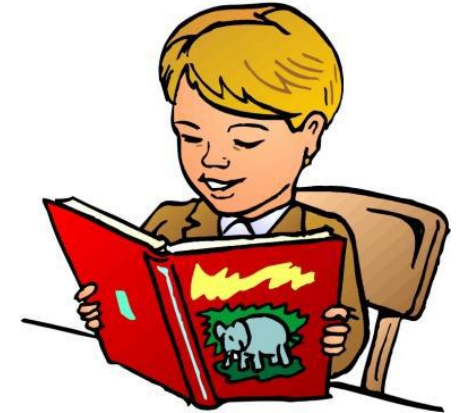
Time 1 (baseline)
5-6 years



Time 2
6-7 years



Time 3
7-8 years



Vocabulary
Speech-reading
Letter-sound knowledge

Reading ability



Conclusion

- **Why do deaf people who have good sign language skills have better reading and writing skills?**
- Literacy builds on language skills and signed languages are full natural languages
- But beyond that, there might be two possible links between signed languages and written language:
 - Manual alphabet
 - Mouthing
- But there's lots that we still don't know!

Thinking about literacy in bi- and multi-lingual children in Europe

- What knowledge and skills can transfer from one language/orthography to another as children acquire literacy in second and subsequent languages?