

# **Sign Language Acquisition**



**Approaches to Language 2014-2015**

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# Deaf children

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- ▶ Only 5-10% of kids born deaf are born to deaf parents. The other 90-95% are born to hearing parents.
- ▶ Most deaf children learn sign language later in life (from peers, not parents)



# Overview

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- ▶ What is Sign Language?
- ▶ What is the structure of Sign language (BSL & ASL)?
- ▶ What is the grammatical structure of Sign Language?
- ▶ Sign language development
- ▶ Deaf community as a linguistic minority
- ▶ Nicaraguan Sign Language



# What is Sign Language?

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- ▶ Sign Language is a system of communication using visual gestures, facial expression and body language.
- ▶ Sign Language is used by people who are Deaf or have hearing impairments.
- ▶ Sign Language: not a universal language
- ▶ Variation in Sign Languages across different countries: BSL (British Sign Language), ASL (American Sign Language), LSQ (Quebec Sign Language); mutually unintelligible
- ▶ Regional variation within Britain due to the isolated nature of Sign Language (from city to city): similar to regional accents and colloquialisms found in spoken languages.



# What is Sign Language?

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- ▶ Four features: important for the identification and distinction of individual signs:
  1. the location of the sign in space
  2. the handshape used to make the sign
  3. the type of movement made by the hands
  4. the orientation of the palms of the hands. (Mestrie et al. 2009: 408)
- ▶ Non-manual features (e.g. facial expressions, lip movements, posture, orientation and movement of head or body) are also used

Example from Swedish sign language: relative clause marker  
→ raised eyebrows, raised cheeks and the chin drawn back.

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# BSL

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- ▶ BSL: distinct grammatical structure and syntax; it is not strongly related to spoken English.
- ▶ BSL is used by 30,000 – 70,000 people within the UK as their first language; official minority language in the UK since 2003.

[http://www.bbc.co.uk/voices/multilingual/bsl\\_today.shtml](http://www.bbc.co.uk/voices/multilingual/bsl_today.shtml)



# Another method of communication with deaf people: fingerspelling

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- ▶ Fingerspelling: a method of spelling words using hand movements; fingerspelling the letters of the English alphabet
- ▶ Fingerspelling vs. Natural Sign languages
- ▶ It is often used for names of people and places for which there is not a sign (P-A-U-L-A) ( Mesthrie et al. 2009)



# BSL fingerspelling Alphabet

## BSL Fingerspelling Alphabet





# BSL fingerspelling Alphabet & Dictionary

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<http://www.british-sign.co.uk/bsl-british-sign-language/fingerspelling-alphabet-charts/>

- ▶ Fingerspelling 'hello'

<http://www.british-sign.co.uk/bsl-british-sign-language/print-a-word-in-fingerspelling/>

- ▶ BSL dictionary

<http://www.british-sign.co.uk/british-sign-language/dictionary/>





# SUGAR

*Index and middle fingers extended on primary hand. Hand makes small movements side to side.*

BSL sign for 'sugar'

<https://www.youtube.com/watch?v=tcWA-koRIgs>

# The 'phonetics' of Sign Language

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- ▶ Sign languages are governed by a grammatical system: syntactic and morphological rules.
- ▶ Spoken languages : distinguish sounds according to place and manner of articulation
- ▶ Sign languages : distinguish signs according to the place and manner in which the signs are articulated by the hands. The signs of ASL are formed by 3 features:
  - ▶ 1. The configuration of the hand (handshape)
  - ▶ 2. The movement of the hand and arms toward or away from the body
  - ▶ 3. The location of the hands in signing space (Fromkin et al, 2014)



# The ‘phonetics’ of Sign Language

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- ▶ ASL sign meaning “arm” : a flat hand, moving to touch the upper arm.
- ▶ It has three features: a. flat hand, b. motion upward, c. upper arm.
- ▶ ASL has over 30 handshapes; NOT all signed languages share the same handshapes, (e.g. French lacks interdental stops; English lacks the uvular trill of French).



# The 'phonetics' of Sign Language

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- ▶ Movement can be either straight or in an arc.
- ▶ Secondary movements include wiggling or hooking fingers.
- ▶ Signs can also be unidirectional or bidirectional (moving in one direction and then back again).
- ▶ The location of signs is defined relative to the body or face; sign involves vertical movement, horizontal movement, or movement to or away from the body.
- ▶ As in spoken language, a change along one of these features can result in different words (Fromkin et al. 2014)



# The ‘phonetics’ of Sign Language

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- ▶ A change in location, handshape, or movement can result in different signs with different meanings.
- ▶ “father” differs from the sign meaning “fine” only in the place of articulation.
- ▶ Both signs: spread five-finger handshape; ‘father’: the thumb touches the signer’s forehead & ‘fine’: the thumb touches his chest.
- ▶ There are two-handed and one-handed signs.
- ▶ One-handed signs: the speaker’s dominant hand → a difference in handedness does not affect the meaning of the sign.
- ▶ Parallels in the organization of sounds and signs → Not surprising as similar cognitive systems underlie both spoken and signed languages.



# Morphology of Sign Language

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- ▶ Sign language: rich morphology.
- ▶ Signs belong to grammatical categories.
- ▶ Free and bound morphemes, lexical content and grammatical morphemes, derivational and inflectional morphemes, & morphological rules to form complex signs.
- ▶ Affixation is accomplished by preceding or following a particular gesture with another “affixing” gesture (Fromkin et al. 2014)



# Morphology of Sign Language

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- ▶ Suffix meaning “negation”: a rapid turning over of the hand(s) following the end of the root sign that is being negated.
- ▶ Example: “want” is signed with open palms facing upward; “don’t want” follows that gesture with a turning of the palms to face downward. (“reversal of orientation”).
- ▶ Inflection of sign roots: modification of the movement of the hands and the spatial contours of the area near the body in which the signs are articulated.
- ▶ Examples of verb inflection
- ▶ ‘I see you’: movement away from the signer’s body toward the “listener”
- ▶ ‘You see me’: movement away from the listener and toward the body





# Syntax of Sign Language

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- ▶ Sign language: syntactic rules
- ▶ Signed languages have phrase structure rules.
- ▶ A signer distinguishes the following sentences through the order of signing :

DOG CHASE CAT (signs)

*'The dog chased the cat'*

CAT CHASE DOG (signs)

*'The cat chased the dog'*

- ▶ ASL basic order: SVO
- ▶ ASL expresses notions such as tense, agreement, modality, and so on
- ▶ The head motion and facial expressions of a signer: markers of the special word order, much as intonation does in English, or the attachment of prefixes or suffixes



# Syntax of Sign Language

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- ▶ Sign languages exhibit similar constraints regarding ungrammatical sentences: the ASL signer knows that \*CHASE CAT DOG is ungrammatical
- ▶ The rules of sign languages are structure dependent, and movement rules are constrained in different ways.
- ▶ Facial gestures: an integral part of the grammar of sign languages but not of spoken languages.
- ▶ Theoretical proposal: UG principles and parameters hold in both the spoken and manual modalities → the human brain is designed to acquire and use language, not simply speech.



# Pre-linguistic communication

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- ▶ Infants are born with the potential to learn any human language.
- ▶ Birth-8 months in all infants: vocalic sounds progress to syllabic combinations (babbling).
- ▶ Syllabic combinations are influenced by the phonology of the spoken language.
- ▶ Intentional communication: well-formed syllabic combinations begin to appear → parents respond accordingly: changes in patterns of adult-child vocal interaction (vocal interactive turn-taking).



# Pre-linguistic communication

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- ▶ Deaf babies: early vocal babbling is similar to that of hearing babies; BUT after the first few months, vocal babbling decreases (Clement 2004; cited in Baker & Woll, 2008).
- ▶ Hearing babies: steady increase in quantity and syllabic variability.
- ▶ Deaf babies: the absence of the normal babbling pattern affects the interaction patterns with hearing parents → impaired interaction: implications for later social, cognitive development & language development.



# Pre-linguistic communication

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- ▶ ‘Manual babbling’: infants exposed to sign languages; infants imitate hand and arm movements.
- ▶ Hearing/speaking parents change their interaction pattern according to the development of syllabic vocal babbling
- ▶ Signing parents respond to manual babbling: intentional communication on behalf of the infant.
- ▶ Manual babbling: a motivation for both infant and parent to engage in conversations in the same way as vocal babbling does (Petitto & Marentette 1991, cited in Woll 1998).



# Pre-linguistic communication

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- ▶ Gestures: very important in early social interaction with adults
- ▶ Children use gestures to communicate their needs & interests.
- ▶ All deaf children: regular use of gestures to communicate even if they are not exposed to a sign language, or who have only limited signed or gestural input.



# Development of sign language

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- ▶ Child spoken language acquisition: similar stages of development.
- ▶ Deaf children acquiring English: they do not follow the typical pattern of acquisition in one or more areas of morphology, syntax and pragmatics, especially if language acquisition is delayed.
- ▶ Deviant phonology due to difficulties in hearing sound contrasts.
- ▶ Other linguistic areas may not reflect the usual patterns.
- ▶ Language delay cannot occur without a greater or lesser degree of deviance from the normal pattern (Geers & Schick 1988).



# Development of sign language

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- ▶ Similar language milestones observed in children acquiring a spoken language & in monolingual deaf babies acquiring signed languages (Petitto & Holowka, 2002).
- ▶ Neurological studies: signed languages are organised in the brain in the same way as spoken languages; the only difference is the visual modality (Fromkin et al, 2014)





# Development of sign language

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- ▶ Children of parents not fluent in sign language may not follow this pattern: Delayed LI acquisition of sign language can result in limited proficiency
- ▶ Mainly Deaf children of Deaf parents are considered fluent native signers
- ▶ Most children start school with limited communication skills in both sign language & spoken language (Mesthrie et al. 2009)



# Development of sign language

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- ▶ **HOWEVER**, preliminary research evidence: children in hearing families using alternative models of sign language from an early age (home-signs; enrolment in bilingual early intervention programs with fluent signers in the environment) appear identical to deaf children of deaf parents (Woll, 1998).
- ▶ Mayberry's research on ASL (2002): regular exposure to fluent sign language models before the age of 5 leads to full acquisition of sign language.



# Sign Bilingual Language Development

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- ▶ Is there an effect of early sign language acquisition on the development of spoken language?
- ▶ Swanwick (2001): Case studies; Early sign language acquisition does not prevent deaf children from learning spoken language, but it can support the language acquisition process.
- ▶ Use of sign language from an early age does not inhibit the motivation and interest in the learning of speech (Swanwick, 2001).



# Sign Bilingual Language Development

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- ▶ Petitto et al. (2001): six bilingual children.
- ▶ Bilingual children acquiring acquiring spoken French and English simultaneously & bilingual children acquiring spoken French and Quebec Sign Language (Langue de Signes Quebecoise - LSQ): similar linguistic milestones & exhibited patterns of lexical growth that were consistent with monolingual norms.
- ▶ Petitto & Holowka (2002): bilingual babies (LSQ & French) were not delayed in the achievement of early language milestones in either of their respective native languages.
- ▶ No preference for speech in these hearing babies: both languages (LSQ and French) signed and spoken were learned equally.



# The Deaf community as a linguistic minority

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- ▶ Deafness is not viewed as a type of disability by deaf people
- ▶ Deafness: ‘ ....viewed as a form of positive social and cultural identity, defined by shared beliefs and experiences, rules of interaction, cultural narratives and, most centrally, the use of sign language’ (Mesthrie et al 2009: 413)
- ▶ Linguistics, anthropology, sociology: national Deaf communities are described as linguistic & cultural minorities within the majority hearing culture



# The Deaf community as a linguistic minority

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- ▶ Different membership criteria:
  - the use of sign language as one's primary language
  - a positive attitude towards Deaf culture ('attitudinal Deafness')
  - active participation in Deaf social life and organisational networks (clubs, national organisations, schools) (Mesthrie et al 2009: 413)
- ▶ Core members: Deaf children of Deaf parents → sign language acquisition (first language) & socialisation into the Deaf community from birth/infancy



# The Deaf community as a linguistic minority

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- ▶ However: audiologically deaf people (socialisation in the hearing community & no use of sign language) are not considered to be part of Deaf communities
- ▶ Partial membership: hard of hearing bimodal individuals (use both sign language and spoken language); hearing children of Deaf parents → acquisition of sign language from infancy (first language) & members of the dominant hearing community (Mesthrie et al. 2009)



# The Deaf community as a linguistic minority

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- ▶ Semantic & cultural distinction between physiological deafness and cultural/linguistic identity: Deaf vs deaf
- ▶ Deaf: deaf individuals who identify themselves as members of Deaf communities
- ▶ deaf: individuals who are audiologically deaf, but do not identify with Deaf culture
- ▶ Description of out-group members: ASL → the signs THINK-HEARING or HEARING-IN-THE-HEAD are used to describe deaf people who think and behave like hearing people, and who have not adopted Deaf culture (Mesthrie et al. 2009, p. 413)





# The Deaf community as a linguistic minority

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- ▶ Deaf communities: multilingual groups → use of sign language & use of the language(s) of the dominant hearing community (spoken, signed and written forms)
- ▶ Hearing individuals have a low knowledge of sign language; except for relatives of Deaf people & professional sign-language interpreters
- ▶ Deaf communities may experience societal discrimination on the basis of language



# The Deaf community as a linguistic minority

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- ▶ ‘Deaf fakes’? Extract from an interview which Jennifer Harris conducted with Richard, who was born to hearing parents and became deaf as a child (through meningitis), in the early 1990s.
- ▶ Richard: Now the Deaf saying instead of using; ‘I am a strong sign language user’ (say) ‘I’m BSL’ and it has become a real cultural obsession – a thing of great pride for the Deaf community. In fact the BDA (British Deaf Association) has become a BSL organisation, but if you look at history the people at the very beginning of the BDA were people like myself – deafened people, and now it is changing, and people like myself are in fact being pushed out.



# The Deaf community as a linguistic minority

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- ▶ J. Harris: Yes. Yes.
- ▶ Richard: You see people like me are becoming called 'Not the Real Deaf'.
- ▶ J. Harris: How does that make you feel?
- ▶ Richard: Well. I spoke to a born Deaf person, she said I was a fake – that feeling was not there ten or fifteen years ago.
- ▶ J. Harris: You were more sort of looked up to? Now you are sailing downwards?



# The Deaf community as a linguistic minority

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- ▶ Richard: Yes. Well it doesn't hurt me much. But what hurts me is – what disappoints me is the fear that the BDA could become an organisation of the 'True Deaf – the Real Deaf' and people who could contribute enormously would be pushed out. I would like to see an organisation of ALL Deaf People.

(Harris 1995; quoted in Mesthrie et al 2009: 414)



# Nicaraguan Sign Language: the birth of a new language

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- ▶ Nicaragua had no sign language around 30 years ago.
  - ▶ Today: NSL is a rich, developed sign language → The language arose naturally, among a generation of young Nicaraguans who needed to communicate. In the 1970s-80s.
  - ▶ The birth of a new language
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- ▶ <https://www.youtube.com/watch?v=maUN3asrHAo>
  - ▶ <https://www.youtube.com/watch?v=QLm0wZAVplc>
  - ▶ <http://www.columbia.edu/~asl038/L02-sign-language.html>

# Summary

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- ▶ Sign language
- ▶ The structure of BSL
- ▶ The grammar of signed languages
- ▶ Morphology, Syntax & 'phonetics' in sign language
- ▶ Sign language acquisition developmental stages
- ▶ The Deaf community as a linguistic minority
- ▶ Nicaraguan Sign Language



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