

# Sign Languages

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THE UGLY DUCKLING OF LINGUISTICS

# Why Sign Languages

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IT'S WORTH

# Universality of language mechanisms

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- To the extent that sign languages are found to conform to the constructs and predications of linguistic theory, it will be demonstrated here that the models on which the predications are based indeed reflect universal properties, that is, that any human language must conform to them.
- Insofar as differences in modality are implicated as the cause of such differences, this strategy will allow us to tease apart the linguistic code from the mode of its transmission.

# Universal Principles 1

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- SLs share with all other languages universal principles
- Identifiable structural difference between spoken languages and signed languages can be attributed to modality effects alone.
- The major structures and processes of grammar are modality independent (Klima & Bellugi 1979; Kyle & Woll 1985; Lane & Grosjean 1980; Newport & Meyer 1986; among others).

# Universal Principles 2

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- Universal principles of organization and structure that constrain spoken languages are active in sign languages despite the iconic base.
- Universal features of languages have always been seen, in the generative tradition, as the factors distinguishing humans as unique. The question of modality is, under this view, an important test of universality.

# Being a Sign Language

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HOW IT FEELS

# Requirements

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- A sign language is a visually communicated language with the possibility of demonstrating the subject matter simultaneously, and at different rates in a three-dimensional space.

# Sign Language Mythology

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- SIGN LANGUAGES, not ONE SIGN LANGUAGE

The international database Ethnologue enumerates 114 SLs, from the wide-spread ASL, with its 500.000 signers, to Adamorobe Sign Language, used in a village in Ghana and spoken by just 300 signers.

- Sign Languages are not derived from any spoken language



# Sign Language is Language

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- And languages is (part of the things that)/what make us human
- So →
- Characteristics of Human Language

# Characteristics of Human Language

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- Arbitrariness of sign
- Discreteness
- Recursion
- Structure-dependence
- (etc.)
- All SLs share these characteristics with spoken languages.

# Terminology: *Sign vs gesture*

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- What does not conform to the characteristics:

*gestures or mimic-gestural forms*

***Sign vs. gesture***

=

***Language vs. pantomime***

- There is not continuum between signs and gestures

# Sign vs Gesture

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	Sign	Gesture
<b>arbitrariness</b>	☺	☹
<b>discreteness</b>	☺	☹
<b>recursion</b>	☺	☹
<b>structure-dependence</b>	☺	☹
compositionality	☺	☹
analysis	☺	☹
consciousness	☺	☹
constraints	☺	☹
redundancy	☺	☹

# Analysis

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- There seems to be consensus that language is analytic, while gesture is global and synthetic.
- As a matter of fact, gestural iconic depiction can be very rich, but it does not attempt to exhaust of the whole content.
- On the other hand, the linguistic channel is charged to cover the full content described.

# Arbitrariness

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- Some signs in LIS

<http://www.youtube.com/watch?v=o7h81Zv0IY4&feature=related>

<http://www.youtube.com/watch?v=-eprzmopwJ8&feature=endscreen&NR=1>

<http://www.youtube.com/watch?v=1fUsTMedBkI&feature=related>

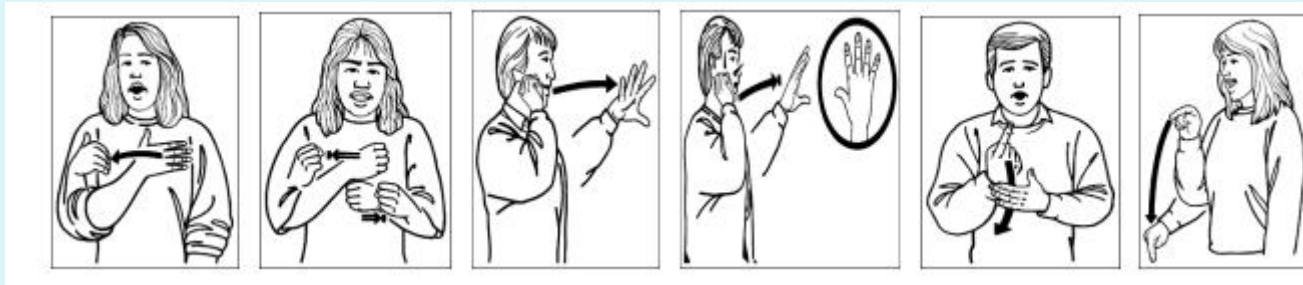
[http://www.youtube.com/watch?v=7d1m\\_PTsTzQ&feature=related](http://www.youtube.com/watch?v=7d1m_PTsTzQ&feature=related)

- No iconicity is therefore tenable here.

# Discreteness

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- In ASL, EARLY differs from ANGRY only in hand configuration, PICTURES (movies) is different from WAR only in location, while ONLY and NOW differ in finger and palm orientation (examples from Siple & Fischer 1990:284).



# Recursion

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- ASL [(JOIN)<sub>V</sub>+(JOIN)<sub>V</sub>]<sub>N</sub> 'compound'
- Manner of articulation change!!!
- [(JOIN)<sub>V</sub>+(JOIN)<sub>V</sub>]<sub>N</sub> [(JOIN)<sub>V</sub>+(JOIN)<sub>V</sub>]<sub>N</sub> [(JOIN)<sub>V</sub>+(JOIN)<sub>V</sub>]<sub>N</sub> ...
- COMPOUND COMPOUND COMPOUND... 'compound after compound after compound'



# Structure dependence

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- LIS                    DOG LITTLE CAT CHASE CAN  
                              'The dog can chase the little cat'.
  
- LIS                    \*DOG LITTLE CAN CAT CHASE  
  
                              \*DOG CAN LITTLE CHASE CAT

# Compositionality

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- ASL SEE+SHARP 'to discern by seeing' (Sadler & Lillo-Martin 2006:69).

# Constraints

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- Constraints on reduplicative plural of LIS and DGS
- A sign may go from head on the center of the chest, but not from head to a shoulder or to a corner or side of the trunk.  
This has nothing to do with physical limitations; it might be an aid to perception, but, in any case, pantomime does not display such constraints.

# Redundancy

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- Two-handed signs that move identically (ISL), see picture
- *Thank you* in some varieties of LIS



# Said all that...

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- Smash another myth: SLs are not mutually intelligible!
- Studies on neuropsychological bases on signed linguistic activity show that the brain areas involved in signing are the same as those involved in spoken language (Poizner, Klima & Bellugi 1987), despite the fact that signers show a greater involvement of the right hemisphere, linked to the visual perception (unsurprisingly, provided that SLs rely more on the sight).

# Sign Languages Grammar

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## SOME NOTIONS

# SL Phonology: basics

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- Signs may be viewed as a conglomerate of several features, or parameters.
- The distinctive features of signs are
  - location,
  - hand configuration,
  - hand orientation
  - types of movement.
- These features, simultaneously realised, give place to a sign. In this sense, they could be compared to the phonemes of spoken languages.

# Simultaneity

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# To explain:

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- The hand configuration is the one seen ; the place of articulation is the head.
- The first location is specified as [+ contact, + low].
- Together, these features specify the chin. The second location is specified at a medial distance from the place of articulation ([-proximal, -distal]), indicating that the articulating hand moves from contact with the chin outward.
- The shape of the movement is [arc].

# Minimal pairs!

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- Features of handshape, location, and movement can recombine to form minimal pairs of signs.
- For example, the signs DRY, UGLY and SUMMER in ASL are minimally distinguished by features of location.
- In most SLs signs can be said to be monosyllabic. So, most sign languages must be tendentially monosyllabic.

# SL Morphology

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- In many SLs, then, signs are single morphemes.
- Being Signs mostly monosyllabic, morphemes are tendentially one syllable long.
- So, tendentially sign languages have morphemes that are one-syllable long, though this is no hard fact, since morphemes can be both larger and smaller than syllables. For example, there are signs in ASL that are composed of several morphemes and are referred to as 'frozen'.

# A case

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- Additionally, compounds, composed of two signs and therefore of two syllables, but they may be reduced to just one in the context.

(1) ASL

a. MIND + DROP

'faint ' FAINT

$\sigma \sigma$

$\rightarrow \sigma$

- The resulting syllable is a blend of the two separated one.
- Note that, incidentally, this process is analogous though not identical, to the clipping phenomenon of Japanese (for example, see Tsujimura 2007).

(2) JAPANESE

pasonaru kompiutaa  $\rightarrow$  paso-kon

# Morphological Typology

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- Agglutinative
  - (1) NZSL            THEY UPSET 'They were upset'
  - (2) NZSL            LEARN FINISH CAN 'You can learn it [NZSL]'
  - (3) NZSL            ME START FRIEND STEPHEN HOUSE DRINK DRINK DRINK  
'It started at my friend Stephen's house, drinking a lot'
- Some inflectional beginnings (ASL and ISL)
- ASL verb LOOK-AT may be inflected for subject and object agreement as well as for temporal aspect, and it could be accompanied by a grammatical nonmanual (e.g. facial) marker that functions as an adverbial. Such a verb, meaning, for example, 'he looked at it with relaxation and enjoyment for a long time', consists of five morphemes.

# Morphology

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- Sign languages, in very broad terms, have a wide range of morphological processes: some of these are fully productive, some are idiosyncratic, all influenced by general linguistic organising principles but most molded by modality-specific factors, too.
- Moreover, the grammatical categories encoded by many of these morphological structures, as well as the form that they take, were found to be quite similar across different SLs. That is, SLs show strong cross-linguistic similarities in their morphological structures.

# Inflection: Plural

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- PLURAL

- Reduplication

(1) DGS HOUSE HOUSE HOUSE

'houses' (Pfau & Steinbach 2006:146)

(2) DGS PERSON PERSON PERSON

'people' (Pfau & Steinbach 2006:144)

(3) NZSL APPOINTMENT APPOINTMENT  
2007)

'appointments' (McKee Locker & McKee  
2007)

(4) LIS PLACE PLACE

'places'

(5) LIS TOWN TOWN

'town'

- Classifiers

(4) ASL THREE CAKES

# Inflection

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- ASPECT
  - Reduplication
    - (1) ASL WIN WIN 'keep on winning'
    - (2) ASL TALK TALK 'keep on talking'
  - Manner of movement
- LIS EAT – circulating motion



# Word Formation: Derivation

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- CATEGORY-SHIFTS

- Reduplication

(1) NZSL

BUILD BUILD	'hammer'
CUT CUT	'scissors'
RING-UP RING-UP	'telephone'
TEACH TEACH	'teacher'
PRAY PRAY	'Sunday'
MEET MEET	'meeting'
PROTEST PROTEST	'strike'

(2) ASL

TO QUOTE FROM TO QUOTE FROM	'derivation'
COMPARE COMPARE	'comparison' (examples from Klima & Bellugi 1979)
COVER-UP COVER-UP	'paper'
CHECK CHECK	'research'
FLY FLY	'airplane' (examples from Perlmutter 1990:80).

# Word Formation: Compounding

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- ASL

a. MIND + DROP

'faint'

b. SLEEP + SUNRISE

'oversleep'

# SL Syntax: Typology

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- While the morphological structures of all SLs have common aspects, the syntactic characteristics of SLs differ dramatically.
- The syntax of SLs is still in course of study, but, roughly, it is possible to say that syntactic word order is completely separated from that of the spoken languages of the areas they are signed in.
- For instance, Japanese Sign Language (*Nihon Shuwa*) is SVO, the spoken language being one of the most consistent examples of SOV constituent order, whereas Italian is SVO but LIS (*Lingua Italiana dei Segni*, Italian Sign Language) is SOV.

# Signers do not borrow

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- There is no exchange between spoken languages and signed languages, but this is not surprising since, differently from the lexicon, syntax does not lend itself to interlinguistic exchanges.

# LIS

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(1) LIS DOG CAT CHASE

'The dog chases the cat'

(2) LIS STUDENT THREE

'Three students'

(3) LIS DOG CAT CHASE NOT

'The dog does not chase the cat'

(4) LIS CAT CHASE WHO

'Who chases the cat?'

(5) LIS DOG CAT CHASE DONE

'The dog has chased the cat'

(6) LIS DOG CAT CHASE CAN

'The dog can chase the cat' (examples from Branchini & Donati 2009).

# The Head-Complement Parameter

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- These properties are consistent with the head-complement parameter, a clue that SLs are ruled by the same principles of spoken languages and, moreover, foundations of core language are universal and non medium-specific (so, possibly innate).

# Conclusions

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- The kinds of relationships between sign languages are not such to make them mutually intelligible; they have characteristics typical of natural languages, on one side (as I have tried to prove here), and of the visual/spatial system on the other side.
- Common knowledge mistakenly assumes that deaf people are able to communicate with each other in spite of linguistic differences but, as it has been already stated, this is far from the real thing. Here and now, concrete topics might be guessed by mere chance.
- Of primary concern among linguists are the features that all human languages have in common; in this respect, SLs instantiate a challenge to theories of linguistic universals, as well as meta-linguistic concepts of 'possible grammars' and so on.

# Conclusions

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- The fact that SLs are languages with complex organizational properties implies that that will share certain principles of organization with other languages.
- The fact that they are languages in a different modality (visual/spatial rather than auditory/vocal) implies, on the other hand, that there will be differences in the principles of organization.
- They indeed seem to exhibit analogous formal structures to spoken languages; however, the surface organization, so to speak, is extremely different. Basically, so, signed languages in general display a marked preference for co-occurring layered (as opposed to linear) organization.



# Grazie!

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E-MAIL ADDRESS**