

In search of grammar

Carol Padden
University of California, San Diego

with Mark Aronoff, Irit Meir and Wendy Sandler

Sign language grammars

Shared properties between signed and spoken languages:

Conventional vocabularies

Duality of patterning

Productivity

Syntactic structure

from Meier, 2002

Sign language grammars

Shared properties between signed and spoken languages:

Conventional vocabularies

learned pairings of form and meaning

from Meier, 2002

Sign language grammars

Shared properties between signed and spoken languages:

Duality of patterning

sublexical structure in spoken words and manual signs

from Meier, 2002

Sign language grammars

Shared properties between signed and spoken languages:

Productivity

expanding the lexicon by types of rules

derivational, inflectional morphology

from Meier, 2002

Sign language grammars

Shared properties between signed and spoken languages:

Syntactic structure

same parts of speech

recursion/embedded clauses

verb agreement

from Meier, 2002

Modality differences in human languages

The articulators

Speech uses the vocal tract

Sign uses the hands, the body, the face

Vocal articulators produce sounds, and are minimally visible

Sign language articulators are directly visible

Modality differences

The articulatory space

Space within the vocal tract modifies sound quality

Signing space is visibly available and exploited for different layers of meaning

Modality differences

Iconicity

Ideophones in spoken languages, e.g. Kambera (Klamer 1998): lexical roots that directly refer to sounds, motions and sights

Iconicity exerts pragmatic and sequential pressures on spoken languages (Croft 2003; Haiman 2002)

Signs can represent objects, locations and movements through visible iconic means (Meier 2002; McBurney 2002)

Iconicity and grammar

Sound symbolism is found in varying degrees across spoken languages

But iconic properties of sign languages are apparently general to all:

Use of space

Possibility of near-infinite indexing

The body as referent

Modality and grammar

Is there evidence of modality effects beyond perceptual and articulatory levels?

Is there evidence of modality effects that are not strictly iconic?

Iconicity and grammar

A special case: the handling/instrument pattern in sign languages

A number of sign languages represent a class of objects held by hand with a preferential pattern: either handling or instrument

Objects held by hand

Hand tools



hand saw, toothbrush, broom

Cosmetics



mascara, lipstick, nail polish

Clothing



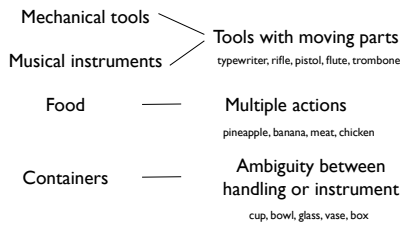
hat, shoes, pants

Utensils



fork, knife, spoon

But not:



Shoes	Scissors	Pants
Hat	Broom	Fork
Jacket	Paintbrush	Knife
Toothbrush	Socks	Rake
Hand saw	Spoon	Screwdriver
Mascara	Nail polish	Hair dryer
Gloves	Cell phone	Nail file
Comb	Vacuum cleaner	Hair brush
Hammer	Lipstick	mop

Vocabulary list

Signers shown slides of objects

List modified over time, as responses were analyzed

Final list: 27 items

To encourage nouns, slides showed varying numbers of objects

The handling pattern

Israeli Sign Language (ISL), Japanese Sign Language (JSL), and New Zealand Sign Language (NZSL) favor *the handling pattern* for noun objects that are held by hand

The instrument pattern

ASL, Danish Sign Language (DSL) and Al-Sayyid Bedouin Sign Language (ABSL) favor *the instrument pattern*

Handling/instrument pattern

Strong preferential pattern favoring one type over the other

Strong agreement across signers over which signs display the favored pattern

In six sign languages surveyed, the less favored pattern is used for a smaller set of signs

The handling pattern



ISL (n=5)

Handling favored: 62%



NZSL (n=7)

Handling favored: 67%



JSL (n=6)

Handling favored: 64%

data by D. McKee

data by S. Mori

The instrument pattern



ABSL (n=7)

Instrument favored: 85%



ASL (n=9)

Instrument favored: 75%



DSL (n=6)

Instrument favored: 60%

data by E-E. Pedersen & R. Bergmann

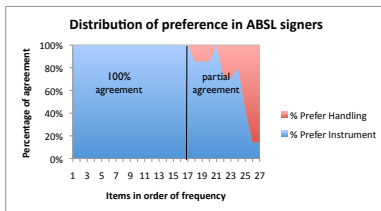
Handling/instrument pattern

Strong preferential pattern favoring one over the other

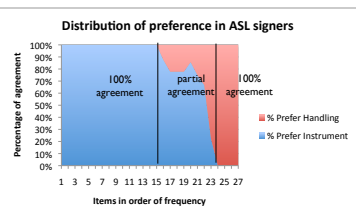
Strong agreement across signers over which signs display the favored pattern

In six sign languages surveyed, the less favored pattern is used for a smaller set of signs

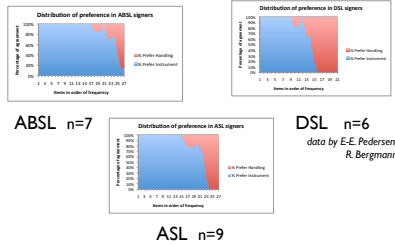
The instrument pattern



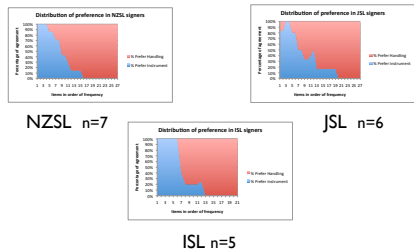
The instrument pattern



The instrument pattern



The handling pattern



Within the pattern

Some forms are almost always handling across sign languages, including those that favor the instrument pattern: HAMMER, LIPSTICK

Other forms are often instrument in languages that favor handling: FORK, RAKE, SCISSORS

Languages with handling forms use instrument forms to show contrast in pairs: FORK vs. SPOON; RAKE vs. BROOM; COMB vs. HAIRBRUSH.

SCISSORS may qualify as a tool with moving parts.

What type of pattern?

Instrumental case?

Instrumental case marked on nouns indicates the instrument by which an action is carried out (e.g. Russian)

The handling/instrument pattern is a preferential pattern of one form or another.

What type of pattern?

Lexicalization pattern?

Similar to verb pattern in spoken languages.

Spoken languages differ systematically in whether they express manner or direction on the verb (Talmy 1985, 2000).

In satellite-framed languages, the *manner* is encoded in the verb. *The ball rolled down the hill.*

In verb framed-languages, the *path* is encoded in the verb. *Le ballon est descendu la colline.*

The handling/ instrument pattern

May be a diagnostic of language differences,
or sign language dialects

ISL and ABSL pattern differently which
provides additional evidence that ABSL is not
related to ISL

Further evidence: ABSL-ISL bilinguals

Bilingual ABSL-ISL signer



Bilingual signer in ABSL

Bilingual signer in ISL

Instrument preference: 85%

Handling preference: 55%



All ABSL signers



All ISL signers

Iconicity and grammar

Iconicity does not determine the preferential
pattern. Both types - handling or instrument
- are equally iconic.

The pattern emerges early in a new sign
language, and is robustly expressed.

Implications

A lexicalization pattern in sign languages, but involves nouns, not verbs

There is no apparent equivalent to the handling/instrument lexicalization pattern in spoken languages.

Is this a problem for the notion of linguistic universals?

Embodiment

The body is not merely an articulator, but actively present in sign language grammars

Handling and instrumental forms take advantage of bodily resources in sign languages

Such resources are not equally available in spoken languages

In search of grammar?

Grammars as logical, disembodied, universal systems

Or grammars as built from bodily resources which are implicated at levels beyond the perceptual/articulatory level

Iconicity is not a simple concept in human languages, signed or spoken.

Thanks to...

Support from NIH: R01 DC 6473

Shai Davidi, videographer and Deniz Ilkbasaran, graphics and video support

Irit Meir, Adam Stone, David McKee, Elisabeth Engberg-Pedersen, Ritva Bergmann, Soya Mori for assistance with data collection