

# The role of mouthing in foreign-deaf interactions

*American Sign Language and Russian Sign Language*

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## Iconic Gestures

### Iconic Gestures<sup>1</sup>

- Are closely related to the semantic content of speech
- Represent:
  - Kinetographic: required hand postures for real world objects
  - Spatial movement: movements of objects or people in space
  - Pictographic: shapes of objects or people
- Example: “a round ornament” (drawing a circle in the air)



<sup>1</sup> Other gesture types such as *beat*, *deictic*, *emblems*, *metaphoric* and *adaptors* will not be discussed here;

## The Relation of Speech and Gesture

### How are speech and gestures different? (McNeill, 1992)

#### Gestures

- Global (meaning from *whole*)
- Instantaneous
- Non-conventionalized (idiosyncratic)<sup>1</sup>
- Created from meaning at the moment of speech

#### Speech

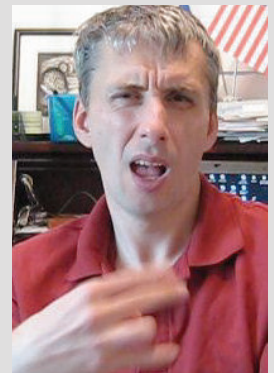
- Analytic (combinatoric)
- Incremental
- Conventionalized
- Constrained by standards of good form (form-meaning pairs)

<sup>1</sup> typically, though emblems are traditionally thought of as conventionalized, such as 'thumbs up'

## What role does the mouth play in sign languages?

**The hands and the mouth integrate in sign language. Various types of mouthing and mouth gestures have been observed across many sign languages** (Sandler, 2009; Vogt-Svendsen, 2001; Hohenberger and Happ, 2001, Schermer, 1990, among others).

**Just as hand gestures tend to co-occur with speech in hearing individuals, mouth gestures perform a similar function for deaf individuals who are signing with their hands: they enrich the signal from the hands in what appears to be *symbolic symbiosis*** (Sandler, 2009)



## Distinguishing *phonetic mouthing* from *mouth gestures*

**Some conventionalization  
but mostly context  
dependent**



**Phonetic mouthing is the nonverbal articulation of words or segments of words. In deaf societies this stems from contact with the majority spoken language of the country (Weisenberg, 2009; Keller, 2001)**

**Idiosyncratic and context  
dependent**



**Iconic mouth gesture is the formation of mouth shapes that represent the signer's interpretation of an object's movement, texture, size, or shape. This can include sensations of sounds or vibrations (Sandler 2009)**

## Other types of *mouthings*

### Conventionalized



**Adverbial or adjectival mouth shapes are used to modify nouns or verbs. The shape of the mouth conveys information about the motion, size, or manner (Liddell 1980)**

### Conventionalized



**Lexical mouthings are obligatory mouth shapes that co-occur with a manual sign (Meir and Sandler 2008; McIntire and Reilly 1988)**

### Idiosyncratic and context dependent



**Mimetic mouthing are mouth shapes conveying affect, physical appearance or imitative actions of a subject (Sandler 2009)**

## Interim summary

**Phonetic mouthing** – in ASL a signer manually articulates the concept CALL accompanied with a silent mouth movement representing the vowel /a/ and /l/

**Iconic mouth gestures** – represent on the mouth the physical properties or sensations related to an event concurrently explained on the hands. Israeli Sign Language (ISL): *tight fit in narrow space* (cat in the pipe (Sandler, 2009, p. 257)) Comparable to iconic gesturing of speakers; complimentary

**Adverbial/adjectival mouth shapes** – in ASL, use of the mouth shape 'brr' for rapid movement of a motor, or appliance; conventionalized and part of grammar.

**Lexical mouthing** – The ASL sign for NOT-YET, must be accompanied by a protruding tongue; may be morphological (without the tongue, it means 'late'). In ISL, THE-REAL-THING requires accompanying mouth movement of 'fa' (Sandler, 2009, p. 265)

**Mimetic mouthing** - imitative actions of a subject, not symbolic. Iconic = the hands or mouth are set to symbolically represent the object. Ex. 'circle' for egg (iconic), and 'cracking the egg' (mimetic) (Klima & Bellugi 1979; Sandler 2009)

## Visuals of various types of mouth gestures and mimetics



Iconic mouth gesture of 'tight fit in narrow space' (cat) (Sandler 2009) **ISL**<sup>1 2</sup>



Mimetic face of a 'monkey' (Sandler 2009) **ISL**<sup>1 2</sup>



Phonetic mouthing, mouth shapes represent sounds 'have...' (Weisenberg, 2009) **ASL**

<sup>1</sup>The first two examples are from native deaf signers; the third is from a hearing bilingual bimodal signer <sup>2</sup>Reprinted with permission Sign Language Research Lab, University of Haifa

## Obligatory *lexical mouthing* in Russian Sign Language vs. *phonetic mouthing* in American Sign Language

### **Russian Sign Language:**

**Псих** ('loony'), uses a slightly protruding tongue mouth shape



Video: in context of a sentence in RSL



Both cases use a protruding tongue, yet of different categories and associated meaning



### **American Sign Language:**

**WILL** or **LATER**, some ASL users employ a slightly protruding tongue mouth shape co-occurring with the sign. The choice is speaker-dependent; considered phonetic mouthing.

## Phonetics in foreign deaf interactions

- ◆ **In International Sign Language (ISL), mouthings containing phonological remnants are restricted since they potentially inhibit mutual comprehension between foreign deaf** (Ebbinghaus 1998)
- ◆ **Moody (2007) specifically teaches interpreters not to utilize mouthing during ISL conferences.**
- ◆ **Goldin-Meadow and McNeill (1999) suggest that the «oral modality is *not* well suited to conveying messages mimetically...»** (p. 155).
- ◆ **In sign languages the mouth does in fact do a poor job of conveying phonological information from speech** (Keller, 2001).
- ◆ **Lipreading, even for the most talented deaf, is arduous and unsuccessful** (Garey & Hott, 2007)

## Hypothesis

- A conversation between two deaf people each using a mutually unintelligible sign language encapsulates a very primitive interaction with the mimetic capacity of the hands fully exploited. The mouth being the dispensable articulator.
- Just as gesturing is not mandatory with speech, signing without mouthing is possible when the two sign languages have contrasting phonetic and lexical mouthing.

### Predicted outcomes

- ➡ Little evidence of phonetic mouthing in comparison to other types
- ➡ Increased use of mimetics<sup>1</sup> to accommodate foreign partner
- ➡ Gesture uptake, as foreign partners encounter each others' signs

<sup>1</sup>Mimetic in the sense of mimicking a person's actions or physical appearance

## Method for the pilot study

### Subjects

- One female deaf, citizen of Russia, native user of Russian Sign Language (РЖЯ)
- One male deaf, citizen of the US, native user of American Sign Language (ASL)
- Both deaf from birth
- Neither had any exposure to the other's sign language

### Procedure

- The female Russian subject was shown the cartoon *Canary Row*, and instructed to retell the story to her American partner
- The male American subject was told to pay close attention to detail for a memory exam at the conclusion, and to interrupt the storyteller for clarification if needed
- The American subject then viewed the cartoon *Putty Tat Trouble* and was instructed to retell the story to his partner. Likewise the Russian subject anticipated a memory test, and was told to interrupt as needed
- Each subject did retell the story as told to them by their partners. Each did in fact interrupt several times to ask questions. Subjects were videotaped.

## Findings

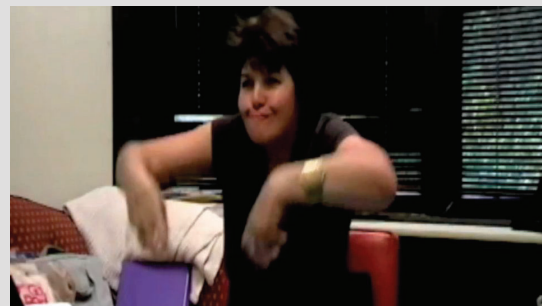
- ★ **Little evidence of phonetic mouthing in comparison to other types**
- ★ **Increased use of mimetics to accommodate foreign partner**
- ★ **Gesture uptake, as foreign partners encounter each others' signs**

## Example of mimetics – Russian subject

**In this example, the Russian subject describes the cat impersonating a monkey. The American subject interrupts her for clarification (a misunderstanding of ‘monkey’). She then incorporates body and mouth mimetics, including jumping, further scratching, and taking on the affect of a monkey.**



Video: mimetic attempt to convey meaning of ‘monkey’



Mimetic mouth of monkey face

## Example of mimetics – American subject

**In this example, the American subject describes a frozen body of water (i.e. lake). He initially starts to fingerspell L-, abandons it, then fingerspells in ASL, I-C-E. The partner doesn't understand. He makes several attempts to clarify the concept using hand gesture of a flat surface, an upright figure twirling, and miming of arms moving in skating.**



Video: mimetic attempt to convey meaning of 'frozen water'



Body mimetic of arms moving in skating

## Example of gesture uptake

**In this example, the Russian subject describes Tweety Bird's owner, the old lady. She first uses the Russian sign BABUSHKA, however the American subject misunderstands and interrupts for clarification. She then adopts the ASL sign GRANDMOTHER, offered by her American partner.**



Video: gesture uptake of ASL sign GRANDMOTHER by Russian subject



Phonetic mouthing of 'babushka'

## Conclusion

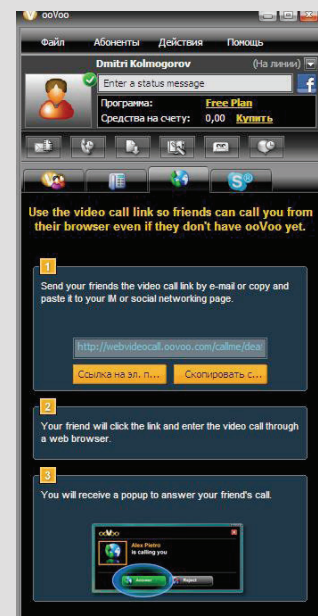
If we are to build on and refine our theory of bimodal language in humans and theories of language evolution, we need to continue to examine the complementary effectiveness of hand and mouth integration.

Foreign to foreign deaf signing interaction is a resourceful means to understanding the hands' capacity to convey meaning when the mouth is not well equipped to contribute.

Pantomime is found more in the earlier generations of a new sign language than later (Sandler 2007; 2009). Similarly, foreign to foreign deaf interaction replicates a simple attempt at communication, fertile ground for a pidgin to grow, and therefore not surprising to find pantomime and other iconicity exploited.

## Future Experimental Design and Activities

- Recruiting of subjects from the Russian Deaf community with no prior ASL exposure
- Setup and installation of OOVOO software with recording capability; prepare options for subjects (*link* or full download/installation)
- Creation of an online subject *consent form* in Russian with accompanying ПЖЯ video interpretation



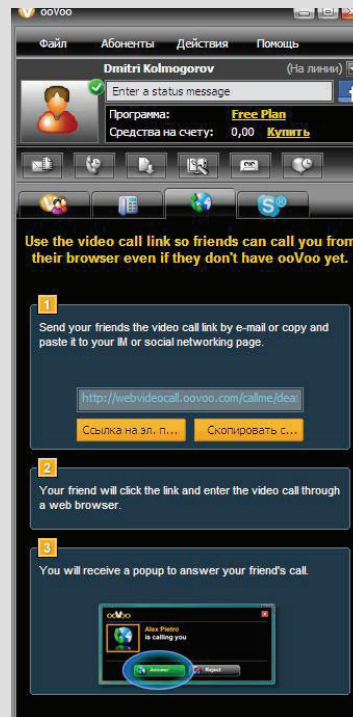
## Future Experimental Design and Activities

- OOVOO software and recording capabilities



## Future Experimental Design and Activities

- permits the foreign user to simply click a link so they can call from their browser, even if they do not have ooVoo installed
- The domestic user will then receive a *popup* on their screen prompting them to answer the call.



## Future Experimental Design and Activities

- an example of a recorded message using ooVoo software



## Future Experimental Design and Activities

- repeat of *Canary Row* and *Putty Tat Trouble* storytelling experiment

### ***purpose***

- Give the experiment more power with larger subject pool
- Permit further opportunity to document and investigate gesture uptake
- create an additional component of the experiment: subjects view extracted video grabs of mouth gestures from either PЖЯ or ASL without context and are asked to assign meaning to each from a multiple choice sheet; intersperse grabs with conventionalized mouth shapes (shown with or without hands?)

### ***purpose***

- Determine if there is any cross-linguistic overlap of mouth gestures between the two sign languages (aka: international conventionalization)
- Determine whether specific iconic mouth gestures captured in the experiment are truly idiosyncratic or perhaps on a continuum towards conventionalization (PЖЯ)
- Determine the effectiveness of mouth gestures alone versus those with manual sign co-articulation

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