

# Tutorial: Week 8

Sign language as a window into language origins

## Prior to the tutorial:

Please read [\*Evolving artificial sign languages in the lab: From improvised gesture to systematic sign\*](#). Pay special attention to the Procedure and Results of Experiment 2.

## In the tutorial:

Download the folder associated with this tutorial. It contains four sub-folders, each containing five videos. These videos show gesture sequences from four chains of participants in Experiment 2. Two of the folders contain videos from transmission-only chains, and two of them contain videos from interaction-only chains. Additionally, two of the folders contain videos where the gestures indicate a person (e.g. a priest) and two folders contain gestures indicating a place (e.g. a restaurant). Using your knowledge from reading the article, complete the tasks below in groups:

1. Explore the videos in each of the four folders and see if you can figure out the meanings that the participants are trying to convey.
2. Based on your understanding of the results of Experiment 2, identify which two folders contain chains from the transmission-only condition and which two contain chains from the interaction-only condition (don't overthink this one!)
3. Try to organise the videos in the order you think they were created in the experiment. For the transmission-only condition, which gestures do you think were produced by the first generation vs the last generation in that chain? For the interaction-only condition, which video shows the first set of gestures produced by members of that dyad to convey a meaning, and which video shows the last set of gestures from that dyad
  - o Pay close attention to differences between videos and be ready to motivate why you think they should be in a specific order.
4. Recall the experiments Kenny discussed in Lecture 1 and during last week's lecture. One experiment examined changes in drawings over time when these were used in a repeated game of Pictionary; the other was an iterated learning experiment examining how a randomised language used to convey motion, colour and shape

changed over time as it was learned by participants. What are some similarities and differences between those two experiments and this one in terms of their starting point and results?

1. Bonus questions (if there is time left in the tutorial):
  - a. In the discussion section of this paper, the authors talk about similarities and differences between their experimental results and patterns observed in real signed languages. What were some of these similarities and differences, and how were they exemplified in the videos you looked at today?
  - b. Did you notice any modality-specific strategies that were used by participants in the gesture videos you looked at? Were there any modality specific strategies you were expecting to see that you didn't?

## Answers:

1. Meanings are:
  - a. videoFolder1 – church
  - b. videoFolder2 – chef
  - c. videoFolder3 – concert hall
  - d. videoFolder4 – police officer
  
2. Conditions are:
  - a. Transmission-only - videoFolder1 and videoFolder2
  - b. Interaction-only - videoFolder3 and videoFolder4
  
3. Video orders:
  - a. videoFolder1 - 0653, 6419, 0456, 8092, 2314
  - b. videoFolder2 - 3602, 7698, 8552, 6430, 9293
  - c. videoFolder3 - 0438, 2473, 7219, 5538, 4675
  - d. videoFolder4 - 6478, 2435, 3856, 4897, 6908
  
4. Comparison with other iterated learning studies:
  - a. Similarity to Garrod et al study: both start from iconic/transparent signs (here gestures) that became shorter/simpler in the interaction-only condition.
  - b. Difference to Garrod et al study: still clear iconic mapping between gestures and meanings in this experiment, even in interaction-only chain, whereas drawings became quite abstract/arbitrary over time (remember exception when the iconic sign also happens to be simple!, e.g. wave pattern for “blue”).
  - c. Similarity to Kirby et al study: emergence of some systematic structure in use of sub-parts that signal aspects of meaning, e.g. opening door or drawing a roof to signify a place, or pointing for person (pointing for person, usually called indexical pointing, is common in pronominal systems in signed languages). Most prominent in the transmission-only condition.
  - d. Difference to Smith et al study: starts form an iconic/holistic system, rather than a random one.

## 5. Bonus questions

- a. Thinking about early cohorts of young sign languages and homesign, these are similar to the interaction only condition as they include few individuals communicating and so the pressure to converge on a systematic structure is low. In later stages of young sign language, and in established national sign language, the turnover of speakers is faster and, like in the transmission only condition, this introduces the need to converge on systematic structure. There is development of categorical markers to distinguish between types of nominals, and between nominals and verbs (recall the set reading for the lecture this week). Also, evidence of segmentation and grammaticalization of holistic gestures.
- b. Saw: use of multiple articulators. E.g. gesture accompanied by manipulation of facial expressions. Didn't see: Simultaneity, e.g. could have expected pointing to self while performing action associated with person, not seen in these videos but present in some others.