

## Cogs 102A Lab 4: Scaffolding

**Goal:** Learn to analyze teaching and learning as an embodied process of scaffolded social interaction.

**Instructions:** Watch the video of somebody teaching somebody how to build and fly paper airplane. You can find the link to this video (called “Scaffolding”) on the class website.

Identify the three paper folding events in this video – one by the “Expert” and two by the “Novice”. Pay particular attention to the way the Novice’s learning is scaffolded by the Expert. Note that both Expert and Novice are considered to be *active* participants in any scaffolding interaction, although the nature of their participation varies across the three events. You will write a detailed description of their activity and compare it across the phases of this learning interaction.

Given that we are interested in embodied cognition, you will report and compare the **sensori-motor activity** of the participants. For example, you will report changes in the target of gaze or touch, in type of hand action performed, in gesture and facial expression, as well as in speech. You will also attend to how these various **modalities interact** (e.g. how speech directs gaze, how hands and eyes get coordinated, etc.) Plus, you will make note of how the participants make use of **space**, and especially relative space, during these interactions. Note also that **timing** is particularly important here - both in the **order** and the **pace** of events. For example, part of what marks an “Expert” is the “smoothness” of performance, so hesitations can be an important marker in learning.

You especially want to note how the **distribution** of these activities across the participants changes over the three events. That is, scaffolding involves a change in the **configuration of joint behavior** over the course of a learning interaction.

While *PART A* (see below) certainly requires MICRO analysis, you have some discretion in terms of just how detailed you go – i.e. when you claim that a relevant change in the system’s configuration has occurred. For example, you do not have to describe every word they say, every move of the hand, every crease of the paper, etc. Instead, you could begin with the starting configuration (e.g. 0:00:00 Expert: Eyes on paper, both hands folding paper, paper positioned on table closer to Novice, Expert head down but body oriented to Novice: Novice: eyes on paper, hands on table, but closer to self than to paper, etc...) and then record any time one or more of the elements reconfigure. (e.g. 00:00:27-35, Expert speaks (instruction) & looks up to Novice face; Novice still looking at paper. e.g. 00:04:23-50: Novice pauses, resumes folding haltingly.) Note that it can help to classify the words spoken, actions taken, gestures performed, etc. into what you decide are the main, pertinent categories (e.g. for words, perhaps: Instruction, Question, Encouragement, etc.), so you do not have to report specific words or actions.

As before, one person on your team should keep a written record of your group’s research activity, informally on the NOTES page of your report. Then answer the **specific questions** provided in the **Lab Report**. Note that the more carefully you READ the questions, and the more directly you answer them as asked, the better you will do!

## LAB QUESTIONS:

### A) Describe the three paper-folding events

Each folding event should be described, independently of the other events, as a **detailed sequence of changes** along the following dimensions: target of gaze and touch, hand actions, body position and orientation, gesture, facial expression, and speech. Note especially how these dimensions **interact** (e.g. how speech directs gaze, whether hands and eyes are co-oriented, etc) both within and between participants. This will include how each participant makes use of space (e.g. where an action takes place, relative to the actor and the other) and any changes in the pace of an activity. This is a sequential description, so be careful to discriminate the order (including overlap) in which things occur. And remember: **“Nothing never happens”** - that is, even the “inactive” participant is always doing something with his hands, eyes, face, etc., so be sure to include the activity of both parties in each description. You should call the participants “Expert” and “Novice”. Use only the space allotted for each event.

**EVENT 1:**

**EVENT 2:**

**EVENT 3:**

### B) Scaffolding : A Changing Configuration of Joint Behavior

Describe how the participants’ behavior changes across the three events (both Event 1 to Event 2, and Event 2 to Event 3). Do not re-describe the particulars of the action that you included above. Instead, provide a thorough account of how the general activity between the participants reconfigures across each pair of events. Be careful here – you must continue to describe the relations between behavioral events – NOT mental ones!

### C) Learning as Behavioral Change

What is it about the above that leads you to believe that the Novice has learned the behavior? Don’t forget to include the Expert in your answer!