

Creativity

MICHAEL BERNSTEIN

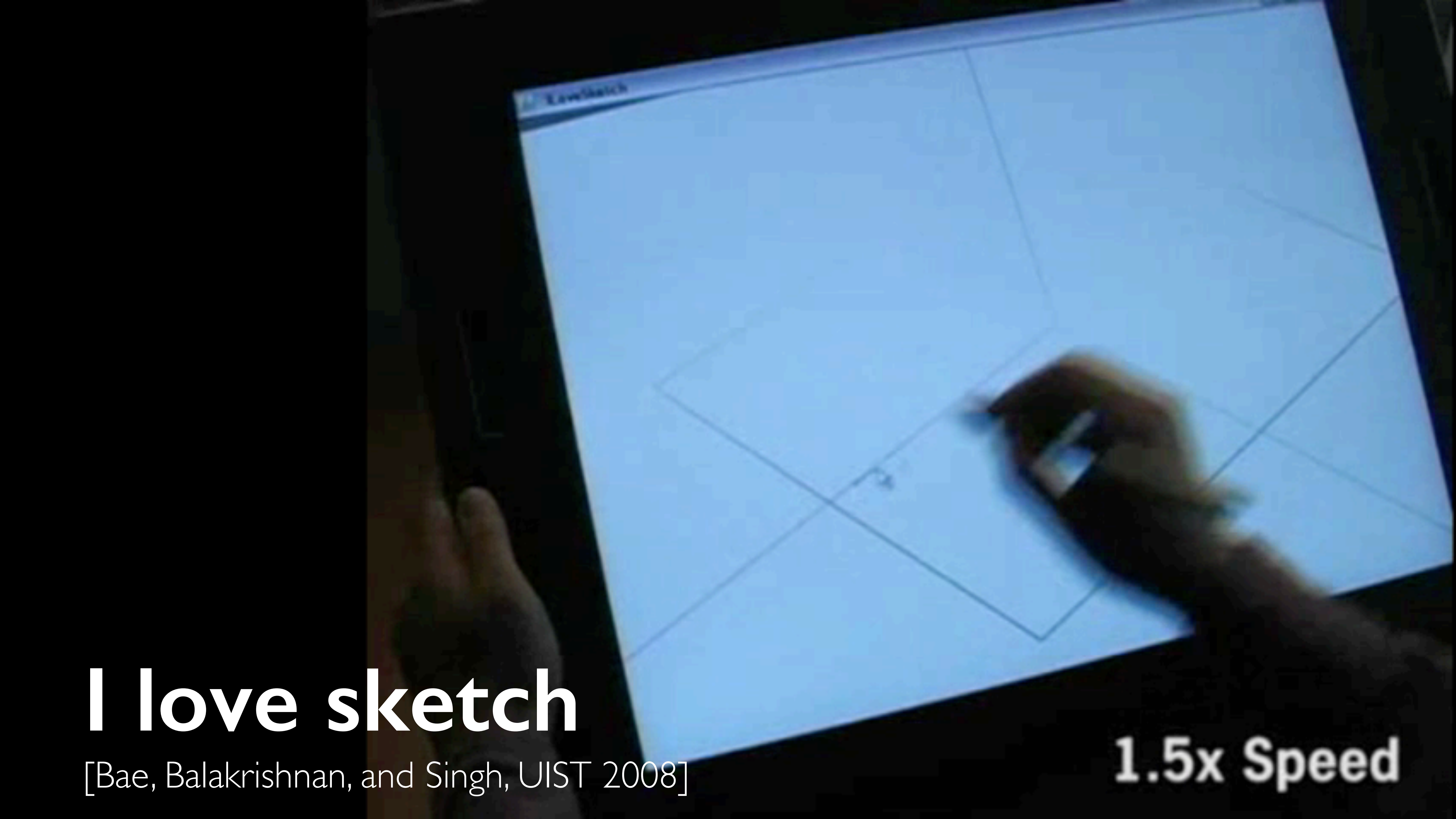
CS 376





Create.

Authoring Tools



I love sketch

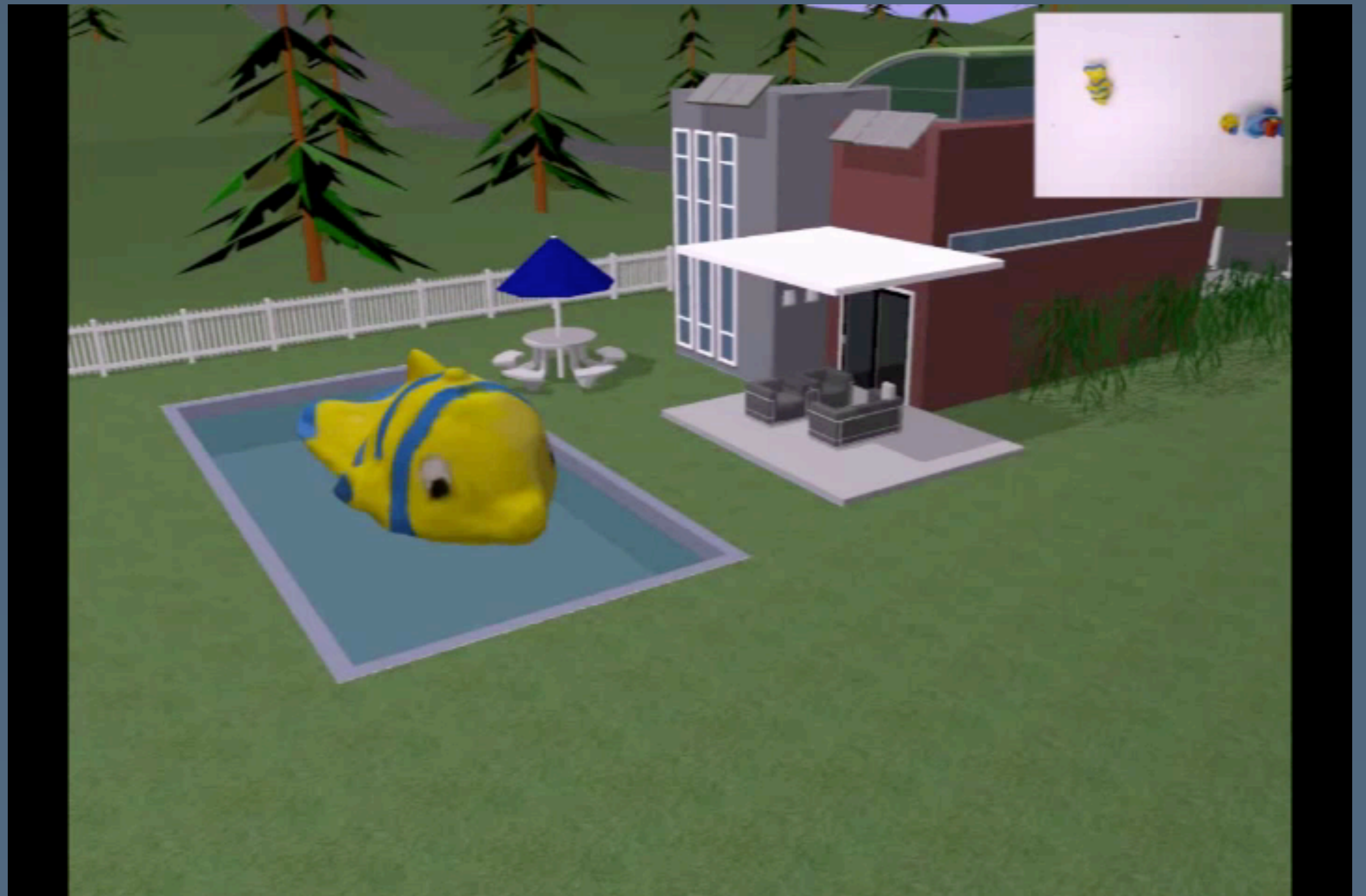
[Bae, Balakrishnan, and Singh, UIST 2008]

1.5x Speed

3D puppetry

[Held et al., UIST '12]

- Kinect motion capture + texture capture = puppets



Musical underscoring

[Rubin et al., UIST '12]

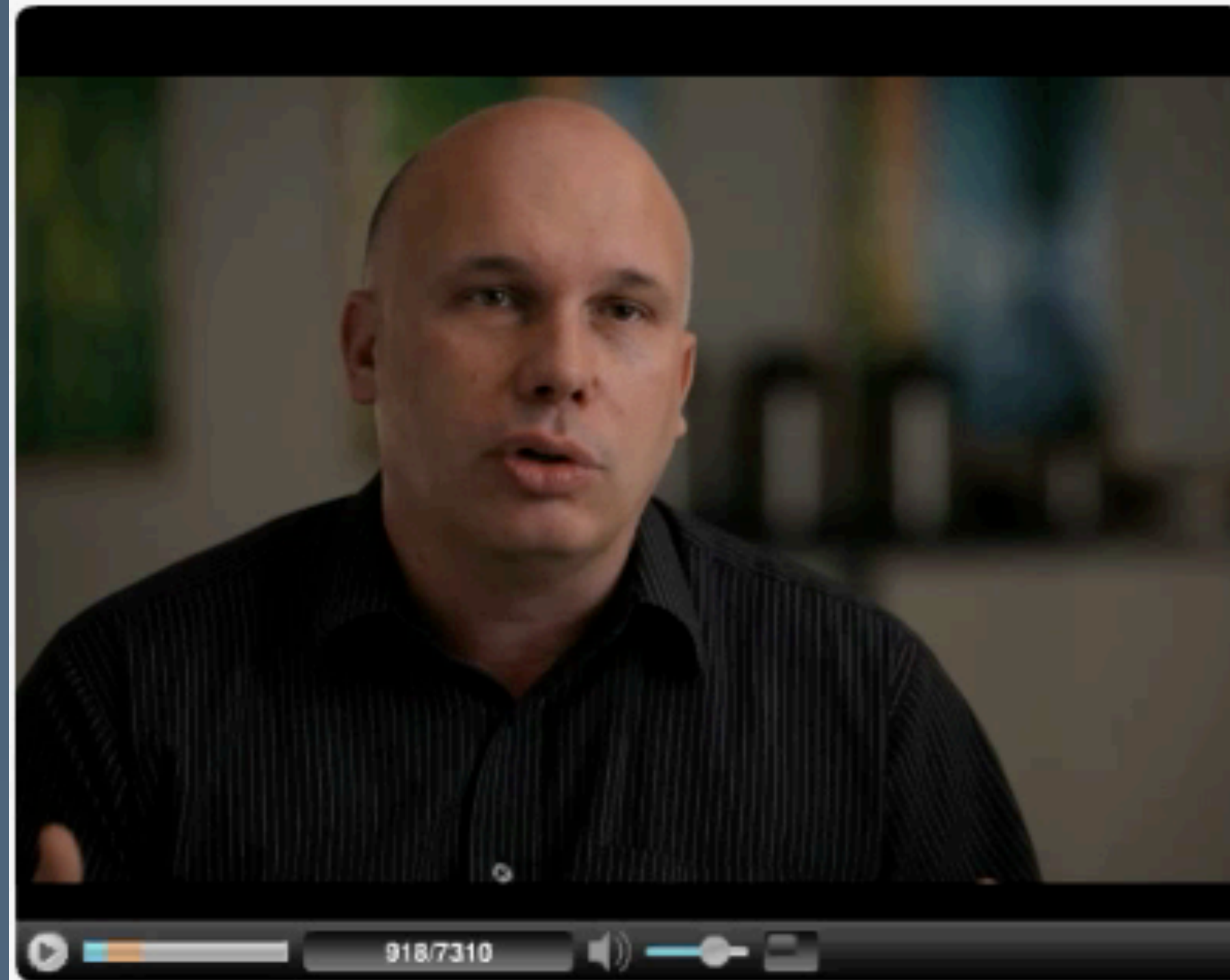
The screenshot shows a software interface for musical underscoring. The main window is titled "Editor" and has a "Composition name" field containing "Great Expectations".

On the left side, there is a "Speech Library" panel with a list of audio files: "alice.wav", "great expectations.wav", and "sedaris.wav". A mouse cursor is hovering over "sedaris.wav". Above this list are three radio buttons: "Tracks move" (selected), "Tracks clip", and "Mark lock". Below the radio buttons is a "Status:" label.

The main workspace features a timeline at the top with a red playhead at the 00:00 mark. The timeline is marked with time intervals from 00:00 to 01:05 in 5-second increments. Above the timeline are several control buttons: "Play", "Render", "Zoom(- +)", "Automate Underlay", and navigation arrows. Below the timeline, there is a grid for placing audio tracks. The grid has three horizontal lanes. The top lane is currently empty. The middle and bottom lanes contain faint, overlapping audio waveforms in light blue and pink colors, respectively.

Video

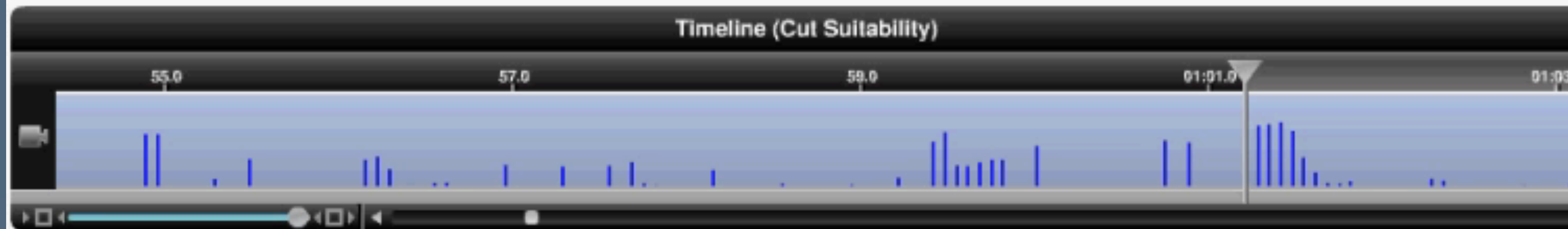
[Berthouzoz,
Li and Agrawala
SIGGRAPH '12]



Transcript View

MAN: Sure. **Um,** | some | of | our | customers, | that
have been working | in | the | print | for | **many,** | **many** |
years, | are | used | to be able to express their
ideas in, **uh,** very specific ways. **They, they**
are used to be able to control exactly what
goes **on, on** the page. They bring the story, |
they | bring the images, and they bring the
layout as well, which is a big part of making a |
story | **and, and** communicating that **story.** | And,
um with **the the** digital media and the
tablets that are used now to bring | **this** | content, |
uh, they've quickly | run | into some, | **uh,** |
limitations | with trying | to | express | the | same | thing |
with | the | HTML | and | CSS. So what we're trying

Load [] Cut Next Replay *



Our result

Video

[Berthouzoz,
Li and Agrawala
SIGGRAPH '12]



Peer production

What is peer production?

[Benkler 2006]

- Self-organizing sets of individuals who create a common resource
 - YouTube
 - Etsy
- Also commons-based peer production, where there is explicit collaboration
 - Wikipedia
 - Reddit

Should we collaborate?

[Settles and Dow, CHI 2013]

- Regression predicting which pairs of February Album Writing Month users would collaborate on a song
- Keys: complementary skills, previous messaging (existing tie)

Path Variable	Coeff.
A ← follows — B	8.433
A — follows → B	7.926
A ← messaged — B	4.935
A — messaged → B	4.183
A — wrote → 🎵 ← commented — B	4.160
A — commented → 🎵 ← wrote — B	3.879
A ← follows — 👤 ← collabed → 👤 — messaged → B	-0.434
A — follows → 👤 ← collabed → 👤 ← messaged — B	-0.484
A — liked → 🎵 ← liked — 👤 — liked → 🎵 ← liked — B	-0.776
A ← follows — 👤 ← collabed → 👤 ← messaged — B	-1.334
A — liked → 🎵 ← liked — B	-1.814
<i>(intercept)</i>	-3.707
A — wrote → 🎵 — tag → 🏷️ ← tag — 🎵 ← commented — B	0.868
A — commented → 🎵 — tag → 🏷️ ← tag — 🎵 ← wrote — B	0.504
A — wrote → 🎵 — tag → 🏷️ ← tag — 🎵 ← wrote — B	-0.388

The cost of collaboration

[Hill and Monroy-Hernández, 2013]

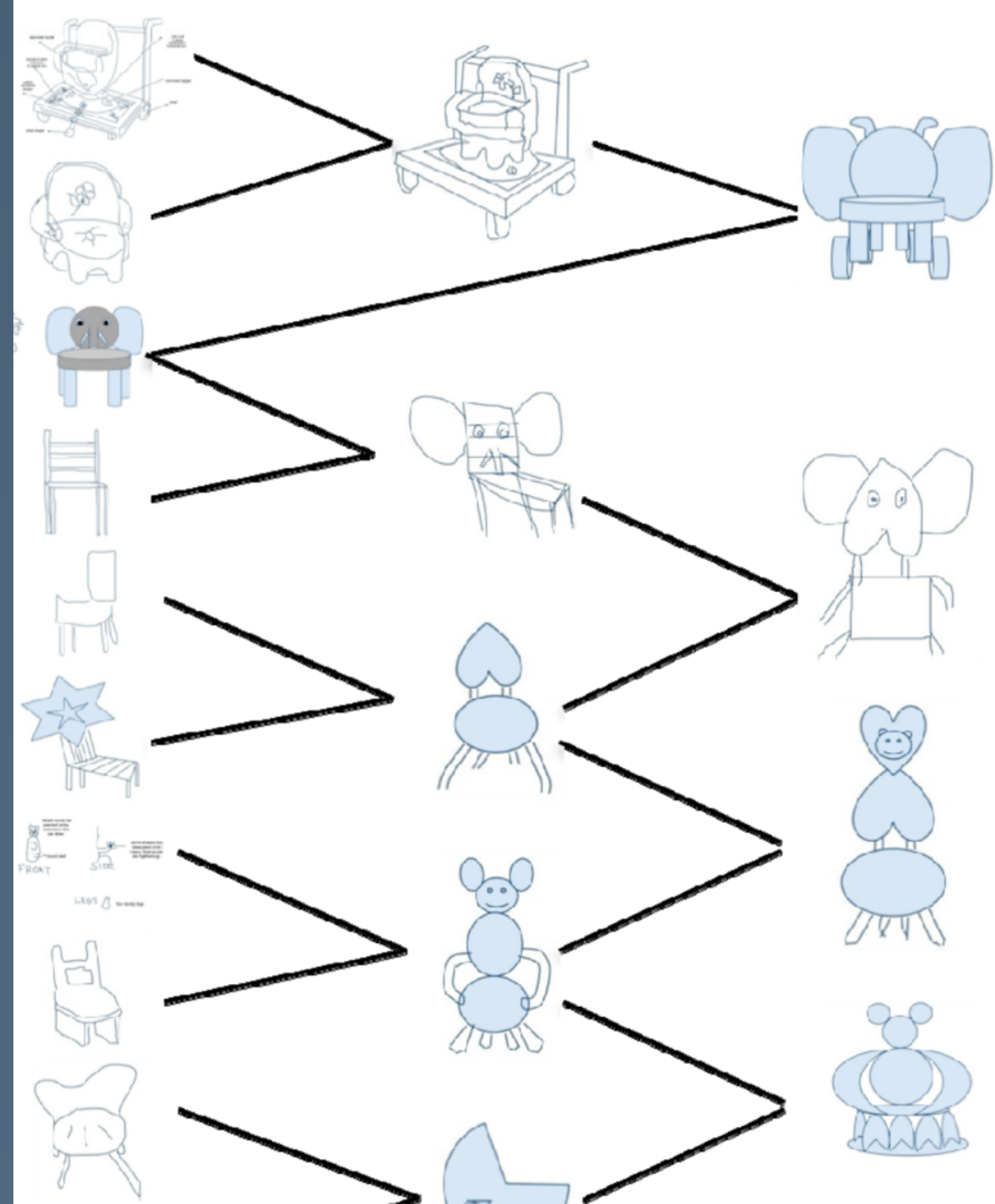
- Test common wisdom about creative collaboration
- Dependent variable: likes on the Scratch web site as a measure of quality
- Common wisdom: collaborations produce better results
 - On Scratch: remixes of prior projects got fewer likes
- Common wisdom: collaboration can improve functional items (e.g., code), not art (e.g., images, sounds)
 - On Scratch: remixes of code-heavy projects got more likes



Cooks or cobblers?

[Yu and Nickerson, CHI 2011]

- Can crowds be creative?
- 1047 workers collaborated in an iterative process of design, evaluation, and combination
- Genetic algorithm asks the crowd to recombine previous ideas



Leadership

Redistributing leadership

[Luther, Fiesler and Bruckman CSCW 2013]

- Why do more than 80% of collaborations on Newgrounds fail?
- Theory: leaders are overburdened
- Solution: make it easier to *redistribute* leadership by decentralizing it and allowing leaders to give out responsibility



Poster evolution across many temporary leaders

Ensemble: centralizing leadership

[Kim, Cheng, and Bernstein CSCW 2014]

Lender's Lake

Bike's escape from the "riders" with the help of a young man

Genre: Slice of Life/Fantasy

772 words

Started by [Zack](#) 10 months ago · Public (anyone can view story)

Story

Discussion 0

Activity

Contributors (1)

Flag

Edit Story

Delete Story

A man name Lender spent his days near the Lake. On the dock he could rest under the sun without the eyes of the oppressors on him and his friends. Him and the bikes.

By Zack #261
♥ 0 · Love

+

Scene

Scene title

0 · Comment

The bikes liked it there, too. One lay, half in the water, half in the mud; another, half-rusted, leaned against a tree. A group of newer models clustered around the base of the dock, not having yet found their favorite spot at Lender's Lake.

By Jade #326
♥ 0 · Love

#262

+

Scene

This is an example scene.

By creating a scene, you allow people to contribute alternative ways of writing this scene. Here, you can provide a short descri...

Give your collaborators a specific pr...

5 · Comment

Past sunset, as Lender left the Lake, activity

Perils and opportunities

- Unlike other areas, these are extremely non-task oriented goals
- What perspective do you take?
 - Do you make existing creative actions easier?
 - Do you give people access to a palette of tools they didn't have?
 - Do you try to provide inspiration?