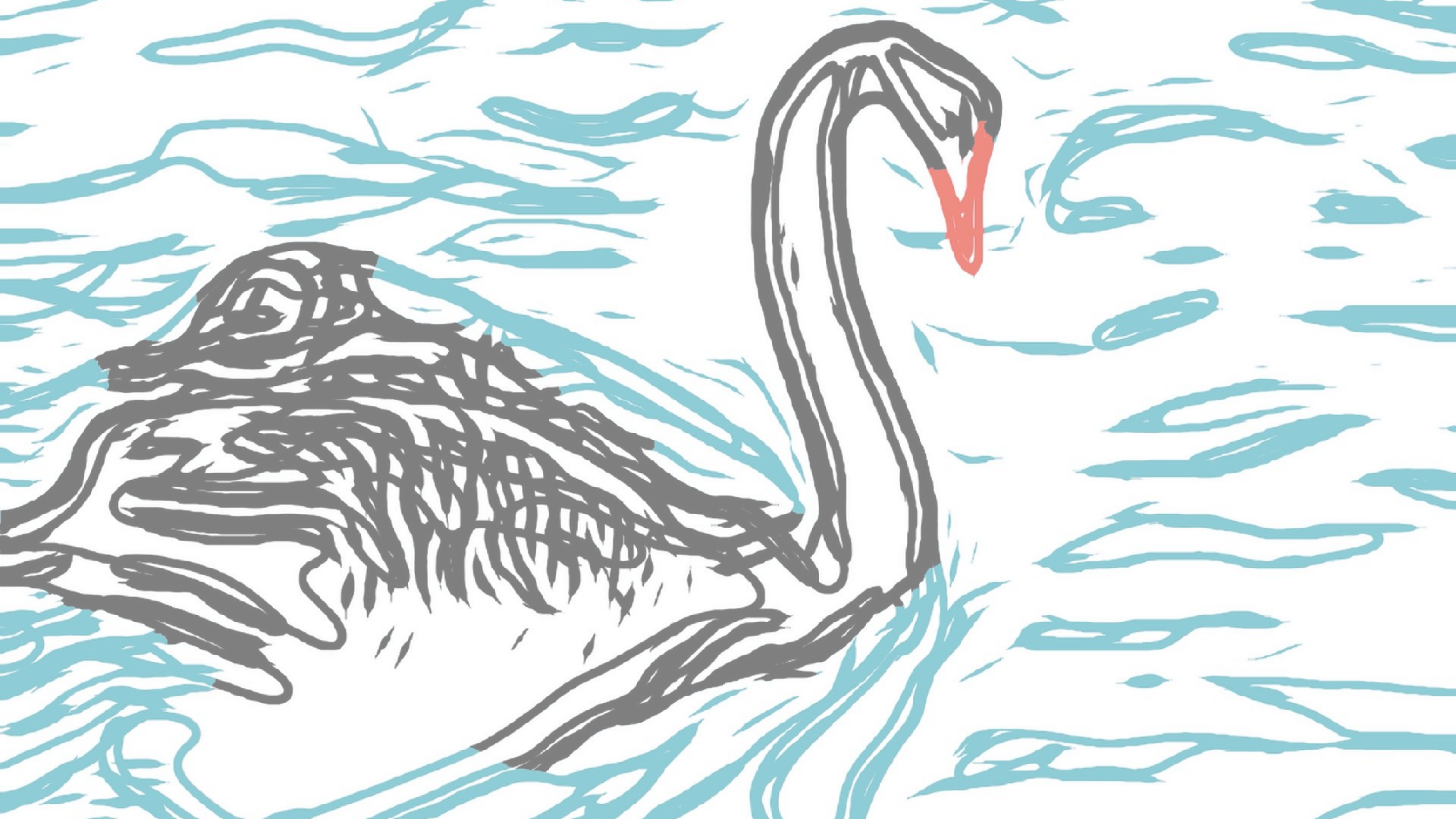


Remembering The Future: A Game With Learning Mirrors

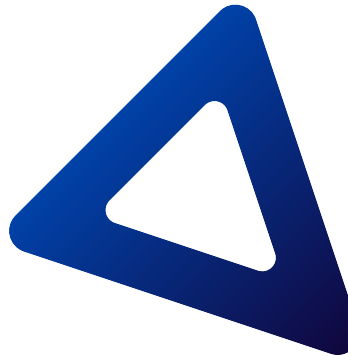
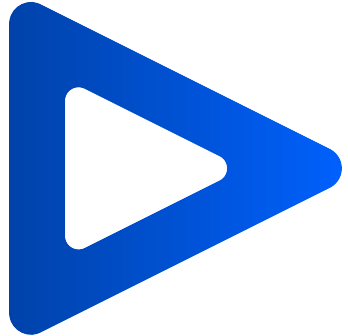
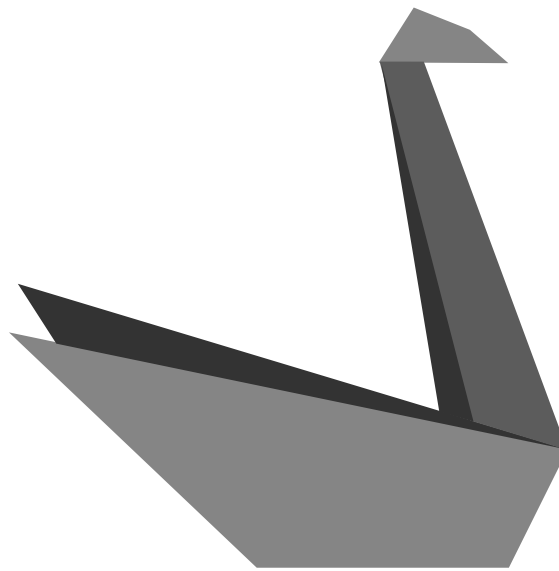
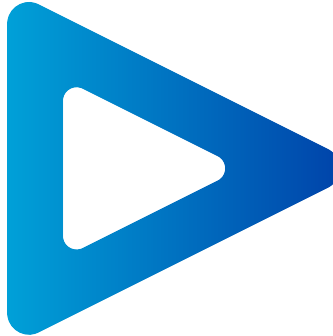
Ruben R. Puentedura, Ph.D.

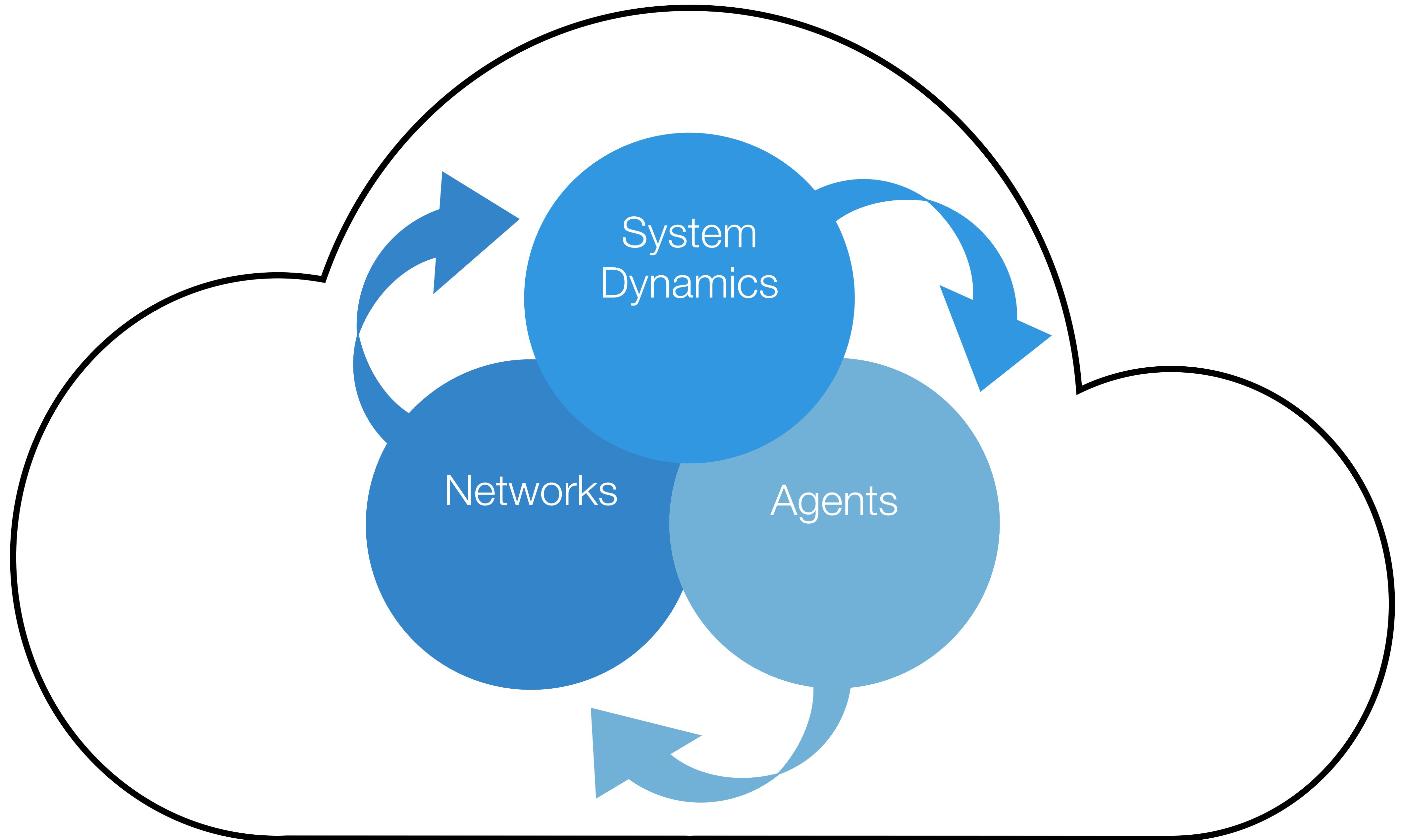
1. Black Swans

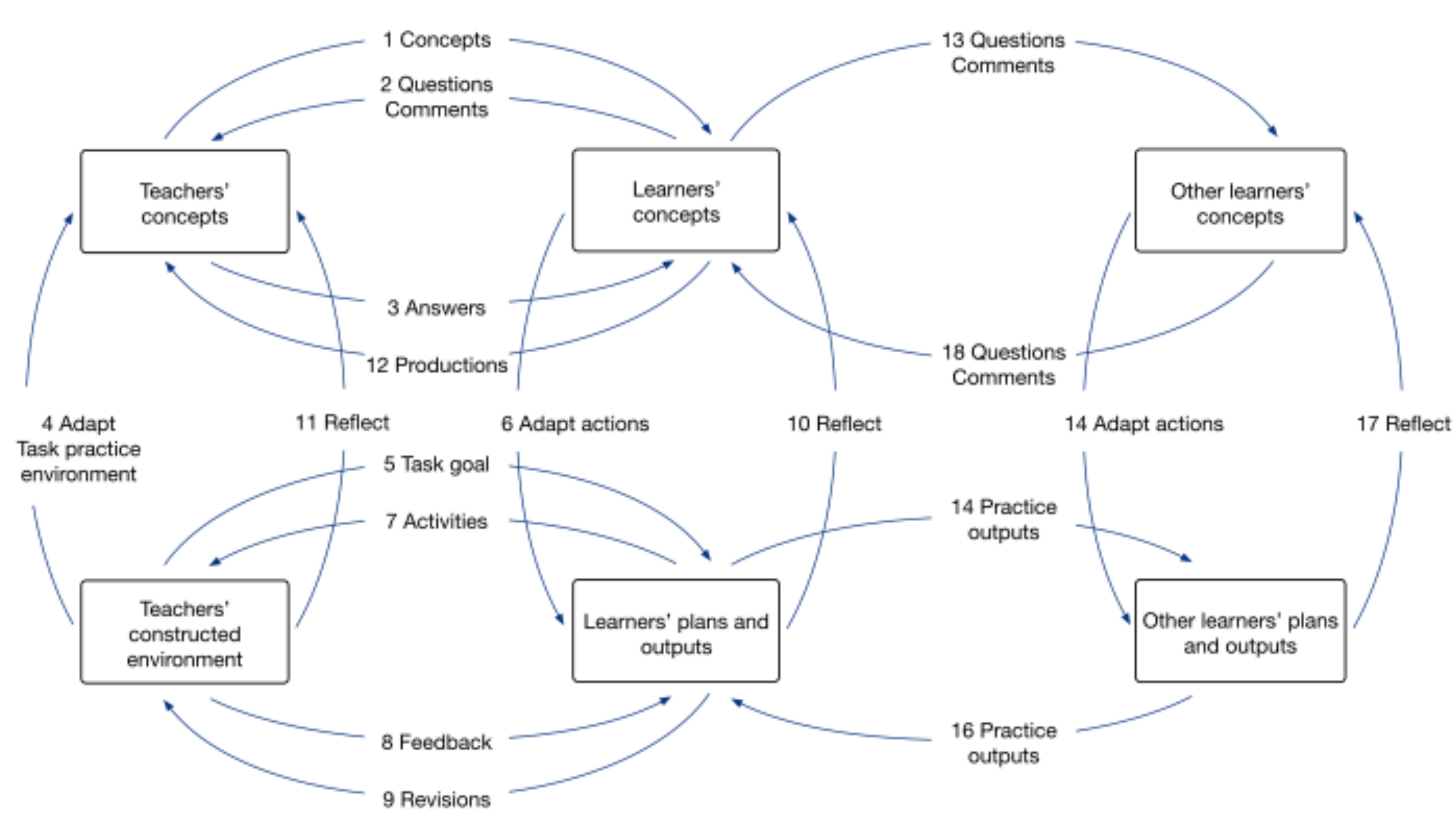


Black Swan Events

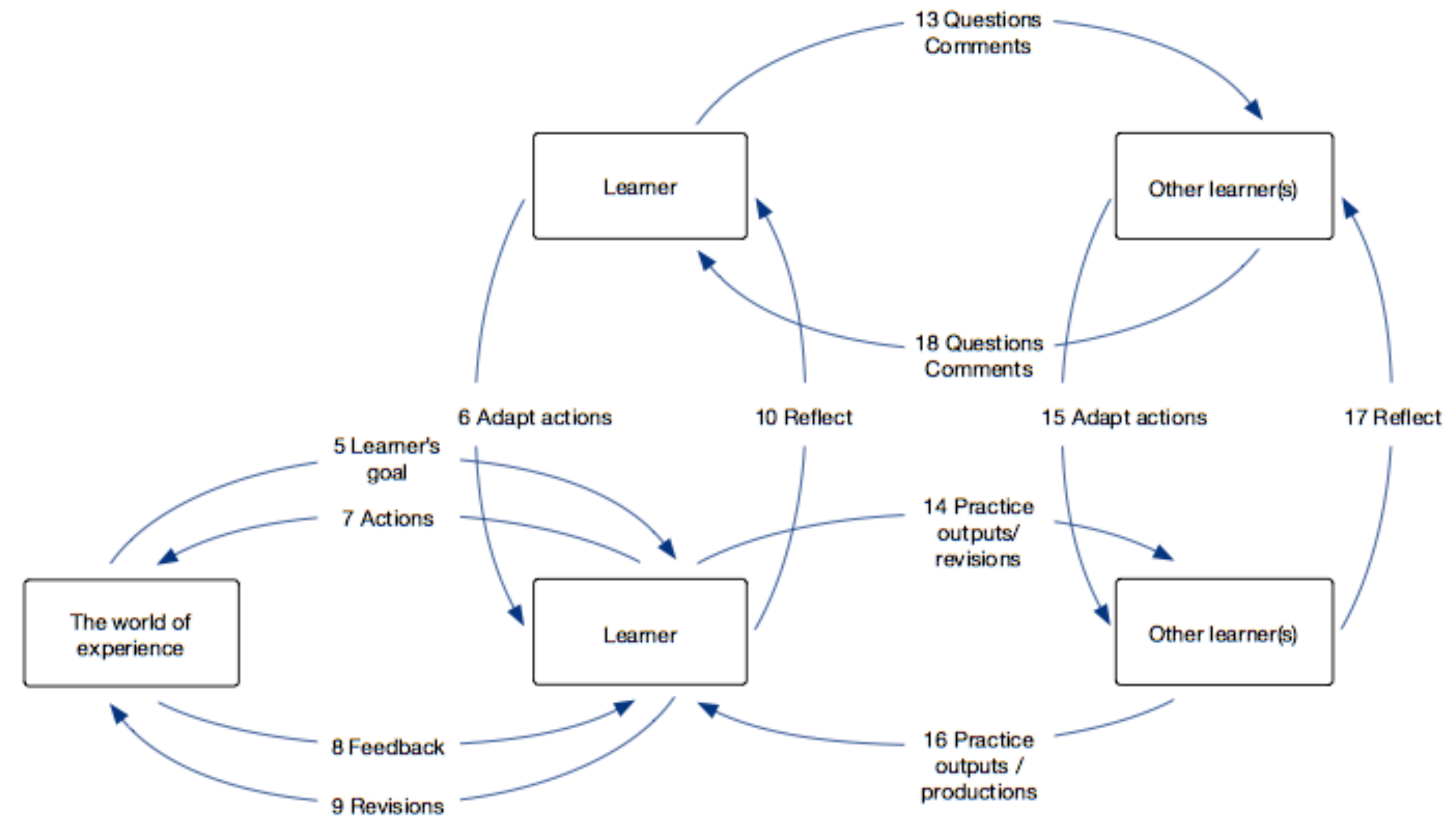
- Cannot be predicted ahead of time
- Have a major effect
- Can be rationalized retrospectively







Formal Learning

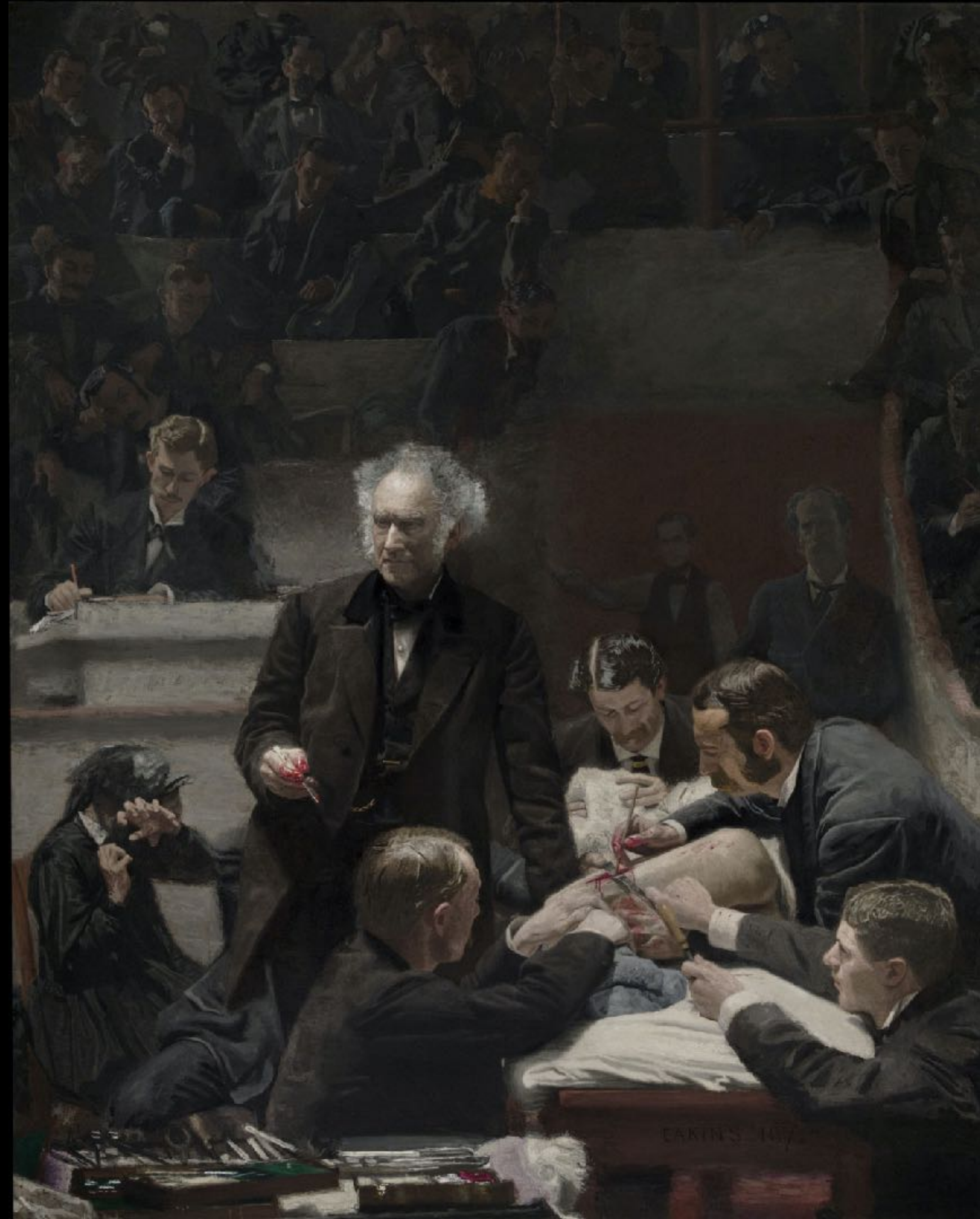


Informal Learning

Wiliam: A Framework for Formative Assessment

	Where the learner is going	Where the learner is	How to get there
Teacher	1 Clarifying, sharing and understanding learning intentions	2 Engineering effective discussions, tasks, and activities that elicit evidence of learning	3 Providing feedback that moves learners forward
Peer		4 Activating students as learning resources for one another	
Learner		5 Activating students as owners of their own learning	

-13.130/7.508/11.799/-9.007



- How do I make this unit of instruction antifragile?
- How do I make this course antifragile?
- How do I make this degree antifragile?
- How do I make this institution antifragile?
- **How do I make this student learning antifragile?**

2. SAMR, the EdTech Quintet, and Antifragility

Transformation

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

Tech allows for significant task redesign




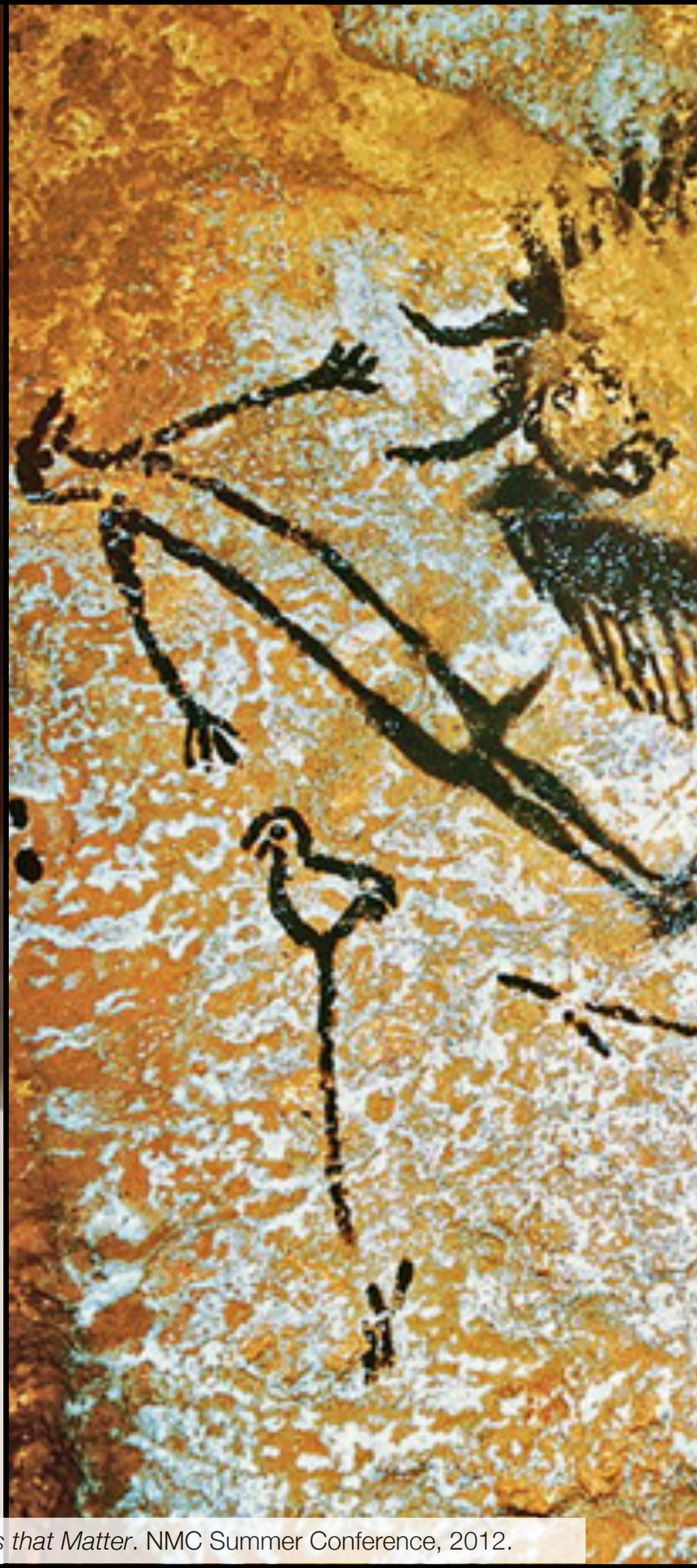

Augmentation

*Tech acts as a direct tool substitute,
with functional improvement*

Substitution

*Tech acts as a direct tool substitute,
with no functional change*

Enhancement

Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years
				

The EdTech Quintet – Associated Practices

Social	Communication, Collaboration, Sharing
Mobility	Anytime, Anyplace Learning and Creation
Visualization	Making Abstract Concepts Tangible
Storytelling	Knowledge Integration and Transmission
Gaming	Feedback Loops and Formative Assessment

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

Tech allows for significant task redesign

Augmentation

*Tech acts as a direct tool substitute,
with functional improvement*

Substitution

*Tech acts as a direct tool substitute,
with no functional change*



Infrastructure

*Primary Focus: EdTech Baseline
Implement shared tools and practices*

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

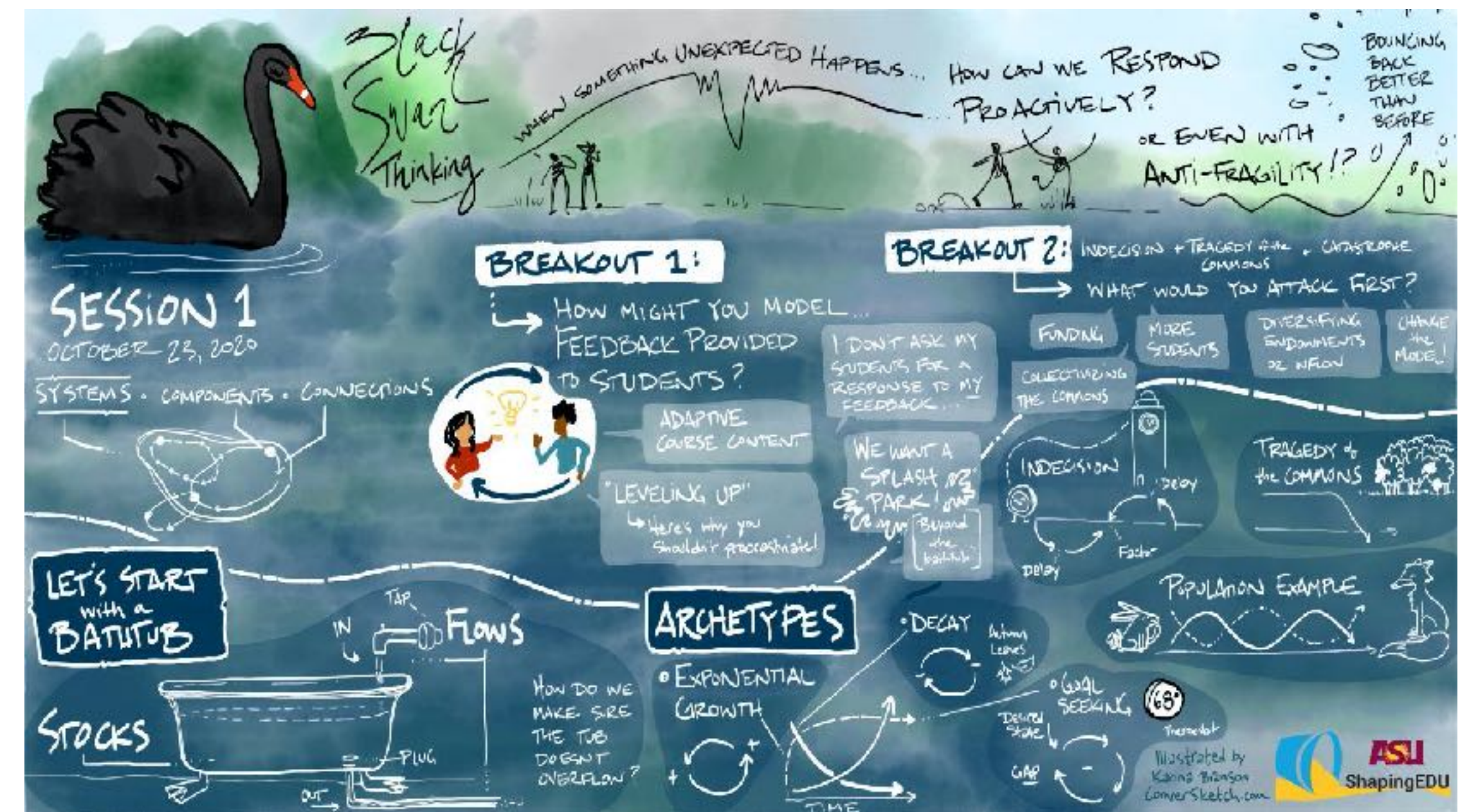
Tech allows for significant task redesign

Augmentation

*Tech acts as a direct tool substitute,
with functional improvement*

Substitution

*Tech acts as a direct tool substitute,
with no functional change*



Amplification

*Primary Focus: System Dynamics
Enhance selected leverage points*

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

Tech allows for significant task redesign

Augmentation

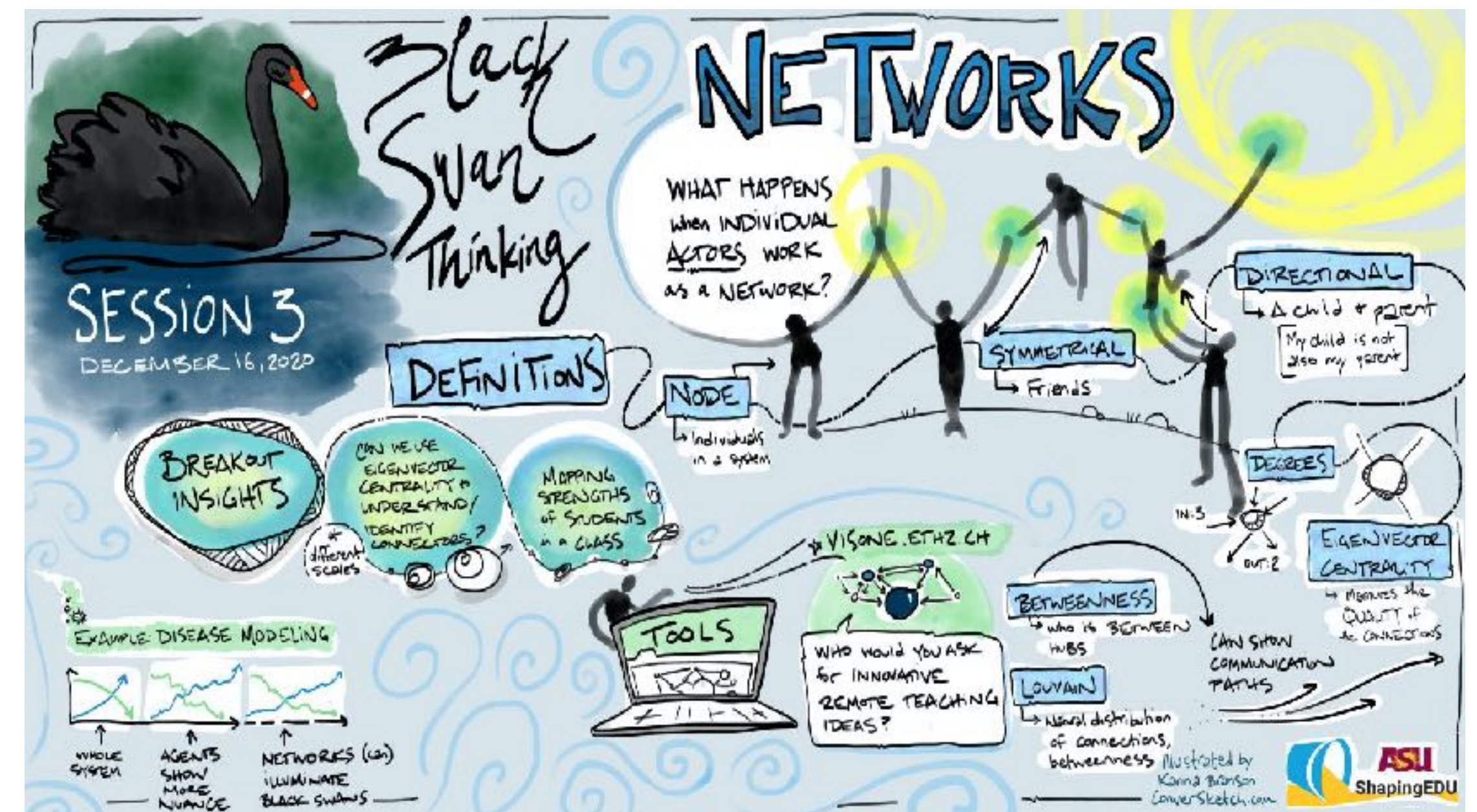
*Tech acts as a direct tool substitute,
with functional improvement*

Substitution

*Tech acts as a direct tool substitute,
with no functional change*

Integration

*Primary Focus: Networks
Create people/practice networks*



Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Differentiation

*Primary Focus: Agents
Develop learner/community agency*

Modification

Tech allows for significant task redesign

Augmentation

*Tech acts as a direct tool substitute,
with functional improvement*

Substitution

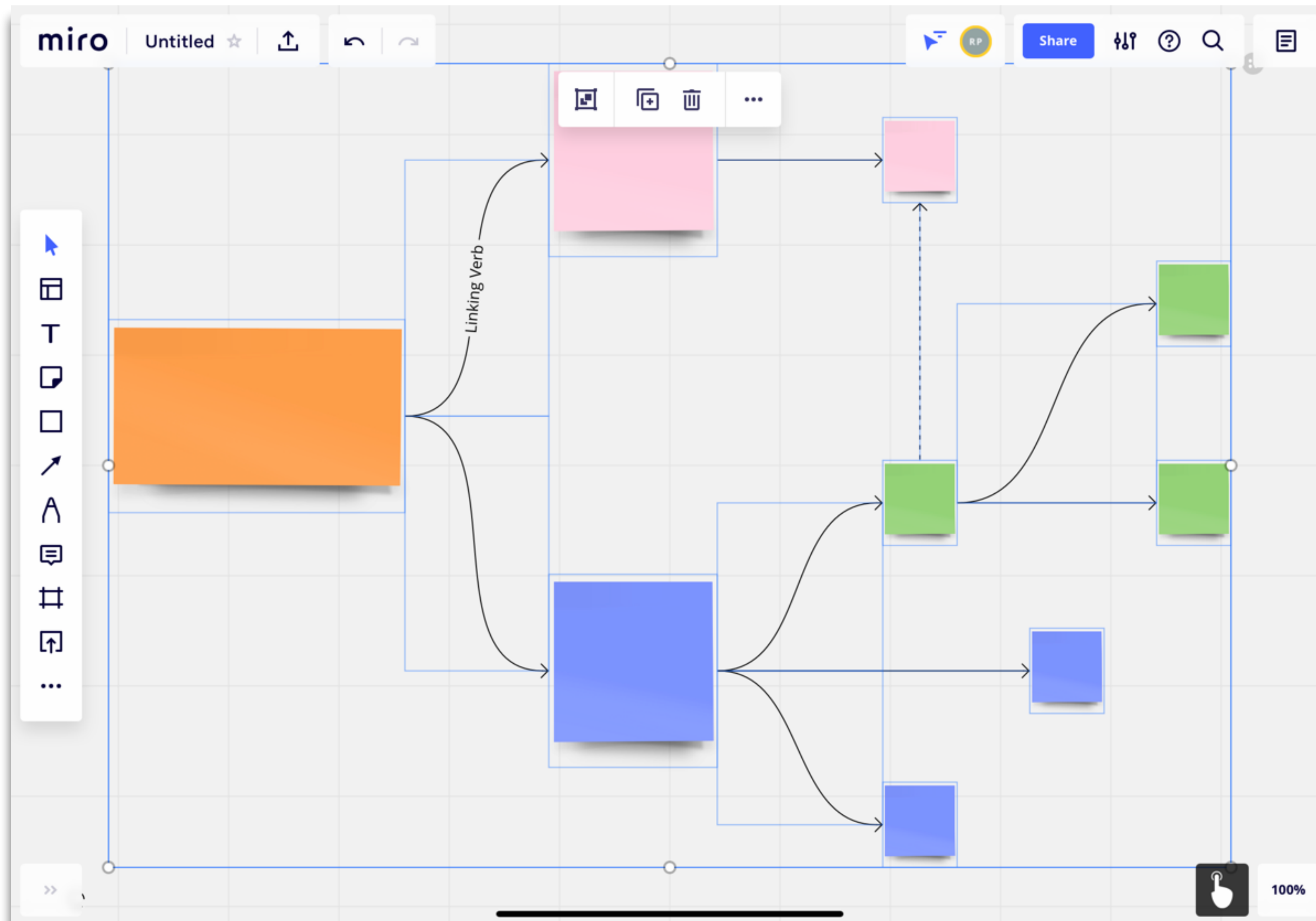
*Tech acts as a direct tool substitute,
with no functional change*



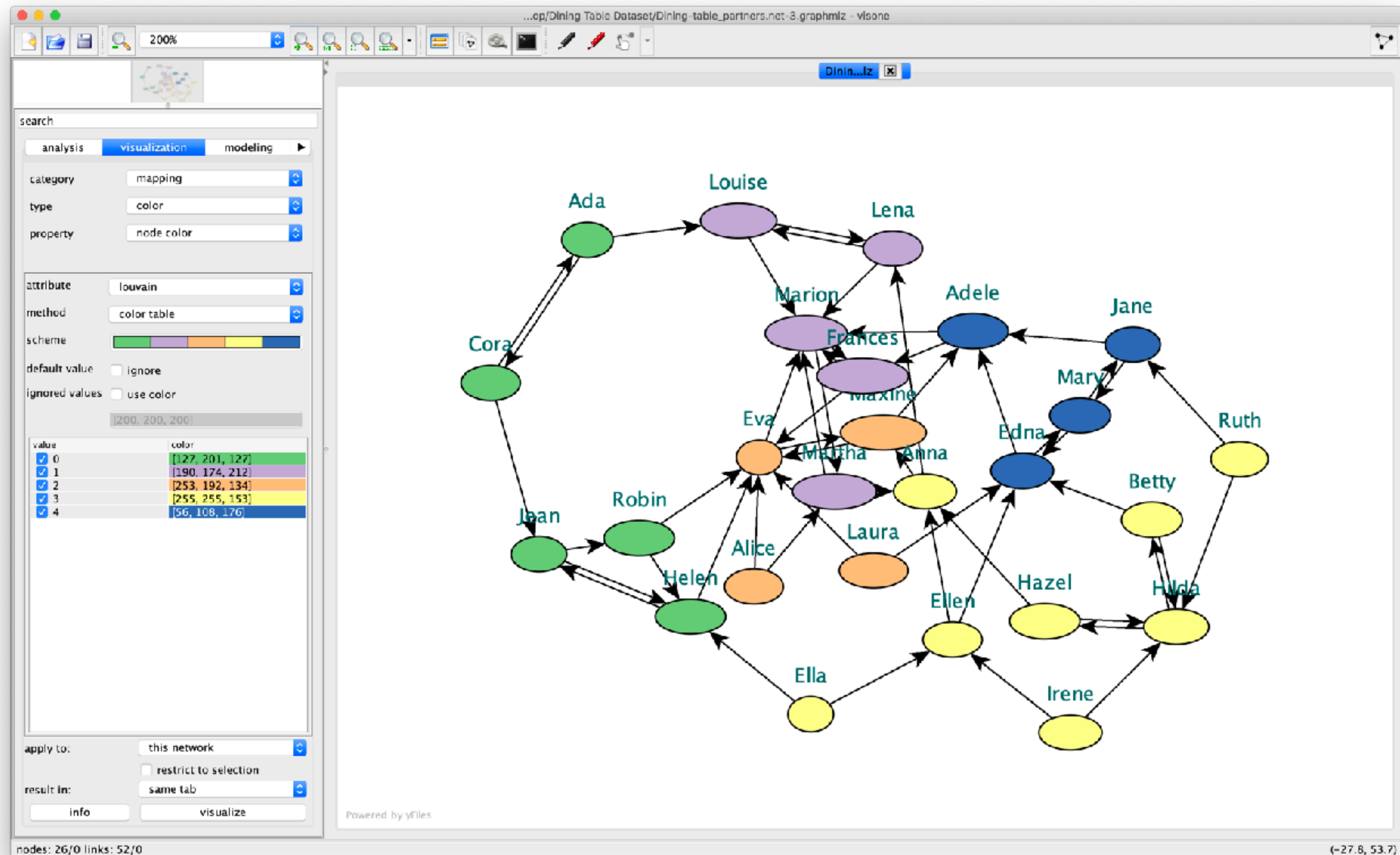
3. Mirrors

3.1 Collaboration Structures

Structuring Collaboration



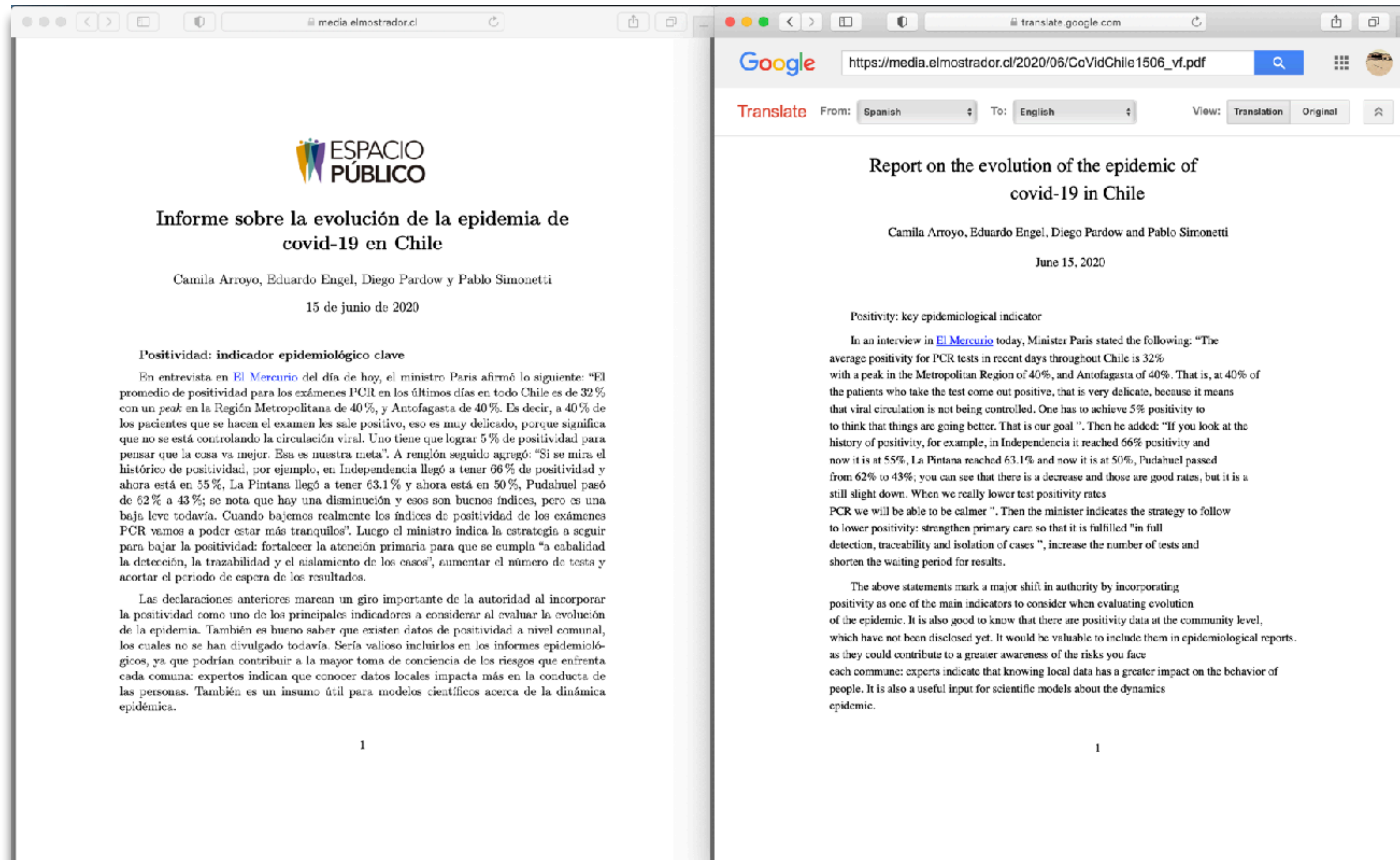
Visualizing Collaboration

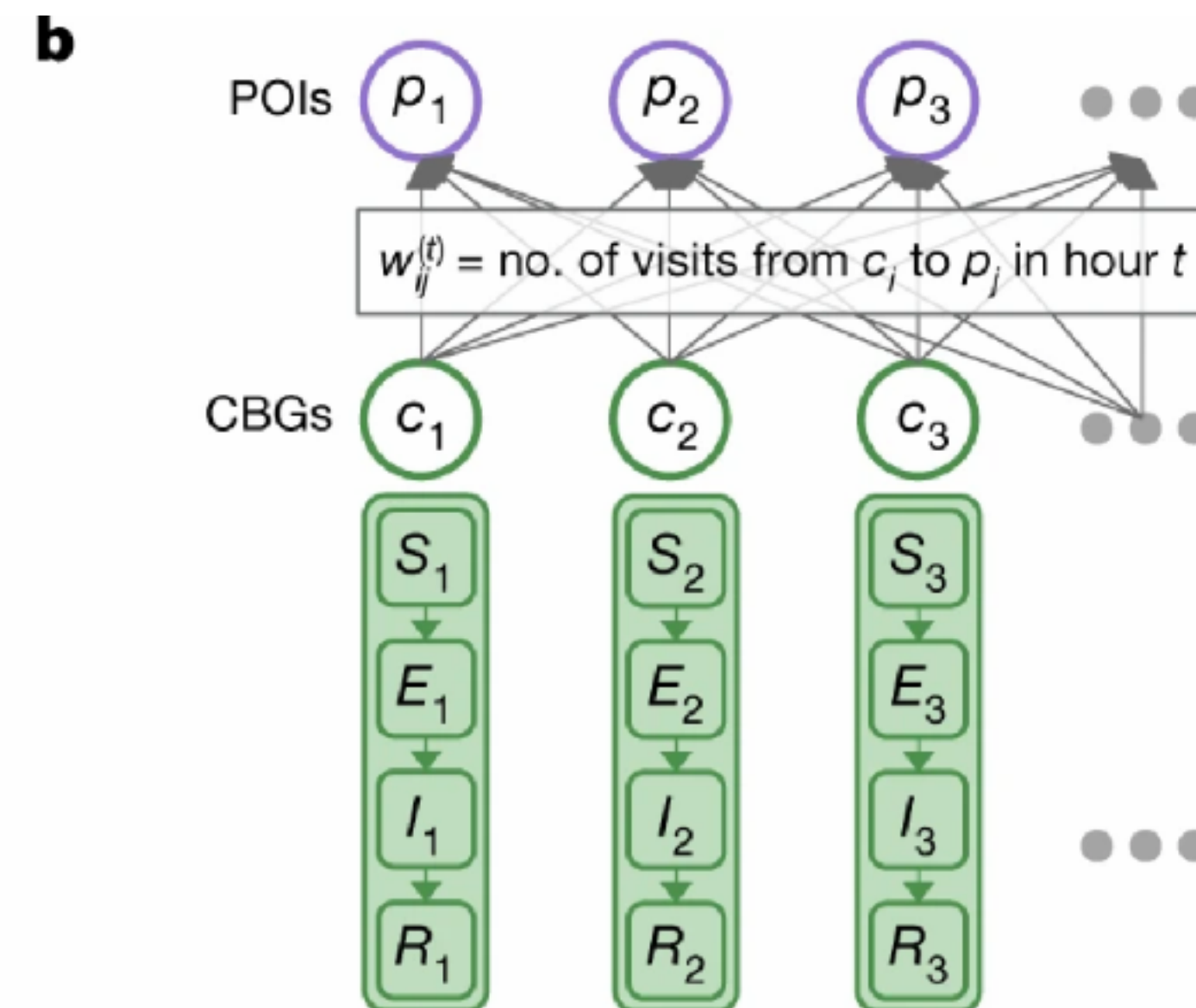
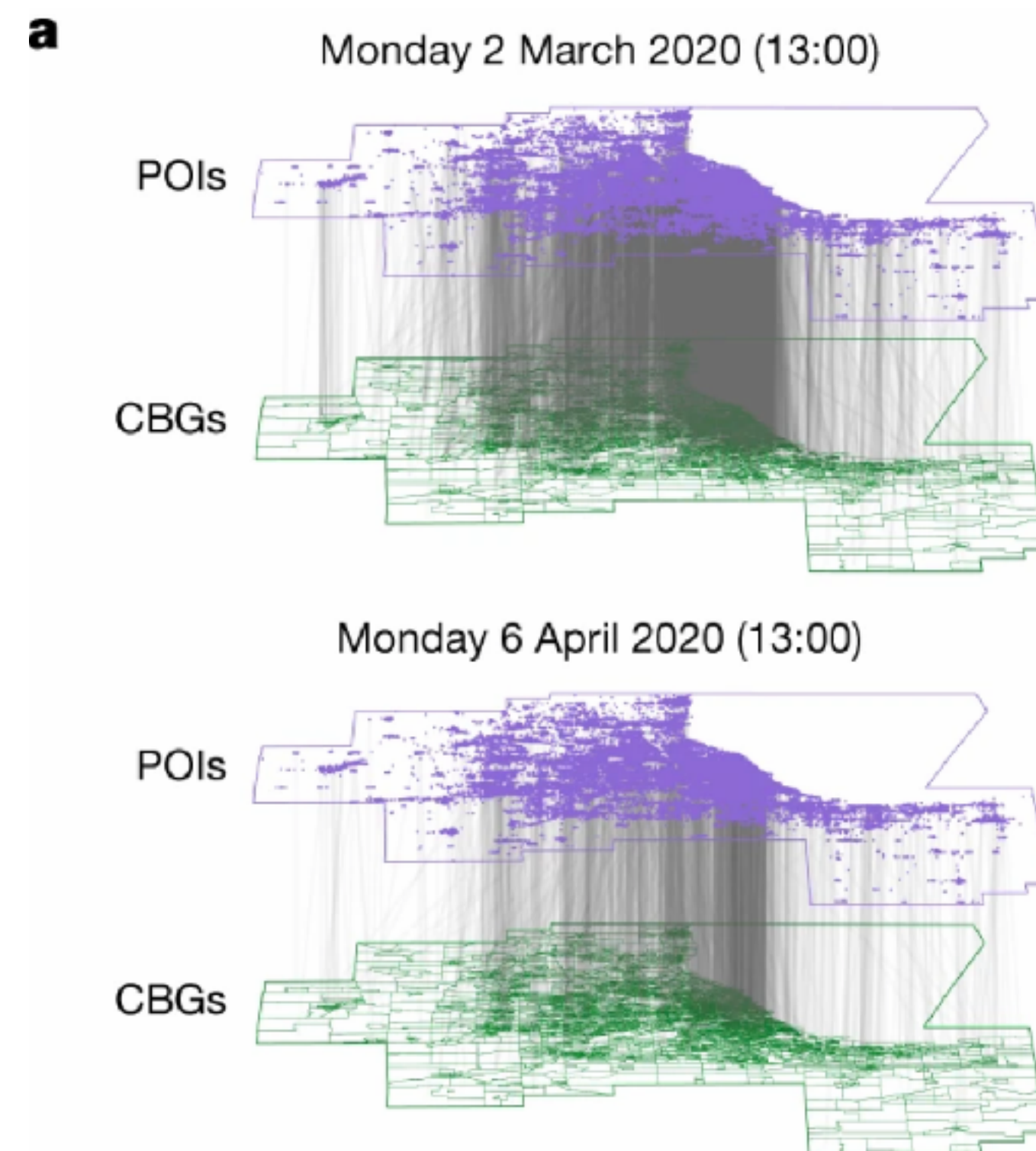


3.2 The Thinking Sidecar

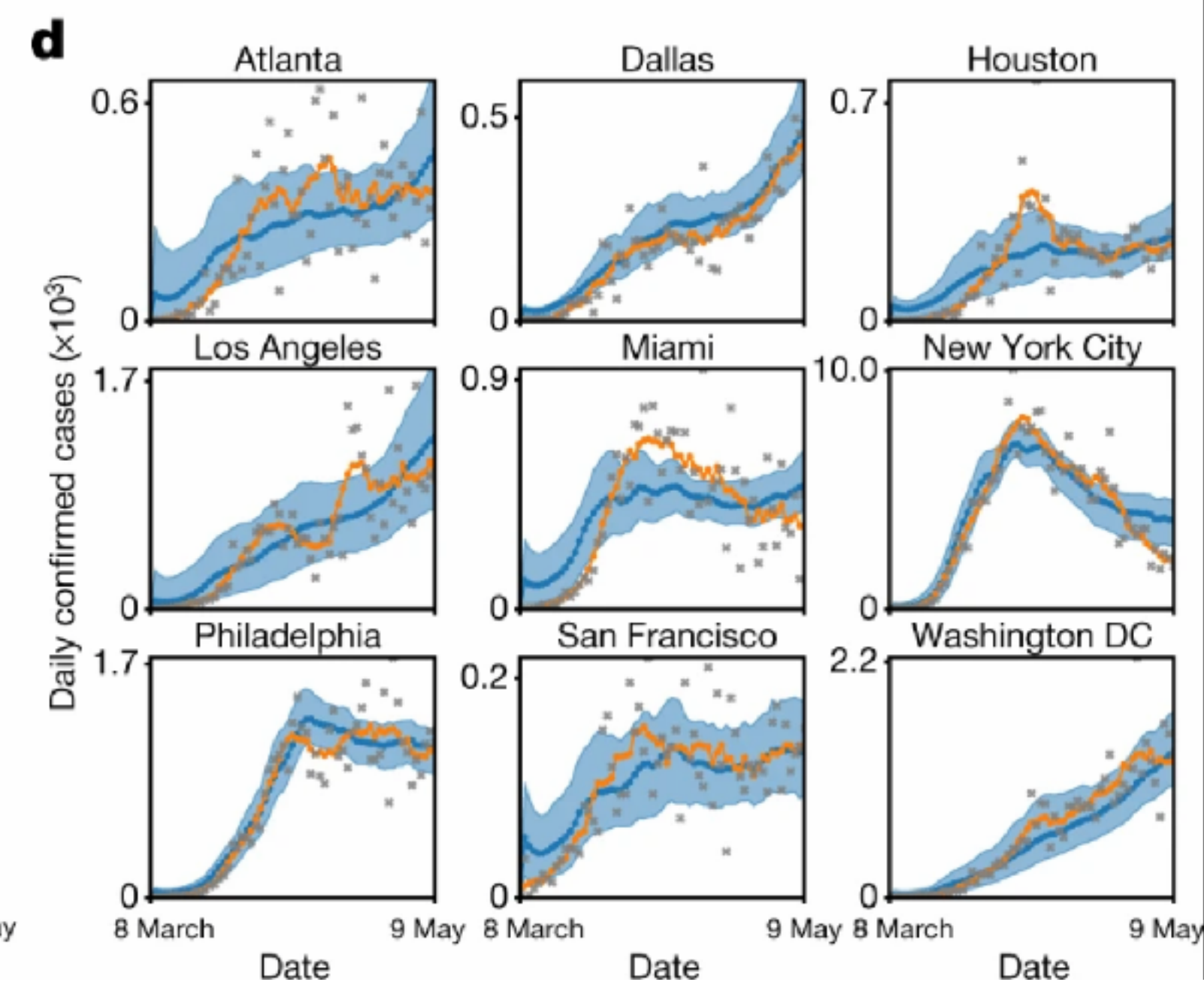
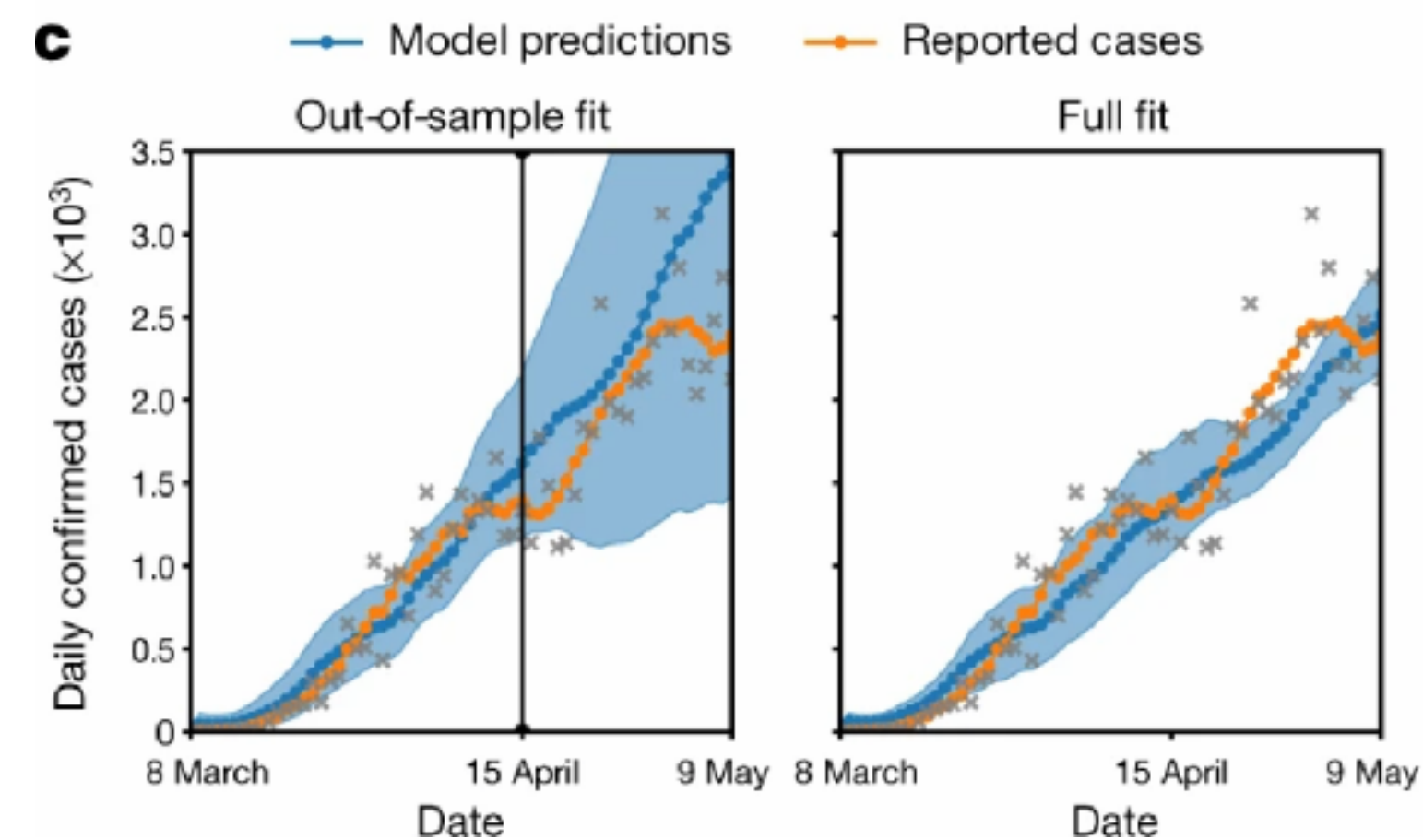


The Language Sidecar



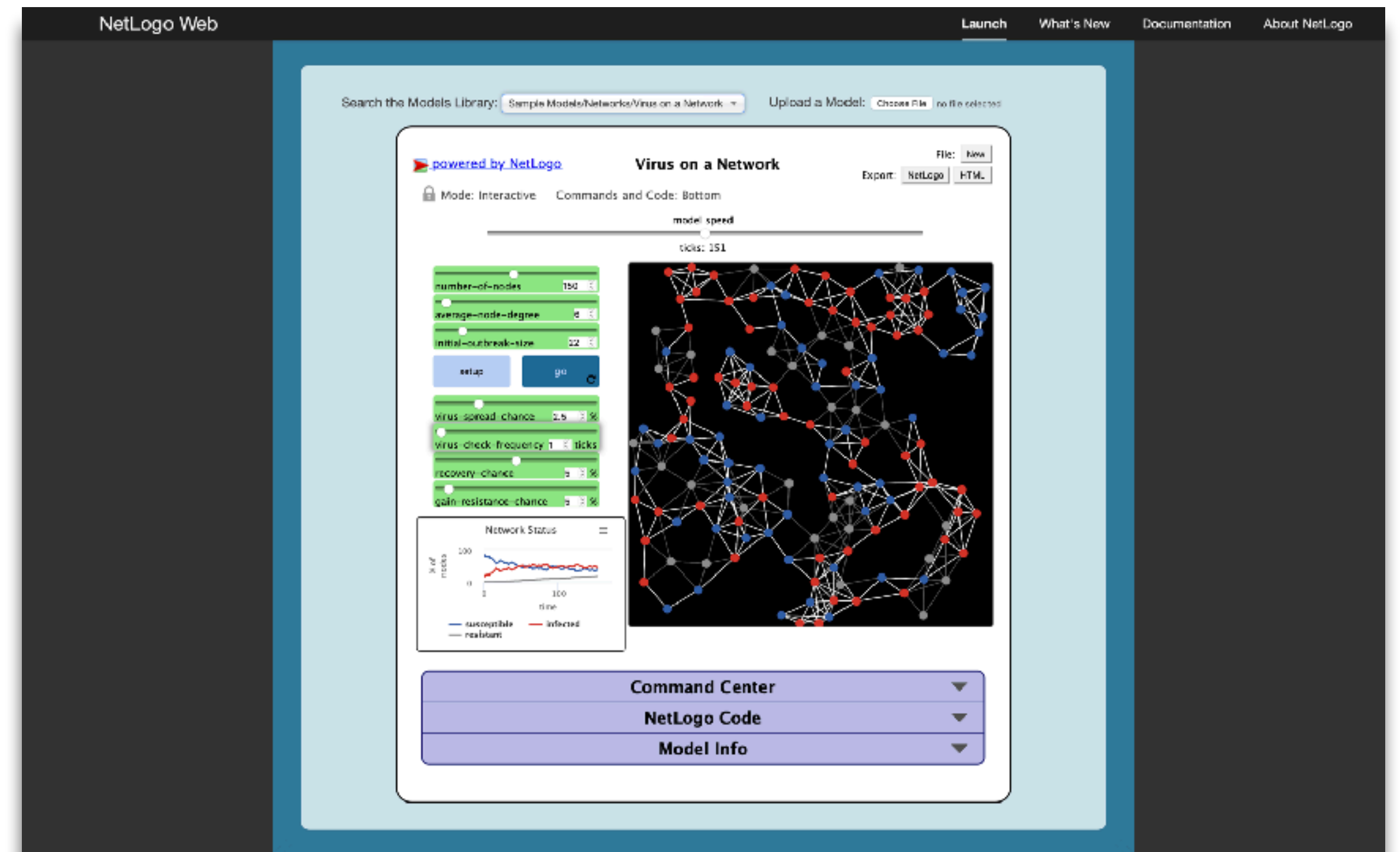
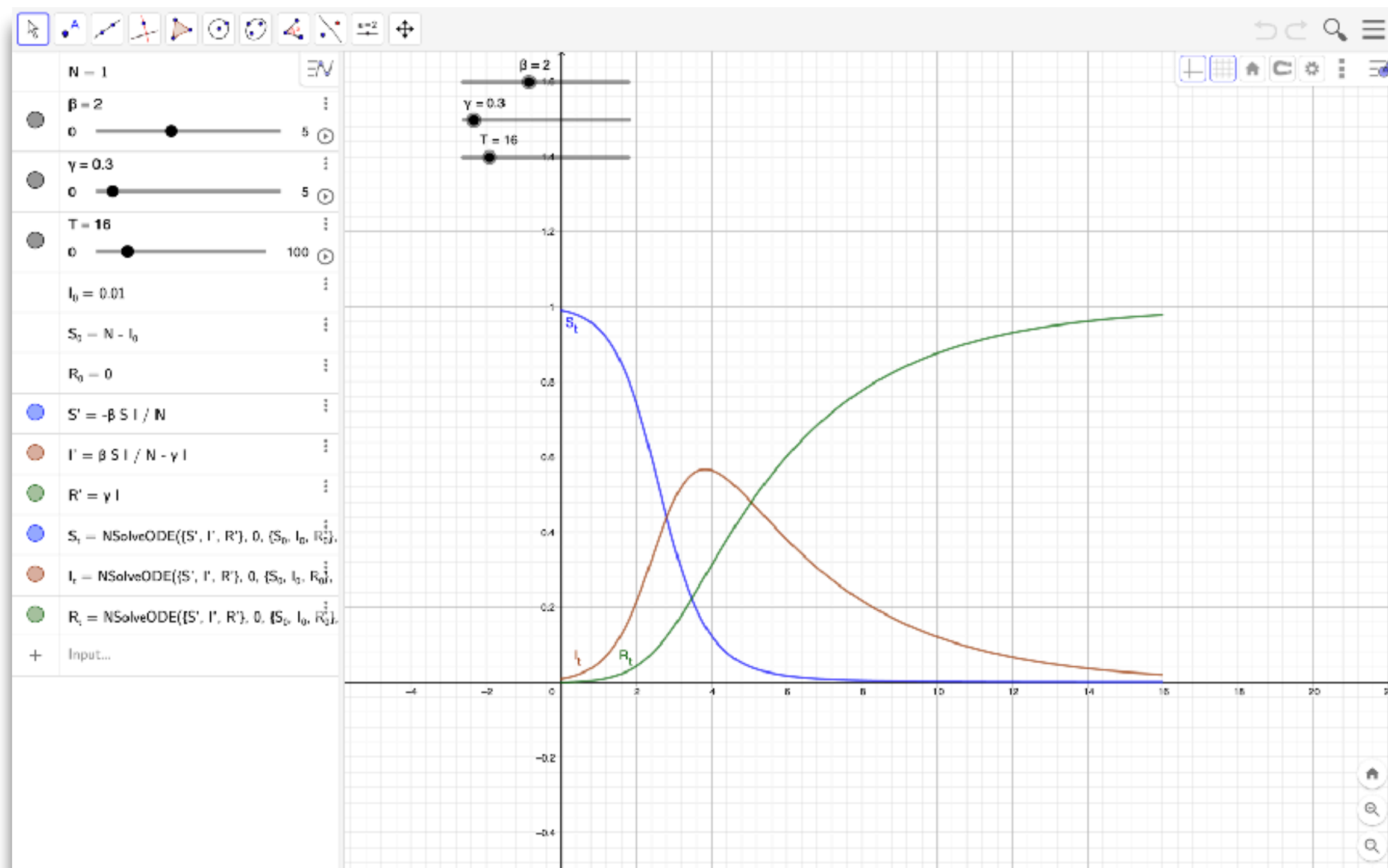


CBG: Census Block Group
POI: Point of Interest



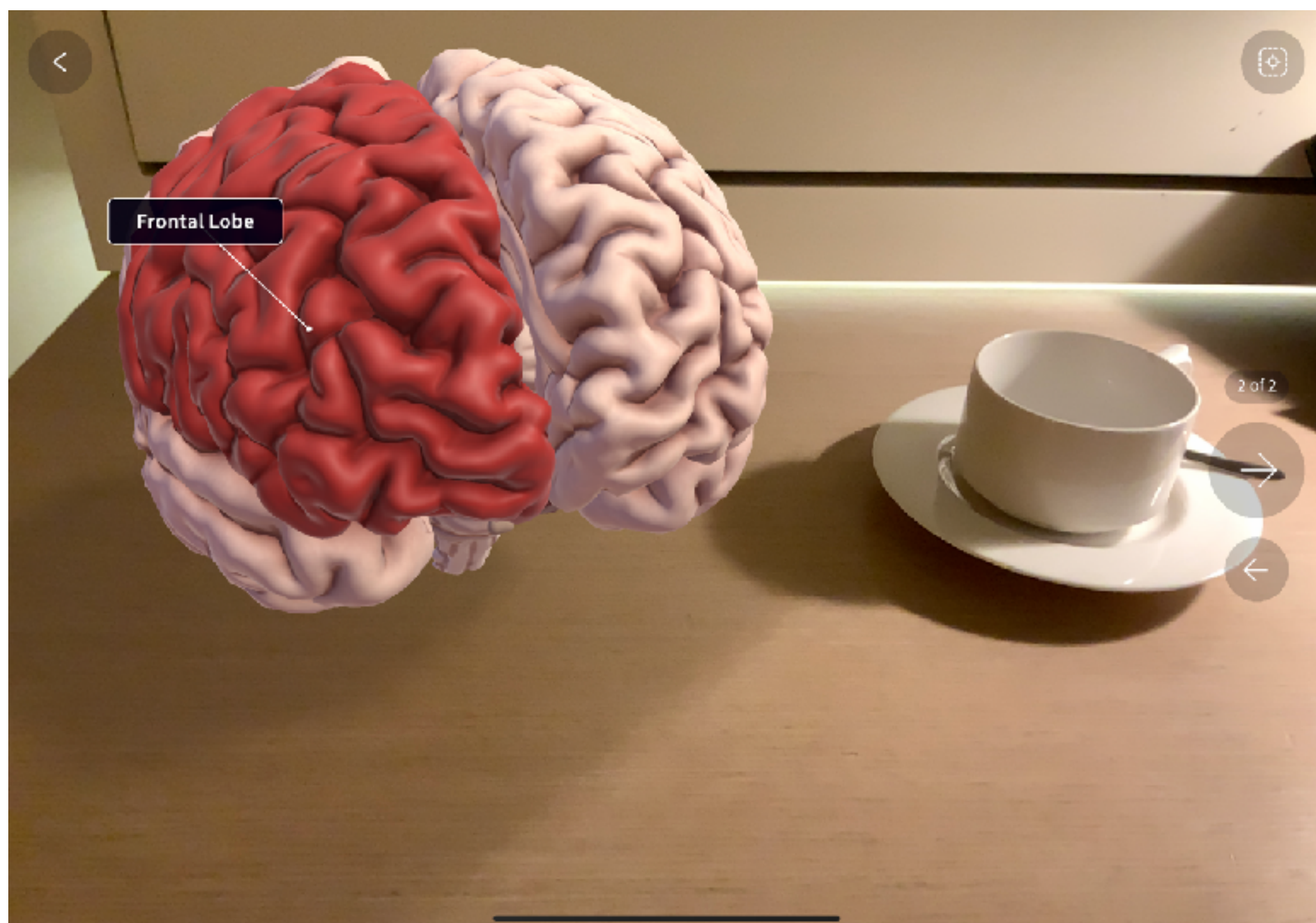
S: Susceptible
E: Exposed
I: Infectious
R: Removed

The Math Sidecar

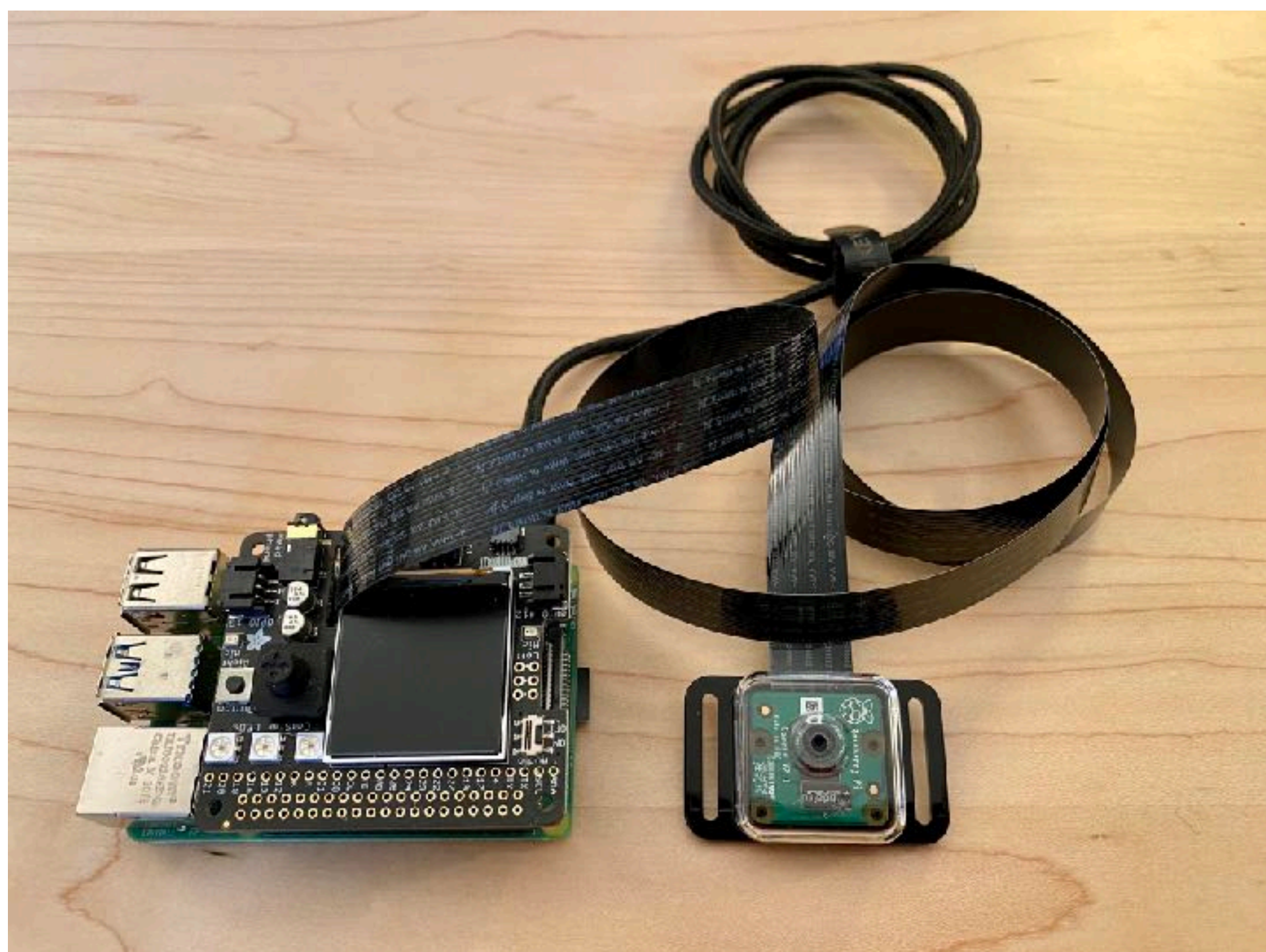


3.3 Tangibility

Maker Tools

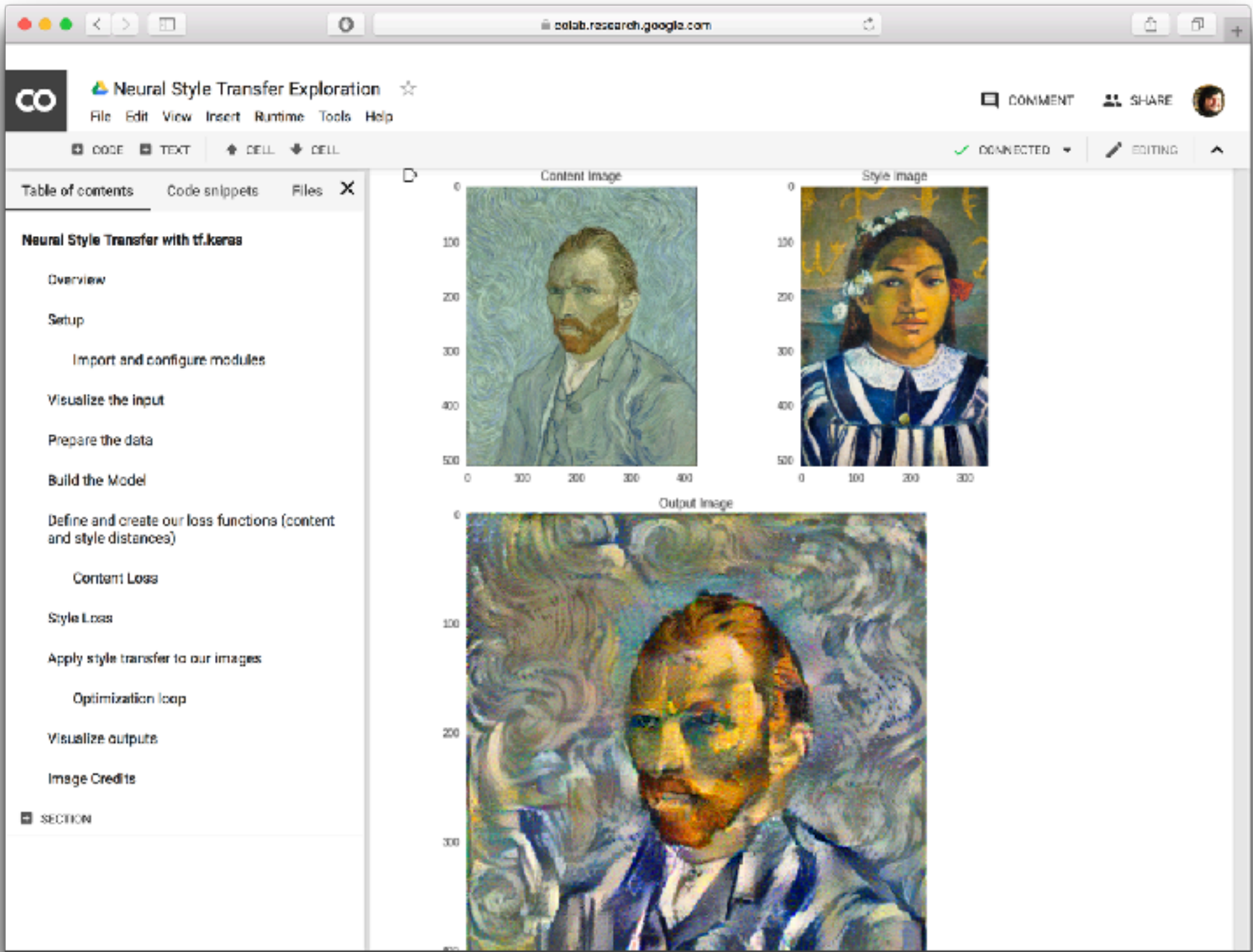
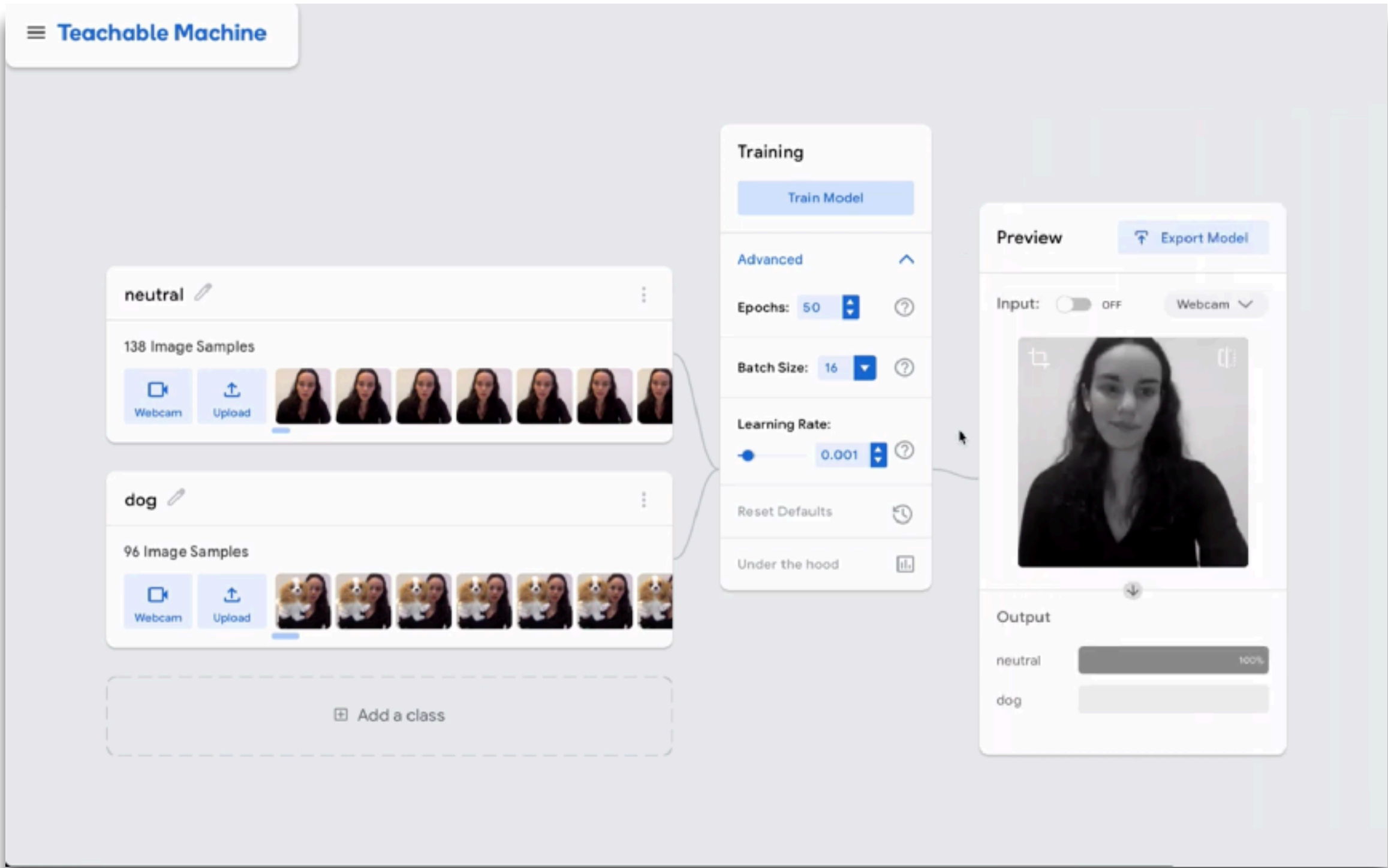


The Internet of Things




3.4 The Next Work/Life Place

AI



Information Creation/Consumption


Check, Please! Starter ... / Lesson One: Introduct... / Introducing SIFT




Introducing SIFT

So if long lists of things to think about only make things worse, how do we get better at sorting truth from fiction from everything in-between?


Our solution is to give students and others a short list of things to do when looking at a source, and hook each of those things to one or two highly effective web techniques. We call the "things to do" moves and there are four of them:




STOP



INVESTIGATE THE SOURCE



FIND BETTER COVERAGE



TRACE CLAIMS, QUOTES AND MEDIA TO THE ORIGINAL CONTEXT

Infographic showing the steps of SIFT: Stop, investigate the source, find trusted coverage, trace claims, quotes and media to the original context.

Stop

The first move is the simplest. STOP reminds you of two things.

4 C's OF PARTICIPATION

Shall We PLAY?

LITERACY FOR ENGAGING IN A PARTICIPATORY CULTURE

PEDAGOGY: PARTICIPATORY LEARNING

PLAY

PROGRESS IN PARTICIPATORY CULTURES

Besides introducing the new media literacies, the 2006 white paper "Confronting the Challenges of Participatory Culture: Media Education for the 21st Century" identified four basic forms of participatory culture:

1. Affiliations (e.g., **belonging to a community**, such as Classroom 2.0),
2. Expressions (e.g., producing new creative forms, such as [Sylvia's Super Awesome Maker Show](#), a video channel created by an 8-year-old to introduce Arduino activities to her peers¹)
3. Circulations (e.g., engaging in activities that shape the flow of media, through, for example, passing along links to the Kony 2012 video)
4. Collaborative problem solving (e.g., working together to develop new knowledge, such as contributing to fan forums for World of Warcraft)

These four forms of participatory culture were briefly outlined in this white paper's Executive Summary without further elaboration or clarification. As we've worked to

Additional Resources

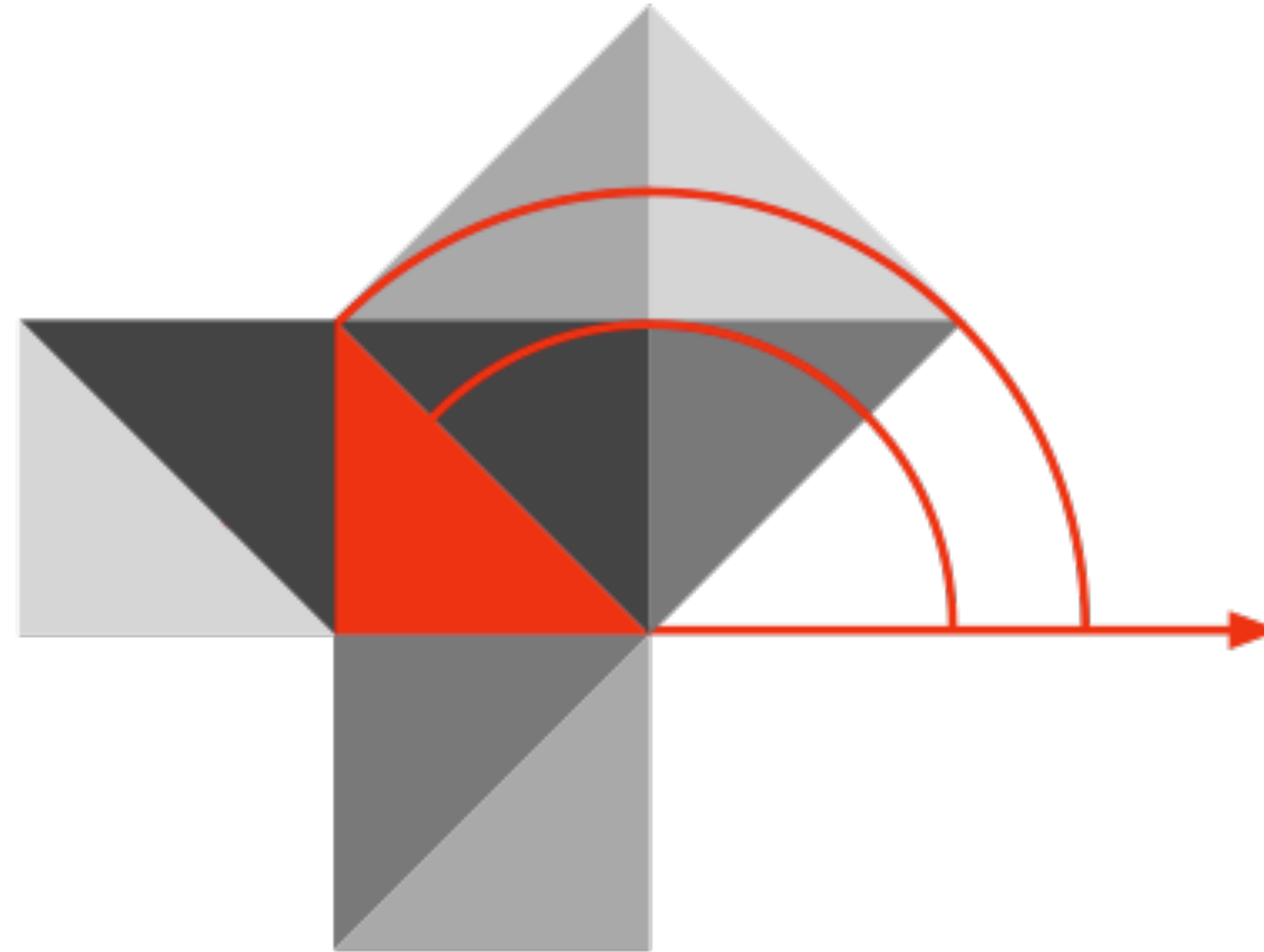
- **SAMR and the EdTech Quintet:**

- For an overview of both models in one location, this video covering the basics is probably the best place to start:
 - *Technology in Education: A Brief Introduction* – <https://youtu.be/rMazGEAiZ9c>
- One particularly accessible and concise introduction focusing exclusively on the SAMR model was codeveloped with Common Sense Education:
 - *What is the SAMR Model?* – <https://youtu.be/9b5yvgKQdqE>
 - *How to Apply the SAMR Model* – <https://youtu.be/ZQTx2UQQvbU>
 - *The Impact of the SAMR Model* – <https://youtu.be/SWU0Dzz6gs0>
- The EdTech Quintet has a rather interesting set of connections to older - much older - technologies, as discussed in this presentation:
 - *The NMC Perspective Series: Ideas that Matter* – <https://youtu.be/NemBarqD6qA>
- Finally, for those wishing to dig a little deeper, a conversation between Dr. Bebell and Dr. Puentedura has more of the inside story on the research:
 - *Demystifying SAMR* – <https://youtu.be/L9h9ePoXqS8>

- **Black Swan Thinking:**

- Dr. Puentedura's ongoing project, sponsored by ASU under its ShapingEDU umbrella:
 - *[Of Swans, Dragons, and How to Tell Them Apart \(Without Getting Singed\)](#)*
 - *[Session 1: Why The Little Dutch Boy Was The Little Doomed Boy](#)*
 - *[Session 2: How The Leopard Didn't Get Its Spots](#)*
 - *[Session 3: Who Framed The Narrative Of Cock Robin?](#)*
 - *[Black Swan Thinking Foundations](#)*

Hippasus



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Twitter: @rubenrp

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