

Fostering Distributed Leadership: A Model for Undergraduate Success in Research

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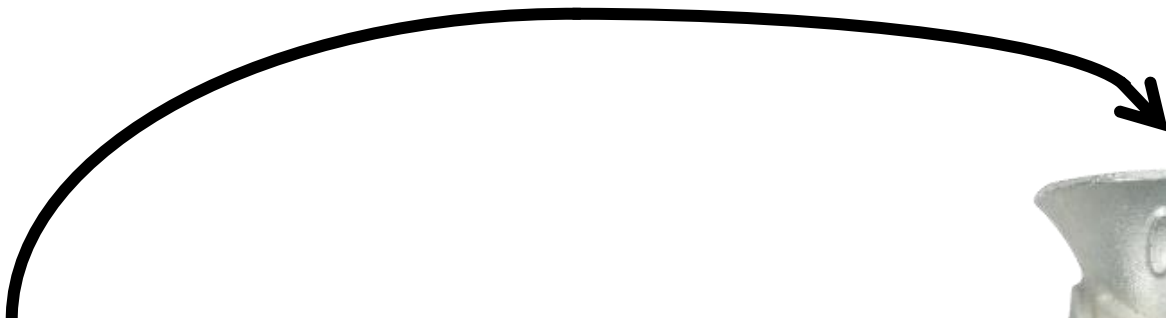
Quantitative Ethnography

Human Science

Activity

Claim

Activity



Claim

Making
~~Sausage~~
Meaning

Activity

Observation

Data

Coding

Model

Claim

INTERPRETABILITY

INTERPRETABILITY

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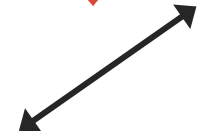
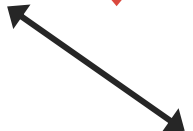
QUALITATIVE

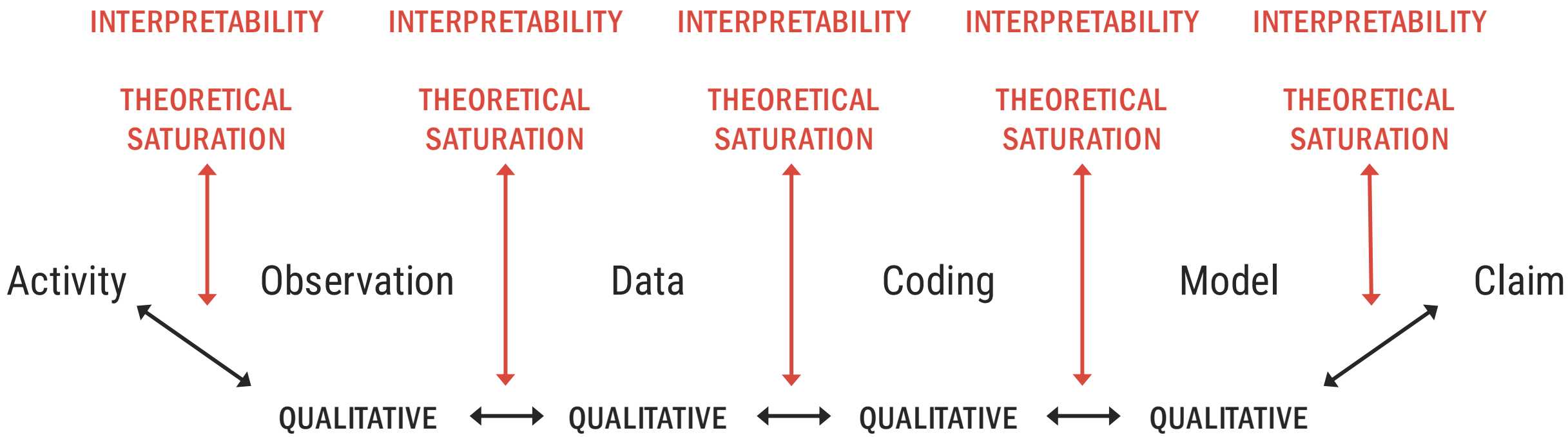
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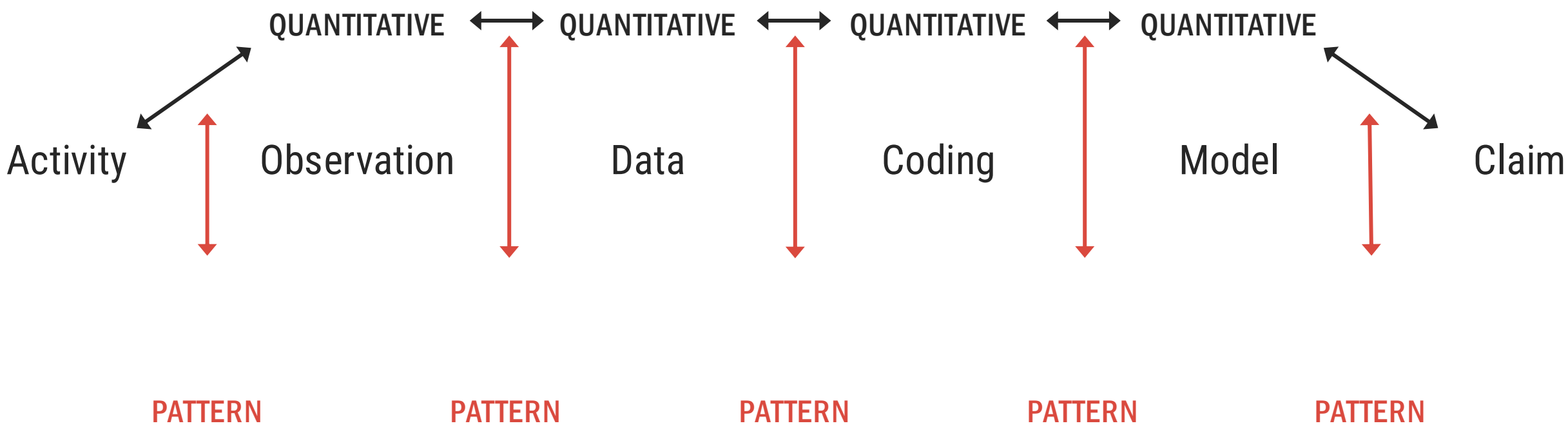
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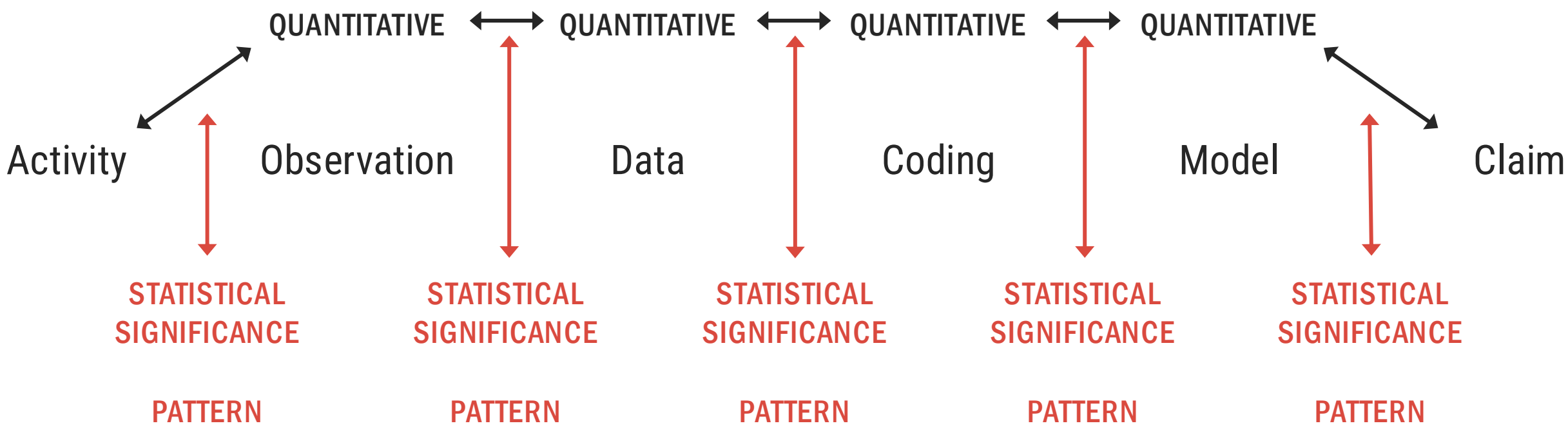
Meaning



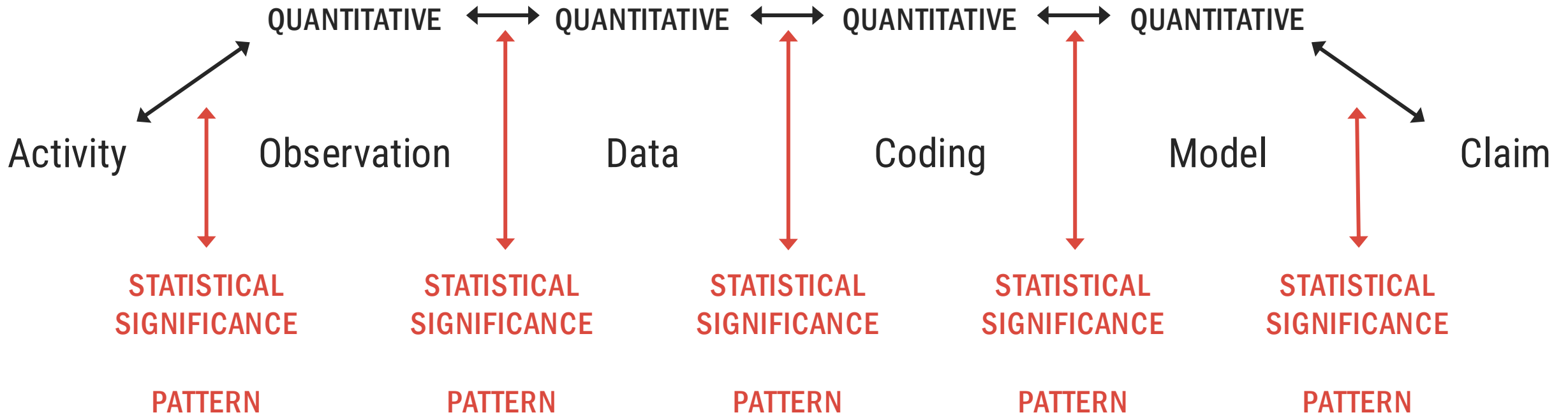


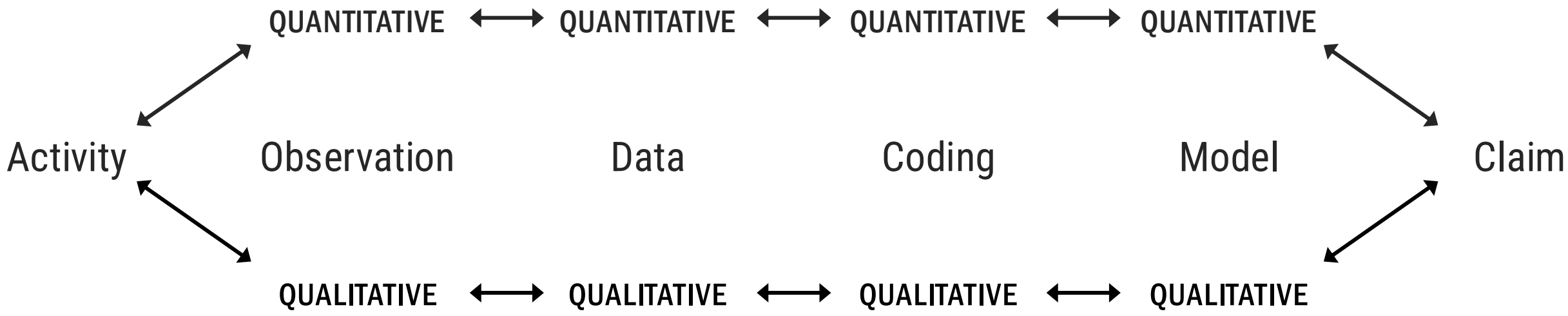
Meaning

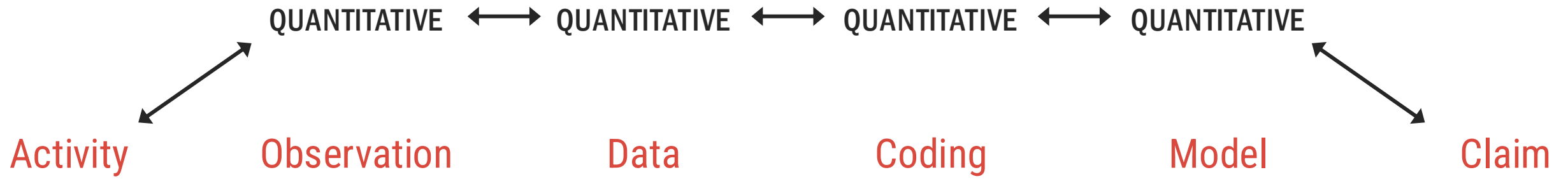


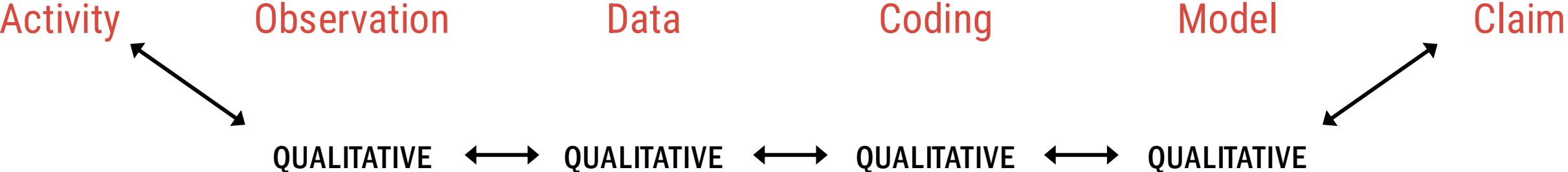


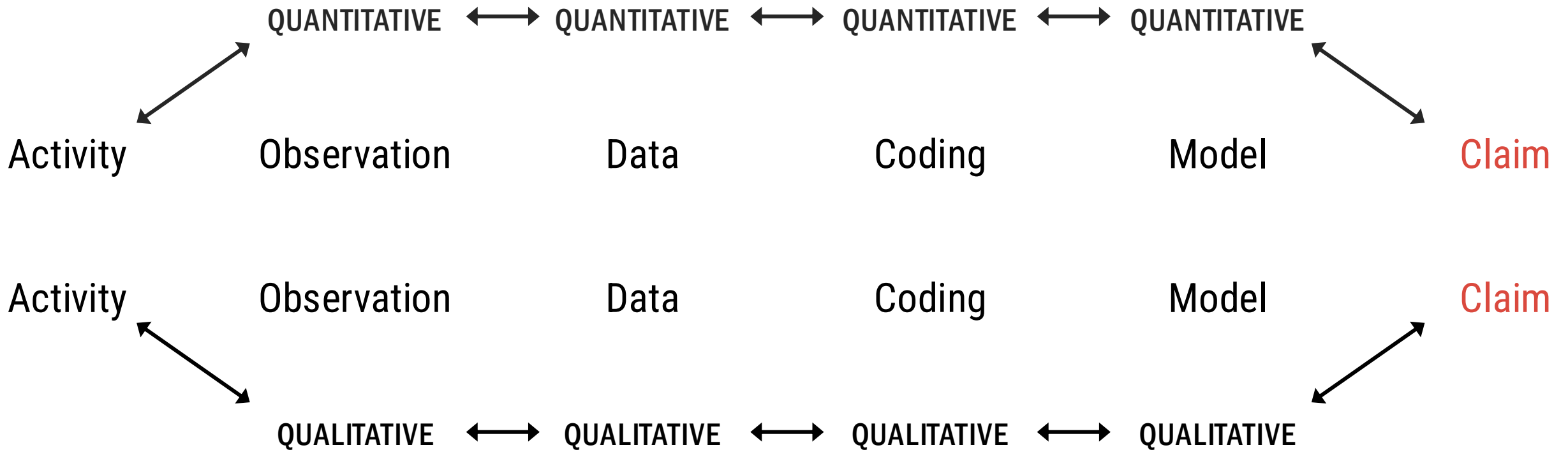
Formal Testability

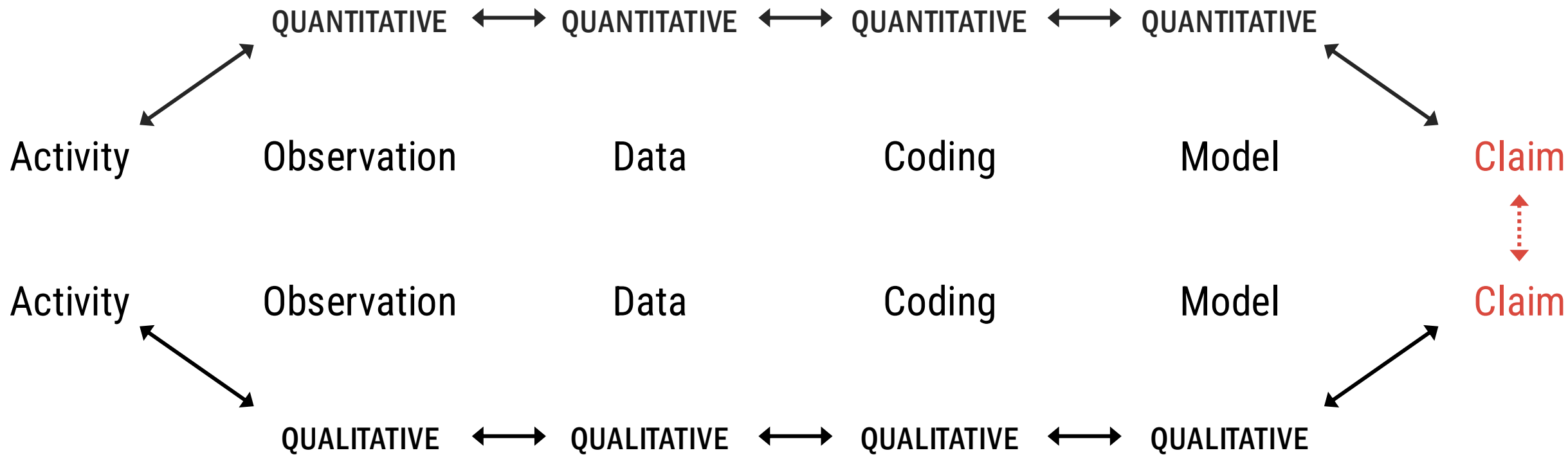


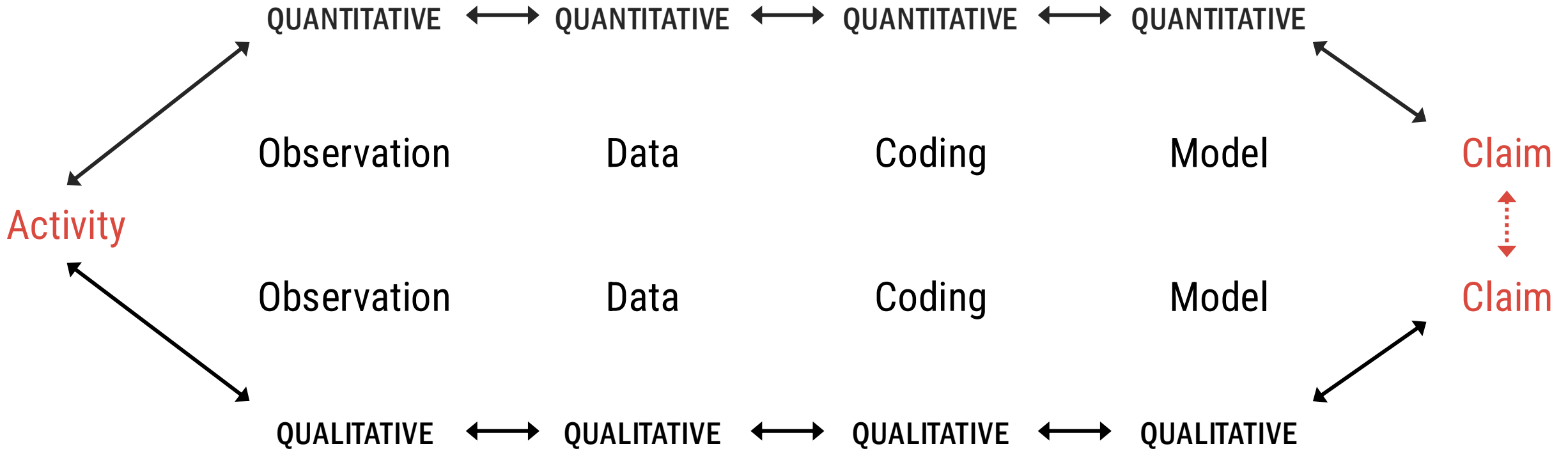












Mixture

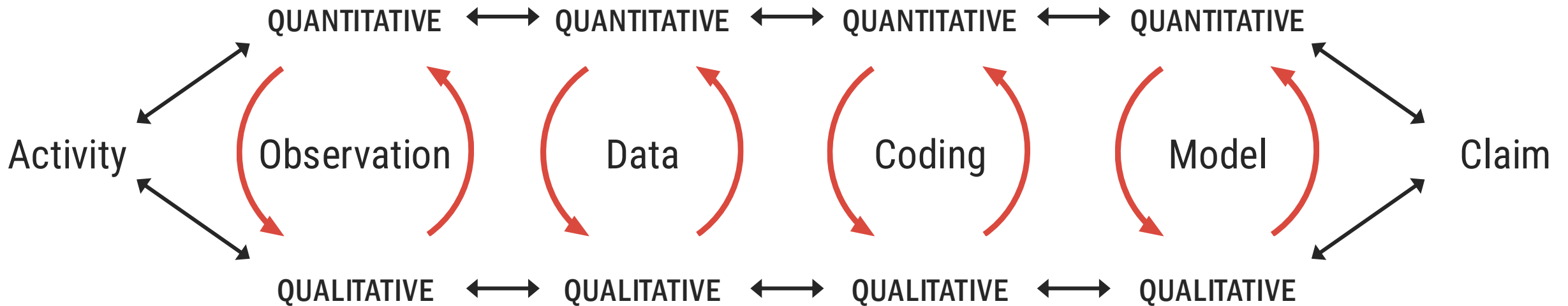


Solution



We look at the same **data**, **model**, and **claim** in two ways

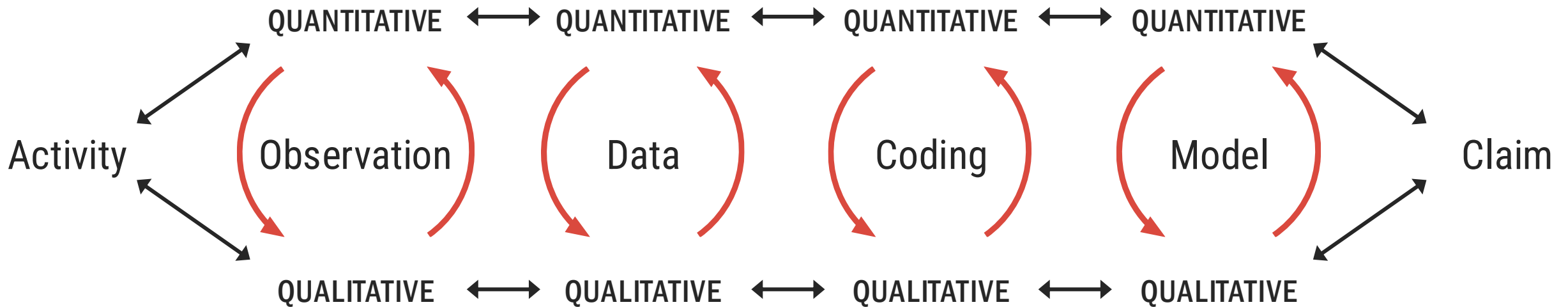
Formal Testability



Meaning

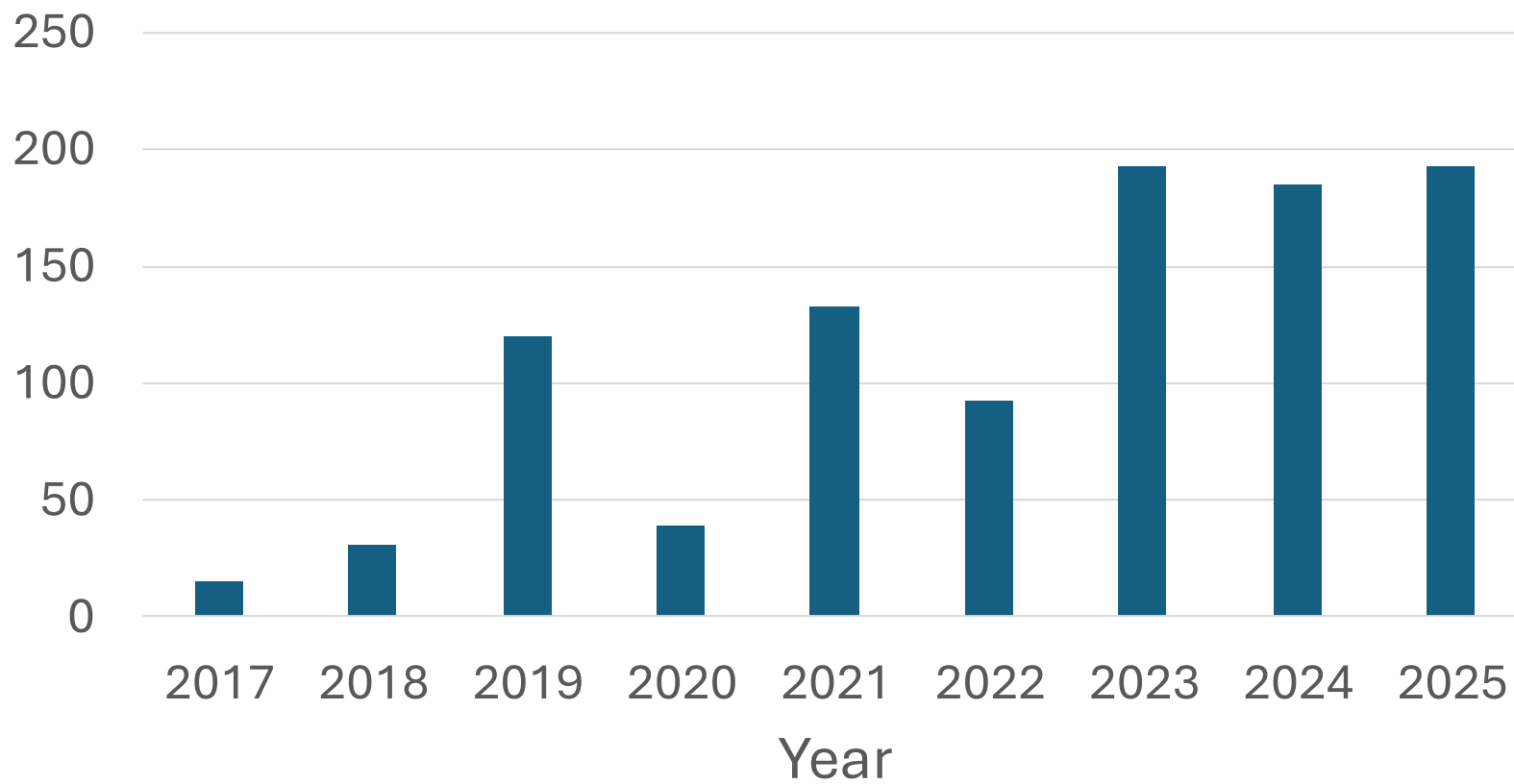
We get a **statistical warrant** for **theoretical saturation**

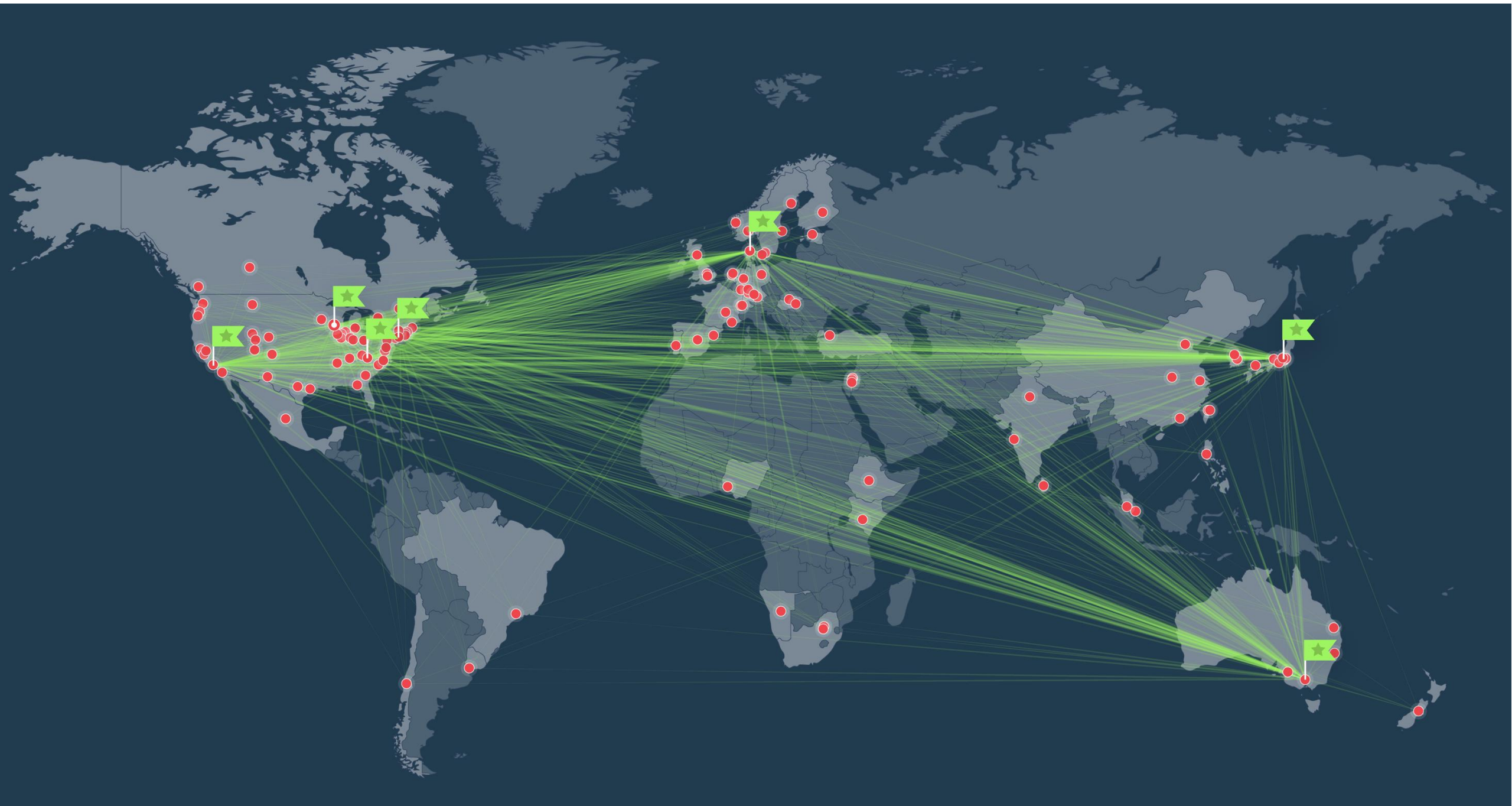
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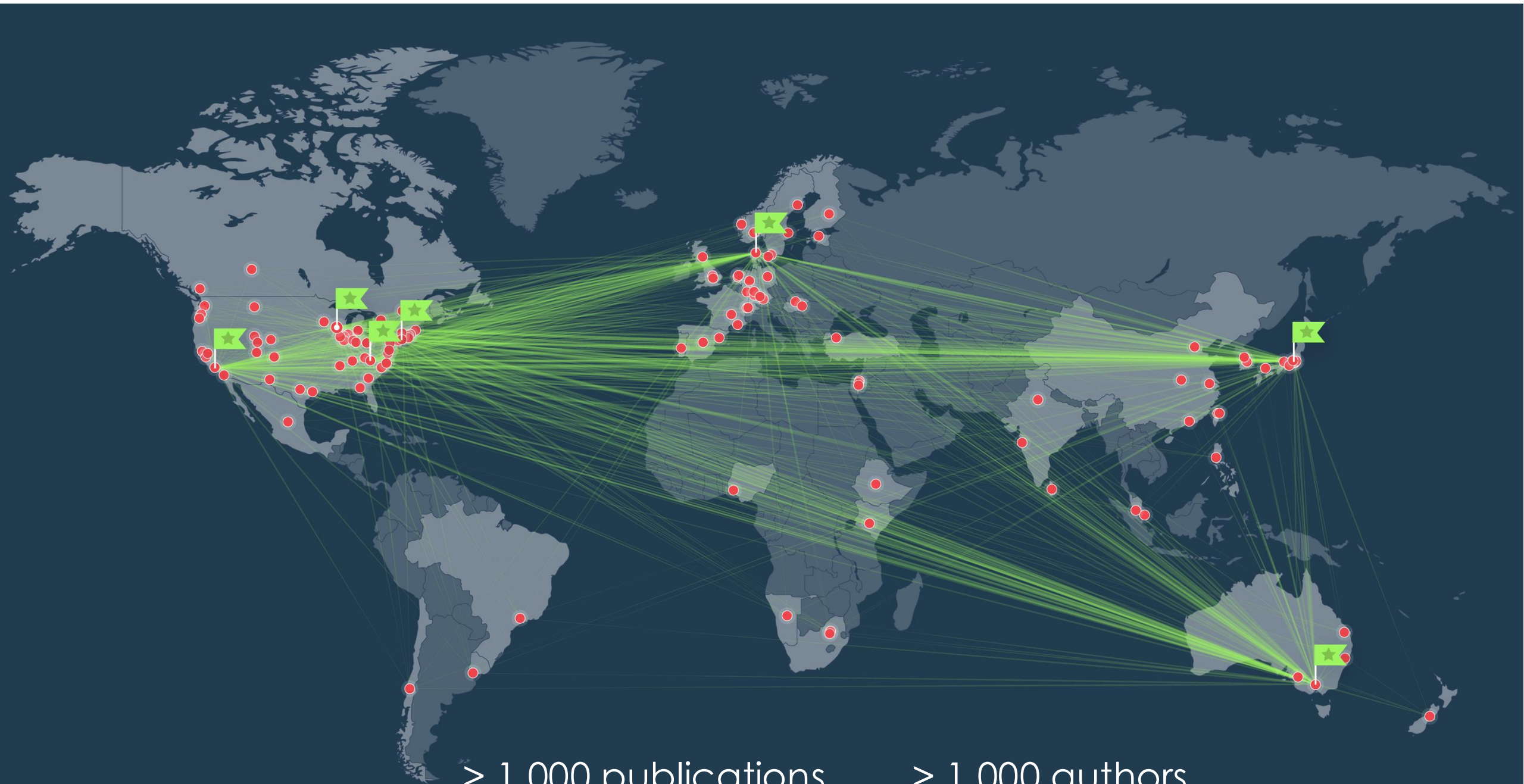


Meaning

Number of QE Publications







> 1,000 publications

> 1,000 authors



Quantitative Ethnography SUMMER INSTITUTE



1. Pilot QE Analysis

Purpose: Develop an initial QE model.

Outcome: Participants will have a worked example of QE in a STEM education context they are familiar with.

4. One-on-One Advising Sessions

Purpose: Obtain individualized QE training in monthly sessions.

Outcome: Participants will identify research leadership development goals and work toward independent implementation of QE methods.



2. In-Person QE Workshop

Purpose: Use QE theory and methods for STEM learning research.

Outcome: Participants will deepen their understanding of QE methods and apply them to advance their STEM learning research projects.

3. ICQE (Optional)

Purpose: Engage in professional development activities.

Outcome: Participants will strengthen their STEM education research networks and leadership skills.

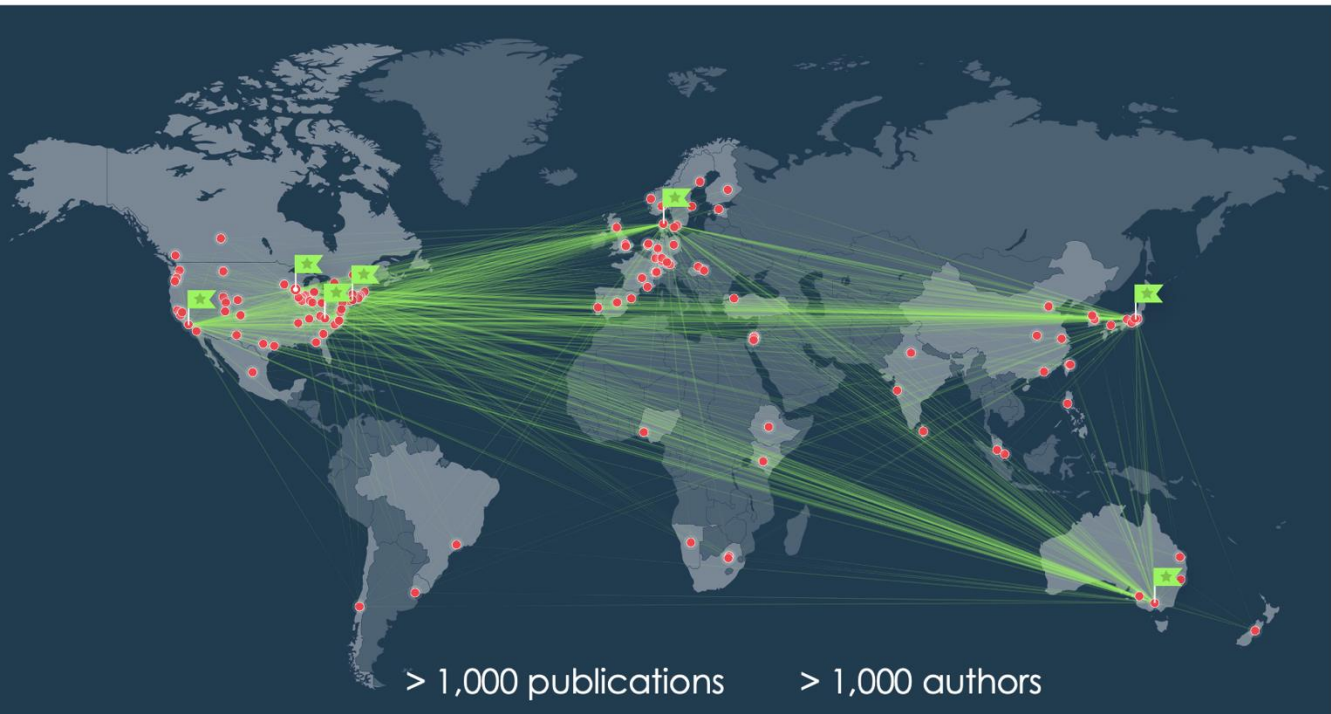


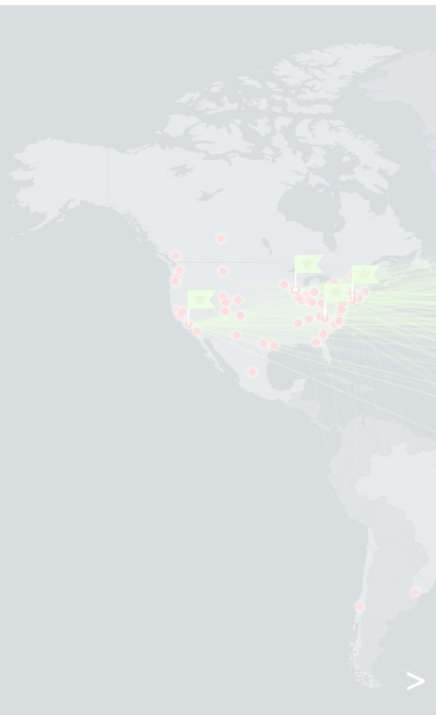
















The Challenge:

- High turnover



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- Requires substantive scaffolding



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How we deal with these challenges

- Align work with undergrads' skills and interests
- Buy-in and ownership of the culture
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- Align work with undergrads' skills and interests
- Buy-in and ownership of the culture
- Pushing explicit awareness of group needs and higher-order responsibilities
- Empowerment to meaningfully contribute to the development and maintenance of a culture of high performance
- Cultivating a culture of care and mutual support
- Passing the baton, paying things forward

Interns at CRCT are all involved in:

- Distributed
 - Leadership
 - Management
 - Mentoring
- Intentional Professional Culture
 - Frequent reflection on and group discussion of professional practice
 - Authentic ownership of projects and practices
 - High expectations with High Levels of Support
 - Involved in hiring their successors
 - Mature ownership of work and projects

- Undergrads who perform more like graduate students
 - High rates of publication
 - Leading teams owning projects
 - Train faculty members in the US and Abroad
 - Mentoring peers and managing projects
- High success post CRCT with Alumni placements at:
 - Rand
 - Federal Reserve
 - Graduate School
 - Industry (e.g. Google, Amazon, Box)



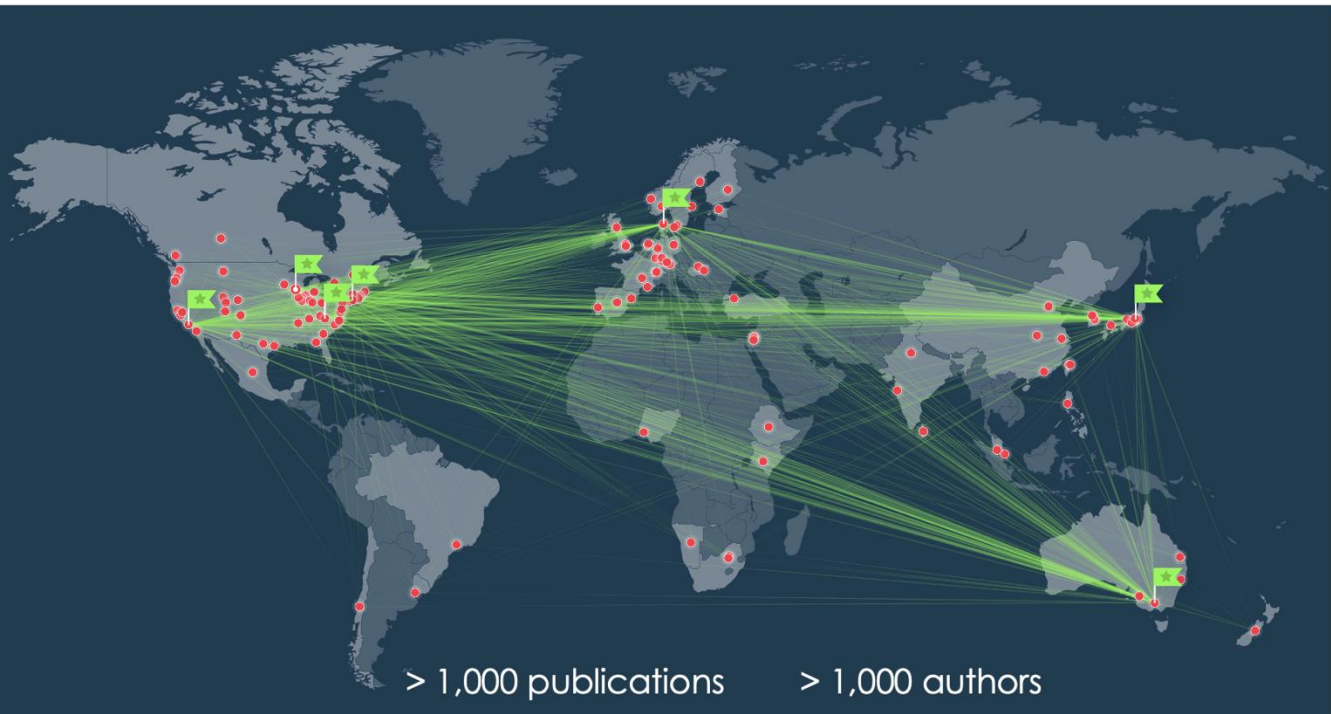
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Potential Benefits:

- Culture of high performance
- Buy-in at all levels
- Maximizing potential and benefits for all team members





Interns



Aarush Nalawadi



Alysia Chou



Cayden Shim



Dylan Ong



Hannah Wang



Judy Liu



Kevin Chon



Michelle Bandiera



Rae Dong



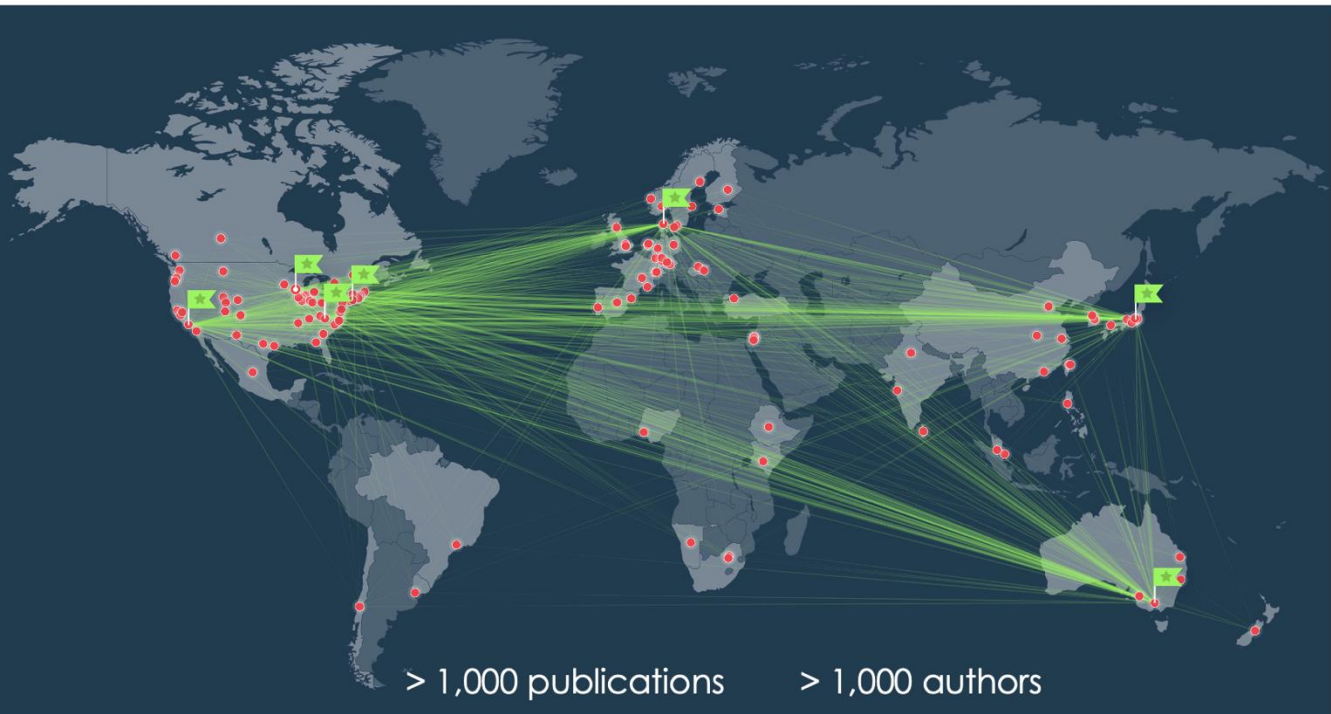
Rain Sun



Vibha Srinivasan







Discussion Topics

- Have people used undergrads in their own work?
 - If so, how did it go? What challenges or successes did you encounter?
- For those of you who have considered it, but haven't, why not?
- The process of careful baton handoffs