

# THE SYSTEMATIC REVIEW-LUTION

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A Manifesto to Promote Rigour and Inclusivity in  
Research Synthesis

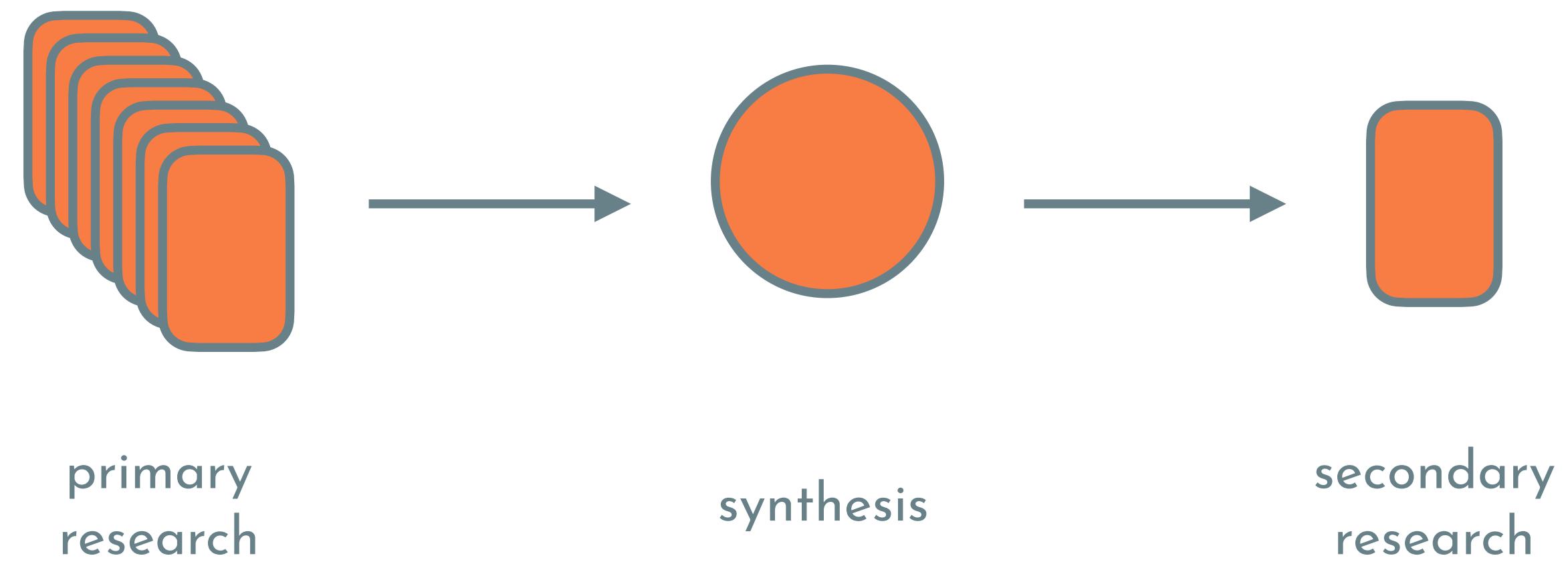
Katja Rogers  
Digital Interactions Lab, University of Amsterdam

Katie Seaborn  
Aspirational Computing Lab, Tokyo Institute of Technology



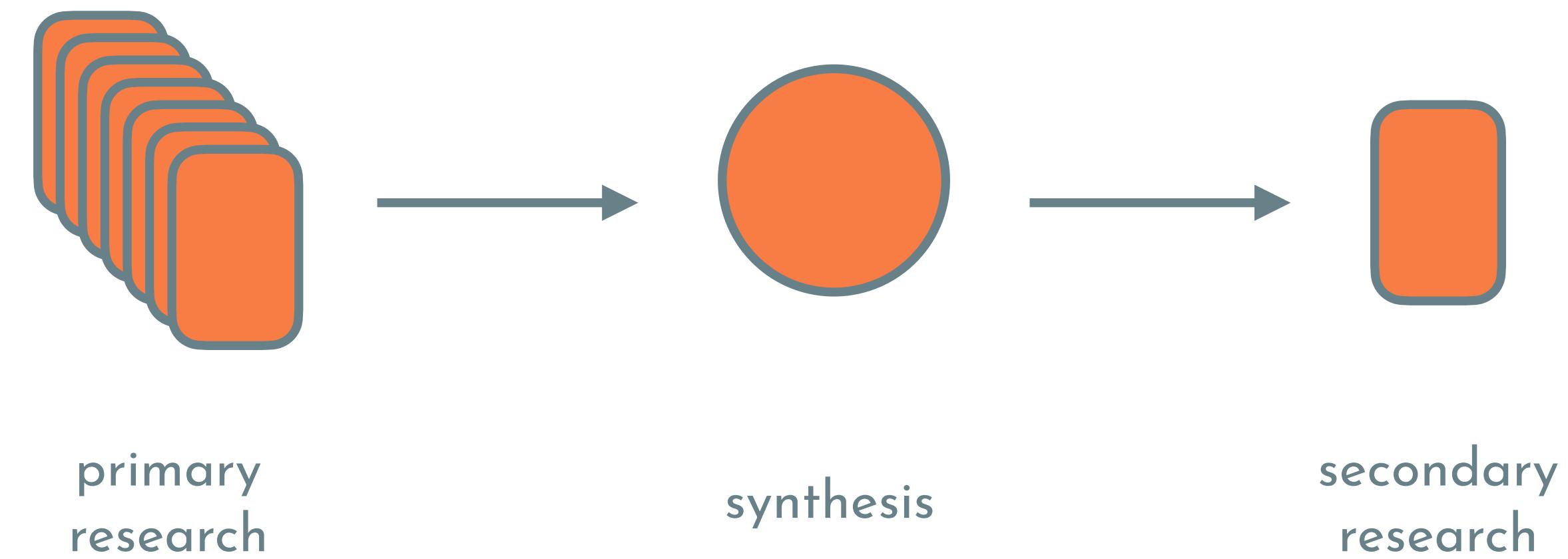
# Research Synthesis

summarising and critically reflecting on primary research:

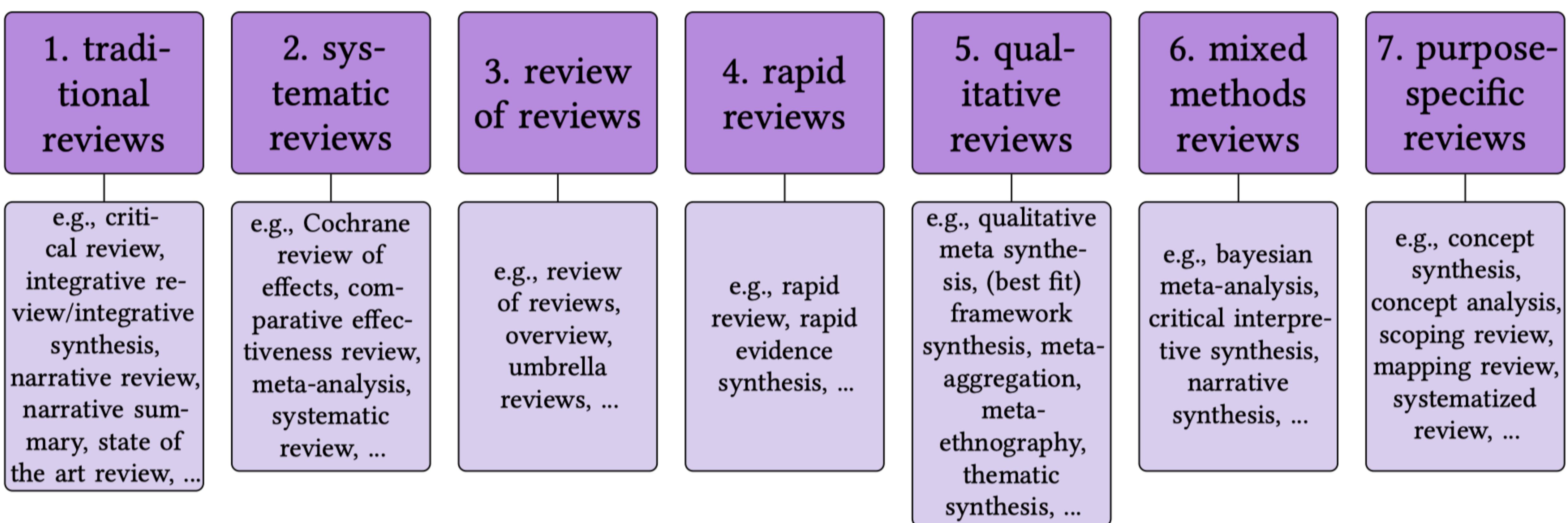


# Research Synthesis

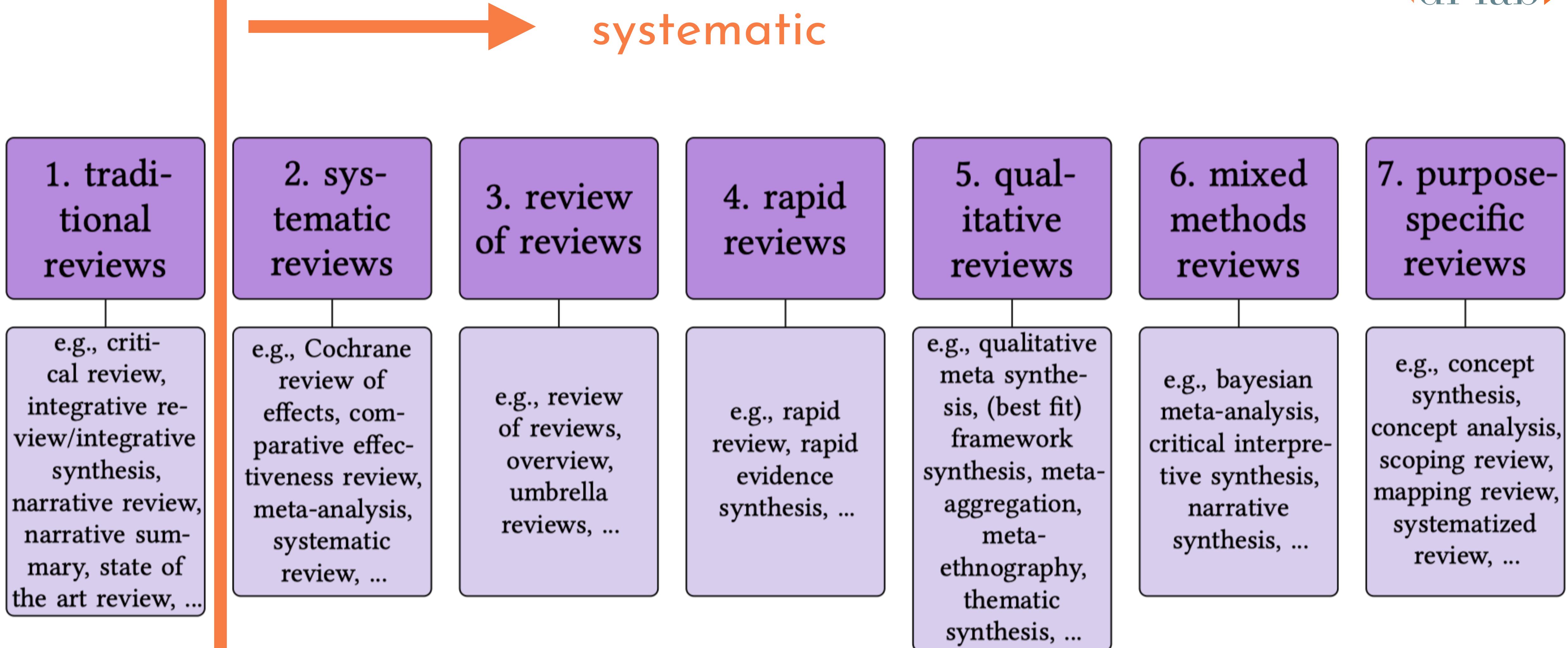
summarising and critically reflecting on primary research:



- to form or arrive at a clear “big picture” / map of the field / statistical estimation of a “true” effect / robust answers to specific research questions / clear guidelines and implications for future research & design / future directions for research / ...



based on Sutton et al. 2019



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# Systematic Review

“i) a research question;  
ii) [...] reproducible search strategy [...];  
iii) inclusion and exclusion criteria;  
iv) selection (screening) methods;  
v) [a critical appraisal of] the quality/risk of bias [...];  
vi) information about data analysis and synthesis that allows the reproducibility of the results.”

(Martinic et al. 2019)



## HCI features:

- > “systematic review”
- > “meta-analysis” although often this involves no statistical synthesis (“meta” as “a paper about papers”)
- > “survey”
- > “scoping review”
- > “overview”
- ...

# Our broad range of opinions & expectations:

- > basic terminology & definitions (e.g., what is a meta-analysis)
- > do systematic reviews have a place in HCI? is their output “novel”, and does this matter?
- > what are systematic reviews FOR?
- > how should they be conducted?
- > what forms of knowledge can/should they produce?



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... than only summarising

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# We Can Do Better

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... than not carefully reflecting about what review methodology should look like in our field

... than not exploring opportunities for HCI expertise particularly in “living reviews” (Elliott et al. 2017)

# Systematic Reviews as a Starting Point



# Systematic Review

supposedly “gold standard” (Moore et al. 2022) yet  
very often flawed

in evidence-based medicine:

“Few systematic reviews and meta-analyses are both  
non-misleading and useful.” (Ioannidis 2016)

- > HCl may be heading in this direction too!

“definitions of [systematic reviews] are vague and ambiguous, often using terms such as clear, explicit and systematic, without further elaboration”

(Martinic et al. 2019)



guidance and efforts at standardisation do exist

BUT they are often premised around the types of knowledge developed in other fields (e.g., randomized controlled trials - RCTs)

HCI with its “disciplinary anxiety” (Reeves 2015, Fallen & Stolterman 2010) makes it difficult to find something that fits for synthesis



when is a review systematic?

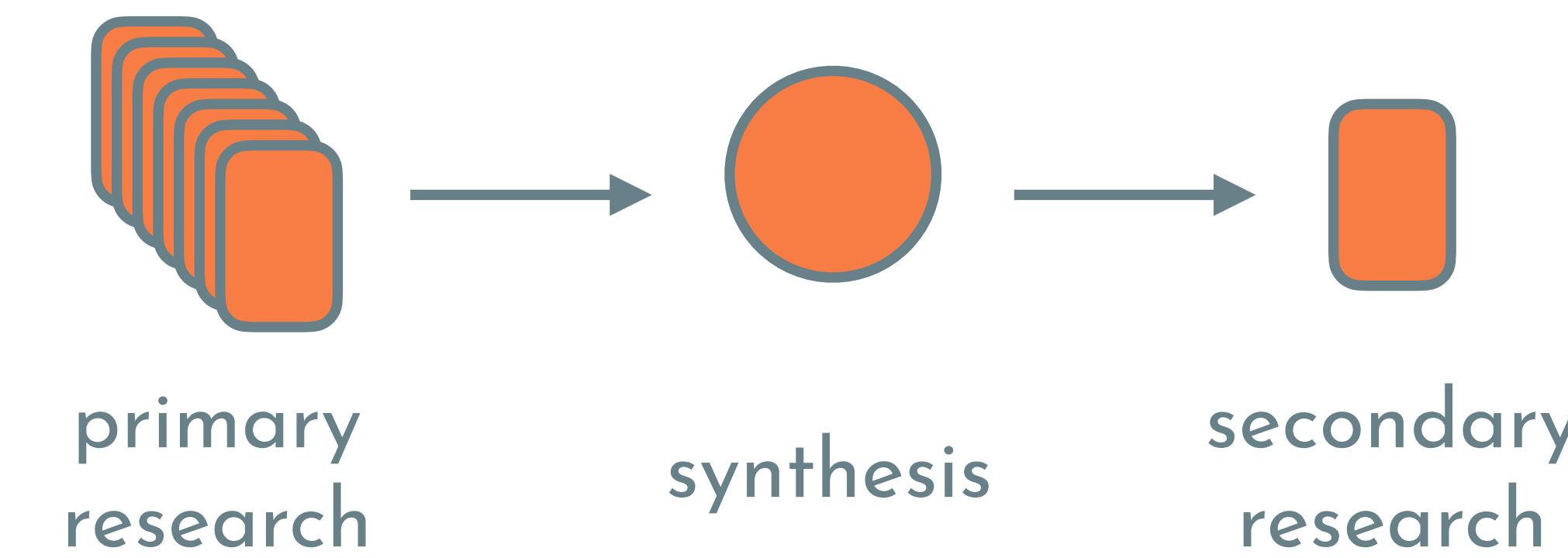
how can we synthesise the literature at this size, growing at this pace?

how can we support new ideas in shaking up the field?

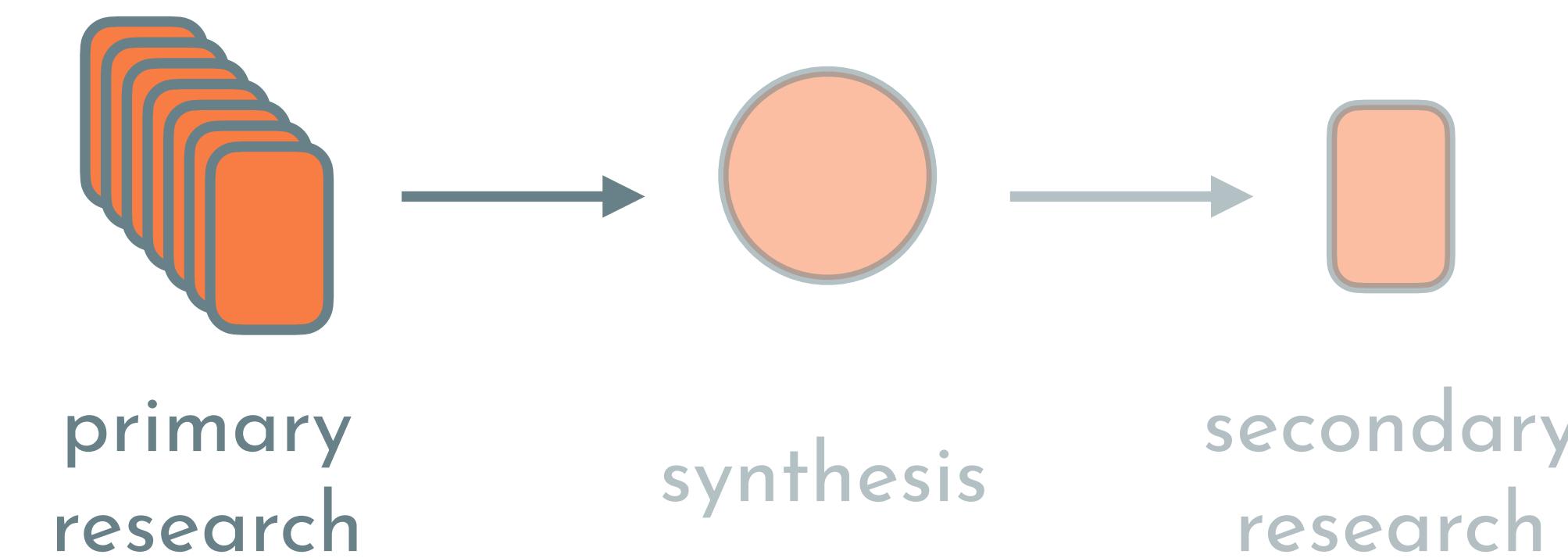
> to avoid “stagnation” and “ossification” (Chu & Evans 2021)

how can we synthesise all the types of research housed within HCI?

We need a community-driven conversation to support research synthesis:

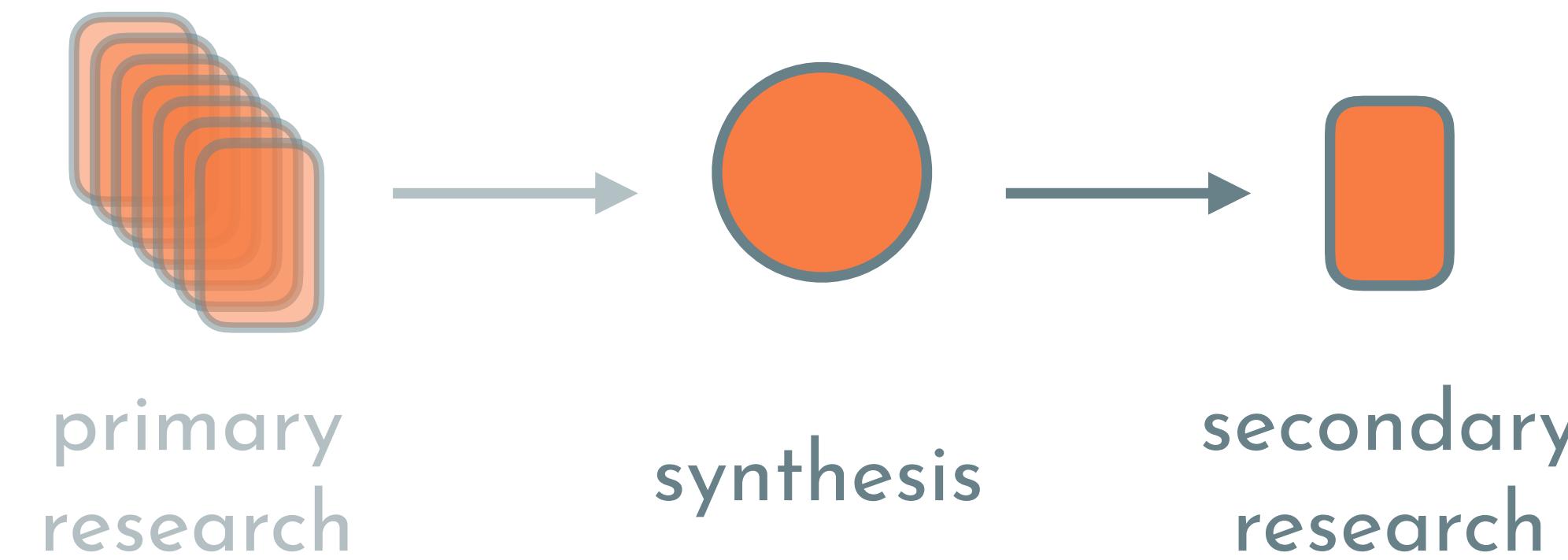


We need a community-driven conversation to support research synthesis:



- 1) How can we **package our work** in such a way that meaningful research synthesis can be practiced based on the wonderful diversity of work that we produce in CHI and adjacent spaces?

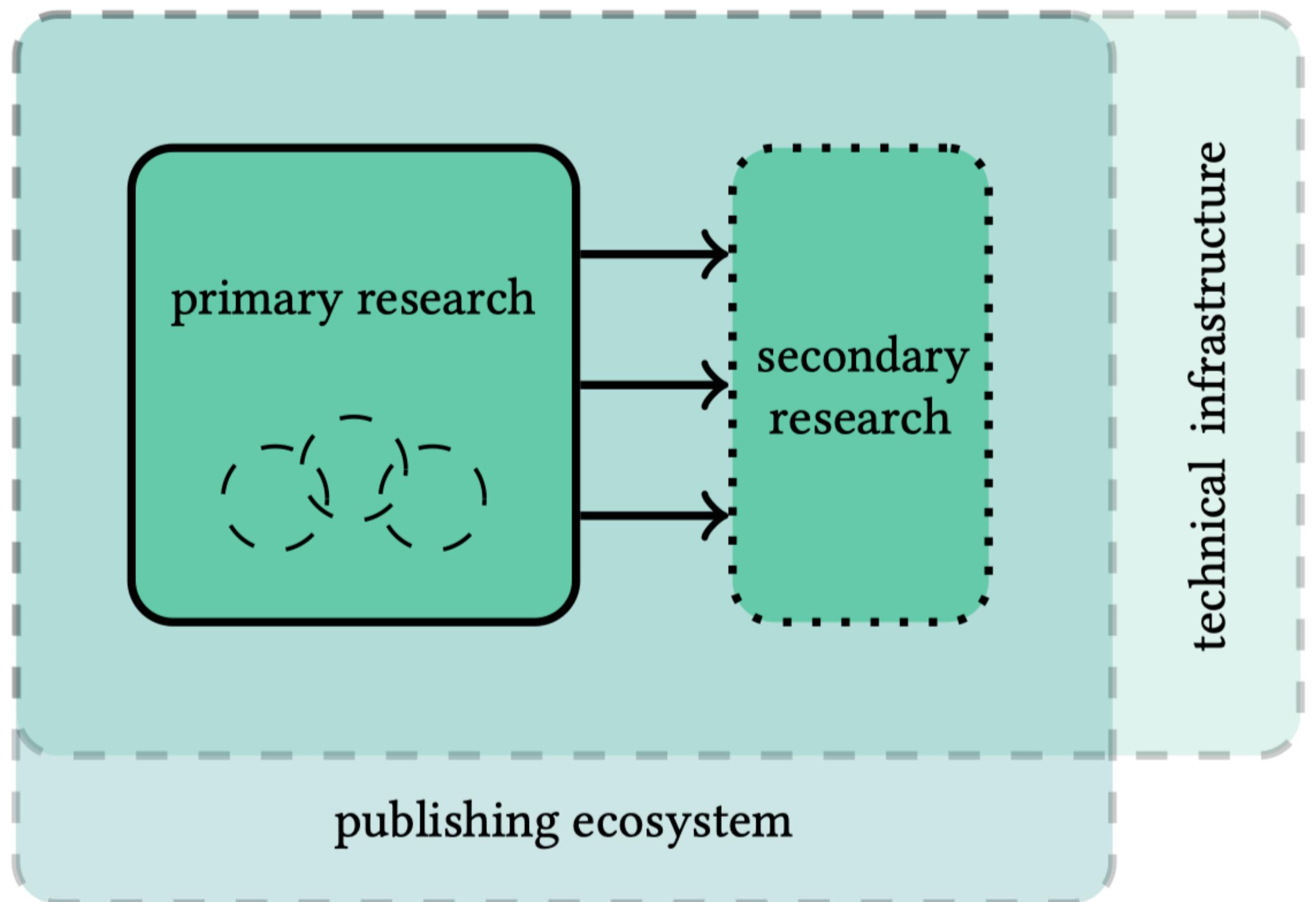
We need a community-driven conversation to support research synthesis:



- 2) What should **research synthesis** look like when it is **grounded in plurality**?  
E.g., quantitative studies, qualitative studies, design research, ethnography, and the development of interactive artifacts and systems

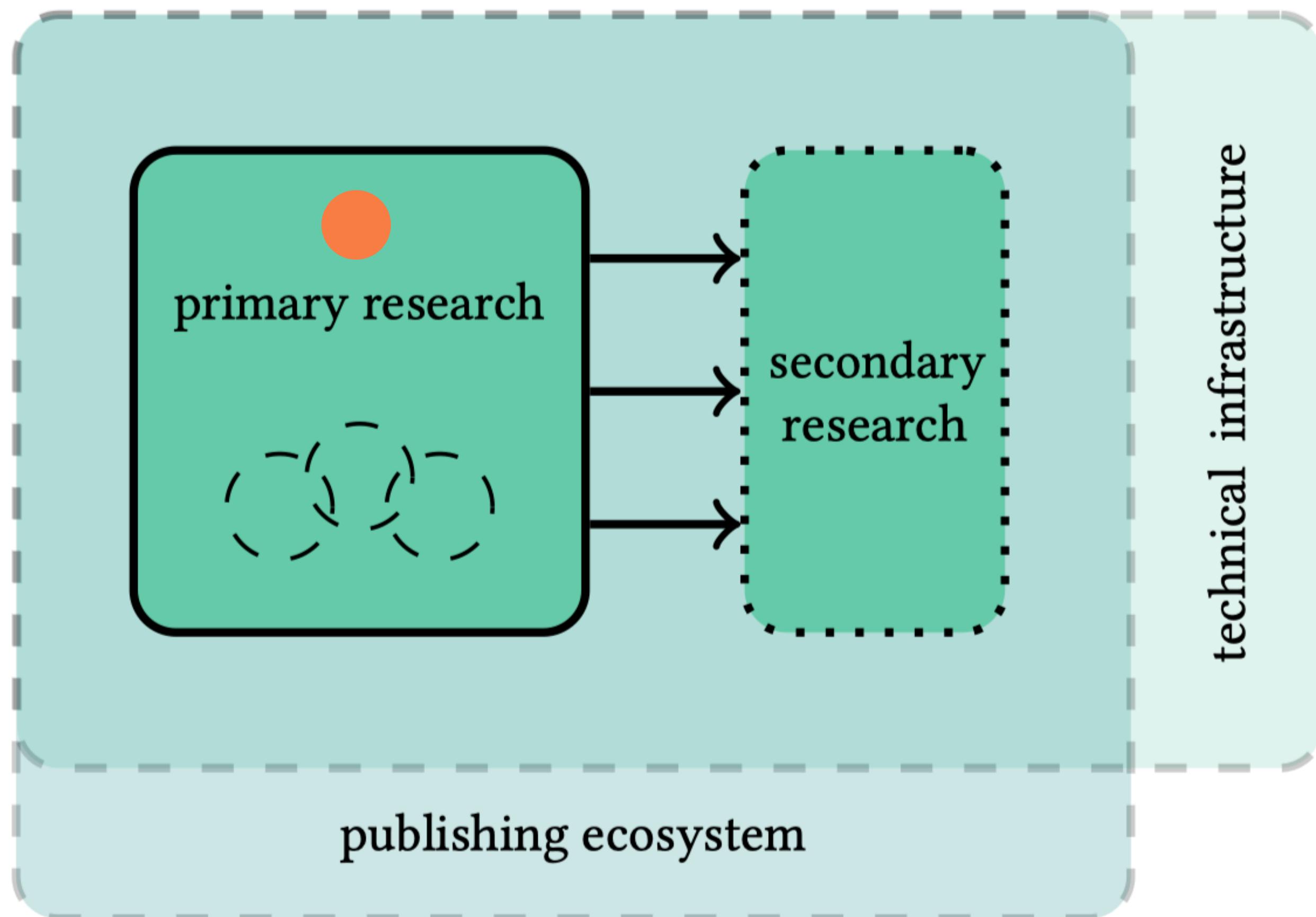


# Critical Issues





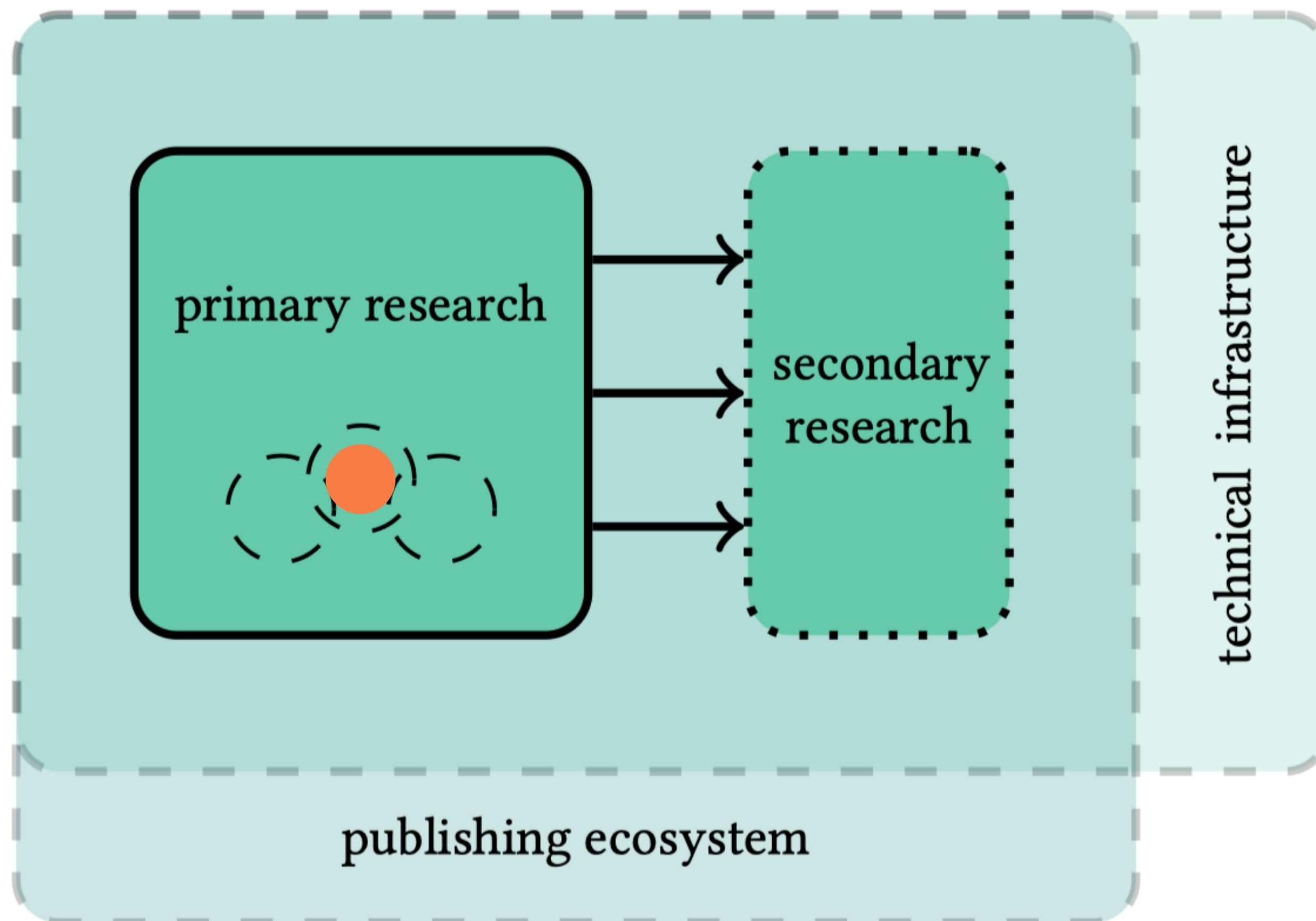
# Primary Research Reporting



➤ given the sheer variety  
in how we report even  
similar types of research in  
HCl, how can we compare  
& weigh & integrate  
findings in synthesis?



# Diverse Epistemologies

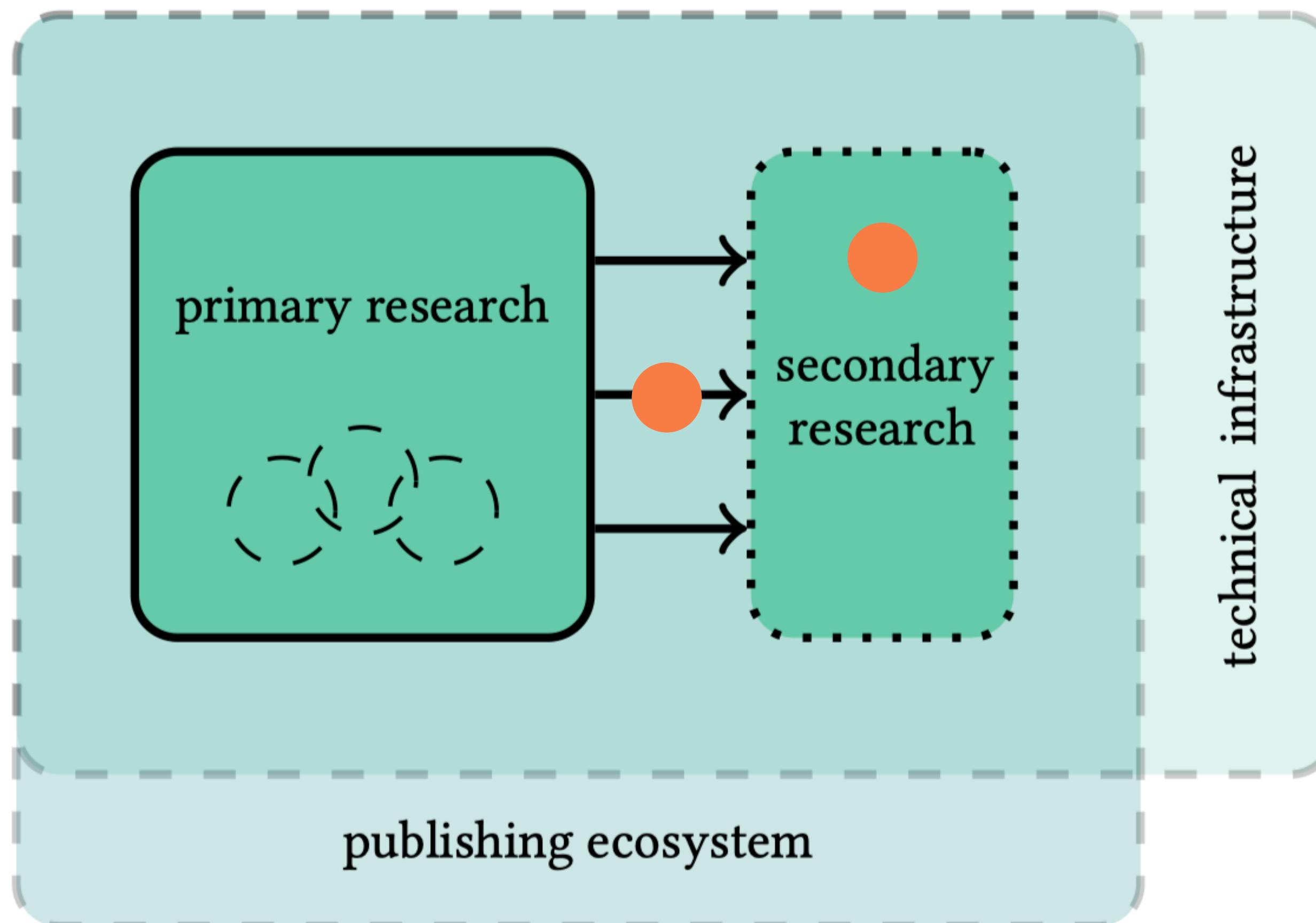


> how can we synthesise findings from methods and epistemologies that differ so broadly?

e.g., to support mixed-methods synthesis, and also integrate design research methods?



# Synthesis & Secondary Research Reporting

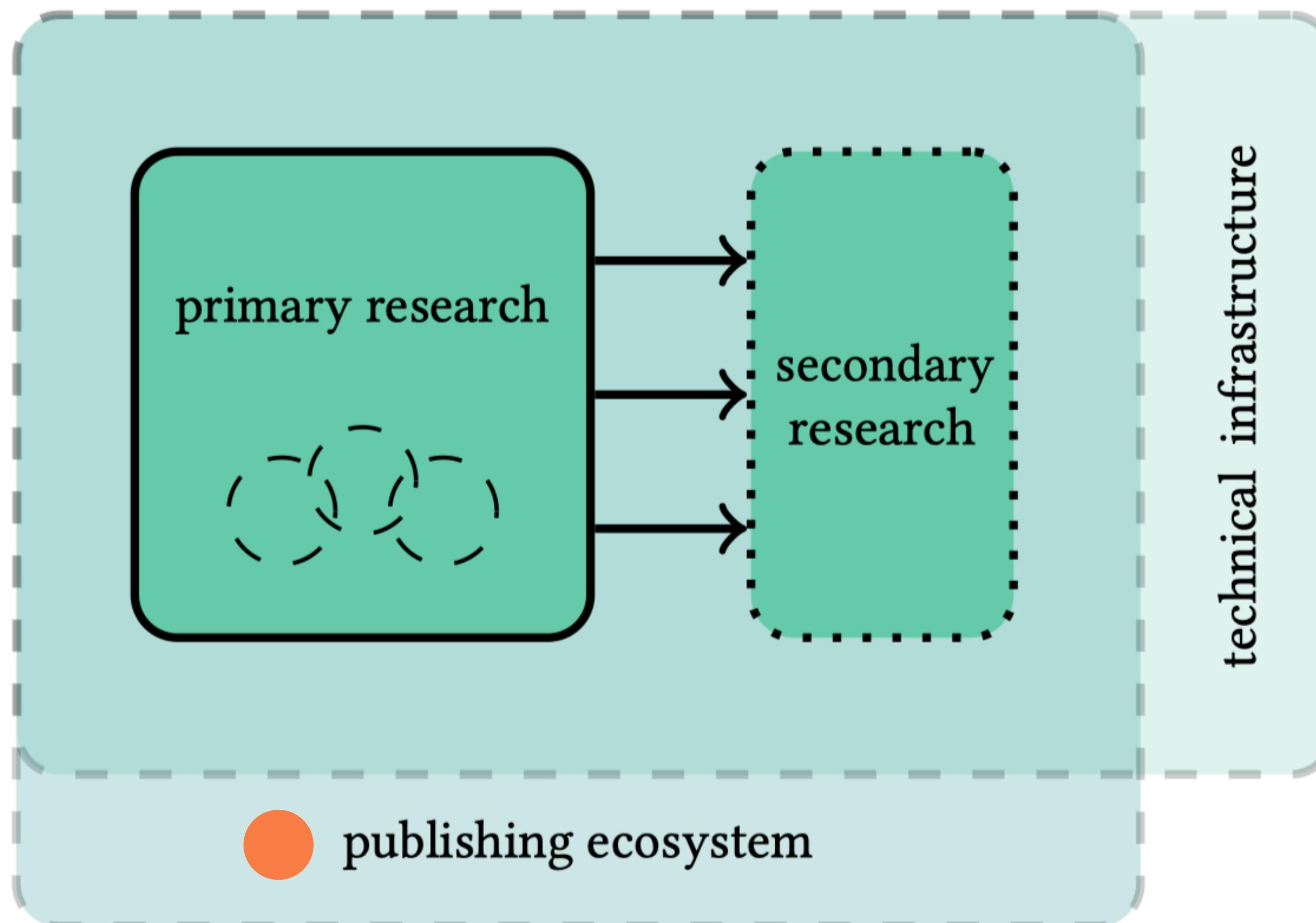


> what guidance actually works for our field? do we need to develop guidance specific to HCI?

e.g., PRISMA doesn't actually fit well - most reviews referencing it don't actually apply it



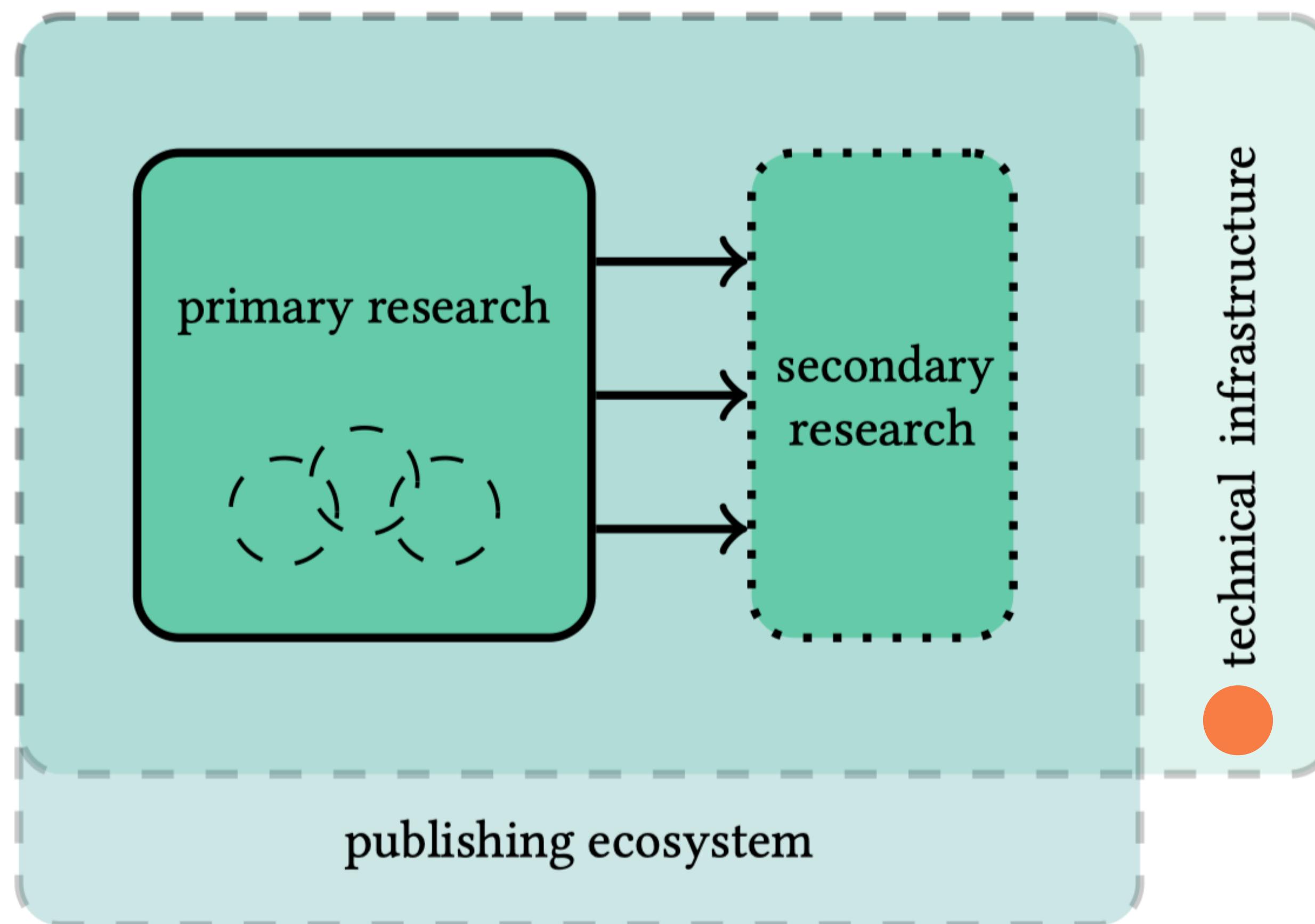
# Venues & Subcommittees



- > which venues actually welcome reviews?
  - e.g., CHI has no SC that explicitly welcomes it
  - e.g., TOCHI “rarely publish [...] survey papers unless they offer a major original contribution”
  - e.g., CSUR does but does not provide guidance



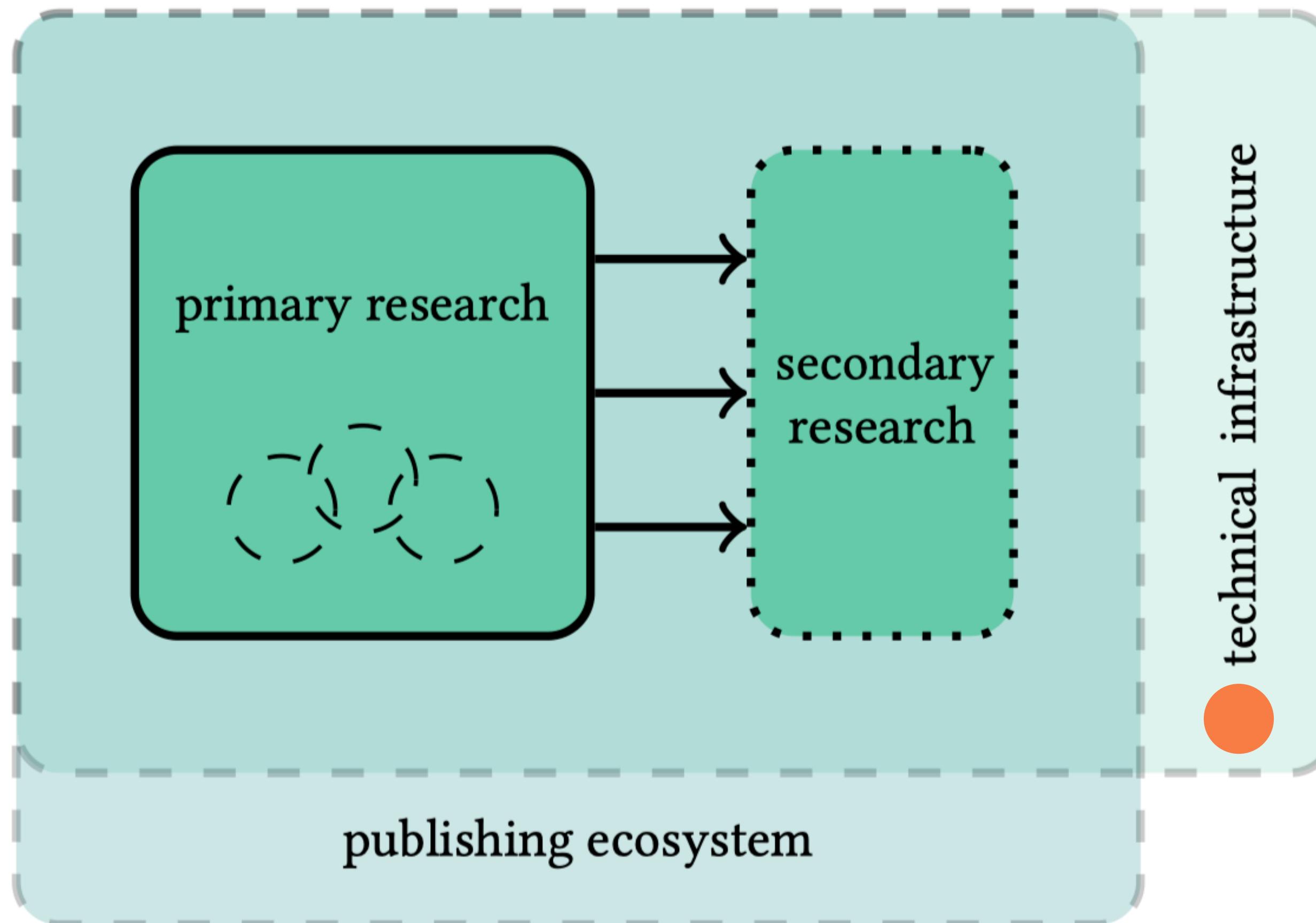
# Infrastructure



➤ our digital libraries are poorly documented & barely evaluated. do we want / how can we support “reproducible” search? how can we support comparable searches across databases? which databases provide which coverage for HCI?



# Infrastructure



> with the rapid growth in artificial intelligence & machine learning, to what extent can / should (semi-)automated tools be used in systematic reviews?





<https://bit.ly/3oBteKA>



## The Systematic Review-lution: A Manifesto to Promote Rigour and Inclusivity in Research Synthesis

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Katja Rogers



k.s.rogers@uva.nl



katjarogers.com



@katjesjes



@katjesjes@hci.social

Katie Seaborn



seaborn.k.aa@m.titech.ac.jp



aspirelab.io