

THE SYSTEMATIC REVIEW-OLUTION

A Manifesto to Promote Rigour and Inclusivity in
Research Synthesis

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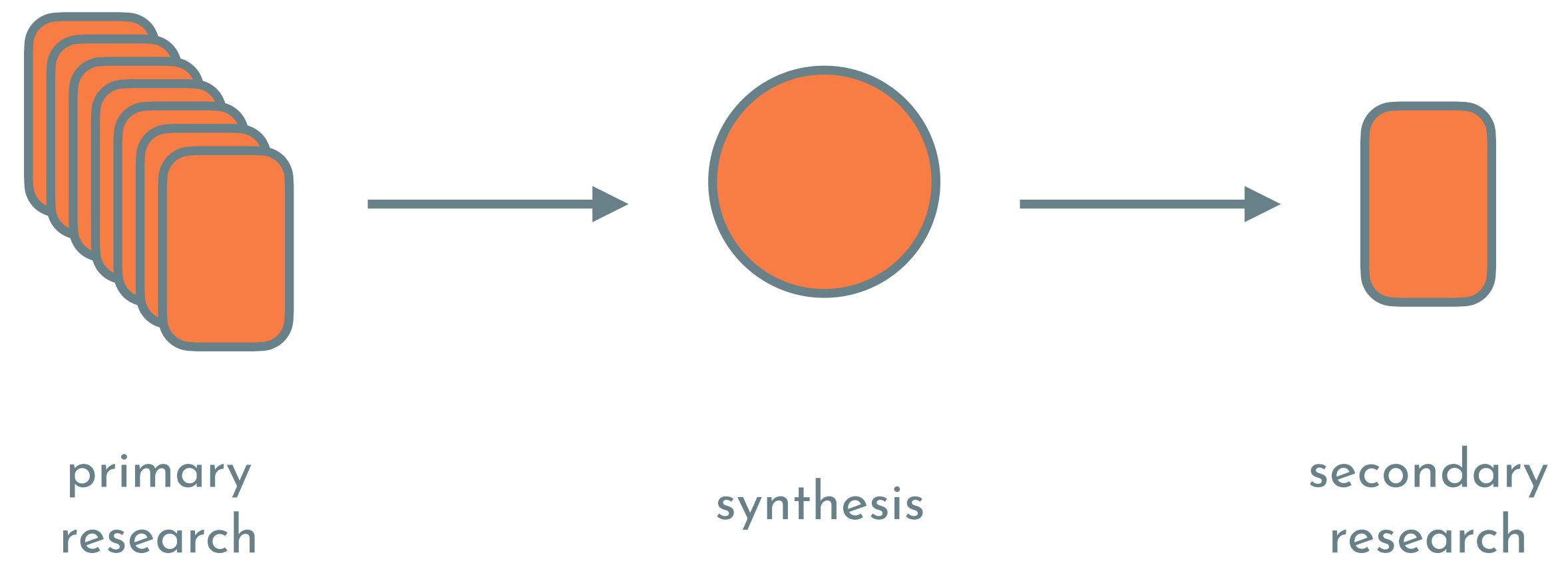
Aspirational Computing Lab, Tokyo Institute of Technology





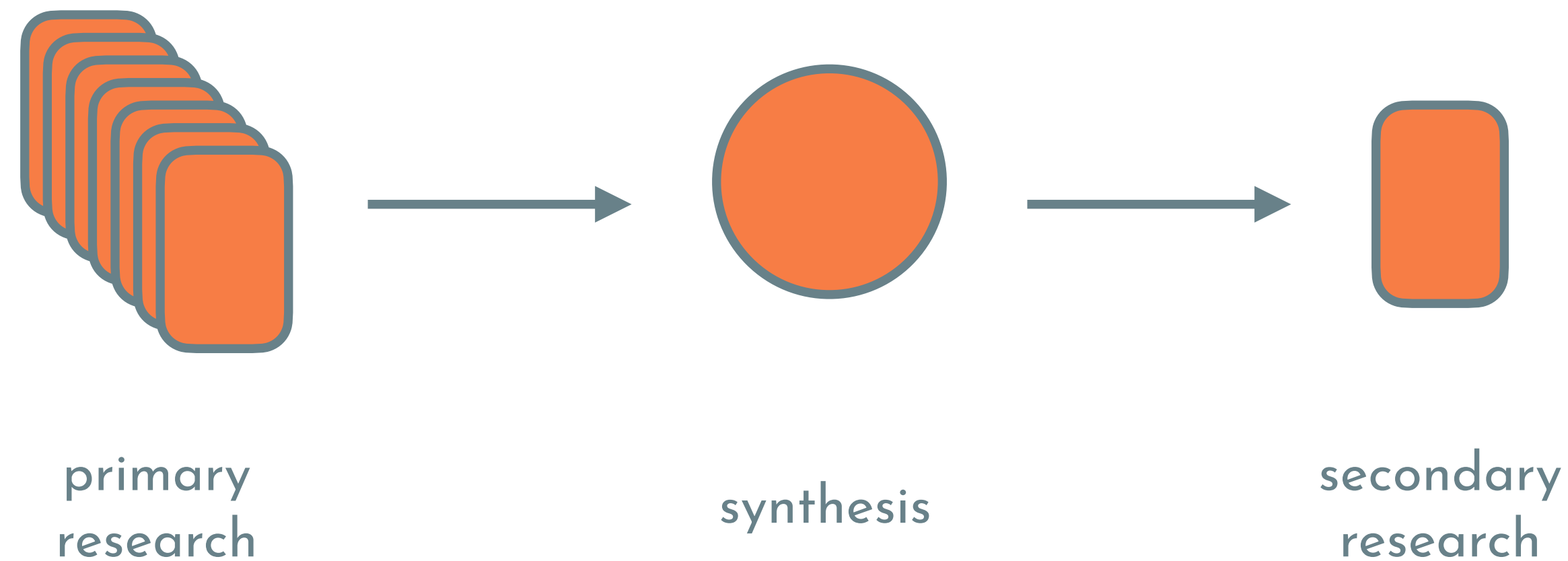
Research Synthesis

summarising and critically reflecting on primary research:

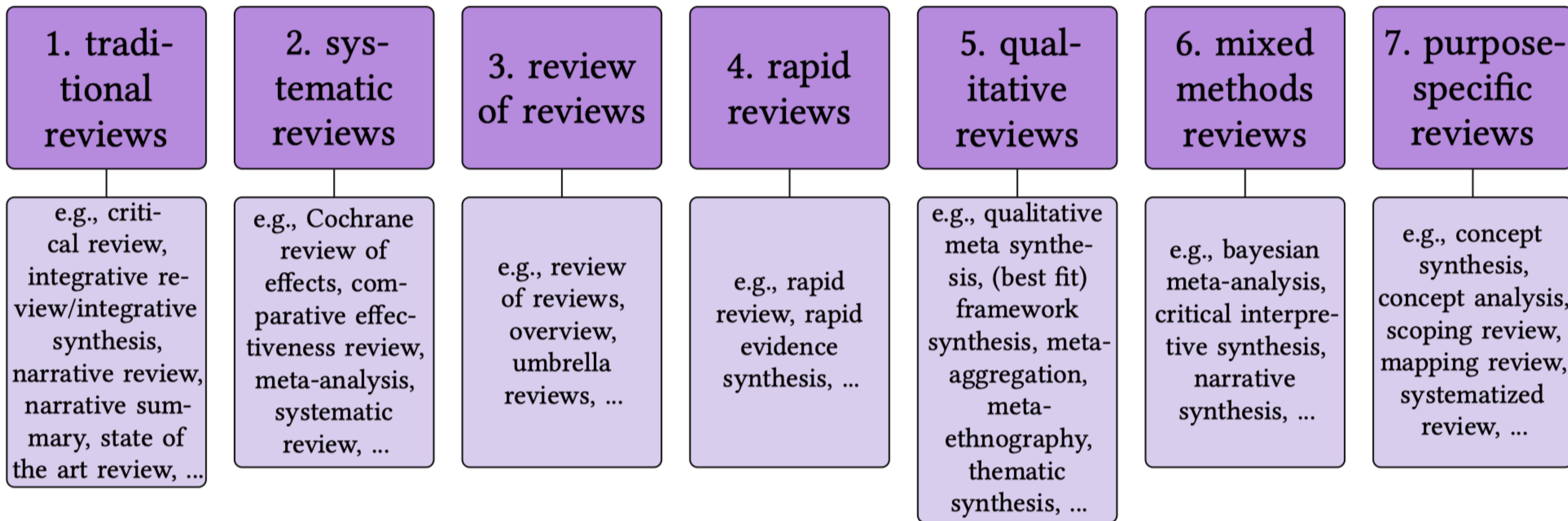


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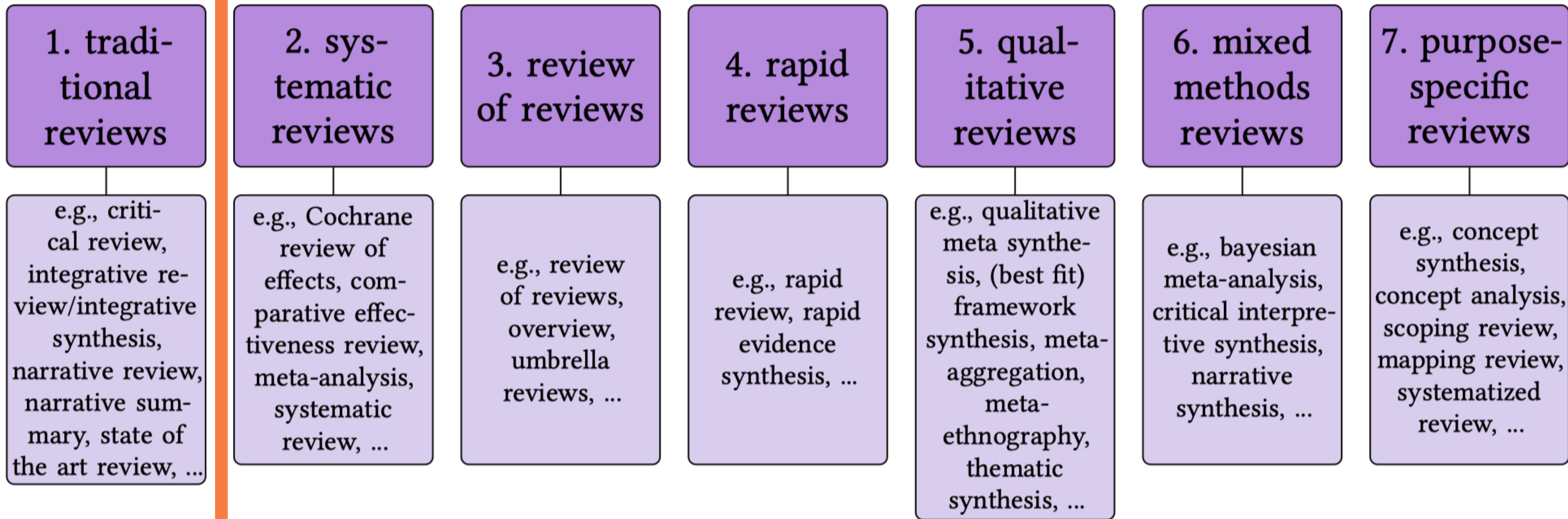
> to form or arrive at a clear “big picture” / map of the field / statistical estimation of a “true” effect / robust answers to specific research questions / clear guidelines and implications for future research & design / future directions for research / ...



based on Sutton et al. 2019



systematic



based on Sutton et al. 2019

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?

We Can

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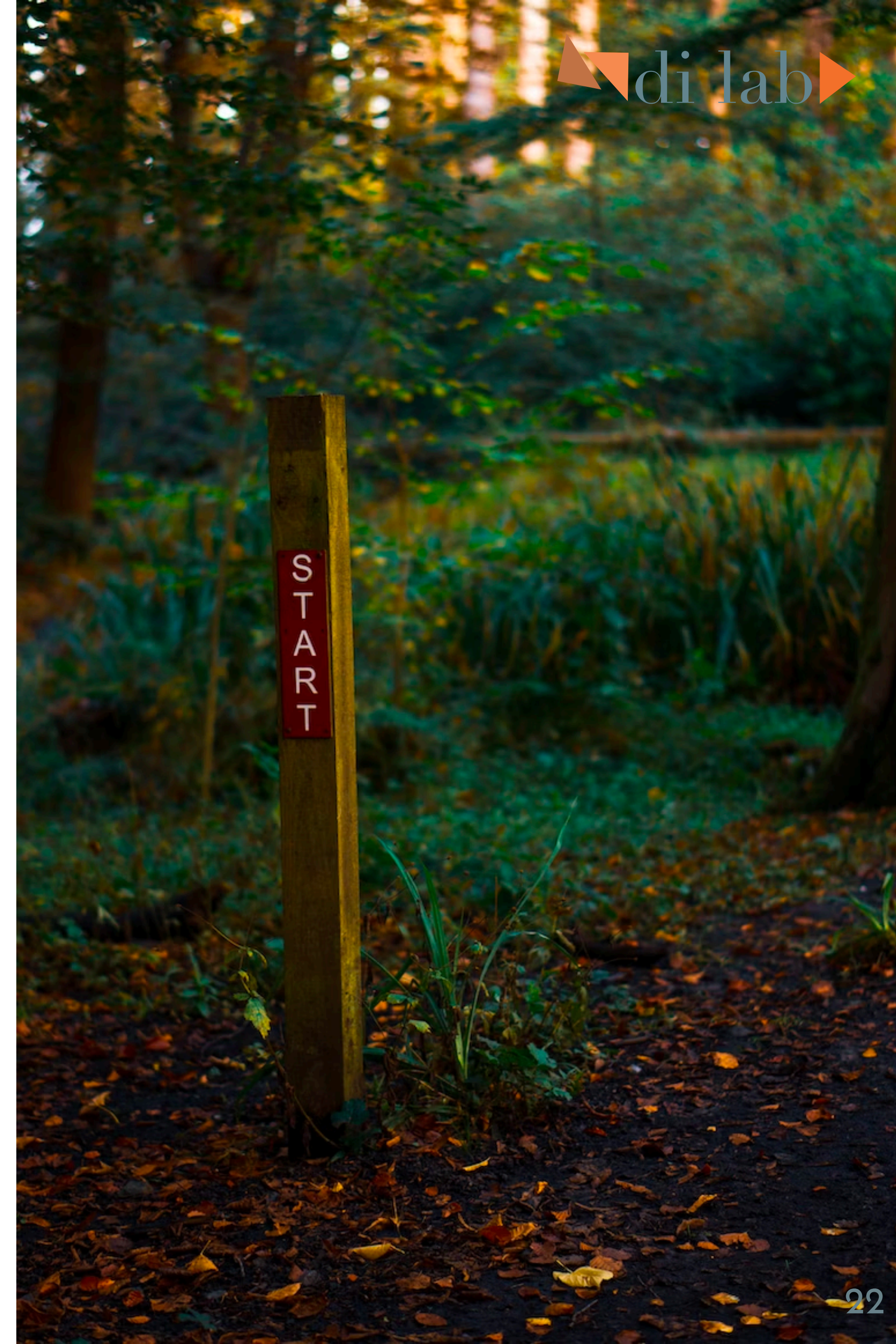
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... than not exploring opportunities for HCI expertise particularly in **“living reviews” (Elliott et al. 2017)**

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)

> HCI 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?

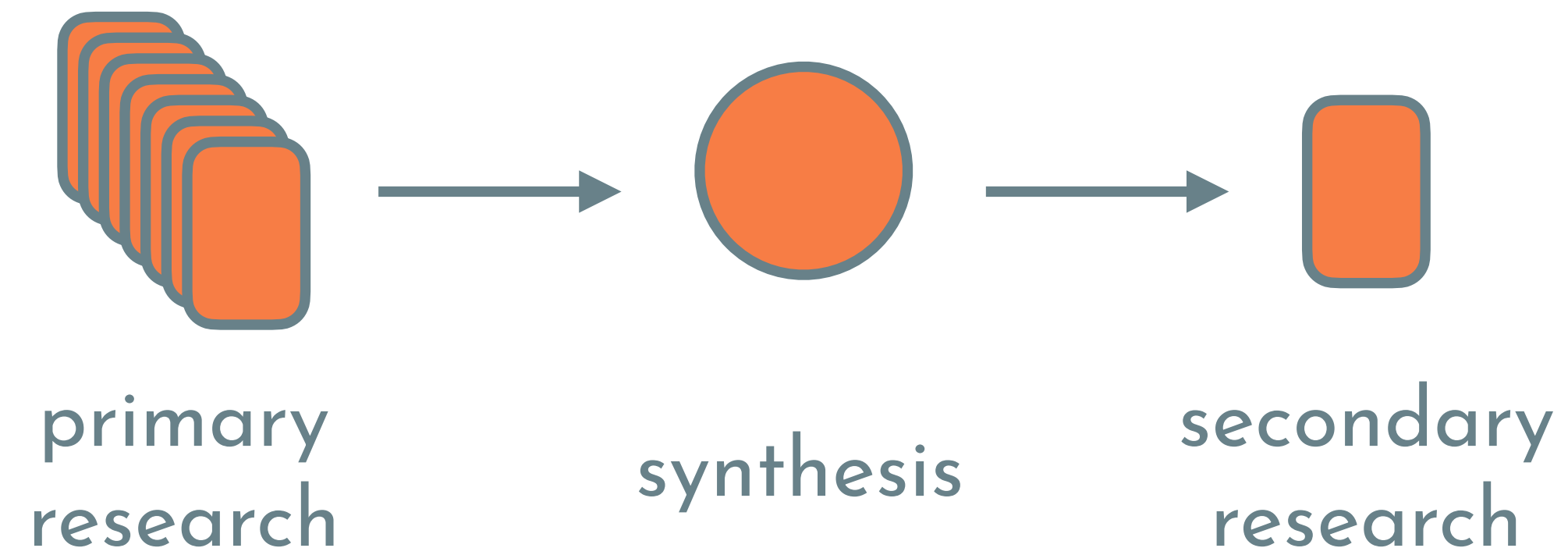
how can we synthesise the literature at this size, growing at this pace?

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

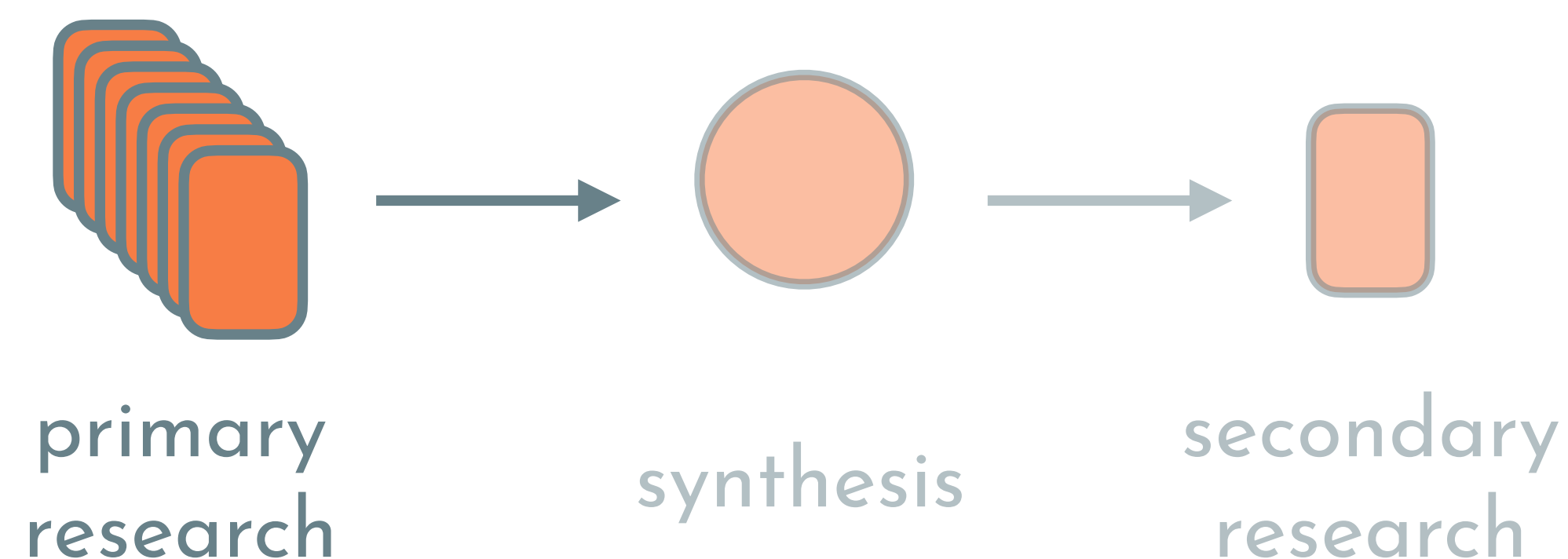
> to avoid “stagnation” and “ossification” (Chu & Evans 2021)

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

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

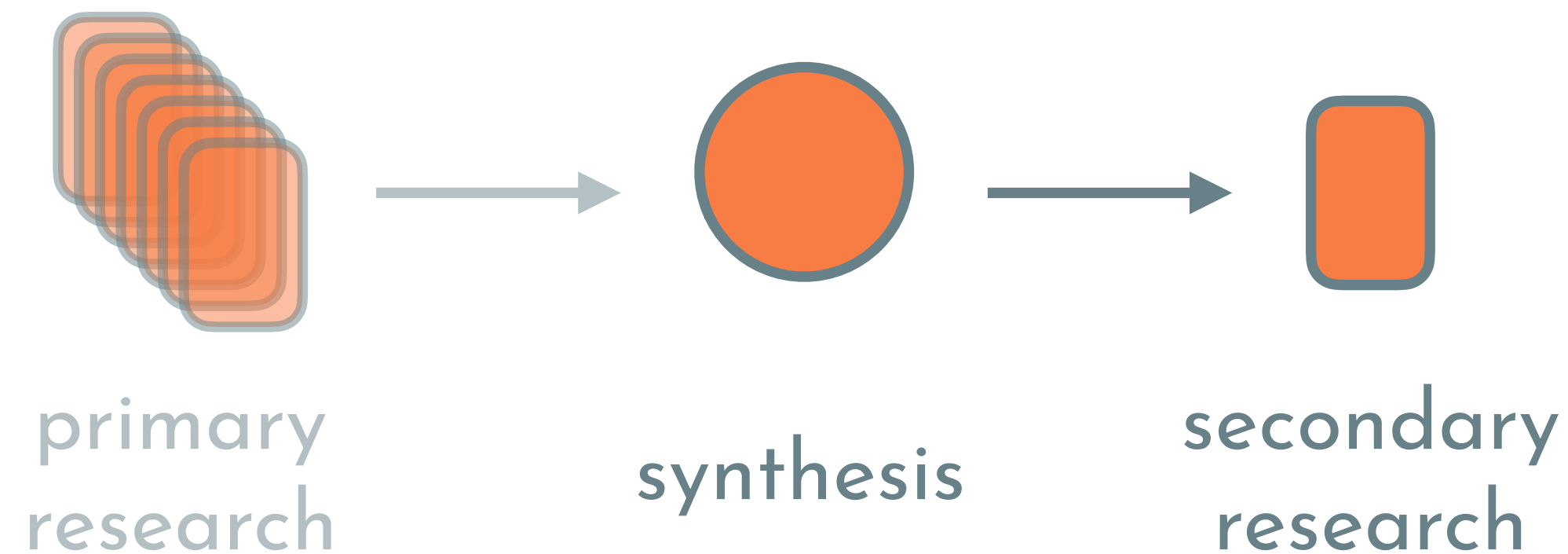


We need a community-driven conversation to support research synthesis:



- 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?

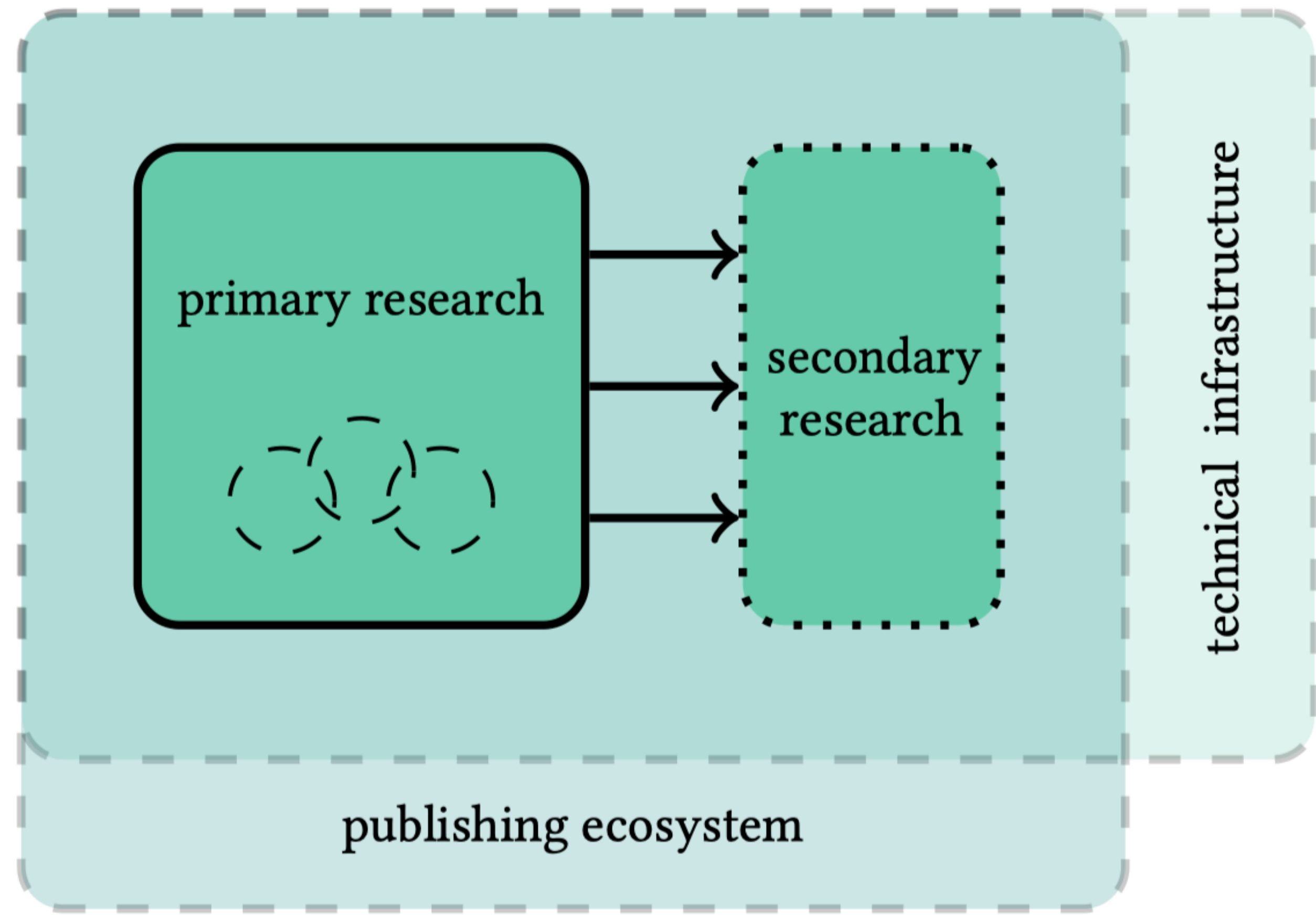
We need a community-driven conversation to support research synthesis:



2) What should **research synthesis** look like when it is **grounded in plurality**?

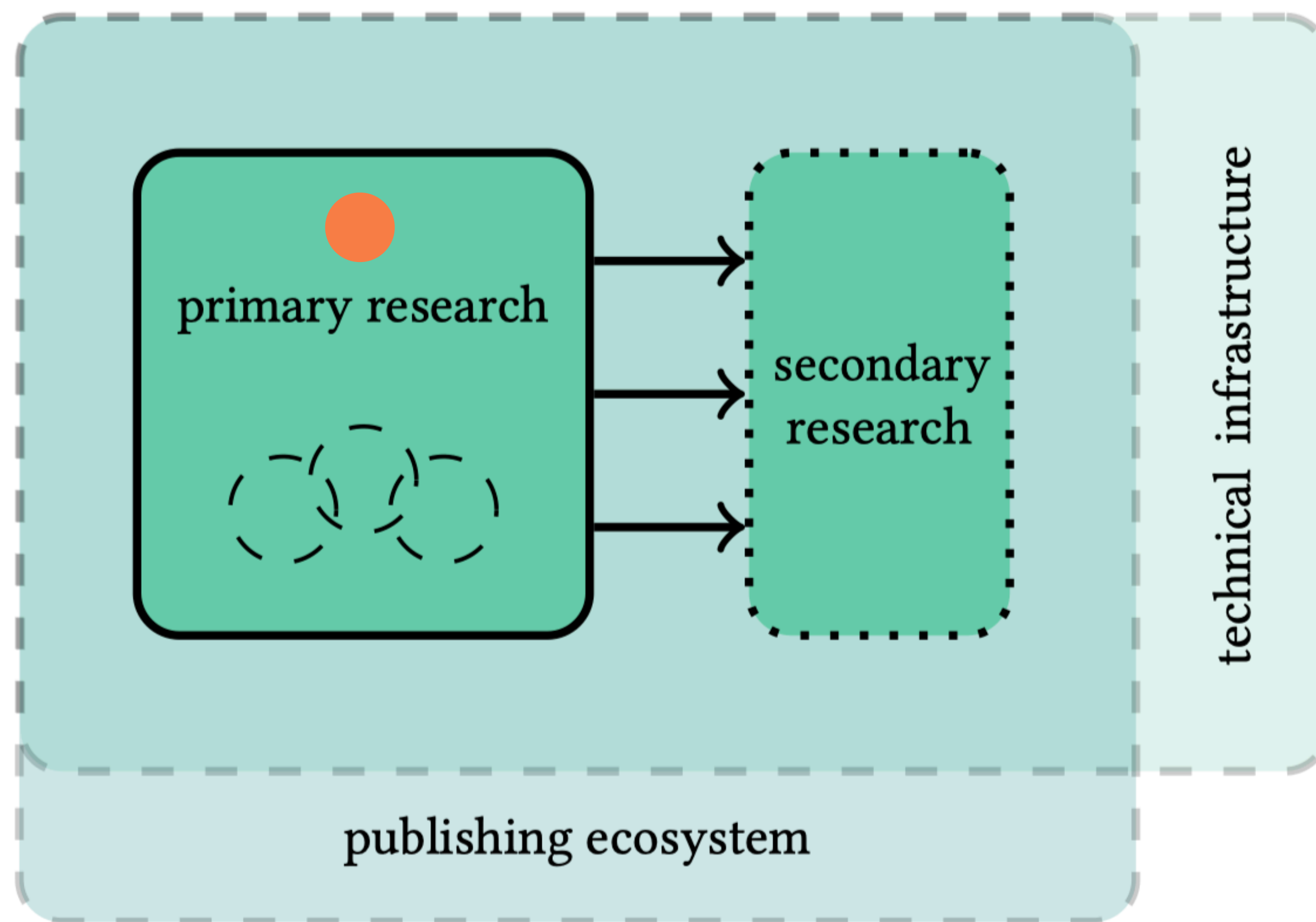
E.g., quantitative studies, qualitative studies, design research, ethnography, and the development of interactive artifacts and systems

Critical Issues





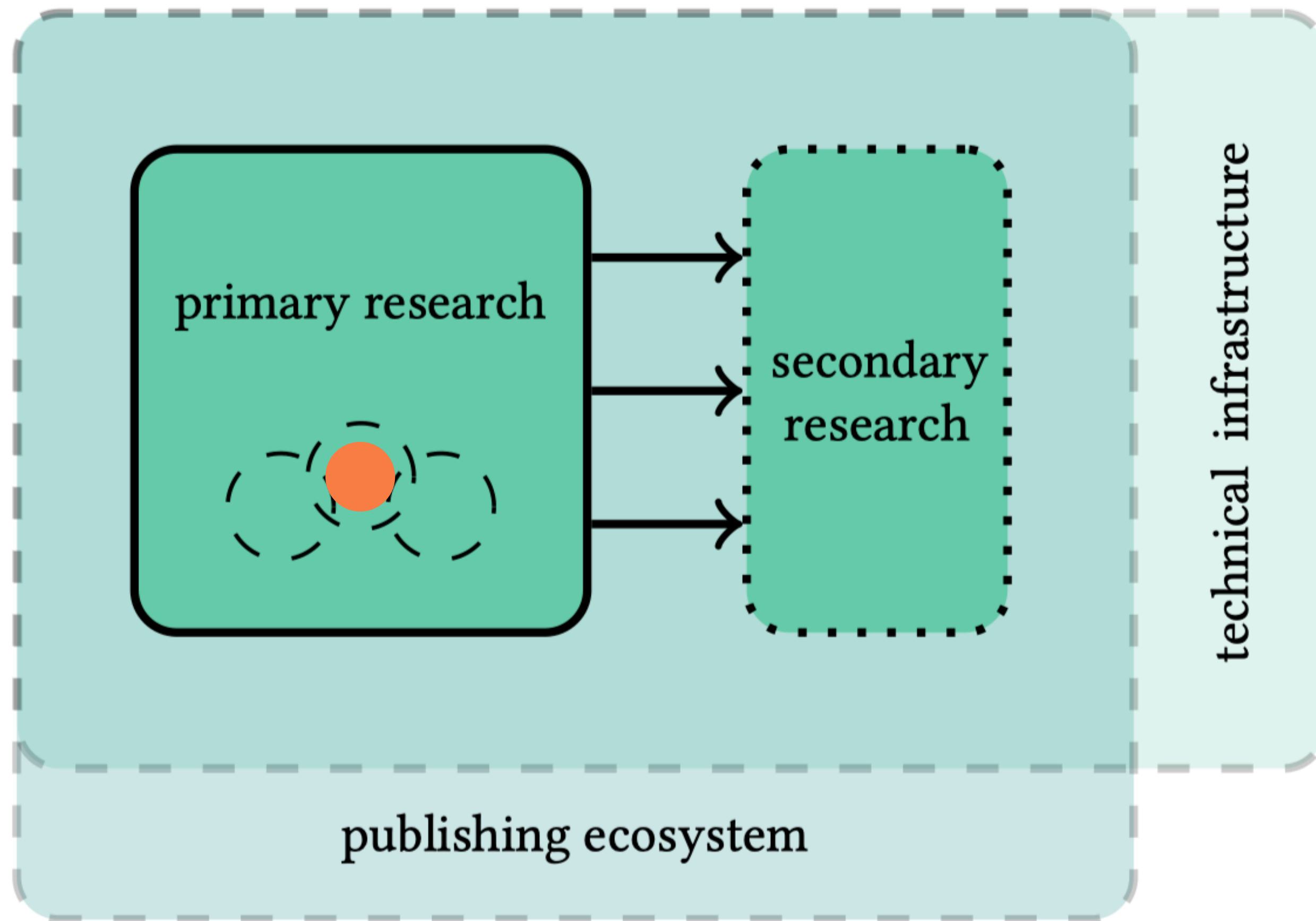
Primary Research Reporting



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



Diverse Epistemologies

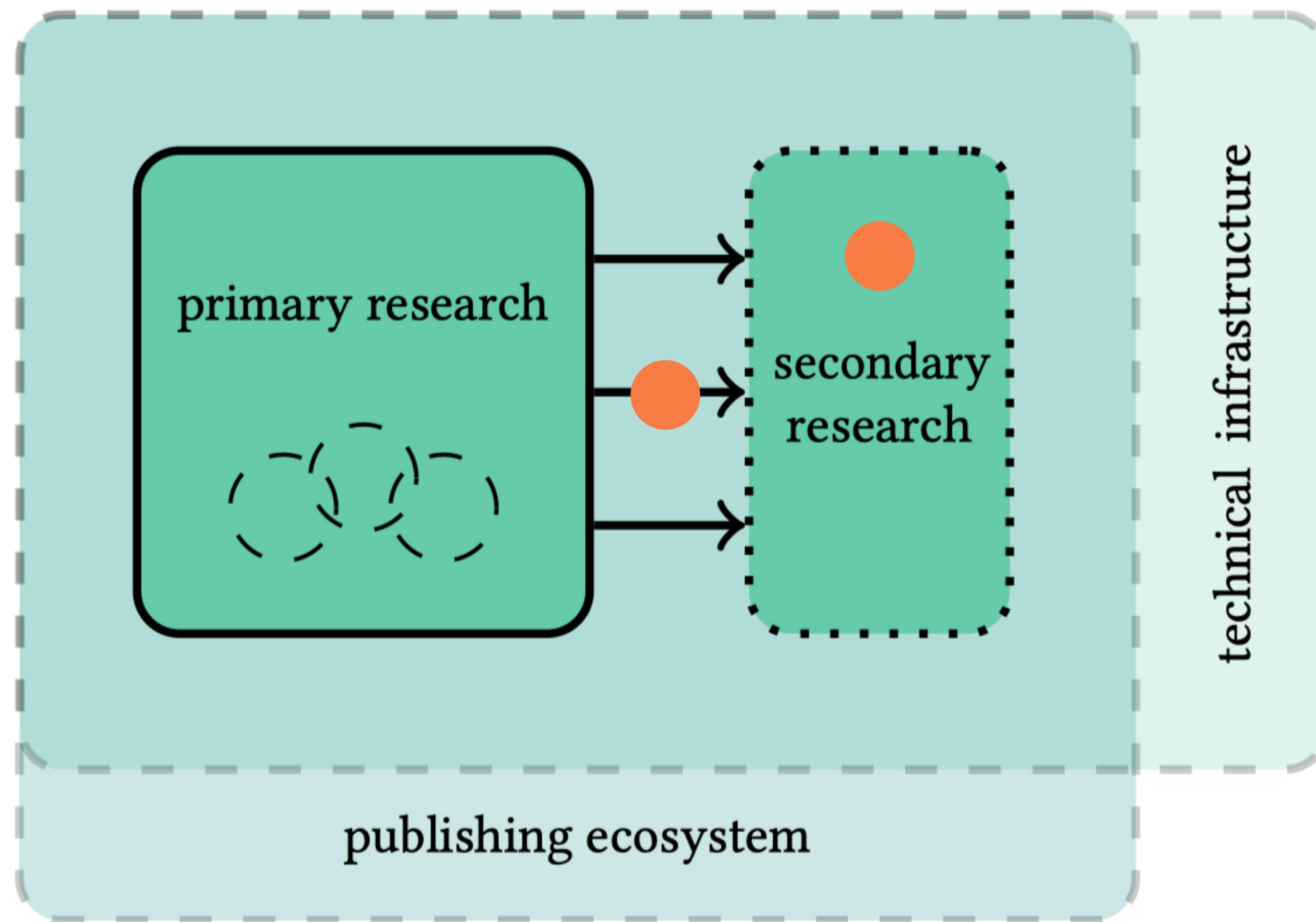


> how can we synthesise findings from methods and epistemologies that differ so broadly?

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



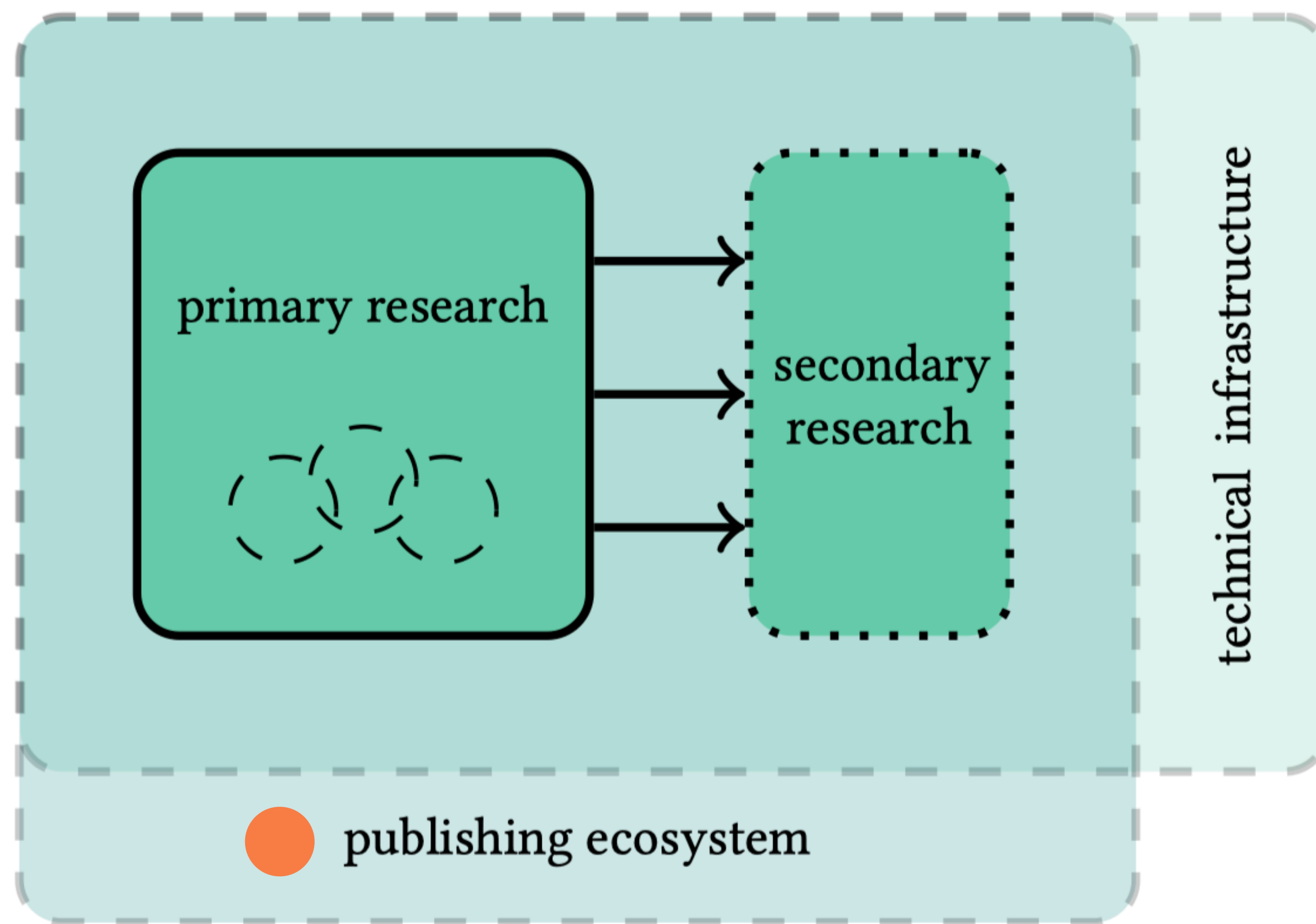
Synthesis & Secondary Research Reporting



> 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?

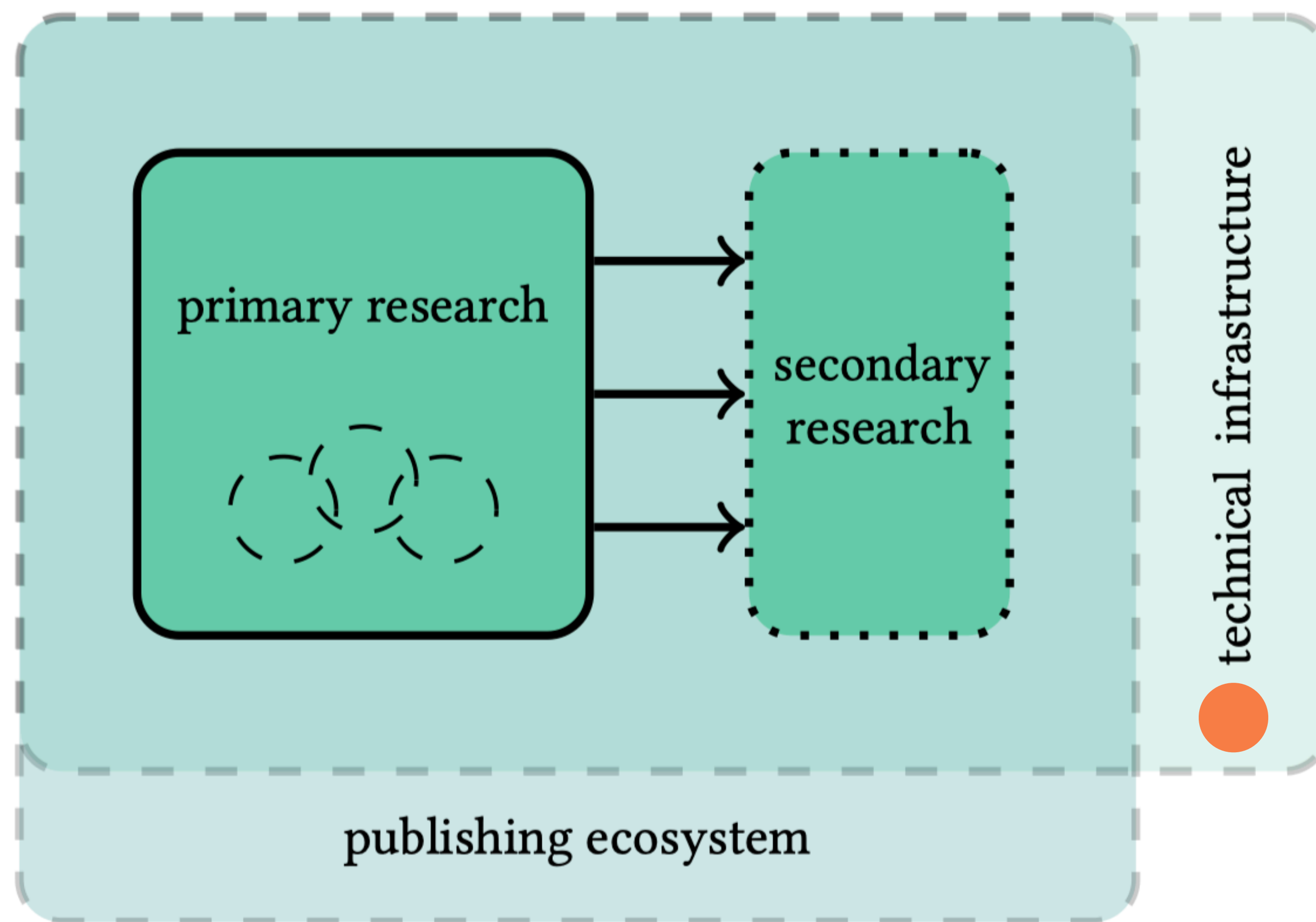
e.g., CHI has no SC that explicitly welcomes it

e.g., TOCHI “rarely publish [..] survey papers unless they offer a major original contribution”

e.g., CSUR does but does not provide guidance

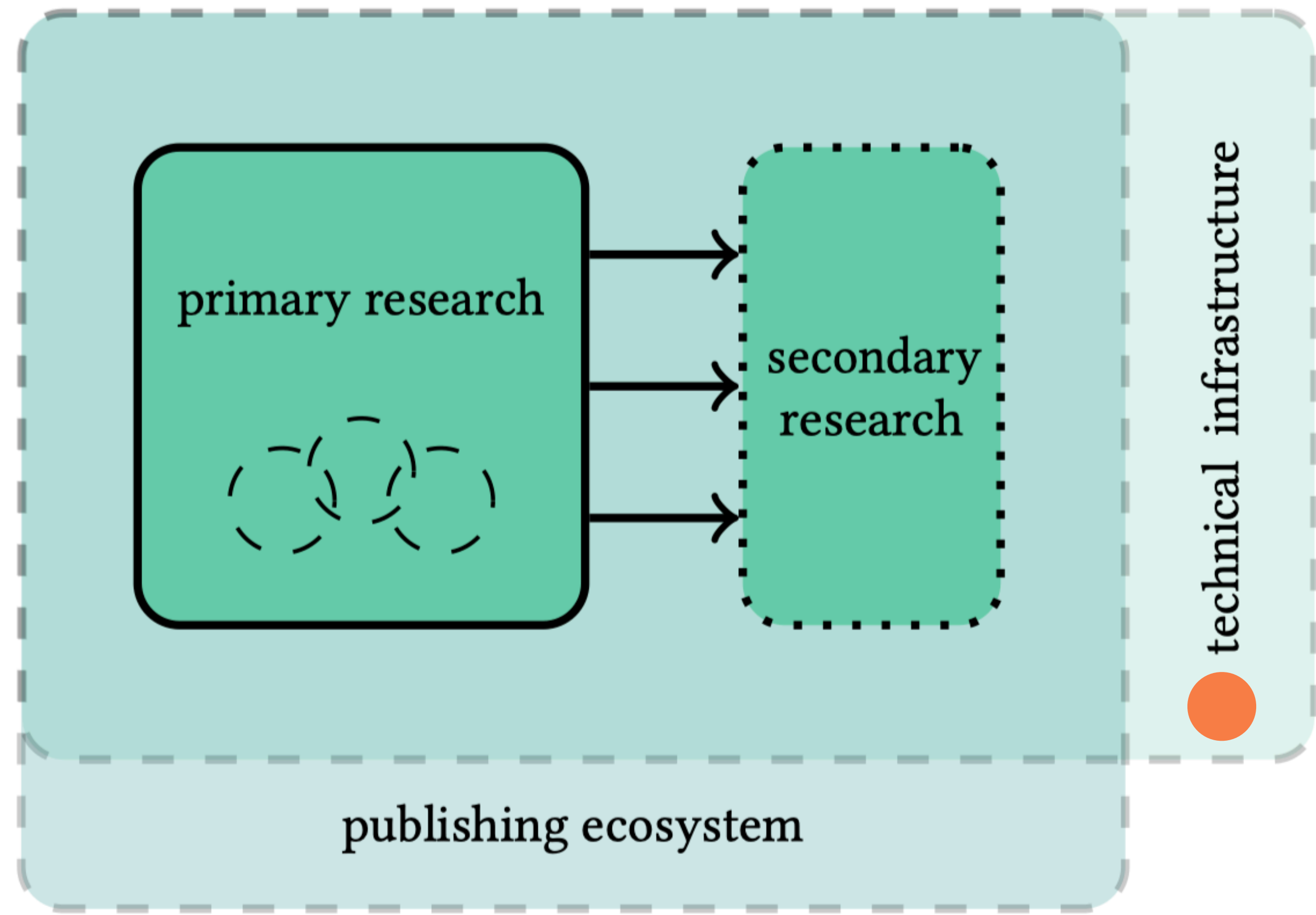


Infrastructure



> 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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