



Considering the credibility of technology education research: A discussion on empirical insights and possible next steps

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An Important Philosophy

“ We should be the most critical as we are amongst friends (Spendlove, earlier today). ”

Research Credibility

LeBel et al. (2018)

Transparency

Is the work clearly reported?

Reproducibility

Could the data analytic procedure be reproduced exactly to come to the same substantive finding?

Robustness

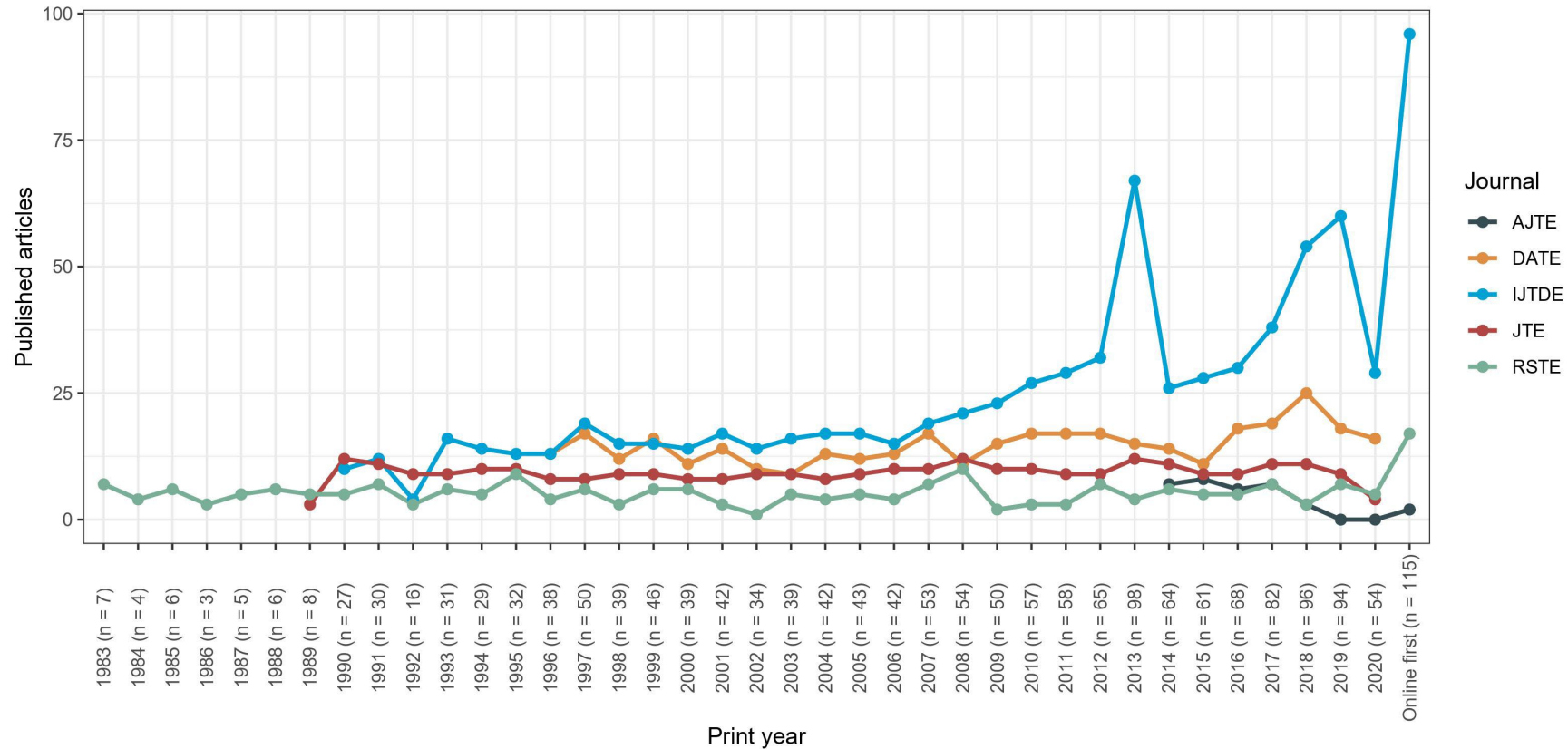
Is the primary substantive finding robust to different analytic procedures?

Replicability

Would the primary substantive finding replicate in an independent replication study?

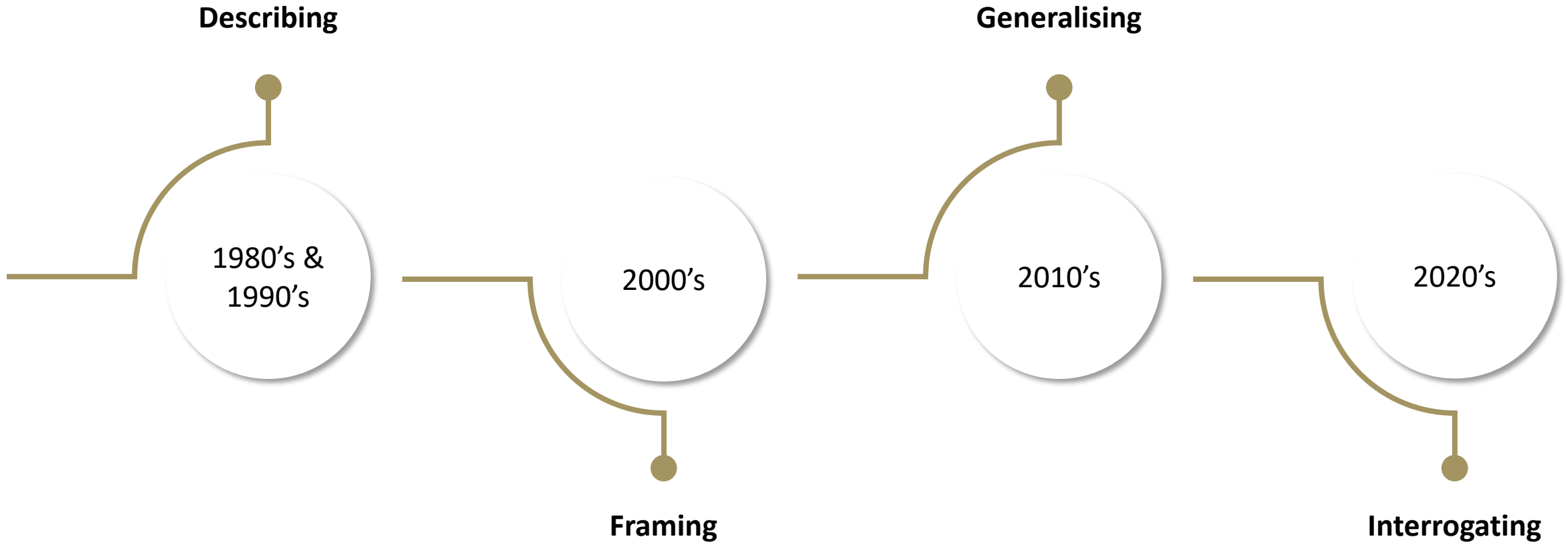
Technology Education Research Growth

Buckley et al. (2023)



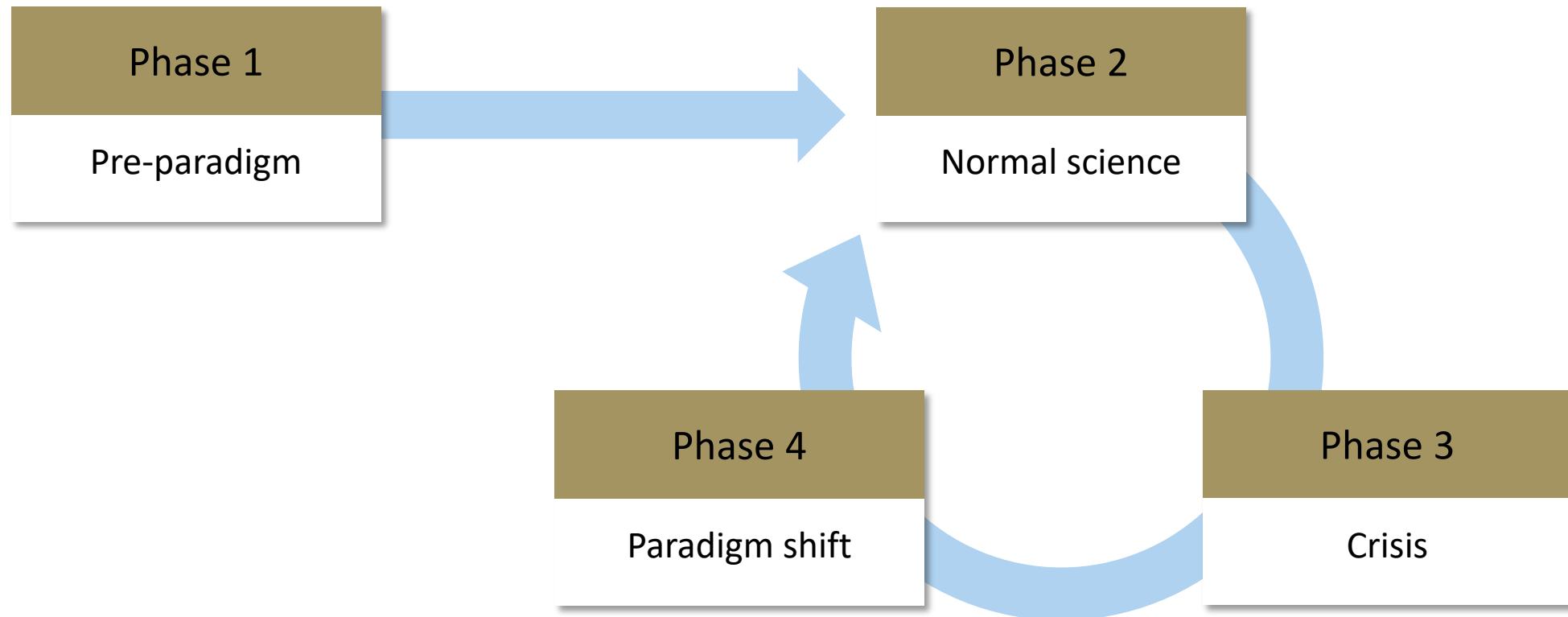
AJTE = Australian Journal of Technology Education. DATE = Design and Technology Education: An International Journal.
 IJTDE = International Journal of Technology and Design Education. JTE = Journal of Technology Education.
 RSTE = Research in Science and Technological Education. Online first articles relate to articles published up to Tuesday 11th August 2020.

Technology Education Research Growth



Research Field Development

Kuhn (1962, 1996)



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LeBel et al. (2018)

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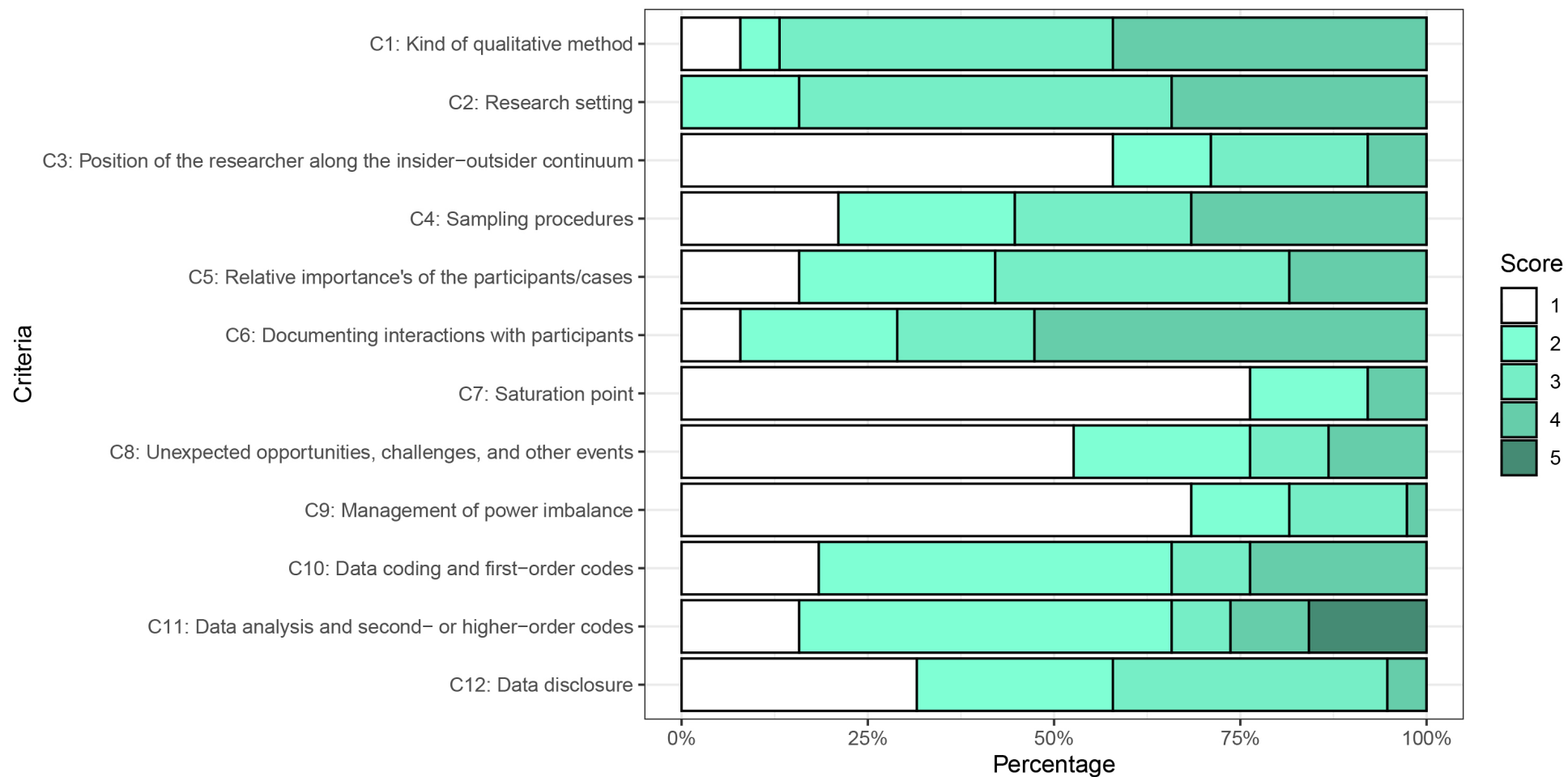
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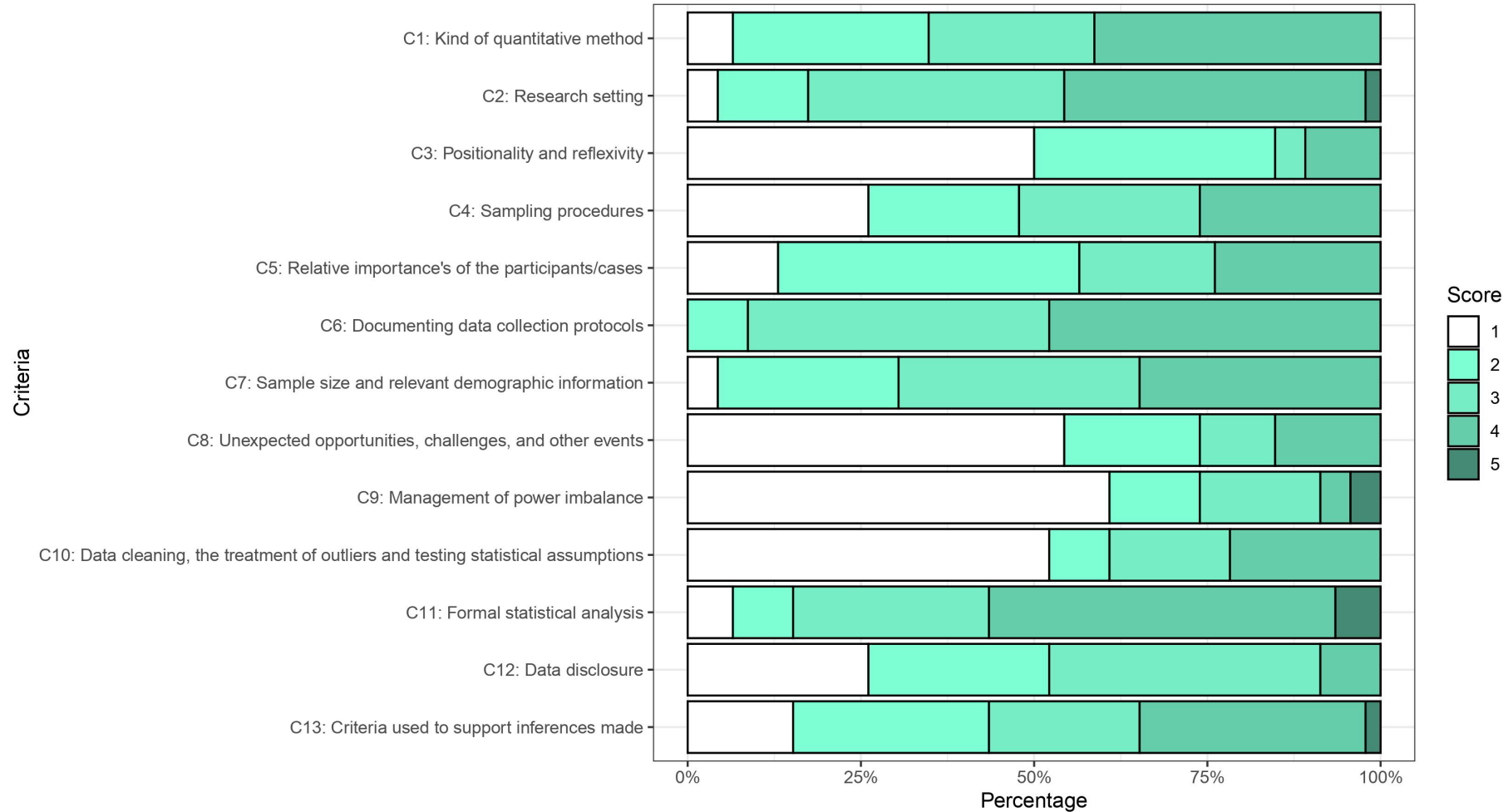
Transparency Analyses

Buckley et al. (2022)



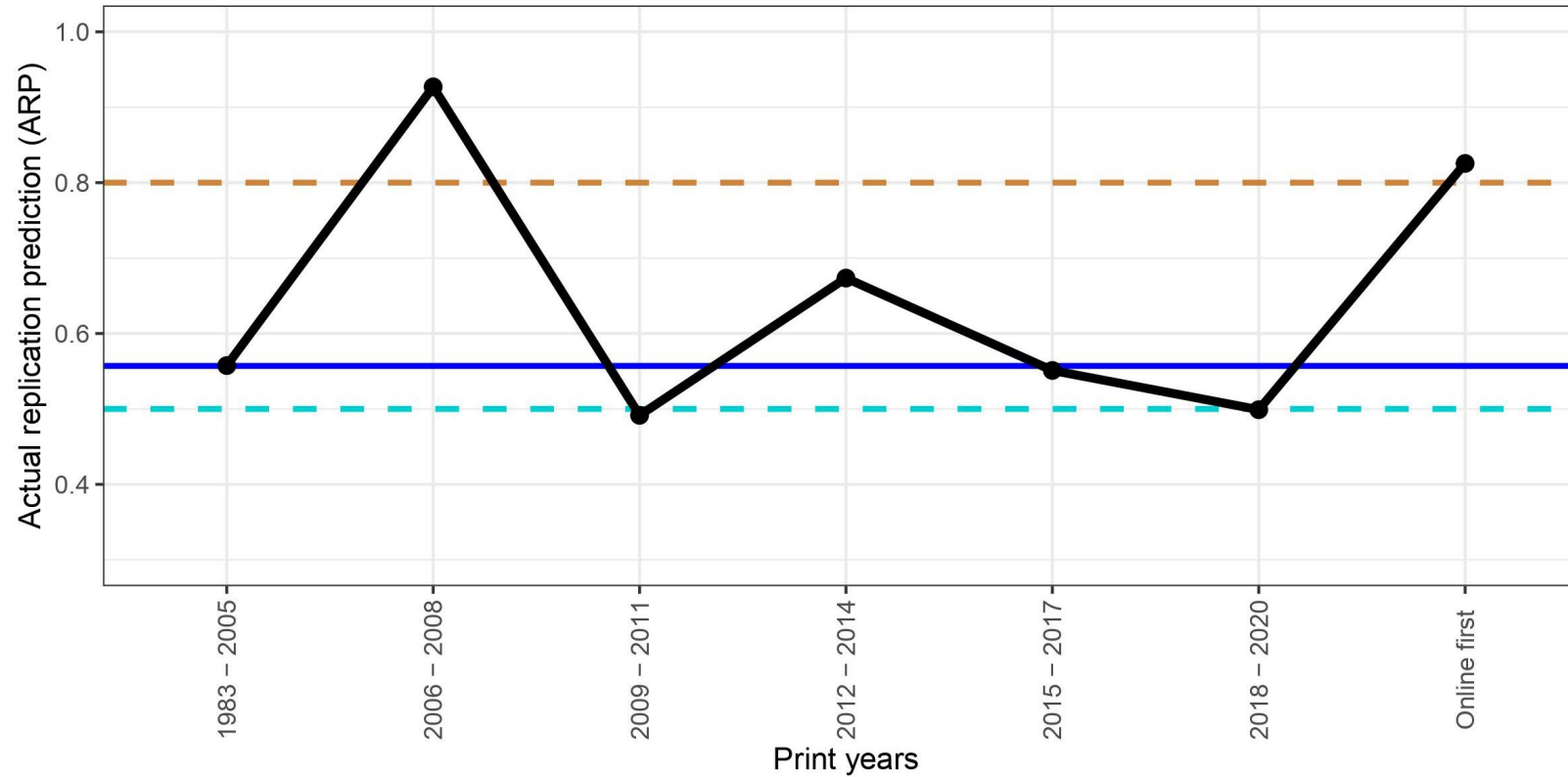
Transparency Analyses

Buckley et al. (2023)



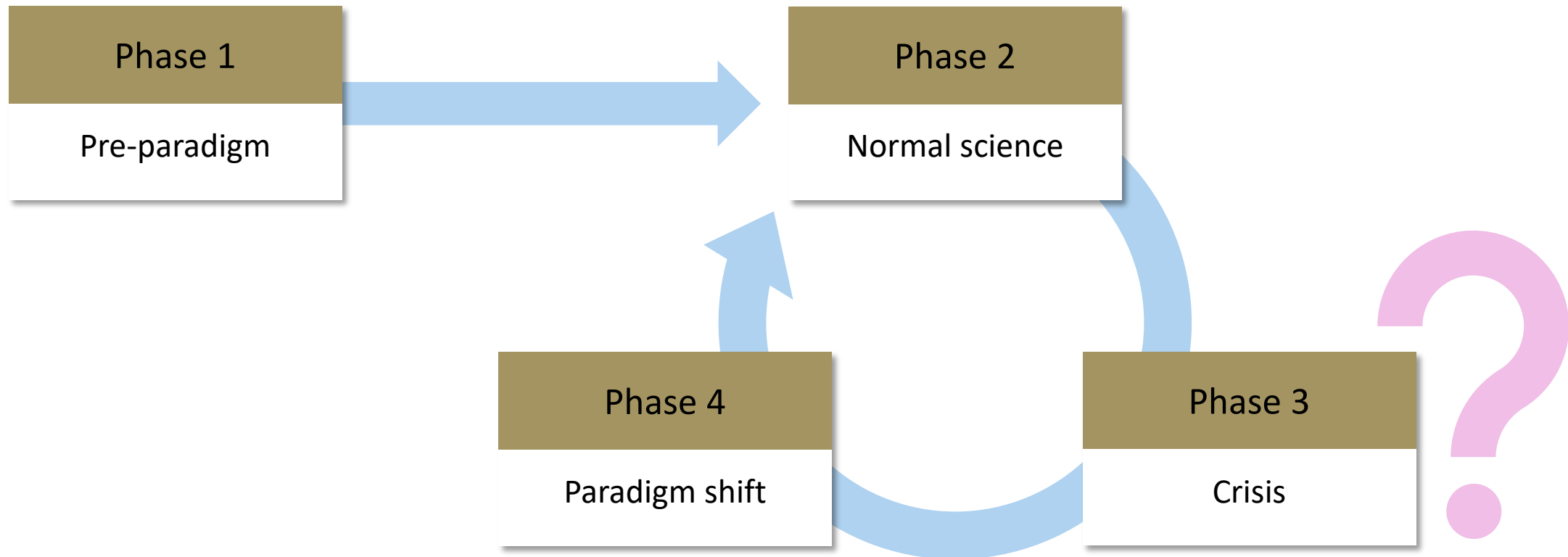
Replicability Analyses

Buckley et al. (2023)

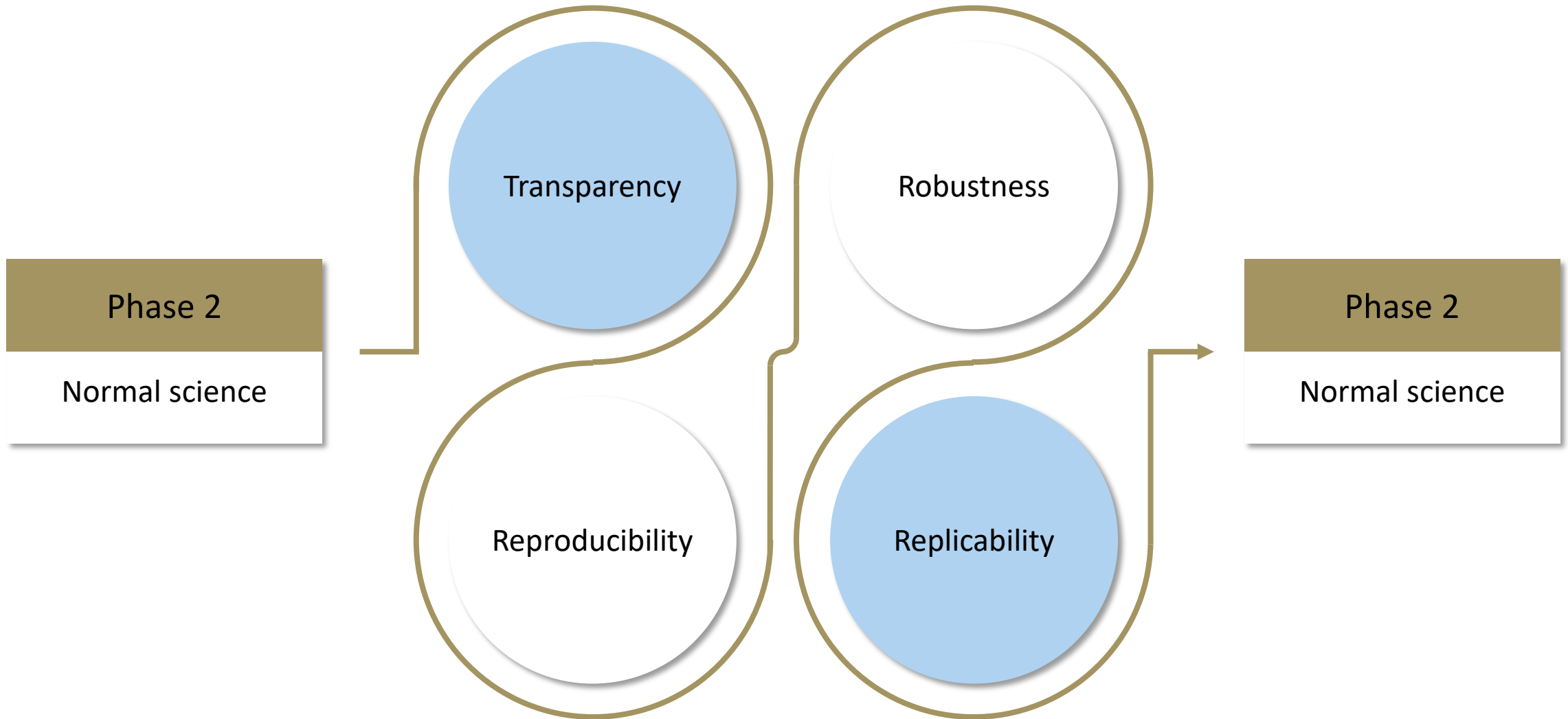


Is there a crisis?

Kuhn (1962, 1996)

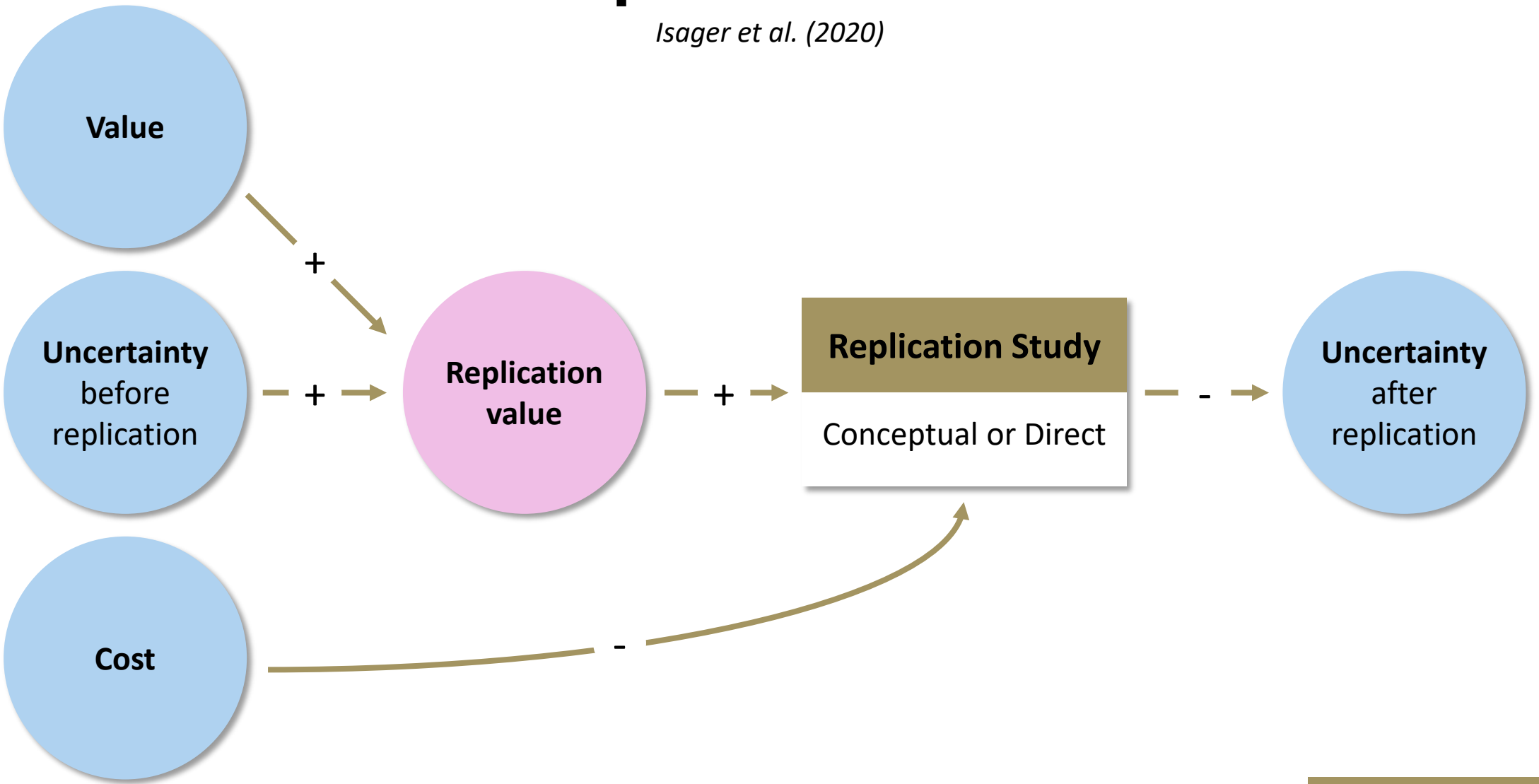


A paradigm shift?

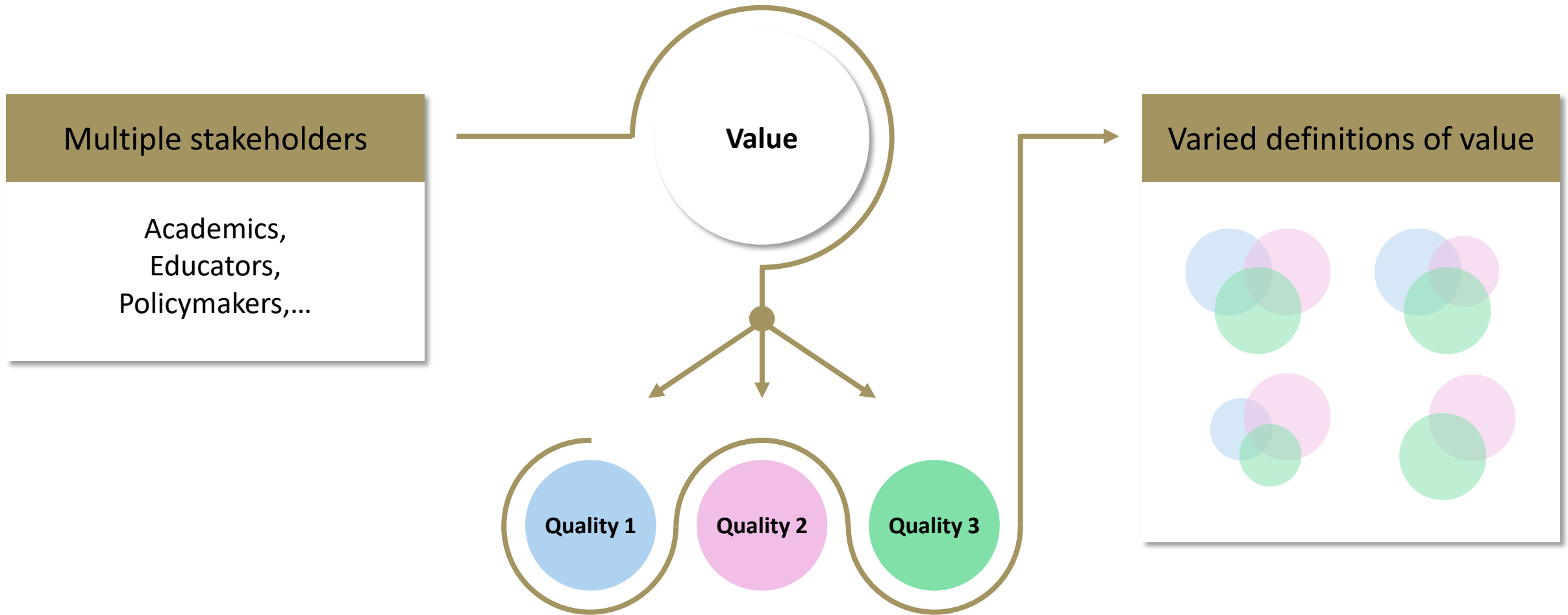


Replication value

Isager et al. (2020)



How could we progress?



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Thank you!

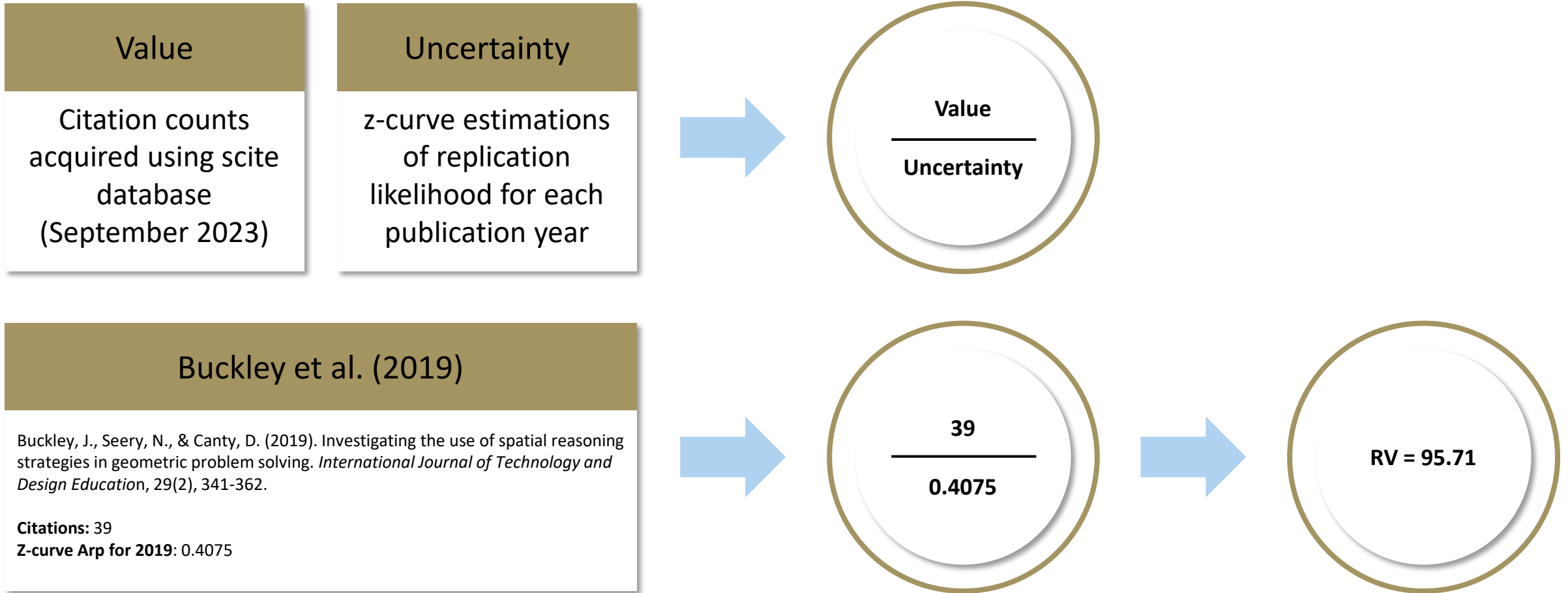
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Example determination of replication value



Buckley et al. (2019)

Buckley, J., Seery, N., & Canty, D. (2019). Investigating the use of spatial reasoning strategies in geometric problem solving. *International Journal of Technology and Design Education*, 29(2), 341-362.

Citations: 39
Z-curve Arp for 2019: 0.4075