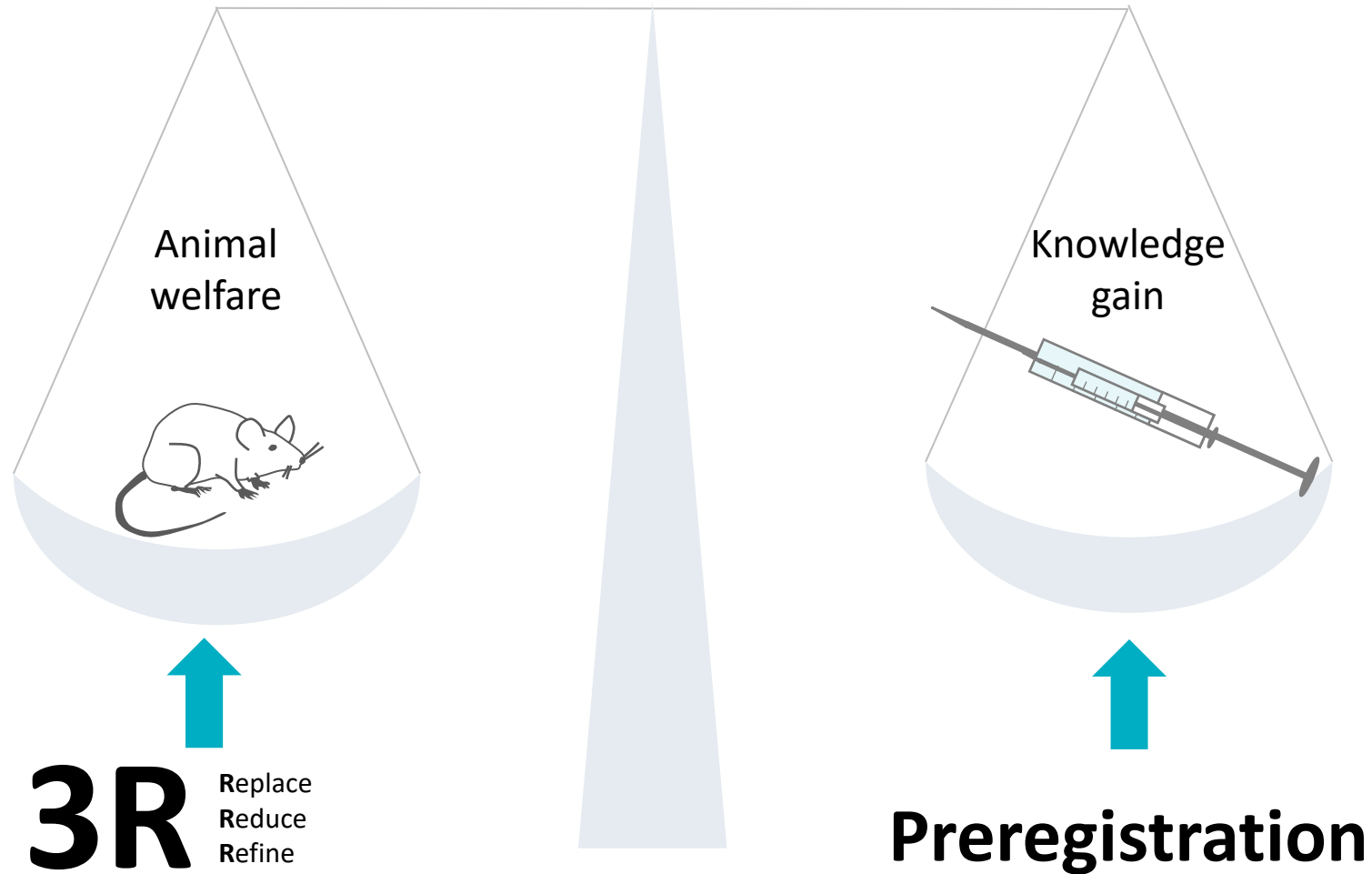# Preregistration in animal research – Critical evaluation of the current state

4/6/2024, 8th World Conference on Research Integrity, Athens

Céline Heinl

The ethical dilemma of animal experiments

Animal welfare

Knowledge gain

3R Replace Reduce Refine

Preregistration

Available platforms

General registries

- e.g. Open Science Framework
- e.g. As predicted

Registries tailored to animal studies

- Preclinicaltrials.eu (held by the Netherlands Heart Institute) since 2018
- animalstudyregistry.org (held by the German Federal Institute for Risk Assessment) since 2019

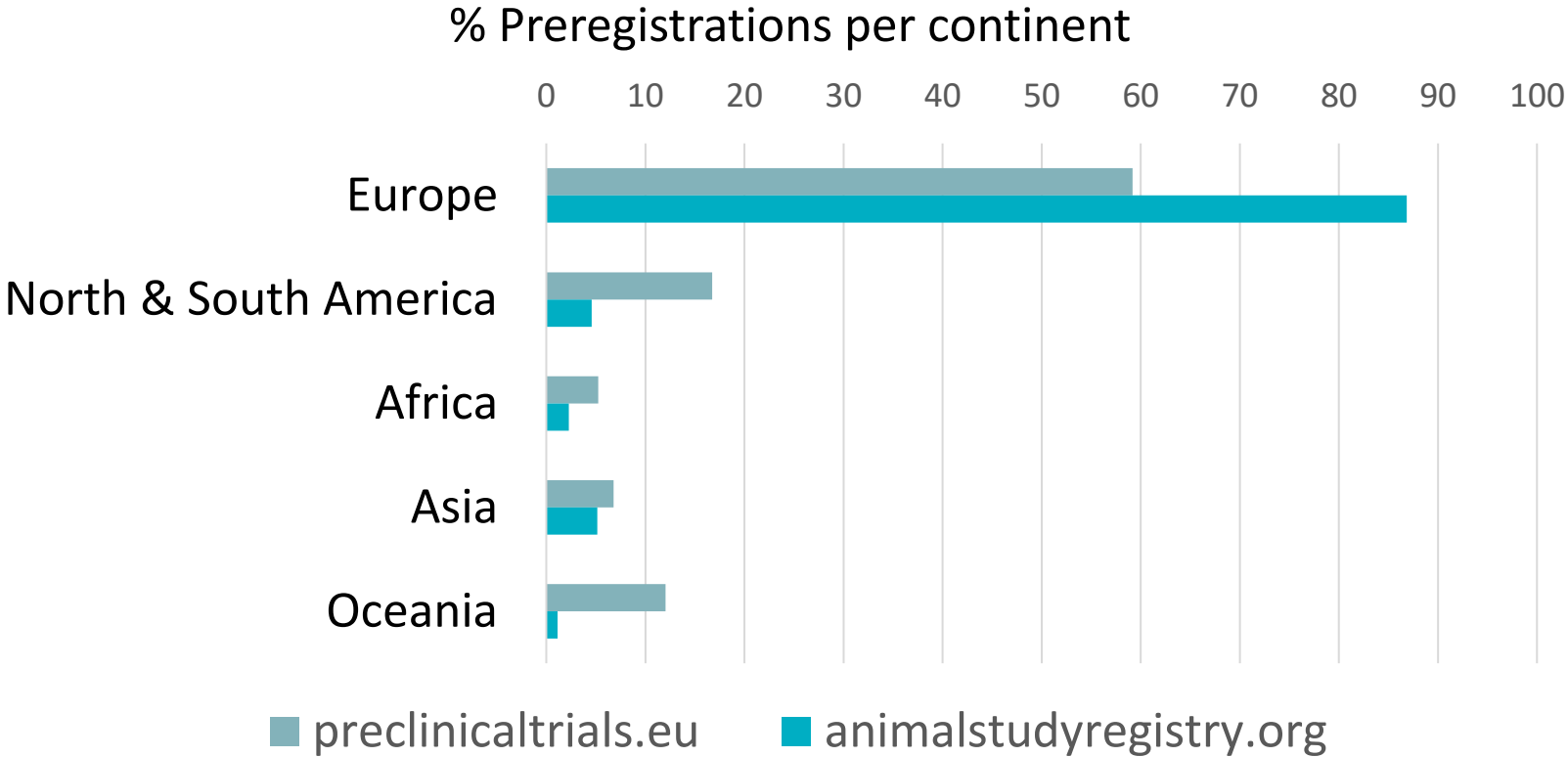# Current state of preregistration in animal research

Cumulative number of preregistration

Legend: ■ preclinicaltrials.eu ■ animalstudyregistry.org
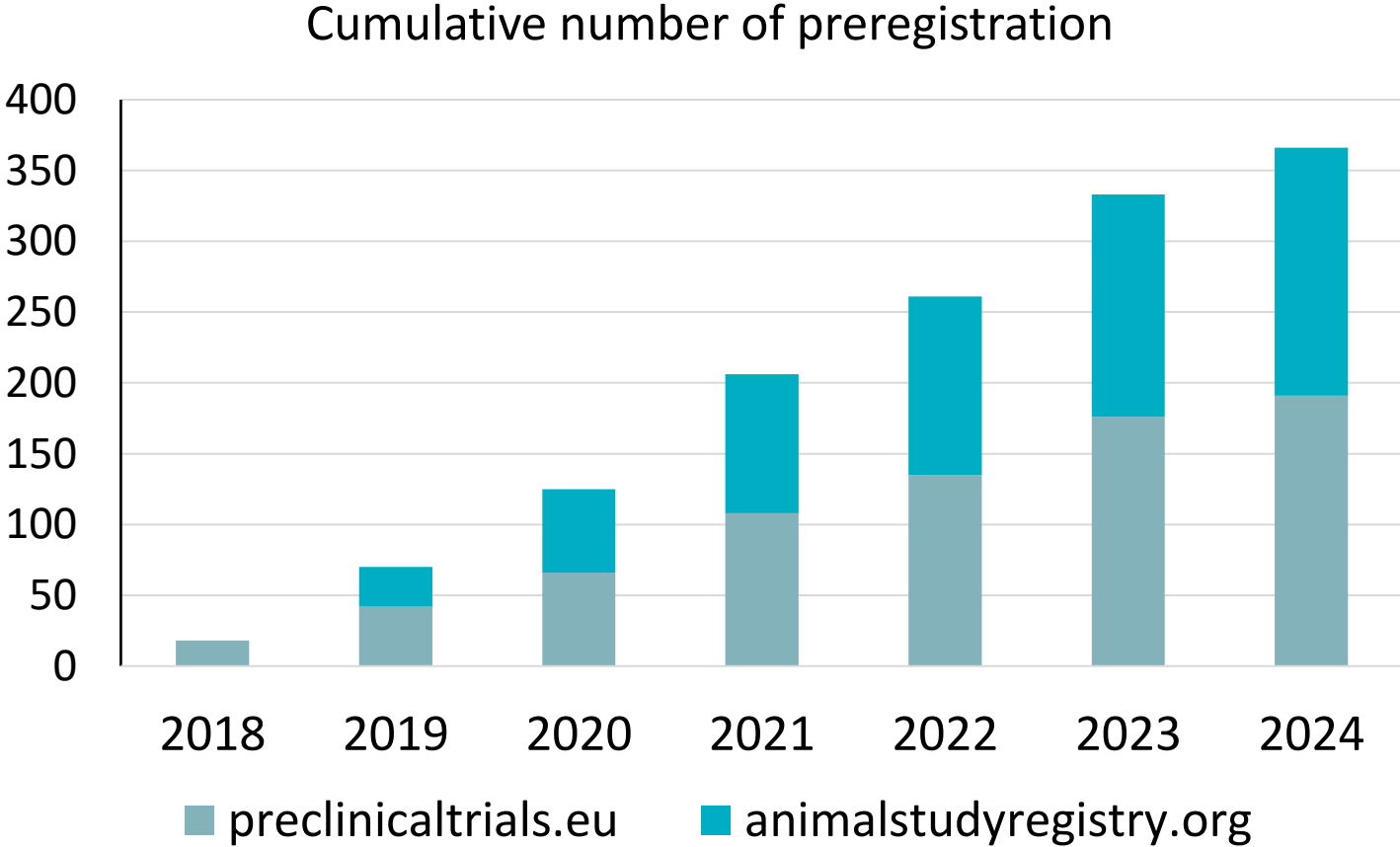
→ Continuous uptake but no strong increase

as of May 29, 2024

BfR

Current state of preregistration in animal research

% Preregistrations per continent

Legend: preclinicaltrials.eu, animalstudyregistry.org

➡ Still concentration of preregistrations on Europe

as of May 29, 2024

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How to convince animal researchers that preregistration is worthwhile
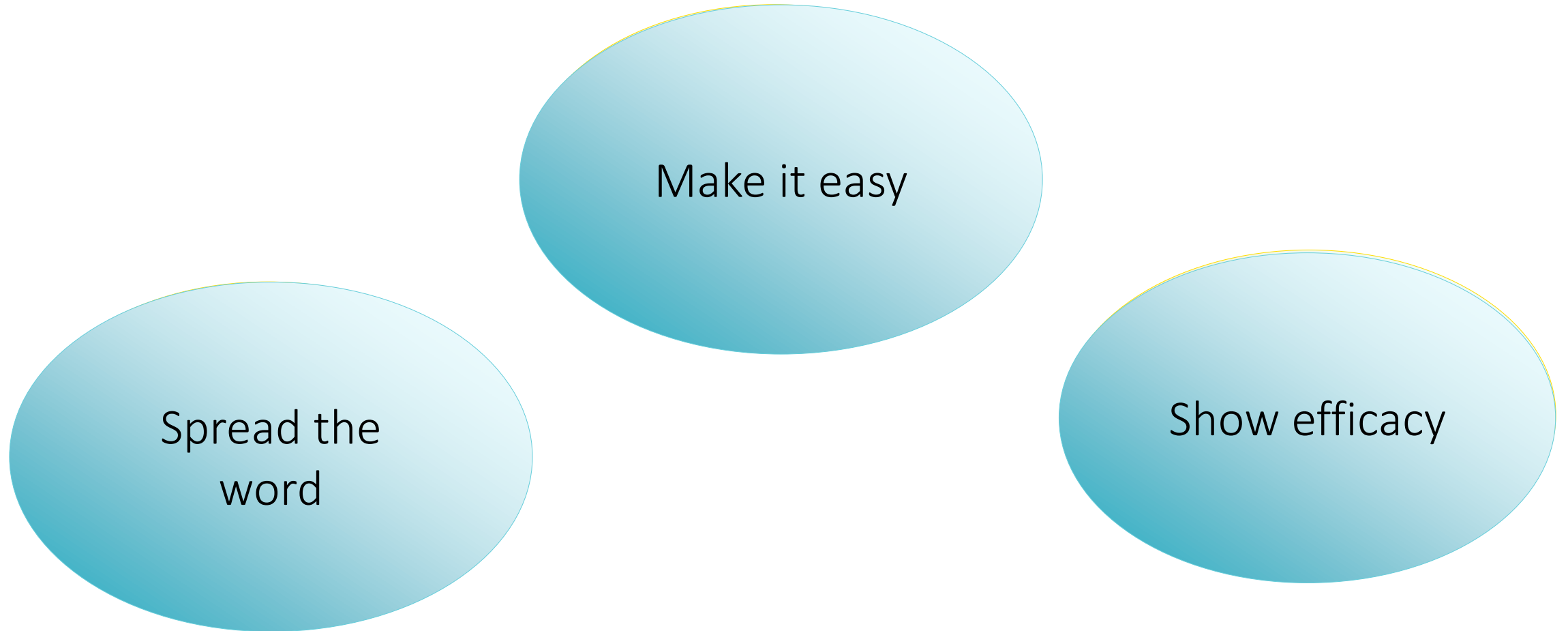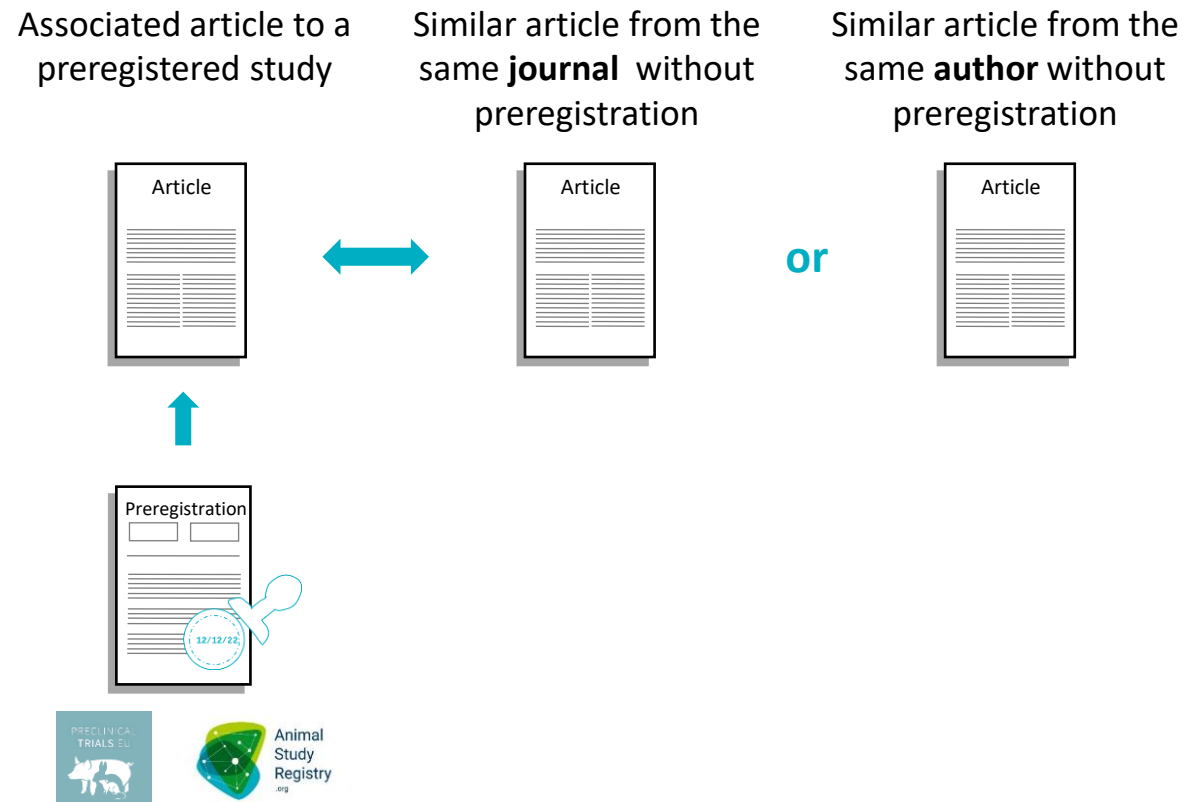
Make it easy

Spread the word

Show efficacy

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Evaluation of the effect of preregistration on published articles

Associated article to a preregistered study

Similar article from the same **journal** without preregistration

Similar article from the same **author** without preregistration

or

Julia Menon

Collaboration:

Evaluation of the effect of preregistration on published articles

Scoring for

- **Reporting**
  ARRIVE guidelines essential 10 scored as reported/unclear/not

- **Transparency**
  Statement for conflict of interest, ethical approval, funding and data accessibility statement

- **Quality**
  Risk of bias = assessing internal validity with the Syrcle Risk of Bias tool
  10 items – scored as yes/unclear/no ➔
  low risk/unclear risk/high risk
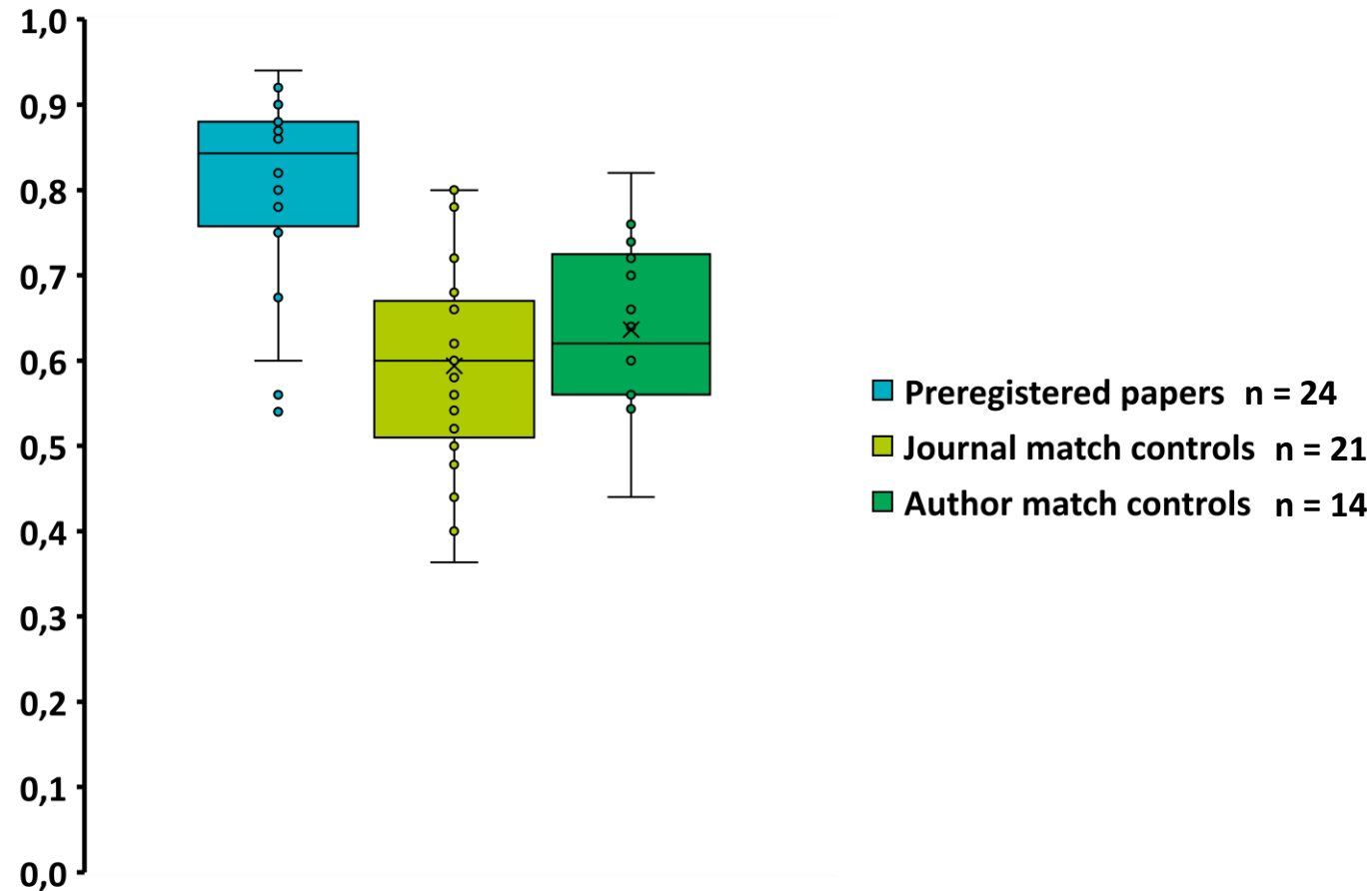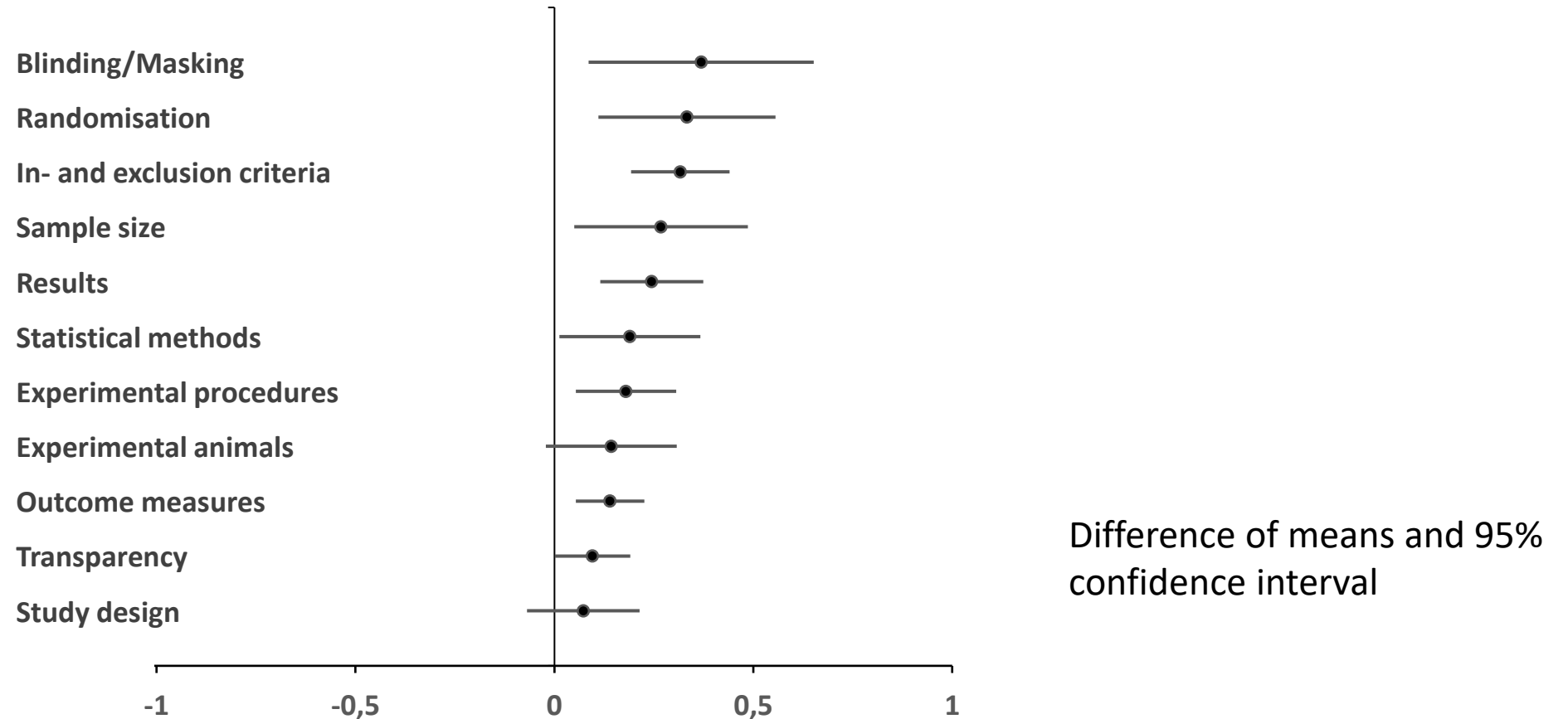
Julia Menon

Collaboration:

Evaluation of the effect of preregistration on published articles
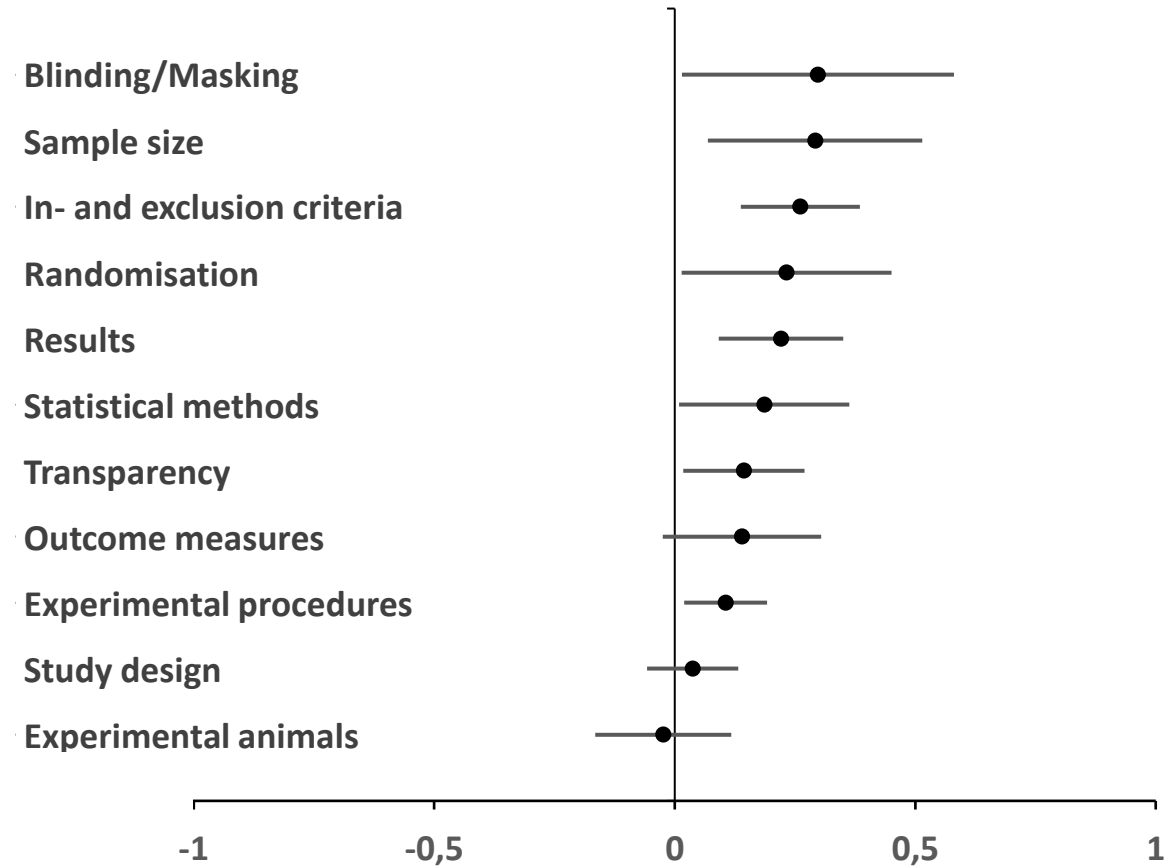
Scoring for

- **Reporting**
  ARRIVE guidelines essential 10 scored as reported/unclear/not

- **Transparency**
  Statement for conflict of interest, ethical approval, funding and data accessibility statement

- **Quality**
  Risk of bias = assessing internal validity with the Syrcle Risk of Bias tool
  10 items – scored as yes/unclear/no ➔ low risk/unclear risk/high risk

- Preregistered papers n = 24
- Journal match controls n = 21
- Author match controls n = 14

Mean difference between preregistered and non-preregistered articles from the same journal
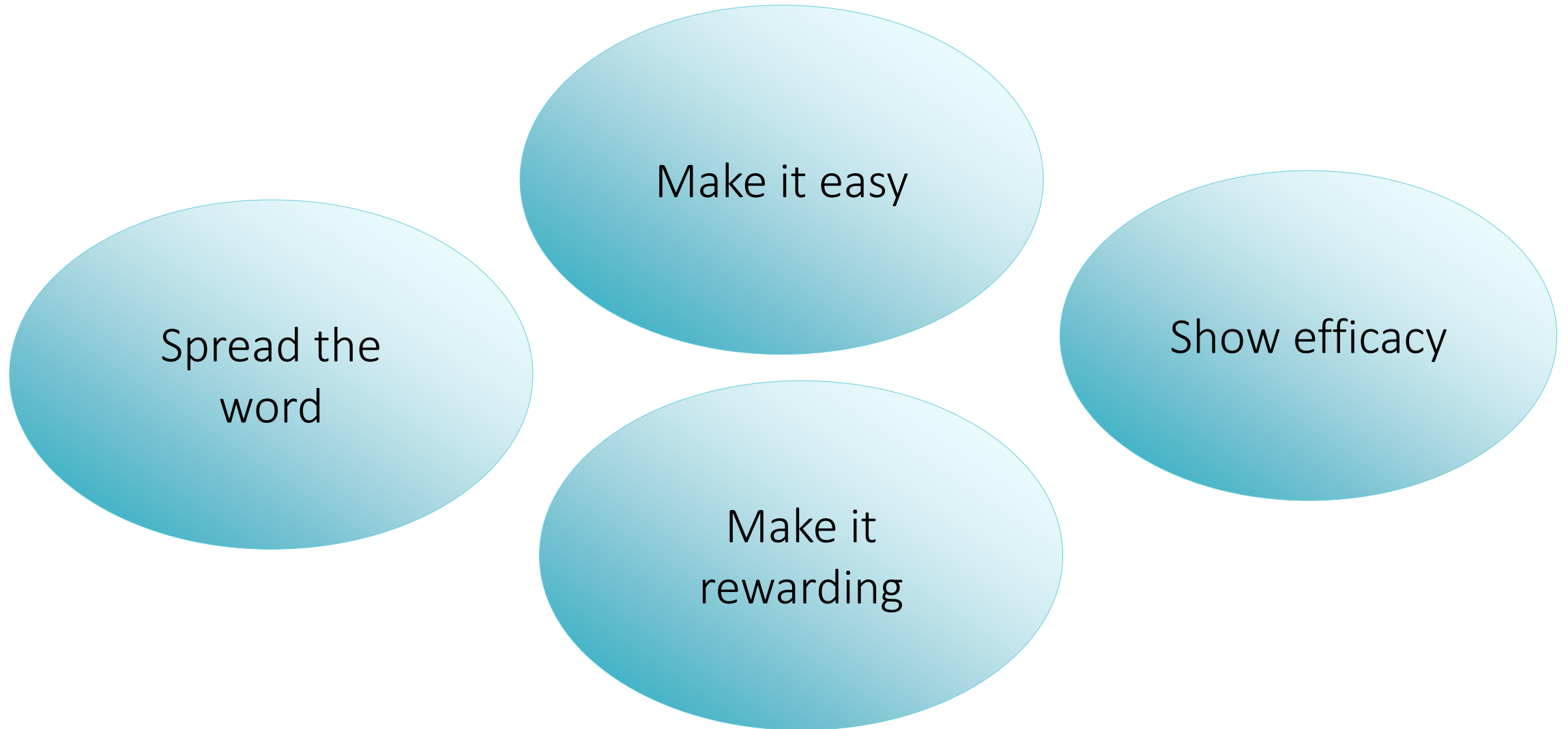

Difference of means and 95% confidence interval

Mean difference between preregistered and non-preregistered articles from the **same author**

Difference of means and 95% confidence interval

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We need to remove the barriers from preregistration to boost the uptake

Spread the word

Make it easy

Make it rewarding

Show efficacy

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Thank you for your attention

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Judith J de Haan

Mira van der Naald

Anton F. J. de Haan

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Slides shared via:

https://osf.io/eangw/

BfR | Identify Risks – Protect Health

Consumer health protection to go

BfR2GO – the BfR Science Magazine

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