

## CONFIDENTIAL - FOR PEER-REVIEW ONLY

### Caution Preprint Study 5 (#43600)

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#### 1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

#### 2) What's the main question being asked or hypothesis being tested in this study?

We are interested in participants' credibility evaluation of preprints and peer-reviewed articles. Participants read short descriptions of five different research findings. Depending on the condition, participants are told that these findings were either originally published as peer-reviewed articles (peer-review-condition), as preprints (preprint-condition) or as preprints, but participants receive additional information about preprints either from an external source (external information-condition), or from the authors of the preprints (authors' information-condition).

We predict that participants' credibility ratings in the "peer-review-condition" and in the "preprint-condition" will not differ significantly and, likewise, that ratings from the "authors' information-condition" and the "external information-condition" will not differ significantly.

However, participants who received additional information about preprints (no matter the source) will perceive the research findings as significantly less credible than participants in the "peer-review" and "preprint-condition".

#### 3) Describe the key dependent variable(s) specifying how they will be measured.

We will measure the perceived credibility of research findings with one item for each description.

#### 4) How many and which conditions will participants be assigned to?

Participants will be assigned to one of four conditions, as described in point 2). We employ a between-subject design.

#### 5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Following our prior studies, we will calculate a mean credibility rating of all five credibility ratings. We will then compute a t-test for independent samples comparing the perceived mean credibility of research findings in the "preprint-condition" and the perceived mean credibility of research findings in the "peer-review-condition", to test whether there is a significant difference. We will likewise conduct a t-test to compare the ratings from the "authors' information-condition" and the "external information-condition". For both t-tests, we expect no significant difference. We will then conduct equivalence tests (Lakens, 2017; Lakens, Scheel, & Isager, 2018) to test whether the observed credibility differences are each statistically equivalent to an interval only containing small effects ( $|d| < .3$ ). We expect this to be the case.

We will then conduct four separate t-tests to compare the mean credibility ratings in the "authors' information-condition" and the "external information-condition" with both, the "peer-review-condition", and the "preprint-condition". We expect the credibility ratings in the "authors' information-condition" and the "external information-condition" to be significantly lower than in the two other conditions.

#### 6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Participants will receive up to four text understanding questions. If participants answer any of the text understanding questions incorrectly, they will be asked to read the text carefully again. If they again fail any of the text understanding questions, they will be excluded from our analyses.

#### 7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We will pay 1000 MTurk users to take part in our study. If by chance, we collect more (as it can happen in online studies), we will analyze data from all participants.

#### 8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

We collect age, gender, and prior knowledge of preprints and peer-review to describe our sample. We further collect familiarity with the publication system and education as potential moderators.

Mediation Analyses:

Participants will be asked to consider all five research findings jointly and to indicate whether these findings have been quality-controlled and whether these findings were published following the standard academic procedure (one item each).

We predict that participants' responses on these items in the "peer-review-condition" and in the "preprint-condition" will not differ significantly, and likewise that responses from the "authors' information-condition" and the "external information-condition" will not differ significantly.

However, participants who received additional information about preprints (no matter the source) will indicate a lower agreement than participants in the "peer-review" and "preprint-condition".

Finally, we will run a parallel mediation model to test which of these two aspects (quality control vs. adherence to publication standards) mediates the effect of the additional information on credibility. For this model, we will merge the “authors’ information-condition” and the “external information-condition” as well as the “peer-review condition” and “preprint-condition”, in case that they indeed do not differ on perceived credibility, as outlined in point 2). Otherwise, we will run separate models.