

Exploratory Reports – author guidelines

Remit of this article type

Exploratory Reports is an article type created for submissions outside of the standard hypothetico-deductive framework. The remit for *Exploratory Reports* is the publication of research activities that precede and underpin the testing of hypotheses derived from substantive theories, with the open sharing of data and materials to help advance the field.

When first established (McIntosh, 2017), *Exploratory Reports* mainly emphasised the publication of open-ended studies without strong *a priori* predictions but with hypothesis-generating value. That original scope has now broadened to include a range of ‘non-confirmatory’ research activities that lay foundations for substantive hypothesis testing (Scheel *et al*, 2021). This includes work aimed at strengthening any part of the derivation chain linking empirical predictions to theory (Meehl, 1990).

Given this remit, a diverse range of *Exploratory Reports* is possible (see below). The common factor is that they focus on research foundations, rather than on confirmatory testing of theoretical predictions. Submissions of all types will be held to the highest standards of rigour and transparency.

Types of contribution. Relevant research activities include (but are not limited to):

- **Definition and standardisation papers** for constructs and methods in the field; for instance, consensus definitions of key constructs, relationship of constructs to common measures, standards for implementation of common cognitive-behavioural tasks.
- **Exploratory data analysis** describing and exploring patterns in large, novel or rare behavioural and/or neural datasets, ideally with the aim of hypothesis generation.
- **Descriptive studies** establishing empirical phenomena/explananda of interest, or estimating likely effect sizes to inform hypothesis testing.
- **Experimental studies** exploring causal relationships between task parameters and outcomes.
- **Identification and testing of auxiliary assumptions** underlying methods and theories.
- **Methods development:** for instance, psychometric characterisation of cognitive-behavioural or neural measures, evaluation and comparisons of new or existing manipulations, tasks, dependent measures, or pre-processing and analysis pipelines.

Criteria for evaluation include:

- Scientific rigour of the work, and quality of writing/presentation.
- Likely value to the field, including the relevance and value of the research question.
- Clarity and completeness of any data presentation, especially data visualisation.
- Quality and clarity of the rationale for any statistical methods.
- Quality and appropriateness of any theoretical elements.
- Generation of specific testable hypotheses, where appropriate.
- Usability and likely value to the field of open data and materials.

Preparation of the article

Articles will typically follow the sub-section sequences of a standard research report, but the diversity of *Exploratory Reports* means that this will not be appropriate for all articles, and authors may wish to adopt an alternative structure more appropriate to their aims.

For articles with **quantitative data analyses**, the following broad guidelines apply:

- The estimation of effect sizes (raw and/or standardised) is generally required.
- Inferential testing via p -values or Bayes Factors should not be used by default, but only where appropriate to the aims and design of the study.
- Confidence or credibility intervals are encouraged, but should not be used as a proxy for significance tests where those are not appropriate to the aims and design of the study.
- Data should be presented fully, giving careful consideration to visualisations that will provide maximum insight into the data.
- Ideally, the robustness and limits of the main patterns of interest will be considered.
- Multiverse analysis approaches are encouraged where appropriate.
- Data and analysis code should be shared at the point of submission (see below).

Cover letter: For submission to *Exploratory Reports*, the authors **must** explain explicitly in the cover letter why the submission fits with the remit of this article type. The authors must also confirm that they have provided data and code sufficient to reproduce the reported analyses. Data and code must be provided at the point of submission, so that they are available to reviewers. Only in exceptional circumstances will a submission be considered where legal or ethical restrictions preclude open data

Submissions that do not meet these requirements, or do not show evidence of engagement with these author guidelines, may be desk-rejected.

Presubmission enquiries. If you are unsure whether your work would be appropriate for this article type, then an email enquiry describing the nature of the study and the (planned) article should be sent to the Cortex journal office <cortex@ed.ac.uk>, entitled "*Exploratory Report presubmission enquiry*". It is better to do this before preparing the article, to avoid wasted work.

Further resources discussing foundational research practices and relevant methods, along with selected exemplars, are available via the Open Science Framework project page for Exploratory Reports at Cortex: <https://osf.io/vzse8/wiki>

References

- McIntosh, R. D. (2017). Exploratory reports: A new article type for Cortex. *Cortex*, 96, A1-A4.
- Meehl, P. E. (1990). Why summaries of research on psychological theories are often uninterpretable. *Psychological Reports*, 66, 195–244.
- Scheel, A. M., Tiokhin, L., Isager, P. M., & Lakens, D. (2021). Why hypothesis testers should spend less time testing hypotheses. *Perspectives on Psychological Science*, 16(4), 744–755.