Framework for
Open and
Reproducible
Research Training

FORRT

Replications & Reversals across Social Sciences

V4 - current version since 10.10.2023, last checked 8.11.2023
This document has been locked as we are transferring it into a database.

Purpose

Replications of previous scientific work are at the core of the Open Scholarship movement. However, as replication efforts become more mainstream, it can be challenging for scholars and educators to stay up to date which effects in their field replicate successfully and which do not. **FORRT's "Replications and Reversals" project aims to collate successful replications, failed replications with null findings, and failed replications with reversals in social science.** Reversals are—in the context of a replication—effects that have their original direction flipped, as in finding evidence for the opposite effect. The extent of such reversals and non-replicated effects is already apparent in the social science literature, with even replicated effects being only half the size of the originally reported effect (Open Science Collaboration, 2015). Although such 'failures' to replicate are far less costly to society than for example medical ones (Prasad & Cifu, 2011), they broadly hinder science's goal of accumulating knowledge and contribute to waste of scarce resources.

This resource aims to be a "living", freely available, crowd-sourced, and community-driven collection of (currently already over 200 documented) effects through empirical research across social sciences, either successfully replicated, not replicated or reversed. Scholars from varied backgrounds and areas of social science are invited to contribute with prevalent effects from in their respective fields. FORRT's replications and reversals can be a valuable tool for researchers who want to keep up to date with current replication efforts. In addition, it can be a fundamental tool to help educators incorporate epistemic uncertainty into their teaching, by encouraging in-class discussions regarding the robustness of published findings. Collating these reversal effects in social science should encourage educators to incorporate replications of certain listed effects into their students' projects (e.g., third-year, thesis, course work) to provide them the opportunity to experience the research process directly, assess their ability to perform and report scientific research, and to help evaluate the robustness of the original study, thereby also helping them

become good consumers of research. For the current online version, see https://forrt.org/reversals (last updated at the end of 2022).

Process, Credit & Team

The below crowdsourced and community-curated resource aims to satisfy FORRT's Goals and Mission. If you have no clue what FORRT is, go here and here first.

This is a dynamic project and is organised in four stages. Currently, we are in stage 2:

1) ~~**Proof of Concept Phase** (adaptation of original project into FORRT, inclusion of effects mainly from social and cognitive psychology, using Gavin Leech's collection of 49 effects as a basis) → ~150 entries were added by the end of 2021.~~
2) **Team Science Expansion Phase Across Disciplines** (crowd-sourcing new entries, and refining/finishing existing entries), started at the end of 2021 and planned until end **2023.** Planning and drafting the first 'output' piece is ongoing.
3) **Review Phase** (open review to identify inconsistencies, missing data, and errors), planned for the beginning of 2024. Finish first 'output' piece. End of Phase 1.
4) **Regular Update Phases** (dynamically adding new effects), planned for 2024 and beyond.

How to contribute?

Any and all contributions in FORRT projects are formally recognized. This means that everybody who contributed (no matter how much or what), will be recognized on the website and the resource itself. This recognition is detached from any future publications about the resource (more about planned output below).

Anyone can **add new entries or edit existing, unfinished entries** (marked as 'incomplete' here and using black font in the spreadsheet) by following the instructions and editing using suggestion mode. Your comments and suggestions will then be checked and approved by the project coordinators. Currently, the focus is on completing as many unfinished entries as possible or adding new, complete entries. This will achieve a first database with many completed effects.

Effects total	Effects completed
602	583

All (for now) completed entries (in the sense of having all bullet points of the template filled out, marked using gray font in the spreadsheet) can be found here. If you want to add content to one of those entries, please contact the project coordinator Helena Hartmann or write her on Slack.

Inclusion criteria

If you want to include a new effect, it must meet **at least one** of the following criteria:

- The scientific claim was successfully replicated by at least one other study;
- The scientific claim has failed to replicate at least once;
- The scientific claim shows effect sizes opposite to the original ones, i.e. the claim has been reversed;
- The scientific claim was studied in a meta-analysis.

Instructions

1. **Search in the spreadsheet whether that effect is already listed** (possibly under a different category). Each effect should only be listed once, so contact Helena if you would like to change the discipline/category of an existing effect or put a comment under the effect name in the spreadsheet.

2. **Search for any existing, alternative terms** (e.g. intelligence priming is also known as professor priming). This ensures that your time and effort is not wasted and avoids content duplication. Nevertheless, it is important to include this information both in the spreadsheet and here in the gdoc. Example: Intelligence priming, alt-term: professor priming.

3. **Select the effect you want to work on or add that effect to the spreadsheet**, update its column "Started" to "Y". You can work on all effects in black font, even if there is already a contributor listed - just add yourself! Then copy-paste the entry template below into this document under the right category and in the same order as in the spreadsheet, if it is not copied already.

4. **Extract information and update the entry template** under the matching field(s). Sources can be scientific articles, OSKB, Curate Science, direct replications, personal blogs, etc.

   Once you have copied all the information in the template, hyperlink the manuscript of the original article to the title of the manuscript and hyperlink the manuscript of the replication article to the author's names. The total number of citations, which you can obtain from Web of Science, or Google Scholar needs to be included as well. Finally, it is important to report the replication outcome as a sentence saying whether there is either evidence or no evidence of the original study.

   Please list both effect sizes from meta-analyses or unpublished manuscripts shown only in the manuscript and clearly distinguish them (e.g. $d = 0.5$ (metaanalysis), $d = 0.3$ (manuscript). List the individual effect sizes for each replication, if available. If reporting results from preprint, please add a comment to the effect size stating "preprint" so we can track its publication. If you are

reporting several effect sizes from a Many Labs/crowdsourced study, it is important to highlight the effect sizes of the effect for each individual lab and their averages. If the type of effect size (e.g. Cohen's *d*, eta squared, etc.) is not reported in the study or there is no understanding of how the effect size was calculated, please calculate it yourself, if possible, otherwise put NA.

5. **After all bullet points are filled out, update the column "Finished" to "Y"** in the spreadsheet and add your name, affiliation and email in the respective columns**.** Send an email to Helena after your contribution, so we can share the Contributors sheet with you.

6. **Once you have access to the Contributors sheet, please make sure that columns A to O are filled out**, the rest you can ignore for now.

   What do the "Number of …" columns (F, G and H) mean?

   a. Edited: If you edited an existing entry in the gdoc (e.g., added missing information to the template such as a new paper, reviewed existing text, or calculated/found effect sizes within manuscripts).
   b. Finished: If you finished an existing effect entry that was incomplete before, in the sense of all bullet points of the template filled out and the entry can be considered "complete" for now.
   c. Added: If you added a completely new effect to the spreadsheet or took an existing effect from the spreadsheet, and (important!) filled out all bullet points of the corresponding template in the gdoc, so the entry can be considered "complete" for now.

   Please only put discrete numbers (e.g., 1, 7, 11,...) and no ranges. If a number is already put in, but not correct in your opinion, please correct it. If you don't know the exact numbers anymore, please give us a **best estimate**. Put a zero if you did not complete one or more of the three categories, so we know you have had a look at all of them. If you don't have access to the Contributors sheet, but have already contributed, send Helena an email.

7. If you made it until here, congrats! You're all done - welcome on board of #teamreversals! :)

Template

Words in black are standardised, words in purple need to be updated by you.

Effect name (incomplete)

- **Effect name** (alternative terms). One sentence definition. Summary of key conclusion (if applicable).

- Status: replicated / not replicated / reversed / mixed / NA (choose only one of the three, mixed stands for partially replicated effects, NA indicates that there was no replication attempt). If this field is blank, the status information still needs to be added.
- Original paper: 'paper title with link to source', author year; study design, sample size [citations=XX(source of citation count, Month Year)].
- Critiques: This is basically any attempt that aimed to replicate the original claim or a meta-analysis. Use this format: author year with link [n=XX, citations=XX(source, Month Year)]. List total n for meta-analyses. Repeat this format for all studies you find and add "meta-analysis" or "review" for specific study types.
- Original effect size: ES=X[95% CI, if available] to ES=X[95% CI, if available]. [Here are useful ES converters if you need one: https://www.escal.site/ or https://mgto.org/effectsizeguide.]
- Replication effect size: author: ES=X[95% CI, if available]. author: ES=X [95% CI, if available]. etc.

Planned output

We are still discussing (many!) options, but we envision a resource-based perspectives paper (similar to the one on the Glossary). Fortunately, Nature Human Behaviour has expressed their interest in our project (no guarantees though), but in order to submit there, we need many more entries to be completed and a lot more work to be done. We are very open to other outlets as well so if you have suggestions, please send Helena an email.

If you would like to be a part of such an output piece as a co-author, please aim for your total contribution to include either a minimum of 8 finished effects (6b above) **or 5 newly added effects** (6c above)! If every contributor is able to achieve this, we will have finalised the first phase and can move towards the first output (yay)! If you haven't done so, no worries, there is still plenty of time and plenty of entries.

Upcoming events

Apart from working asynchronously whenever you find a bit of time, we have an **online Reversals workspace**, where we carve out one hour a week to work together on the project. Helena is also always around to onboard new folks and answer open questions. Consider joining us every Wednesday at 4pm CEST! Send Helena an email if you want to be added to the Google calendar appointment and get access to the meeting link. You can also find it in our website's calendar for FORRT events & meetings.

Publicising and funding

We would like to spread the word about this project's already published entries and make it a true community project for the betterment of our science. If you know of outlets that would be open to writing about our initiative/presenting our resources (e.g.,

organization blogs, newsletters, learned societies, etc. but also email lists or slack communities, etc.), please let us know and feel free to share this document and spread the work yourself. Similarly, we are also pursuing several avenues to fund this work. If you know of potentially suitable funding opportunities, please let us know.

Effects sorted by disciplines

If an effect is greyed out in the spreadsheet and you don't find it in here, check here for completed effects. However, those are (for now) treated as completed. Please edit/finish the black entries or add a new entry!

Social Psychology

Poffenberger Paradigm (incomplete)

- **Poffenberger Paradigm** (interhemispheric transfer cost). Crossed trials (visual field of stimuli display and responding hand are contralateral) are slower then uncrossed trials (visual field of stimuli display and responding hand are ipsilateral). Interhemispheric transfer through the corpus callosum is more time consuming than intra-hemispheric transfer.
    - Status: not replicated / reversed / mixed / NA
    - Original paper: 'paper title with link to source', author year; study design, sample size [citations=XX(source of citation count, Month Year)].
    - Critiques: This is basically any attempt that aimed to replicate the original claim or a meta-analysis. Use this format: author year with link [n=XX, citations=XX(source, Month Year)]. List total n for meta-analyses. Repeat this format for all studies you find and add "meta-analysis" or "review" for specific study types.
    - Original effect size: ES=X[95% CI, if available] to ES=X[95% CI, if available]. [Here are useful ES converters if you need one: https://www.escal.site/ or https://mgto.org/effectsizeguide.]
    - Replication effect size: author: ES=X[95% CI, if available]. author: ES=X [95% CI, if available]. etc.

Judgement and Decision Making/Behavioural Economics

Derived relational responding (incomplete)

- **Derived relational responding**, one sentence definition. Summary of key conclusion (if applicable).
    - Status: replicated / not replicated / reversed / mixed / NA (choose only one of the three, mixed stands for partially replicated effects, NA indicates that there was no replication attempt). If this field is blank, the status information still needs to be added.
    - Original paper: 'paper title with link to source', author year; study design, sample size. [citation=XX(source of citation count, Month Year)].
    - Critiques: author year with link [n=XX, citations=XX(source, Month Year)]. List total n for meta-analyses. Repeat this format for all studies you find.
    - Original effect size: ES=X to ES=X.
    - Replication effect size: author: ES=X. author: ES=X.

Marketing

- OpenMKTG.org records all retractions and replications in marketing.
- Brian Wansink accidentally admitted gross malpractice; fatal errors were found in 50 of his lab's papers. These include flashy results about increased portion size massively reducing satiety.

Neuroscience (humans)

Personality on hemisphere dominance (incomplete)

- **Effect name** (alternative terms). One sentence definition. Summary of key conclusion (if applicable).
    - Status: replicated / not replicated / reversed / mixed / NA (choose only one of the three, mixed stands for partially replicated effects, NA indicates that there was no replication attempt). If this field is blank, the status information still needs to be added.
    - Original paper: 'paper title with link to source', author year; study design, sample size [citations=XX(source of citation count, Month Year)].
    - Critiques: This is basically any attempt that aimed to replicate the original claim or a meta-analysis. Use this format: author year with link [n=XX, citations=XX(source, Month Year)]. List total n for meta-analyses. Repeat this format for all studies you find and add "meta-analysis" or "review" for specific study types.
    - Original effect size: ES=X[95% CI, if available] to ES=X[95% CI, if available]. [Here are useful ES converters if you need one: https://www.escal.site/ or https://mgto.org/effectsizeguide.]
    - Replication effect size: author: ES=X[95% CI, if available]. author: ES=X [95% CI, if available]. etc.

Neuroscience (animals)

- …

Candidate genes (incomplete)

- Be very suspicious of any such "**candidate gene**" finding (post-hoc data mining showing large >1% contributions from a single allele). 0/18 replications in candidate genes for depression. 73% of candidates failed to replicate in psychiatry in general. One big journal won't publish them anymore without several accompanying replications. A huge GWAS, n=1 million: "We find no evidence of enrichment for genes previously hypothesized to relate to risk tolerance."

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END OF EFFECTS LIST