



The Shape of Space: Evidence for Spontaneous but Flexible Use of Polar Coordinates in Visuospatial Representations

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First Published March 15, 2021; pp. 573–586

[Abstract](#)

[> Preview](#)



Preregistration & Reporting guidelines

A quick guide



Today, I want to share with you a quick guide for preregistering your research and reporting its results using the relevant reporting guideline

Prereg = Preregistrations -- records made a priori about study designs and analysis plans and placed in (open) repositories -- should be used when designing a study

Rep Guid = minimal information that has to be specified for a study to be useful, should be used when writing up a manuscript

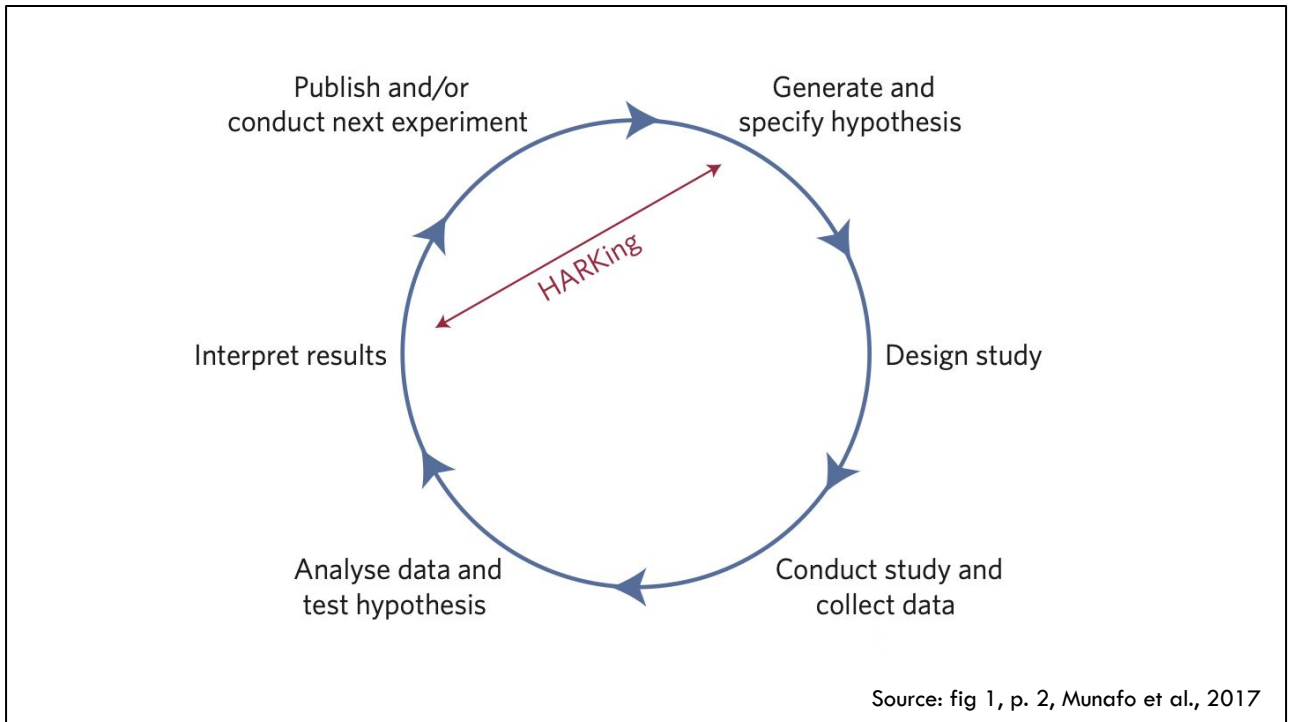
Journal badge -- journal psychological science --

STRUCTURE

- **Relevance** preregistration & reporting guidelines
- **Types** preregistration
 - Trials
 - Animal research
 - Quantitative observational/experimental
 - Qualitative
- **Registries**
- **Reporting guidelines**



The structure of my talk will be as follows: I will briefly sketch the relevance of preregistration and will do the same for reporting guidelines later, I will distinguish a few broad types of preregistration, review their associated registries; the places where you make and upload your preregistration, and will then delve into selecting the right reporting guidelines



How come people are enthusiastic about prereg?

Here you see the standard empirical cycle, many of us are familiar with, but the cycle is, as some have argued, not fool-proof -- and here you see just some of the problems that might creep in at various steps that may lead to less reproducible science;

Ref: <https://www.nature.com/articles/s41562-016-0021%2%A0>

RELEVANCE

- Reduce *degrees of freedom*
- Mitigate *publication bias*
- Strengthen the *credibility* and *transparency*
- Importance recognised by various *stakeholders*



In sum, preregistration is thought to narrow down the choices a researcher needs to make that may influence the study's results

It is also thought to help in combatting publication bias, as it means there is a record of the study conducted and its hypothesis or research question, independently of whether that is also published

openness of this information about the study encourages the researcher to carefully reflect on different study aspects and to systematically report on their design and analysis choices, including those made as the study progresses

the records about the study design and analysis plan help the reviewer or user of the study in assessing the study's quality, because the preregistration provides a structured insight into how the study was thought out and set up

Different funders now require prereg (Arnold), it is encouraged by journals and disciplinary organisation (APA)

TYPES

- Trials
- Animal studies
- Quantitative (e.g., cross-sectional/observational)
- Qualitative



since 2005 members of the International Committee for Medical Journal Editors only allow trial publications of trials that have been registered (DeAngelis et al., 2004). In the United States, trials are mandated to be registered in ClinicalTrials.gov that is managed by the National Library of Medicine, but the registry also accepts trials from outside the US since 2005. In Europe, drug trials must be registered in EudraCT database. The World Health Organization maintains its own registry, called the International Clinical Trials Registry Platform.

A similar approach is being applied to animal research with Germany being the first to launch a tailored registry (animalstudyregistry.org). Although the registration of animal studies is not yet mandated, it is argued that by prompting researchers to think about and commit themselves to quality measures when designing their study, preregistration has the potential to improve the reproducibility of animal research (Bert et al., 2019).

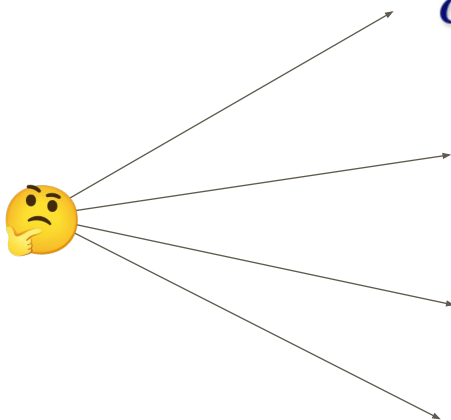
Extending this practice to cross-sectional research also allows for distinguishing between exploratory and confirmatory research (Nosek et al., 2018)

<https://www.pnas.org/content/115/11/2600>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6793840/pdf/pbio.3000463.pdf>

<https://www.nejm.org/doi/full/10.1056/NEJMe048225>

REGISTRIES



Animal Study Registry

Animal Study Registry

Animal Study Registry is an online registry for scientific studies involving animals conducted around the world. It is operated by the German Centre for the Protection of Laboratory Animals (B3R) at the German Federal Institute for Risk Assessment (BfR). The registry was launched as a reaction to the reproducibility



<https://aspredicted.org>

<https://osf.io>

REGISTRIES (cont.)

NIHR | National Institute
for Health Research

PROSPERO
International prospective register of systematic reviews

And another registry important to those of you conducting yet another type of research, namely systematic reviews, is PROSPERO

<https://www.crd.york.ac.uk/prospero/>

CHALLENGES



There are two main types of fears that researchers face when thinking about whether to preregister their work. The first is the fear of being scooped, or ideas being stolen -- this is why you can embargo your work for up to 4 years, or up to whatever point before that that fits your purposes.

The second is the fear of doing something wrong and then needing to update your preregistration, in short this can be done by either making a new preregistration or adding a summary note where you explain the changes and justify the rationale for them

EXAMPLE



OSF REGISTRIES ▾

Add New

STEP 1

Do you have content for registration in an existing OSF project?

YES

NO

STEP 2

Which type of registration would you like to create? *

OSF Preregistration ▾

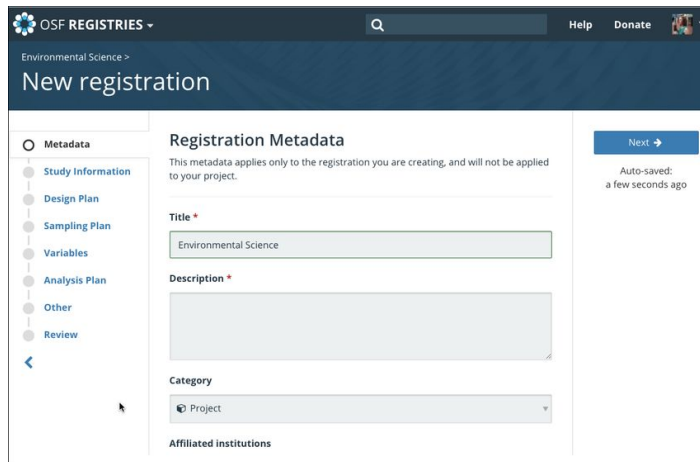
Create draft



I will now go through one example and show you the different steps of a preregistration

<https://help.osf.io/hc/en-us/articles/360019738834-Create-a-Preregistration>

Add metadata



The screenshot shows the OSF Registries interface for creating a new registration. The page title is "New registration" under the "Environmental Science" category. The "Registration Metadata" section is active, showing a form with the following fields:

- Title ***: A text input field containing "Environmental Science".
- Description ***: A large text area for entering a description.
- Category**: A dropdown menu currently set to "Project".
- Affiliated institutions**: A section for listing affiliated institutions.

On the left, a sidebar lists the registration steps: Metadata (selected), Study Information, Design Plan, Sampling Plan, Variables, Analysis Plan, Other, and Review. On the right, there is a "Next" button and an "Auto-saved" notification.



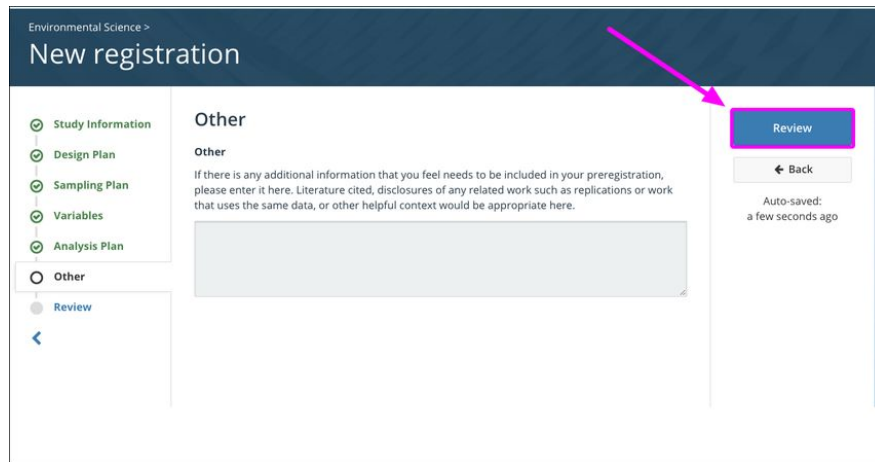
You start with adding meta data about your study, this allows OSF to make your study findable;;

Describe research plan/add files

The screenshot shows the 'New registration' form in the OSF interface. The page title is 'Environmental Science > New registration'. On the left, a navigation sidebar includes 'Study Information' (selected), 'Design Plan', 'Sampling Plan', 'Variables', 'Analysis Plan', 'Other', and 'Review'. The main content area is titled 'Variables' and contains a section for 'Manipulated variables'. Below this, there is a text input field with a 'Show example' link. A pink arrow points to a green circular button with a white plus sign, which is used for uploading files. Below the text input, there is a table with columns for 'Name' and 'Last modified'. On the right side of the form, there are 'Next' and 'Back' buttons, and an 'Auto-saved: a minute ago' indicator. A decorative graphic of blue and grey circles is visible in the bottom right corner of the screenshot.

You then specify the relevant details about your design/sampling/variables, etc. For various parts, you can either write a description or upload the relevant files

Review your preregistration



Close with a quick review your prereg, assuring everything is as you wanted it to be, you might also want to ask others of your team to do the same, as once uploaded, the prereg is a frozen-non editable and timestamped version of your research plan

Register!

Environmental Science >

New registration

- ✓ Study Information
- ✓ Design Plan
- ✓ Sampling Plan
- ✓ Variables
- Analysis Plan

Study Information

Title
The Effects of Climate Change on Drosophila Size

Authors
Sara Bowman

Register

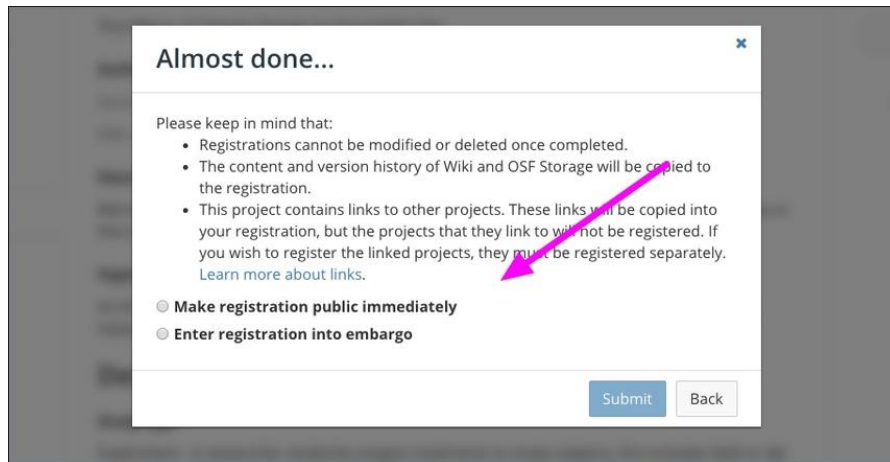
← Back

Auto-saved:
2 minutes ago



And then it is time to actually register!

Specify visibility



Almost done...

Please keep in mind that:

- Registrations cannot be modified or deleted once completed.
- The content and version history of Wiki and OSF Storage will be copied to the registration.
- This project contains links to other projects. These links will be copied into your registration, but the projects that they link to will not be registered. If you wish to register the linked projects, they must be registered separately. [Learn more about links.](#)

Make registration public immediately

Enter registration into embargo



Finally, choose how you want your preregistration to appear -- linking back to the challenges

Need support?



The screenshot shows the OSF Registries website. At the top, there is a dark navigation bar with the OSF logo and the text 'OSF REGISTRIES' on the left, and 'Add New', 'Help', and 'Donate' on the right. The 'Help' button is highlighted in blue. A red arrow points to this button. Below the navigation bar, the OSF logo is on the left, and 'Submit a request' and 'Sign in' are on the right. A search bar is located on the right side. The main content area is titled 'Registrations' and contains four links: 'Learn More About Registrations', 'Create Registrations', 'Select a Registration Template', and 'Create a Preregistration'. The breadcrumb 'OSF Guides > Registrations' is visible on the left.

Don't be shy to ask for help;

Pre-registration will improve discoverability of research, but discoverability does not guarantee usability. Poor usability reflects difficulty in evaluating what was done, in reusing the methodology to assess reproducibility, and in incorporating the evidence into systematic reviews and meta-analyses. Improving the quality and transparency in the reporting of research is necessary to address this.

REPORTING

- **Relevance** guidelines
- Endorsed by various **stakeholders**
- **Types** guidelines (some examples)
 - PRISMA
 - STROBE
 - CONSORT
 - STARD
 - COREQ
 - SPIRIT

Thus far we talked about preregistration, but just preregistering your work does not mean it is automatically useful to others -- To ensure that others can use or build on your work, there are certain aspects that must be reported so that readers can critically appraise the study (Moher, 1998; Altman et al., 2001; Kilkenny et al., 2010; Percie du Sert et al. 2020). It has become apparent that biomedical research reports across different subfields are frequently incomplete (Kjaergard, Nikolova & Glud, 1999; Adetugbo & Williams, 2000; Kilkenny et al., 2009; Macleod et al., 2015). Reporting guidelines were designed to bridge this gap and include a list of items that authors must report to allow others to reproduce, critically appraise and build on the work.

Prisma = Sys reviews

Strobe = Observational studies

Consort = RCTs

Stard = Diagnostic/prognostic studies

Spirit = Study protocols

// relationship PREREG/REP GUIDELINES; similar things are considered / too late to come in?

RESOURCES



Enhancing the QUALity and Transparency Of health Research

Library for health research reporting

The Library contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

- Search for reporting guidelines
- Not sure which reporting guideline to use?
- Reporting guidelines under development
- Visit the library for more resources

Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
Observational studies	STROBE	Extensions
Systematic reviews	PRISMA	Extensions
Study protocols	SPIRIT	PRISMA-P
Diagnostic/prognostic studies	STARF	TRIPOD
Case reports	CARE	Extensions
Clinical practice guidelines	AGREE	RIGHT
Qualitative research	SRQR	COREQ
Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	Extensions
Economic evaluations	CHEERS	

[See all 460 reporting guidelines](#)

There exists a broad array of reporting guidelines, and I flashed out just a few before. great resource is the equator network that has classified reporting guidelines that allows you to select the one most relevant for your work -- <https://www.equator-network.org>

When I completed my focus groups as part of PhD, I was advised to use COREQ -- but some of you may not know immediately which reporting guideline to use

Selecting the *right* checklist

Reporting checklists for medical researchers

Checklists will help you report your research clearly and fully.

For most study types there are specific checklists that medical journals will expect you to upload alongside your manuscript.

Using a checklist can help you get published faster and maximise the impact of your work.

This tool was made by the [EQUATOR Network](#) in collaboration with [Penelope.ai](#).

[Need some help choosing?](#)

See: <https://www.goodreports.org>

You either start with specifying what you are writing, using their dropdown menu

OR -- you use their 'help'

Selecting the *right* checklist



See: <https://www.goodreports.org>

This is the dropdown menu option, it shows an array of examples

Find the right reporting checklist to help you plan, write or review medical research.

start

press Enter ↵

1 → What type of article is it?

Key A Original research ✓

B Protocol or methods article

C Systematic review

D Clinical case report

E Another type of article

OK ✓

a. Where is the data from?

Key A People ✓

B Laboratory animals

C Farm, domestic or wild animals

D Human tissue

E Other


OK ✓

b. Did you exclusively use qualitative research methods, such as interviews or focus groups, in your study?

Key Y Yes

N No

This is the menu that goodreports walks you through when you ask for help, it then ends with a recommendation

Search for reporting guidelines		No	Item	Guide questions/description
Use your browser's Back button to return to your search results				
 Consolidated criteria for reporting qualitative research 32-item checklist for interviews and focus groups				
Reporting guideline provided for? (i.e. exactly what the authors state in the paper)	Qualitative research interviews and focus groups			
Full bibliographic reference	Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting (COREQ): a 32-item checklist for interviews and focus groups 2007;19(6):349-357.			
Language	English			
PubMed ID	17872937			
Relevant URLs (full-text if available)	Full-text available from: http://intqhc.oxfordjournals.org/content/19/6/349			
Reporting guideline acronym	COREQ			
Study design	Qualitative research			
Applies to the whole report or to individual sections of the report?	Whole report			
Record last updated on	March 12, 2015			
			Domain 1: Research team and reflexivity Personal Characteristics 1. Interviewer/facilitator 2. Credentials 3. Occupation 4. Gender 5. Experience and training 6. Relationship with participants 7. Participant knowledge of the interviewer 8. Interviewer characteristics Domain 2: study design Theoretical framework 9. Methodological orientation and Theory Participant selection 10. Sampling 11. Method of approach 12. Sample size 13. Non-participation Setting 14. Setting of data collection 15. Presence of non-participants 16. Description of sample Data collection 17. Interview guide 18. Repeat interviews 19. Audio/visual recording 20. Field notes 21. Duration 22. Data saturation 23. Transcripts returned	What author/s conducted the interview or focus group? What were the researcher's credentials? <i>E.g. PhD, MD</i> What was their occupation at the time of the study? Was the researcher male or female? What experience or training did the researcher have? Was a relationship established prior to study commencement? What did the participants know about the researcher? <i>e.g. personal goals, reasons for doing the research</i> What characteristics were reported about the interviewer/facilitator? <i>e.g. Bias, assumptions, reasons and interests in the research topic</i> What methodological orientation was stated to underpin the study? <i>e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis</i> How were participants selected? <i>e.g. purposive, convenience, consecutive, snowball</i> How were participants approached? <i>e.g. face-to-face, telephone, mail, email</i> How many participants were in the study? How many people refused to participate or dropped out? Reasons? Where was the data collected? <i>e.g. home, clinic, workplace</i> Was anyone else present besides the participants and researchers? What are the important characteristics of the sample? <i>e.g. demographic data, date</i> Were questions, prompts, guides provided by the authors? Was it pilot tested? Were repeat interviews carried out? If yes, how many? Did the research use audio or visual recording to collect the data? Were field notes made during and/or after the interview or focus group? What was the duration of the interviews or focus group? Was data saturation discussed? Were transcripts returned to participants for comment and/or correction?

Again, for me, that was COREQ, now what really is that -- you are linked to the paper and in the paper is the checklist that you can use -- some journals will ask this, such as NATURE series, to submit also on the side of your ms., but many journals will endorse a reporting guideline, meaning that they would encourage you to use this checklist when writing up your results to ensure others can critically appraise them

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349-357

Preregistering Qualitative Research: A Delphi Study

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Abstract

Preregistrations—records made a priori about study designs and analysis plans and placed in open practice in qualitative research and made suggestions for what to include in a qualitative preregistration form was to gauge and understand what parts of preregistration templates qualitative researchers participated (response rate: 16%). In round 1, panelists considered 14 proposed preregistration form, but two items had relevance scores just below our predefined criterion (were put forth again). We combined items where possible, leading to 11 revised items. In round 2, two remaining items. Panelists also converged on suggested terminology and elaborations, except provided clear arguments. The result is an agreement-based form for the preregistration of qualitative research. The form will be made available as a registration option on Open Science Framework to assure that the strength of qualitative research, which is its flexibility to adapt, adjust and respond. The preregistration should provide a systematic starting point.

Heading	Term	Elaboration
Study information	Research aim(s)	Please specify the overall purpose(s), objective(s), or aim(s) of the research. If helpful, please select the type(s) of aim. Examples include, but are not limited to: * exploring, * describing, * theory evaluating, * comparing, * understanding. In addition, please reflect on whether your aim is different across different domains (e.g., knowledge generation, policy development, community resourcing). If so, specify your aim for each domain that is relevant for your study.
	Research question(s)	Please specify your research question(s) as they are guiding your research now. If relevant, you may also specify here any hypotheses to be assessed. The research questions may break down your aim into smaller, distinct inquiries. If relevant, you may distinguish between primary and secondary research questions or hypotheses.
	Anticipated duration	Please indicate the estimated project start date (mm/yyyy) and estimated project end date (mm/yyyy).
Design Plan	Study design	Please provide a brief, overarching characterization of the study design. Your response might consist of a succinct label (e.g., "case study" or "ethnography") and/or a brief elaboration of that label's meaning. A study may involve a combination of different designs, including a mix of quantitative and qualitative methods.
	Sampling & case selection strategy	Please describe your sampling or recruitment strategy (examples include, but are not limited to: purposive, snowball, theoretical, and maximum variation sampling) and/or your case selection strategy (examples include, but are not limited to: typical case, most similar case, most different case, diverse case, and deviant case). Please provide a short rationale for why you selected this type of strategy.
Data Collection	Data source(s) and data type(s)	Please describe the source(s) and type(s) of data you will be using. In describing the data, distinguish between data that existed prior to your study (e.g., archival documents, newspaper articles, [social] media, secondary literature, or data collected for a different purpose than the current study) and original data (i.e., data that will be collected/generated for the current study).
	Data collection method(s)	Please describe your method(s) of data collection or data generation. Examples of methods include, but are not restricted to: interviews, focus groups, enabling techniques, self-reports, field notes, diaries, (participative) observation, archival research, or mixed methods. Please provide a brief rationale for why you plan to use each particular data collection/generation method in your study.
	Data collection tool(s), instrument(s), or plan(s)	Please describe or upload the tool(s), instrument(s), or plan(s) you will use in collecting or generating your data. Examples could be, but are not limited to: topic guide, interview questionnaire, focus group guide, observation scheme, creative tools (e.g., photos, videos, musical pieces, paintings, etc.), or a description of your archival search plans.
	Stopping criteria	Please describe the criteria or rationale behind when you will stop data generation or collection. Possible criteria include, but are not limited to: data saturation*, when inclusion criteria are satisfied, resource constraints (e.g., time/funding), or when the analysis has produced an enriching answer to the research question(s). * We follow Fusch & Ness (2015) and interpret saturation to be reached when there is enough information to replicate the study, the ability to obtain new information has been attained, and further coding is no longer feasible.

And here putting that the preregistration side by side, you see that similar items have been considered, both in the study design phase and in the phase of writing up the work, that is just one example about how preregistrations and reporting guidelines may mutually enforce one another to make research more transparent

<https://journals.sagepub.com/doi/full/10.1177/1609406920976417>

Endorse ≠ Enforce...

INTERNATIONAL JOURNAL OF SURGERY 5 (2007) 413-422



INTERNATIONAL
JOURNAL OF SURGERY

www.theijs.com

The reporting quality of randomised controlled trials in surgery: A systematic review

Riaz Agha^{a,b,}, Derek Cooper^b, Gordon Muir^c*

Reporting guidelines have been endorsed by many leading journals, professional societies and biomedical research funders (<http://www.consort-statement.org/about-consort/endorsers1>). However, surveys and reviews examining the adherence to reporting guidelines in journals that endorsed the guidelines found mixed results (Agha, Cooper & Muir, 2007; Baker et al., 2015). This shows that to endorse something is not the same as to enforce something (Baker et al., 2015), and that ultimately reviewers, editors and you as individual researchers are responsible for assuring manuscripts that they submit, review and approve comply with the relevant reporting guidelines.

QUESTIONS?

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