

**Hot Politics Lab Guidelines on Preregistration 1.0**

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We commit to the principle that we preregister hypotheses for our experimental and observational analyses (Chambers, Feredoes, Muthukumaraswamy, & Etchells, 2014; Nosek, Ebersole, DeHaven, & Mellor, 2018). This means that we clearly signal all non-preregistered work as exploratory in our communication (e.g. research presentation and research articles). This will lead to a much starker demarcation of confirmatory and exploratory analyses in our work than is currently the case in the discipline and in much of our own, earlier work.

This document is not meant to proselytize, rather it sets out a number of guidelines how to go about preregistration. This is version 1.0. Our thinking about preregistration has already changed markedly after our first experiences. Inevitably, we will also update this document over time. We focus here specifically on preregistering a pre-analysis plan to a platform like the Open Science Framework and less on submitting a registered report to a journal (for an explanation of the distinction see Nosek et al., 2018). The latter is an even more restrictive format because it pins down the theoretical narrative of the paper to a much greater extent than a pre-analysis plan does. We see many benefits of this, however, there are currently few outlets that have a registered report format, among others Journal of Experimental Science, Research and Politics.

**Guidelines for a pre-analysis plan**

1. We do not privilege a specific pre-analysis form. Rather we set out here what a pre-analysis plan should contain and why. A minimum requirement is that the document is uploaded on an accessible server. Hot Politics Lab members should post the pre-analysis plan on an OSF project page with a time stamp.
2. A pre-analysis plan should be designed and written in such a way that it *a)* commits researchers to a clear research plan and *b)* is easy for reviewers to browse and look up relevant information.
3. To that end, pre-analysis plans should only contain the hypotheses that you want to preregister. There should be no theory section, and only a brief introduction. In our view theory is best discussed in the review process of the journal article or book. Writing theory in a pre-analysis plan unnecessarily lengthens the research process and hampers easy review. In the end we do not want to burden reviewers with an additional article-length manuscript to read. [Here](https://mfr.osf.io/render?url=https://osf.io/w3f2k/?action=download%26mode=render) is a good example where we failed in this. Of course we by no means recommend people to preregister hypotheses without any theoretical grounding.
	1. Moreover, the most important point here is that you make sure that you write clearly testable hypotheses.
4. A pre-analysis plan should contain a research design section. This should contain:
	1. Sample
		1. The form and timing of data collection.
		2. The sample size and a justification for this sample size supported by a power analysis.
	2. Measures
		1. Discuss the operationalization of all variables. We encourage submission of the full survey on OSF as an accompanying document to the pre-analysis plan.
	3. Procedures
		1. Outline the procedures of the study in detail so that the reviewer can clearly follow all steps taken in the study.
	4. Analysis strategy
		1. Discuss how all variables are operationalized and what you do with missing values and outliers.
		2. The specific tests that are implied by the hypothesis. And discuss what you consider evidence for your hypothesis.
		3. If you are using frequentists statistics, please specify the alpha level (statistical significance) and whether you rely upon two-sided or one-sided testing.
5. In some cases it may be difficult to know a priori what your data will look like. This has consequences for the construction of variables and the appropriateness of the estimation techniques. We recommend that if you use new, non-validated measures that you specify quantifiable decision criteria for scale construction (e.g. specify an alpha level, goodness of fit index, or other quantifiable test outcome ). It is not enough to say that you test whether a scale is “reliable” or results in an “acceptable” fit.
6. We recommend preregistering a limited number of robustness checks. In general we recommend this because the number of robustness checks can easily get out of hand, and once promised you do need to do and report them. At one point it will be hard to track for anyone what these robustness checks are showing. But most importantly, the idea of a pre-analysis plan is to preregister your best ideas at the start of the study and not to announce all sorts of possible extensions that might be interesting at some point in time. You can still explore these but you cannot sell them as confirmatory findings anymore.
7. We recommend writing the code for the pre-analysis plan and submitting that as part of the pre-analysis plan. This is helpful because in our experience this has helped to reduce the number of errors in the pre-analysis plan.
8. The research articles and books that spawn from data collected and analyzed with a pre-analysis plan should always report ALL hypotheses described in the pre-analysis plan. This does not mean that a research article should necessarily follow the structure of the pre-analysis plan.
9. Do not write a pre-analysis plan for multiple papers. This makes it hard for reviewers to understand what is discussed where. It also blurs the obligation to mention all hypotheses from the pre-analysis plan.
10. Minor changes to the pre-analysis plan are almost inevitable. In our view research articles should publish disclose, for instance in a table, all changes to the pre-analysis plan. Major changes obviously shift an analysis from confirmatory to explanatory. We do not have clear guidelines as to what constitutes a major change. This is something that should be part of the review process.

**Examples pre-analysis plans**

[Here](https://osf.io/nxvyc/) is an example of a pre-analysis plan with open materials and code (Bakker & Arceneaux, 2020). This we consider the best practice, although today we would recommend writing a much shorter introduction. The data collection is currently on hold due to the corona-crisis.

[Here](https://osf.io/4zx3f/?view_only=1bbcfe1db044414183ee274ef62fe7c7) is an example where we did not include a power analysis (Bakker, Lelkes & Malka, 2018). The pre-analysis plans are part of a larger paper with multiple experiments that were not preregistered. The preregistered experiments, mostly, replicated the results from the exploratory experiments. But they also resulted in informative null findings. The paper is published in The Journal of Politics (Bakker, Lelkes, & Malka, 2019).

[Here](https://mfr.osf.io/render?url=https://osf.io/w3f2k/?action=download%26mode=render) is an example of a case in which the introduction was too long (Bakker, Arceneaux & Schumacher 2018). This is a replication project, so in this instance we preregistered a lot of robustness checks to assess the robustness of the association. For replication papers, preregistering robustness checks is helpful. The paper is published in Nature Human Behaviour (Bakker, Schumacher, Gothreau, & Arceneaux, 2020).

**References**

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