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To cite this article: Kai J. Jonas & Joseph Cesario (2016) How can preregistration contribute to research in our field?, *Comprehensive Results in Social Psychology*, 1:1-3, 1-7, DOI: [10.1080/23743603.2015.1070611](https://doi.org/10.1080/23743603.2015.1070611)

To link to this article: <http://dx.doi.org/10.1080/23743603.2015.1070611>



Published online: 24 Jul 2015.



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How can preregistration contribute to research in our field?

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ABSTRACT

Comprehensive Results in Social Psychology (CRSP) is a novel journal for preregistered research (so-called registered reports, RR) in the field of social psychology. It offers RR-only publications, with the possibility of adding exploratory analysis and data as well. After submission of introduction, hypotheses, methods, procedure, and analysis plan, submitted manuscripts are reviewed prior to data collection. If the peer review process results in a positive evaluation of the manuscript, an initial publication agreement (IPA) is issued upon which publication of the manuscript (given adherence to the registered protocol) independent of the obtained results is possible. CRSP seeks to complement the publication options in our field by making transparent confirmatory and exploratory research possible.

KEYWORDS

Pre-registration; replication;
social psychology; open
science

It is with great enthusiasm that we introduce CRSP, the first preregistration or Registered Reports (RR)-only journal in psychological science. We and others have highly anticipated this announcement for some time. Many have recognized that the preregistration format can allow further confidence in our science, by preventing flexibility in research and reporting that may allow exploration and confirmation to get too much intertwined. In 2003, Bem suggested in his influential chapter on how to write a psychological paper a clear true and false on this matter:

There are two possible articles you can write: (1) the article you planned to write when you designed your study or (2) the article that makes the most sense now that you have seen the results. They are rarely the same, and the correct answer is (2). (Bem, 2003, p. 172)

Given the current debates within our field, about transparency (Miguel et al., 2014), but also concerning both the risk of false positives (e.g., Murayama, Pekrun, & Fiedler, 2014; Simmons, Nelson, & Simonsohn, 2011) and false negatives (e.g., Fiedler, Kutzner, & Krueger, 2012), we seek to contribute to our science by introducing a journal devoted to scientific confirmation and discovery, by publishing preregistered research that has been reviewed before the results are known.

In this first editorial, we start with a brief note on how CRSP differs from existing publication procedures (Detailed submission procedures can be found at

<http://www.tandfonline.com/rrsp>). While authors are accustomed to submitting their whole, completed manuscript to a journal, and then receiving feedback on it, CRSP requires authors to submit only their Introduction, Materials/Methods, and Analysis plan. This initial submission is reviewed and in case of a successful review procedure improved and awarded with an IPA. This IPA is the guarantee for the authors that their final submission, if fully adhering to the preregistered submission, will get published, no matter what the results look like. Based on the submission and the IPA, authors then conduct their proposed research. The Results, Analysis, and Discussion follow later, after data collection. There is of course room to conduct exploratory analyses and the addition of exploratory studies if deemed necessary. Yet, those analyses or additional studies will be clearly marked as exploratory and set off from the preregistered material in the final paper.

Preregistration is not a new format, of course. Other disciplines have made use of this format before social psychology (and have pointed to its potential short-comings; Vickers, Goyal, Harland, & Rees, 1998). Today, this gives us a well-developed tool for our discipline at hand: Quite prominently within life sciences and clinical trials, preregistration is now employed in many disciplines, and more and more psychology sub-disciplines are adding preregistration section to their journals (Chambers, 2013). CRSP takes this further and positions itself as an innovative journal in two ways. First, although other journals may publish some preregistered studies, in those cases preregistration and review are not linked. Independently registered research, for example via the OSF framework, is getting reviewed as a full and final manuscript after the results are known. In these cases empirical results can bias the review process. This is not the case of CRSP where the IPA guarantees publication independent of the results. Second, CRSP is a RR-only journal. The reasons for doing so are simple. While journals with an RR section naturally offer a heterogenous mix of exploratory and RR papers, CRSP is the premier outlet for RR work, and thus becomes a citable, trustworthy resource for research that has been reviewed and accepted for publication before the results are known. Thereby it aims to document research in a way that facilitates empirical debate, allows easy replication since materials and procedure are documented extensively and published with the final manuscript, and furthers the development of research paradigms.

What kind of research is suitable for publication in CRSP? What will a CRSP publication look like?

One of the most exciting aspects of CRSP is the ability to accommodate a wide range of research approaches and publication formats, in fact *more* than those of traditional journals. It is this flexibility and openness that allows CRSP to advance our field in new ways. CRSP aims to allow for confirmatory *and* exploratory research (Wagenmakers, Wetzels, Borsboom, van der Maas, & Kievit, 2012) (understanding exploratory research as distinct from exploratory analyses, as we highlight below), theoretical extensions and competing theoretical predictions, replication/extensions and secondary data analysis. Providing reliable, methodologically rigorous advancements and discoveries: this should be the focus of CRSP submissions.

In terms of format, there are several possibilities. One type of prototypical submission, under the umbrella of confirmatory research, is a proposal to experimentally test

predictions derived from a theory, which extends the theory in some meaningful way. Social psychology is a discipline overflowing with theories, and if a theory needs extension we are quite happy to develop it further. Moreover, one can seek to explain a phenomenon making use of two differing theories or approaches by carefully manipulating the variables in each specific way to test which approach or theory is the one better fitting the data.

Yet it is possible as well that no existing theory can predict the effect some manipulation might have, or that a given theory is silent about a given manipulation or relationship between variables. In such exploratory cases, scientific discovery is of course still possible and should not be hindered by a bias toward confirmatory research. Indeed, it is an open secret that many researchers have felt the need to pretend that otherwise exploratory research was confirmatory in order to get results published in a traditional journal (Giner-Sorolla, 2012; Wagenmakers et al., 2012). CRSP will accept proposals if the case can be made that some set of conditions could yield discovery, even if a theory cannot specifically predict what that discovery might be.

Another type of submission takes an already published finding and replicates and extends it. It is worth noting that CRSP is *not* a replication-only journal. Of course we are happy to accept replication studies, but we would like to see them moving a step further beyond solely a direct replication. We acknowledge the need for replications, but we believe that the field can benefit more from those types of studies if they are taking the case one step further and explore boundary conditions, processes, or alternative explanations for any given effect. That way, we can improve our theorizing and come up with models and theories that potentially better fit the to-be-explained phenomena, than the initial formulations of the approach (Cesario & Jonas, 2014).

Finally, there are other types of submissions that CRSP welcomes as well: The journal is open towards secondary data analysis, particularly if accompanied by further preregistered research. We are interested in meta-analyses that a priori determine inclusion and exclusion criteria, or type of model tests. Furthermore, it is worth noting that in the context of policy-relevant research, intervention researchers benefit more from knowing what does not work than from the single success stories. CRSP offers the opportunity for our field to learn about null-effects, unsuccessful manipulations, and helps to carve out the conditions under which we find stable effects that are crucial for interventions. We should not underestimate the value for this applied part of our field. Social psychology is faced with the question what we can contribute to the resolution of pressing problems, and we need to be able to document what our field is capable of. CRSP can help to communicate this potential, but also the critical analysis thereof. Taken together, in terms of research content, any social psychological research, very broadly defined, is suitable for submission and publication in CRSP.

In the end, papers published in CRSP will not look much different compared to the manuscripts published in traditional journals in our field. Within the final product, there will be a section that is marked as preregistered research, and if applicable as exploratory analysis or exploratory extra data. The difference lies mostly in the process, namely the preregistration and the reviewing before the results are known. We are aware that

writing up a paper in this new style may pose problems for authors, since they may not be used to the level of detail and disclosure that is characteristic for RR. It is important to avoid simple copy-and-paste text style (e.g. the repetition of the same text for each of the different descriptions of the materials) in the description of the materials and procedure. Even in those sections reader guidance is essential and manuscripts should aspire to develop a flow that makes its reception pleasurable, and not just a dull reading. Although we may disagree with Bem (2003) on his notion about how manuscripts should be written, many of his recommendations about scientific writing still hold. Our writing should be nonredundant and contribute significantly to the message we want to convey.

Why submit a manuscript proposal to CRSP?

Submitting to CRSP has a number of outright advantages. With the IPA your publication is guaranteed (provided authors stick to the preregistered research plan and their additional analyses are sound). It is particularly interesting that now, for the first time, principle authors are able to indicate during a grant proposal that part of the grant has been reviewed and approved for publication, prior to data collection.

It is also the case that preregistration sets a high standard for research, meaning your publication in CRSP will carry with it a set of standards that are not necessary default for publications in other journals. Without doubt CRSP aims to contribute to transparent, well-documented research. For sure, it will not prevent fraud, but it will help researchers to conduct their most exciting work in a way that warrants publication independent of the results found. This will make all results of well planned and conducted research “significant”, independent of their statistical significance.

We are not making a statement about the extent to which we as researchers, as a field, are or are not following the strict procedures that we teach our students. However, there is ample evidence to date that we, at times, may unwillingly be too flexible when it concerns our own research. A short list of shortcomings might include: publication bias of “confirming” results (Fanelli, 2010; Rosenthal, 1979; Thornton & Lee, 2000); insufficient statistical power (Chase & Chase, 1976; Tressoldi, 2012); lack of or poor replicability (Makel, Plucker, & Hegarty, 2012; Pashler & Harris, 2012; Pashler & Wagenmakers, 2012); undisclosed analytic flexibility (Bakker, Van Dijk, & Wicherts, 2012; Masicampo & Lalande, 2012; Wagenmakers, 2007); and a lack of data transparency (Ioannidis, 2005; Miguel et al., 2014). (See also Gray & Wegner, 2013; Murayama et al., 2014; Pashler & Wagenmakers, 2012; Schimmack, 2012; Simmons et al., 2011; Van Lange, 2013; Wagenmakers et al., 2012). All of the above to varying degrees can lead to the mis- or over-interpretation of published results. We are aware that these critical views instigated a lively debate, and are not to be seen as the final truth. They document a self-reflection process of a healthy scientific field. CRSP seeks to contribute here by offering an outlet for transparent publications.

Without doubt, there are good reasons that may explain why mis- or over-interpretation of results happens. After all, researchers are also human. On top of that, the academic debate on how to properly articulate critique on empirical work is far from conclusive. In the end, we may fall prey to the same biases that we study (see Sijtsma, 2015). Importantly, we think that many of these problems are not related to questionable research practices, but to questionable reporting practices (see Wigboldus & Dotsch, 2015). In our view, adding the

opportunity to report in a preregistration journal will contribute to our science in all of these respects.

Social psychology and RR

A number of colleagues pledged for this type of research reporting (Chambers, 2013; Gelman & Loken, 2014; Greve, Bröder, & Erdfelder, 2013; Humphreys, Sanchez, & Windt, 2013) and first successful examples have been published, e.g. Simons (2014) or Simons, Holcombe, and Spellman (2014) in *Perspectives on Psychological Science*. Therefore, we can conclude that RR is a model that can only benefit Social Psychology as an important and strong scientific tool that may prevent publication bias and unwillingly mixing up exploration and confirmation.

We are aware that some in our field have raised criticisms of the preregistration format. It is not the place in an editorial to try to deal with all of them, but we are compelled to address at least the most widespread. First and most important, we do not think that CRSP negatively impacts on the innovative scientific process of discovery. As we note above, there is *greater*, not lesser, flexibility and opportunity for discovery with the CRSP format as compared to traditional journals. Preregistration is not equivalent to boring, incremental, or confirmatory. Authors can also submit pilot data with their initial submission. Hence, once the authors believe that they are on to something new and interesting, CRSP offers the possibility to publish those findings based on a robust methodical basis that allows the discipline to process these findings adequately. Our open, non-anonymous review process safeguards authors from loss of intellectual ownership since everyone will know the full scope of who has seen the material. Taken together, we think that the advantages outweigh the concerns. Additionally, CRSP is not meant to devalue previous publications, but to complement them. In a blog post, Leif Nelson (2014) nicely documents how his view toward RR changed to a clear advocacy of the format. Interestingly, the idea of an RR journal was discussed by a number of colleagues at the same time, and independently from each other, too.

RR is an endeavor of a whole discipline

Daniel Wigboldus greatly helped to improve the format of CRSP, and we would like to thank him personally. We would like to thank the European Association of Social Psychology and the Society of Australasian Social Psychologists for supporting this endeavor and making it theirs. It is very important that such a project is not a stand-alone initiative by researchers finding a publisher, but that there is institutional backup by scientific associations. This guarantees continuity and also a readership of the journal, which is necessary to market the novel publication procedure and to successfully root it in the discipline. It is also worth mentioning that the enthusiasm of the team at Taylor & Francis/Routledge for this new project helped a lot to overcome the last hurdles. Again, many thanks for this support.

We have tried to gather a thematically broad and diverse first board of editors. Initially the following colleagues have joined our team: Jolanda Jetten – University of Queensland, Australia; Arie Kruglanski – University of Maryland, USA; Elizabeth Page-Gould – University of Toronto, Canada; Shaul Shalvi – Ben Gurion University of

the Negev, Israel; Lotte van Dillen – Leiden University, The Netherlands. We also chose to add statistical consultant editors to the board, Debby Kashy, Michigan State University and Eric-Jan Wagenmakers, University of Amsterdam, to aid the editors and the authors with critical statistical questions. In doing so we hope to provide the feedback and support to the authors on a level that allows them to submit competitive and well-grounded manuscripts. In sum, we did our best to pave the way to make a submission to CRSP as accessible as possible. Now it is in the hands of the discipline to turn this formula into a successful form of publication, and to create the intended benefit. Author guidelines are available from the website (<http://www.tandf.co.uk/journals/authors/rrsp-submission-guidelines.pdf>) and of course the editorial team is available for any further questions and comments.

We are looking forward to many submissions!

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