### unser Experiment

muss noch be- / überarbeitet werden

aus der OSF Preregistration template

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### Study Information

1. Title
   1. Conformity to descriptive norms of people with opposing political or social beliefs
2. Authors
   1. Breidbach, Kyra
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   3. Rönck, Antonella
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3. Description
   1. Forming groups and creating societies has played a major role in human evolution (reference?). Groups tend to have similar norms, values and belief systems. Therefore, we will test whether people are more prone to conform to descriptive norms of one’s social ingroup or whether we are more likely to follow the overall descriptive norm even if it is the norm of one’s outgroup.
4. Hypotheses (required)
   1. People will actively disagree with the beliefs of their outgroup. (self-categorization theory)

→ If people actively disagree with the beliefs of their outgroup, then mean choices of action will be contrary to the descriptive norm favoured by the outgroup.

* 1. People tend to conform to the descriptive norm. (alternative hypothesis)

→ If people tend to conform to the descriptive norm, then mean choices of action will be identical to the descriptive norm.

### Design Plan

In this section, you will be asked to describe the overall design of your study. Remember that this research plan is designed to register a single study, so if you have multiple experimental designs, please complete a separate preregistration.

1. Study type (required)
   1. Psychological experiment with human subjects
2. Blinding (required)???
   1. Blinding describes who is aware of the experimental manipulations within a study. Mark all that apply.
      1. No blinding is involved in this study.
      2. For studies that involve human subjects, they will not know the treatment group to which they have been assigned.
      3. Personnel who interact directly with the study subjects (either human or non-human subjects) will not be aware of the assigned treatments. (Commonly known as “double blind”)
      4. Personnel who analyze the data collected from the study are not aware of the treatment applied to any given group.
3. Study design (required)
   1. We have a between-subjects and a 2x2 factorial design. The first factor being the *ingroup descriptive norm* with two levels for each possible action and the second factor being *both norms shown* with two levels where the suggested action is complementary to the action in the *ingroup descriptive norm*. This results in the experiment having four possible experimental conditions. There are two possible conditions whenever only one statement is shown (*both norms shown* = 0) either the statement claims that 60% of one’s ingroup would leave the robber alone (*ingroup descriptive norm* = 1) or the ingroup descriptive norm suggests to report the robber(*ingroup descriptive norm* = -1). If ingroup descriptive norm and outgroup descriptive norm are shown (*both norms shown* = 1)
4. Randomization (optional) DENNIS / ANTO
   1. The experiment will use simple randomisation, where each participant will be randomly assigned to one of the four experimental conditions.
   2. Genauere Beschreibung der randomisation Implementierung
   3. We will also use randomisation of order whenever both norms are shown
   4. If you are doing a randomized study, how will you randomize, and at what level?
   5. Example: We will use block randomization, where each participant will be randomly assigned to one of the four equally sized, predetermined blocks. The random number list used to create these four blocks will be created using the web applications available at http://random.org.
   6. More info: Typical randomization techniques include: simple, block, stratified, and adaptive covariate randomization. (Different techniques explained: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136079/>) If randomization is required for the study, the method should be specified here, not simply the source of random numbers.

### Sampling Plan

In this section we’ll ask you to describe how you plan to collect samples, as well as the number of samples you plan to collect and your rationale for this decision. Please keep in mind that the data described in this section should be the actual data used for analysis, so if you are using a subset of a larger dataset, please describe the subset that will actually be used in your study.

1. Existing data (required)
   1. Preregistration is designed to make clear the distinction between confirmatory tests, specified prior to seeing the data, and exploratory analyses conducted after observing the data. Therefore, creating a research plan in which existing data will be used presents unique challenges. Please select the description that best describes your situation. Please do not hesitate to contact us if you have questions about how to answer this question ([prereg@cos.io](mailto:prereg@cos.io)).
      1. Registration prior to creation of data: As of the date of submission of this research plan for preregistration, the data have not yet been collected, created, or realized.
      2. Registration prior to any human observation of the data: As of the date of submission, the data exist but have not yet been quantified, constructed, observed, or reported by anyone - including individuals that are not associated with the proposed study. Examples include museum specimens that have not been measured and data that have been collected by non-human collectors and are inaccessible.
      3. Registration prior to accessing the data: As of the date of submission, the data exist, but have not been accessed by you or your collaborators. Commonly, this includes data that has been collected by another researcher or institution.
      4. Registration prior to analysis of the data: As of the date of submission, the data exist and you have accessed it, though no analysis has been conducted related to the research plan (including calculation of summary statistics). A common situation for this scenario when a large dataset exists that is used for many different studies over time, or when a data set is randomly split into a sample for exploratory analyses, and the other section of data is reserved for later confirmatory data analysis.
      5. Registration following analysis of the data: As of the date of submission, you have accessed and analyzed some of the data relevant to the research plan. This includes preliminary analysis of variables, calculation of descriptive statistics, and observation of data distributions. Please see cos.io/prereg for more information.
2. Explanation of existing data (optional)
   1. This experiment will not use or analyse already existing data. All data which is relevant to the analysis will be collected in the online experiment in order to enable a true replication of the study of Pryor et al.
3. Data collection procedures (required)
   1. Subjects will be recruited through the experimenters’ social media accounts. Participation is voluntary and there will be no compensation for it. After two weeks, the data collection will stop regardless of the target sample size and the gathered dataset will be analysed according to the analysis plan.
4. Sample size (required)
   1. As it most probably will not be possible to recruit as many participants as Pryor et al we define our own target sample size of 100 participants. Assuming that not all recruited participants will complete the total task we will try to recruit 150 subjects.
5. Sample size rationale (optional)
   1. This could include a power analysis or an arbitrary constraint such as time, money, or personnel.
   2. **Example**: We used the software program G\*Power to conduct a power analysis. Our goal was to obtain .95 power to detect a medium effect size of .25 at the standard .05 alpha error probability.
   3. **More information**: This gives you an opportunity to specifically state how the sample size will be determined. A wide range of possible answers is acceptable; remember that transparency is more important than principled justifications. If you state any reason for a sample size upfront, it is better than stating no reason and leaving the reader to “fill in the blanks.” Acceptable rationales include: a power analysis, an arbitrary number of subjects, or a number based on time or monetary constraints.
6. Stopping rule (optional)
   1. If our recruitment aim of 150 participants is fulfilled before the two weeks of data gathering we will stop data collection for the study. If that aim is not reached data collection will stop as the collection period has finished.
   2. **More information**: You may specify a stopping rule based on p-values only in the specific case of sequential analyses with pre-specified checkpoints, alphas levels, and stopping rules. Unacceptable rationales include stopping based on p-values if checkpoints and stopping rules are not specified. If you have control over your sample size, then including a stopping rule is not necessary, though it must be clear in this question or a previous question how an exact sample size is attained.

### Variables

In this section you can describe all variables (both manipulated and measured variables) that will later be used in your confirmatory analysis plan. In your analysis plan, you will have the opportunity to describe how each variable will be used. If you have variables which you are measuring for exploratory analyses, you are not required to list them, though you are permitted to do so.

1. Manipulated variables (optional)
   1. Describe all variables you plan to manipulate and the levels or treatment arms of each variable. This is not applicable to any observational study.
   2. **Example:** We manipulated the percentage of sugar by mass added to brownies. The four levels of this categorical variable are: 15%, 20%, 25%, or 40% cane sugar by mass.
   3. **More information**: For any experimental manipulation, you should give a precise definition of each manipulated variable. This must include a precise description of the levels at which each variable will be set, or a specific definition for each categorical treatment. For example, “loud or quiet,” should instead give either a precise decibel level or a means of recreating each level. 'Presence/absence' or 'positive/negative' is an acceptable description if the variable is precisely described.
2. Measured variables (required)
   1. Describe each variable that you will measure. This will include outcome measures, as well as any predictors or covariates that you will measure. You do not need to include any variables that you plan on collecting if they are not going to be included in the confirmatory analyses of this study.
   2. **Example**: The single outcome variable will be the perceived tastiness of the single brownie each participant will eat. We will measure this by asking participants ‘How much did you enjoy eating the brownie’ (on a scale of 1-7, 1 being ‘not at all’, 7 being ‘a great deal’) and ‘How good did the brownie taste’ (on a scale of 1-7, 1 being ‘very bad’, 7 being ‘very good’).
   3. **More information**: Observational studies and meta-analyses will include only measured variables. As with the previous questions, the answers here must be precise. For example, 'intelligence,' 'accuracy,' 'aggression,' and 'color' are too vague. Acceptable alternatives could be 'IQ as measured by Wechsler Adult Intelligence Scale' 'percent correct,' 'number of threat displays,' and 'percent reflectance at 400 nm.'
3. Indices (optional)
   1. If any measurements are going to be combined into an index (or even a mean), what measures will you use and how will they be combined? Include either a formula or a precise description of your method. If your are using a more complicated statistical method to combine measures (e.g. a factor analysis), you can note that here but describe the exact method in the analysis plan section.
   2. **Example**: We will take the mean of the two questions above to create a single measure of ‘brownie enjoyment.’
   3. **More information**: If you are using multiple pieces of data to construct a single variable, how will this occur? Both the data that are included and the formula or weights for each measure must be specified. Standard summary statistics, such as “means” do not require a formula, though more complicated indices require either the exact formula or, if it is an established index in the field, the index must be unambiguously defined. For example, “biodiversity index” is too broad, whereas “Shannon’s biodiversity index” is appropriate.

### Analysis Plan **(DENNIS)**

You may describe one or more confirmatory analysis in this preregistration. Please remember that all analyses specified below must be reported in the final article, and any additional analyses must be noted as exploratory or hypothesis generating.

A confirmatory analysis plan must state up front which variables are predictors (independent) and which are the outcomes (dependent), otherwise it is an exploratory analysis. You are allowed to describe any exploratory work here, but a clear confirmatory analysis is required.

1. Statistical models (required)
   1. What statistical model will you use to test each hypothesis? Please include the type of model (e.g. ANOVA, multiple regression, SEM, etc) and the specification of the model (this includes each variable that will be included as predictors, outcomes, or covariates). Please specify any interactions, subgroup analyses, pairwise or complex contrasts, or follow-up tests from omnibus tests. If you plan on using any positive controls, negative controls, or manipulation checks you may mention that here. Remember that any test not included here must be noted as an exploratory test in your final article.
   2. **Example**: We will use a one-way between subjects ANOVA to analyze our results. The manipulated, categorical independent variable is 'sugar' whereas the dependent variable is our taste index.
   3. **More information**: This is perhaps the most important and most complicated question within the preregistration. As with all of the other questions, the key is to provide a specific recipe for analyzing the collected data. Ask yourself: is enough detail provided to run the same analysis again with the information provided by the user? Be aware for instances where the statistical models appear specific, but actually leave openings for the precise test. See the following examples:
      * 1. If someone specifies a 2x3 ANOVA with both factors within subjects, there is still flexibility with the various types of ANOVAs that could be run. Either a repeated measures ANOVA (RMANOVA) or a multivariate ANOVA (MANOVA) could be used for that design, which are two different tests.
        2. If you are going to perform a sequential analysis and check after 50, 100, and 150 samples, you must also specify the p-values you’ll test against at those three points.
2. Transformations (optional)
   1. If you plan on transforming, centering, recoding the data, or will require a coding scheme for categorical variables, please describe that process.
   2. **Example**: The “Effect of sugar on brownie tastiness” does not require any additional transformations. However, if it were using a regression analysis and each level of sweet had been categorically described (e.g. not sweet, somewhat sweet, sweet, and very sweet), ‘sweet’ could be dummy coded with ‘not sweet’ as the reference category.
   3. **More information**: If any categorical predictors are included in a regression, indicate how those variables will be coded (e.g. dummy coding, summation coding, etc.) and what the reference category will be.
3. Inference criteria (optional)
   1. What criteria will you use to make inferences? Please describe the information youÍll use (e.g. p-values, bayes factors, specific model fit indices), as well as cut-off criterion, where appropriate. Will you be using one or two tailed tests for each of your analyses? If you are comparing multiple conditions or testing multiple hypotheses, will you account for this?
   2. **Example**: We will use the standard p<.05 criteria for determining if the ANOVA and the post hoc test suggest that the results are significantly different from those expected if the null hypothesis were correct. The post-hoc Tukey-Kramer test adjusts for multiple comparisons.
   3. **More information:** P-values, confidence intervals, and effect sizes are standard means for making an inference, and any level is acceptable, though some criteria must be specified in this or previous fields. Bayesian analyses should specify a Bayes factor or a credible interval. If you are selecting models, then how will you determine the relative quality of each? In regards to multiple comparisons, this is a question with few “wrong” answers. In other words, transparency is more important than any specific method of controlling the false discovery rate or false error rate. One may state an intention to report all tests conducted or one may conduct a specific correction procedure; either strategy is acceptable.
4. Data exclusion (optional)
   1. exclude data from participants who fail the understanding check
   2. subjects who claimed to have a neutral stance on the statement regarding their chosen social / political issue
   3. → all similar to the previous study conducted by Pryor et al
5. Missing data (optional)
   1. Subjects whose data is incomplete or missing will be excluded from the analysis since the missing data could falsify the experimental results.
6. Exploratory analysis (optional)
   1. We will not perform exploratory analysis but only analyse the data in respect of the preregistered plan.
7. Other (Optional)
   1. If there is any additional information that you feel needs to be included in your preregistration, please enter it here. Literature cited, disclosures of any related work such as replications or work that uses the same data, or other context that will be helpful for future readers would be appropriate here.