# Comparison

In the following conversation, please respond as if you were a psychological researcher and peer reviewer concerned with replicable, transparent, and reliable research. In the pdf documents you will find two papers. The first is the Preregistration (PREREG). The second is the Published study (PUBSTUD). Please work step by step. Within the Study there can be several Studies, only focus on Conceptual replication.

* 1. I want you to **compare** the two documents. Follow this structure of the questions bellow, do not skip any number, and answer the SET of questions/tasks for the two texts. If you cannot find an information in one text, please state it according to the rules below. Please be as critical as possible in your judgement. So, for each question/task state the question number, the first variable name (e.g MatchMI1) and then your answer. Do not summarize. Please be as critical and strict as possible in your judgement/comparison and list even the slightest deviations. Keep the structure of the questions and the FORMAT-EXAMPLE at the end. Please make sure to explain and explicitly state what is different. The important differences sometimes lay in the wording! If you cannot find any justifications for the deviations, please also mention them.

Be careful about dependencies: depending on whether a variable was experimentally manipulated or not, or if it is a composite or a non-composite measure, certain questions must be answered or not. For instance, questions about the manipulation of a variable (e.g., MatchMI1) are only filled out when the variable is experimentally manipulated, while questions about measures (e.g., MatchIV1\_0-3) are only answered when the variable is not experimentally manipulated. If this is the case, write “Not applicable”. The same goes for when one variable (e.g third variable) is not part of the study then write “not applicable” to the items regarding this variable. Also note that only when an item/operationalization is (partially) reproducible for both the preregistration and the paper, evaluate its consistency (Y/N), otherwise if it is mentioned in none or in only one of them, also write “not applicable”.

1. At the end, after listing and explaining the main differences, give an estimate about the consistency between the pre-registration and the published study. For each of the five major study parts (the operationalization of the independent variable, the operationalization of the dependent variable, the data collection procedure, the statistical model used and the the statistical inference criteria used) **rate** “0” if the elements were inconsistent and “1” when they were consistent.

Questions/tasks for both the Preregistered Paper (Prereg) <Pre….> and the Published Paper (Pubstud) <Pap…>:

1. Operationalization of Independent Variable 1, IV 1

1.1 MatchMI1: If IV1 is experimentally manipulated, assess whether the manipulation of INDEPENDENT VARIABLE 1 is consistent between the preregistration and the paper. (Y/N)

1.2 MatchIV1\_0: If IV1 is not experimentally manipulated, assess whether the operationalization of INDEPENDENT VARIABLE 1 is consistent between the preregistration and the paper. Which measure is used [specification] (Y/N)

1.3 MatchIV1\_1: If IV1 is not experimentally manipulated and a non-composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 1 is consistent between the preregistration and the paper. The procedure of measurement (e.g., information about the administration of an EEG, IQ test, or personality scale) [procedure] (Y/N)

1.4 MatchIV1\_2: If IV1 is not experimentally manipulated and a non-composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 1 is consistent between the preregistration and the paper. The potential values of each component (e.g., the response options of individual items in a questionnaire) [values] (Y/N)

1.5 MatchIV1\_3: If IV1 is not experimentally manipulated and a composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 1 is consistent between the preregistration and the paper. The procedure how they will construct the composite from its elements (e.g., arithmetic mean, weighted mean, sum) [construction] (Y/N)

2. Operationalization of Independent Variable 2, IV 2

2.1 MatchMI2: If IV2 is experimentally manipulated, assess whether the manipulation of INDEPENDENT VARIABLE 2 is consistent between the preregistration and the paper. (Y/N)

2.2 MatchIV2\_0: If IV2 is not experimentally manipulated, assess whether the operationalization of INDEPENDENT VARIABLE 2 is consistent between the preregistration and the paper. Which measure is used [specification] (Y/N)

2.3 MatchIV2\_1: If IV2 is not experimentally manipulated and a non-composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 2 is consistent between the preregistration and the paper. he procedure of measurement (e.g., information about the administration of an EEG, IQ test, or personality scale) [procedure] (Y/N)

2.4 MatchIV2\_2: If IV2 is not experimentally manipulated and a non-composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 2 is consistent between the preregistration and the paper. The potential values of each component (e.g., the response options of individual items in a questionnaire) [values] (Y/N)

2.5 MatchIV2\_3: If IV2 is not experimentally manipulated and a composite measure, assess whether the operationalization of INDEPENDENT VARIABLE 2 is consistent between the preregistration and the paper. The procedure how they will construct the composite from its elements (e.g., arithmetic mean, weighted mean, sum) [construction] (Y/N)

3. Operationalization of Third Variable, TV

3.1 MatchMT: If TV is experimentally manipulated assess whether the manipulation of the THIRD VARIABLE is consistent between the preregistration and the paper. (Y/N)

3.2 MatchTV\_0: If TV is not experimentally manipulated, assess whether the operationalization of the THIRD VARIABLE is consistent between the preregistration and the paper. Which measure is used [specification] (Y/N)

3.3 MatchTV\_1: If TV is not experimentally manipulated and a non-composite measure, assess whether the operationalization of the THIRD VARIABLE is consistent between the preregistration and the paper. The procedure of measurement (e.g., information about the administration of an EEG, IQ test, or personality scale) [procedure] (Y/N)

3.4 MatchTV\_2: If TV is not experimentally manipulated and a non-composite measure, assess whether the operationalization of the THIRD VARIABLE is consistent between the preregistration and the paper. The potential values of each component (e.g., the response options of individual items in a questionnaire) [values] (Y/N)

3.5 MatchTV\_3: If TV is not experimentally manipulated and a composite measure, assess whether the operationalization of the THIRD VARIABLE is consistent between the preregistration and the paper. The procedure how they will construct the composite from its elements (e.g., arithmetic mean, weighted mean, sum) [construction] (Y/N)

4. Operationalization of Dependent Variable, DV

4.1 MatchDV\_0: assess whether the operationalization of the DEPENDENT VARIABLE is consistent between the preregistration and the paper. Which measure is used [specification] (Y/N)

4.2 MatchDV\_1: If DV is a non-composite measure, please assess whether the operationalization of the DEPENDENT VARIABLE is consistent between the preregistration and the paper. he procedure of measurement (e.g., information about the administration of an EEG, IQ test, or personality scale) [procedure] (Y/N)

4.3 MatchDV\_2: If DV is a non-composite measure, assess whether the operationalization of the DEPENDENT VARIABLE is consistent between the preregistration and the paper. The potential values of each component (e.g., the response options of individual items in a questionnaire) [values] (Y/N)

4.4 MatchDV\_3: If DV is a composite measure, assess whether the operationalization of the DEPENDENT VARIABLE is consistent between the preregistration and the paper. The procedure how they will construct the composite from its elements (e.g., arithmetic mean, weighted mean, sum) [construction] (Y/N)

5. Operationalization of First Control Variable, CV

5.1 MatchMC: If CV is experimentally manipulated, assess whether the manipulation of the FIRST CONTROL VARIABLE is consistent between the preregistration and the paper. (Y/N)

5.2 MatchCV\_0: If CV is not experimentally manipulated, assess whether the operationalization of the FIRST CONTROL VARIABLE is consistent between the preregistration and the paper. Which measure is used [specification] (Y/N)

5.3 MatchCV\_1: If CV is not experimentally manipulated and a non-composite measure, assess whether the operationalization of the FIRST CONTROL VARIABLE is consistent between the preregistration and the paper. The procedure of measurement (e.g., information about the administration of an EEG, IQ test, or personality scale) [procedure] (Y/N)

5.4 MatchCV\_2: If CV is not experimentally manipulated and a non-composite measure, assess whether the operationalization of the FIRST CONTROL VARIABLE is consistent between the preregistration and the paper. The potential values of each component (e.g., the response options of individual items in a questionnaire) [values] (Y/N)

5.5 MatchCV\_3: If CV is not experimentally manipulated and a composite measure, assess whether the operationalization of the FIRST CONTROL VARIABLE is consistent between the preregistration and the paper. The procedure how they will construct the composite from its elements (e.g., arithmetic mean, weighted mean, sum) [construction] (Y/N)

6. Operationalization of Data collection procedure, dcp

6.1 MatchDCP\_1: assess whether the DATA COLLECTION PROCEDURE is consistent between the preregistration and the paper. The exact number of participants the authors want to include / included in the study [sample size] (Y/N)

6.2 MatchDCP\_2: assess whether the DATA COLLECTION PROCEDURE is consistent between the preregistration and the paper. The exact time frame (i.e., period, not exact dates) and situation in which participants will be/were invited [sampling frame] (Y/N)

6.3 MatchIEC\_1: assess whether the INCLUSION / EXCLUSION CRITERIA to select PARTICIPANTS / DATA are consistent between the preregistration and the paper. (Y/N)

6.4 MatchIMD\_1: assess whether the way the study deals with INCOMPLETE OR MISSING DATA is consistent between the preregistration and the paper. The definition of a missing case [definition] (Y/N)

6.5 MatchIMD\_2: assess whether the way the study deals with INCOMPLETE OR MISSING DATA is consistent between the preregistration and the paper.the procedure to handle missing cases (e.g., pairwise deletion, listwise deletion, imputation method, intention-to-treat method, full information method) [method] (Y/N)

7. Statistical Model, SM

7.1 MatchSM\_1: assess whether the STATISTICAL MODEL is consistent between the preregistration and the paper. the statistical model used (e.g., t-test, chi-squared test, linear / logistic regression, two-way ANOVA) [model] (Y/N)

7.2 MatchSM\_2: assess whether the STATISTICAL MODEL is consistent between the preregistration and the paper. The relevant variables and their factor levels (including mediating, moderating, interacting, and control variables) [variables] (Y/N)

7.3 MatchSM\_3: assess whether the STATISTICAL MODEL is consistent between the preregistration and the paper. The manner in which the variables are used in the analysis (e.g., mean centered, SEM model specification including potential residual covariances, robust standard errors) [details] (Y/N)

7.4 MatchVSA\_1: assess whether the way the study handles VIOLATIONS OF STATISTICAL ASSUMPTIONS is consistent between the preregistration and the paper. Which assumptions are checked (e.g., normality, homoscedascity, linearity, homogeneity of variances, sphericity)? [which] (Y/N)

7.5 MatchVSA\_2: assess whether the way the study handles VIOLATIONS OF STATISTICAL ASSUMPTIONS is consistent between the preregistration and the paper. How the assumptions are checked (e.g., type of test like Levene’s test, alpha level)? [how] (Y/N)

7.6 MatchVSA\_3: assess whether the way the study handles VIOLATIONS OF STATISTICAL ASSUMPTIONS is consistent between the preregistration and the paper. What is done in cases of violations (e.g., transformations, non-parametric tests)? [deal] (Y/N)

7.7 MatchIC: assess whether the INFERENCE CRITERIA are consistent between the preregistration and the paper. (e.g., statistical significance, sidedness of the test, corrections formultiple testing, Bayesian criteria) (Y/N)

PLEASE go step by step and answer only AFTER COMPLETION (1.1 – 7.7)

<<FORMAT-EXAMPLE:  
……

**7. Violations of statistical Assumptions, SA**

……

7.4 MatchVSA\_1:

* **PREREG:** Assumptions checked include normality and homoscedasticity.
* **PUBSTUD:** Same assumptions.
* **Assessment:** Y

7.5 MatchVSA\_2:

* **PREREG:** Type of test specified (e.g., Levene’s test).
* **PUBSTUD:** Same type of test.
* **Assessment:** Y

7.6 MatchVSA\_3:

* **PREREG:** Procedure for dealing with violations includes transformations and non-parametric tests.
* **PUBSTUD:** Same procedure.
* **Assessment:** Y

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### Consistency Ratings

1. Operationalization of the independent variable: 1
2. Operationalization of the dependent variable: 1
3. Data collection procedure: 0 (due to deviation in the number of participants)
4. Statistical model: 1
5. Statistical inference criteria: 1

**Overall Consistency Score: 4/5**

The pre-registration and the published study are largely consistent, with the primary deviation being the number of participants recruited, which was higher in the published study than planned in the pre-registration. This deviation, while notable, does not undermine the overall consistency and adherence to the pre-registered plan.

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