

Preregistration for Quantitative Research in Psychology (PRP-QUANT) Template

Title

T1 Title

The title should be focused and descriptive, using relevant key terms to reflect what will be done in the study. Use title case (<https://apastyle.apa.org/style-grammar-guidelines/capitalization/title-case>).

Maintenance of disgust – a validation of the Chain of Contagion Task

T2 Contributors, Affiliations, and Persistent IDs (recommend ORCID iD)

Provide in separate entries the full name of each contributor, each contributor's professional affiliation, and each contributor's persistent ID. See ORCID iD for an example of persistent ID (<https://orcid.org/>). Optional: include the intended contribution of each person listed (e.g. statistical analysis, data collection; see CRediT, <https://casrai.org/credit/>).

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T3 Date of Preregistration

This is assigned by the system upon preregistration submission.

T4 Versioning information

This is assigned by the system upon submission of original and subsequent revisions. Should be a persistent identifier, if not a DOI.

T5 Identifier

This unique identifier is assigned by the system upon submission.

T6 Estimated duration of project

Include best estimate for how long the project will take from preregistration submission to project completion.

October 2021 – February 2022

T7 IRB Status (Institutional Review Board/Independent Ethics Committee/Ethical Review Board/Research Ethics Board)

If the study will include human or animal subjects, provide a brief overview of plans for the treatment of those subjects in accordance with established ethical guidelines. If appropriate institutional approval has been obtained for the study, provide the relevant identifier here. If the study will be exempt from ethical board review, provide reasoning here.

Ethics Advisory Board of the University of Leipzig (2020.06.11_eb_48)

T8 Conflict of Interest Statement

Identify any real or perceived conflicts of interest with this study execution. For example, any interests or activities that might be seen as influencing the research (e.g., financial interests in a test or procedure, funding by pharmaceutical companies for research).

No conflict of interest identified.

T9 Keywords

Include terms specific to your topic, methodology, and population. Use natural language and avoid words used in the title or overly general terms. If you need help with keywords, try a keyword search using your proposed keywords in a search engine to check results.

disgust, contamination, OCD, imagination, sympathetic magic

T10 Data accessibility statement and planned repository

"We plan to make the data available (yes / no)

If "yes", please specify the planned data availability level by selecting one of the options:

- Data available upon email request by member of scientific community

Data access via download; usage of data has to be agreed and defined on an individual case basis

T11 Optional: Code availability

We plan to make the code available (yes / no).

If "yes", please specify the planned code availability level (use same descriptors of data in T10).

No

T12 Optional: Standard lab practices

Standard lab practices refer to a (timestamped) document, software package, or similar, which specifies standard pipelines, analytical decisions, etc. which always apply to certain types of research in a lab. Specify here and refer to at the appropriate positions in the remainder of the template:

We plan to make the standard lab practices available (yes / no).

If "yes", please specify the planned standard lab practices availability level (use same descriptors of data in T10).

No

Abstract

(150 words)

A1 Background

(See introduction I1)

Tolin, Worhunsky and Maltby (2004) developed the Chain of Contagion Task for the experimental verification of the law of contagion. The main result of the study was that participants with contamination-related obsessive-compulsive disorder (OCD) were convinced of the transmission of contamination across multiple steps significantly longer than patients with anxiety disorders and healthy controls.

A2 Objectives and Research questions

(See introduction I2)

The goal of the present study is the validation of an online version of the Chain of Contagion Task and the constructive replication of the original study in German-speaking countries.

A3 Participants

(See methods M4)

As in the original study, participants with OCD will be compared to an anxious and a healthy control-group with regard to their beliefs about infection.

A4 Study method

(See methods M10-14)

An online version that induces disgust in a similar way and depicts potential contamination could be more economical, acceptable and reasonable. It also makes an important contribution to disgust research by being used consistently to measure beliefs in connection with contamination, disgust and infection.

Introduction

(no word limit)

I1 Theoretical background

Provide a brief overview that justifies the research hypotheses.

A strong experience of fear and disgust is associated with various mental illnesses, including the contamination-related subtype of obsessive compulsive disorder (C-OCD). The results from experimental studies in recent years suggest that disgust plays an important role in the etiology but also in the maintenance of C-OCD. For example, intrusive thoughts about potential contamination with a contaminated stimulus are typical, which can be accompanied by avoidance behavior as a sustaining factor. In contrast to the emotion fear, disgust shows not only the significantly lower habituation effects (McKay, 2006) but also lower extinction effects (Olatunji, Forsyth & Cherian, 2007). Both could explain lower responder rates to exposure treatment with response prevention (first line treatment according to the German S3 guideline). At the same time, better understanding of the individual components of disgust is required in order to foster more targeted treatments in the future. At the cognitive level, distortions of thought such as the law of contagion (Rozin & Fallon, 1987) play an important role. Accordingly, previously neutral objects that have come into contact with disgusting/ contaminated stimuli are subsequently perceived as contaminated. Here, the "infected" objects activate visual images ("imagery") of the original stimuli, which reflexively trigger disgust. The conviction remains: "once in touch, forever contaminated". Tolin, Worhunsky and Maltby (2004) developed the Chain of Contagion task for the experimental verification of the law of contagion. The authors asked the test subjects to identify the most contaminated object in their environment and to rate it with regard to its degree of contamination. The object was then touched by a new, clean pencil and a new contamination assessment of this pencil followed. A second pencil touched the first and the procedure repeated up to the 12th pencil. The main result of the study was that participants with a contamination-related obsessive-compulsive disorder were convinced of the transmission of contamination significantly longer than patients with anxiety disorders and healthy control subjects. The participants in the healthy control groups described a systematic decrease in contamination with each contact. According to this, people with C-OCD differ in their cognitive processing of disgust stimuli from healthy people and people with anxiety disorders. Investigating these specific processing patterns can make a significant contribution to the derivation of therapeutic techniques for dealing with disgust.

I2 Objectives and Research question(s)

Outline objectives and research questions that inform the methodology and analyses (below).

The aim of the research project is to develop and validate an online version of the Chain of Contagion Task. The basis of the Chain of Contagion Task is the operationalization in the study by Tolin and colleagues (2004). An online version that induces disgust in a similar way and depicts potential contamination could be more economical, more acceptable and

more reasonable in the future. It also makes an important contribution to disgust research by being used consistently to measure beliefs in connection with contamination, disgust and infection. By not having an investigator present, confounding factors are eliminated. The study pursues the goal of validating the online Chain of Contagion task on the one hand and the constructive replication of the original study by Tolin and colleagues in German-speaking countries on the other. As in the original study, participants with obsessive-compulsive will be compared with an anxious and a healthy control group with regard to their beliefs about infection. The following questions should be answered on the basis of the study: (a) In contrast to the anxious and healthy control group, do participants with obsessive-compulsive assume a longer-lasting contamination with a disgust-associated stimulus? (b) How do the experimental and control conditions differ? (c) Are the results comparable to those of the original study by Tolin and colleagues (2004)?

I3 Hypothesis (H1, H2, ...)

Provide hypothesis for predicted results. If multiple hypotheses, uniquely number them (e.g., H1, H2a, H2b,) and refer to them the same way at other points in the registration document and in the manuscript.

H1: In contrast to the anxious and healthy control group, obsessive-compulsive patients assume a longer-lasting contamination of a disgust-associated stimulus.
A significantly slower decrease in the contamination ratings from pencils 1 to 12, measured with the contamination item (scale from 0-100), is expected in the OCD group compared to the anxious and healthy control group.

H2: The effect of the contagion is specific to the disgust condition and not evident for any group in the control condition (object irrelevant to threat). There is a significant difference between the contamination ratings in the two conditions across the 12 points in time, favoring the disgust condition in all three groups over the control condition.

H3: Only OCD patients report looming vulnerability (LV) to contaminated objects. LV mediates the extent to which contamination transmission is perceived as unlimited.

I4 Exploratory research questions (if applicable; E1, E2,)

If planning exploratory analyses, provide rationale for them here. If multiple exploratory analyses, uniquely number them (E1, E2, ...) and refer to them in the same way in the registration document and in future publications.

Method

M1 Time point of registration

Select one of the options:

- Registration prior to creation of data
- Registration prior to any human observation of the data
- Registration prior to accessing the data
- Registration prior to analysis of the data
- Other (please specify; might include if T1 longitudinal data has been analyzed, but T2 has not yet been analyzed)

Registration prior to analysis of the data

M2 Proposal: Use of pre-existing data (re-analysis or secondary data analysis)

Will pre-existing data be used in the planned study? If yes, indicate if the data were previously published and specify the source of the data (e.g., DOI or APA style reference of original publication). Specify your level of knowledge of the data (e.g., descriptive statistics from previous publications), whether or not this is relevant for the hypotheses of the present study, and how it is assured that you are unaware of results or statistical patterns in the data of relevance to the present hypotheses.

Pre-existing data will be used: existing data from a previous study with healthy volunteers (covered by the same votum of the ethics committee) will be used for the matched healthy control group. The study has already been evaluated in the form of a bachelor thesis. Based on these study results, the Chain of Contagion Task was presented as an Imagination Audio Instruction (and not in the form of videos).

Sampling Procedure and Data Collection

M3 Sample size, power and precision

(1) Relevant sample sizes: e.g., single groups, multiple groups, and sample sizes (or sample ranges) found at each level of multilevel data. (2) Provide power analysis (e.g. power curves) for fixed-N designs. For sequential designs, indicate your 'stopping rule' such as the points at which you intend to be viewing your data and in any way analyzing them (e.g., t-tests and correlations, but even descriptively such as with histograms).

Multiple groups: 1. experimental group: participants with OCD of the compulsory washing type and with contamination-related fears (N=15)
2. control group: healthy participants (N= 15)
3. control group: participants with anxiety order (N= 15)

The sample size is based on the study by Tolin et al. (2004) but can also be established by calculating the sample size with G * Power. For a 3x12 ANOVA with a mixed design and the between-subjects factor *groups* and the within-subjects factor *measures*, assuming a large effect ($f = 1.06$, derived from Tolin, an α of .05 and a power of .95, the calculation results in a total sample of $N = 36$.

M4 Participant recruitment, selection, and compensation

Indicate (a) methods of recruitment (e.g., subject pool advertisement, community events, crowdsourcing platforms, snowball sampling); (b) selection and inclusion/exclusion criteria (e.g., age, visual acuity, language facility); (c) details of any stratification sampling used; (d) planned participant characteristics (gender, race/ethnicity, sexual orientation and gender identity, SES, education level, age, disability or health status, geographic location); (e) compensation amount and method (e.g., same payment to all, pay based on performance, lottery).

- a.) **Healthy sample:** 1. Social media such as Facebook groups 2. Bachelor of Psychology students at the University of Leipzig 3. Survey Circle,
Clinical sample: 1. Local support groups 2. Psychotherapeutic university outpatient clinic for adults 3. Special outpatient clinic for obsessive-compulsive disorders, Helios Park-Klinikum Leipzig 4. Call on the website „Deutsche Gesellschaft Zwangserkrankungen e.V.“
- b.) **For all 3 groups:** 1. Age between 18 and 65 years 2. No pregnancy 3. No neurological diseases (e.g. traumatic brain injury, falls with unconsciousness, neurodegenerative diseases, strokes, tic disorders) 4. No dependence on psychotropic substances (except coffee and nicotine) 5. No current benzodiazepine or neuroleptic medication 6. Very good knowledge of German

Additionally:

Group 1: diagnosed contamination-related obsessive-compulsive disorder

Group 2: no diagnosed mental disorder

Group 3: Primary diagnosis of panic disorder with or without agoraphobia / generalized anxiety disorder (ICD-10 F41.1) / social phobias (ICD-10 F40.1) / specific (isolated) phobias (F40.2)
no OCD in lifetime

- c.) With the help of sample matching, it should be prevented that the groups differ from one another with regard to demographic variables. Consequently, we will select healthy participants from a larger healthy sample and match them to participants in the two clinical groups based on gender, age and level of education.
- d.) **Group 1 and 3:** 10 euros per hour compensation
Group 2: course credit for students or raffle of 5 Amazon vouchers worth 10 euros

M5 How will participant drop-out be handled?

Indicate any special treatment for participants who drop out (e.g., there is follow-up in a manner different from the main sample, last value carried forward) or whether participants are replaced.

No

M6 Masking of participants and researchers

Indicate all forms of masking and/or allocation concealment (e.g., administrators, data collectors, raters, confederates are unaware of the condition to which participants were assigned).

No forms of masking or allocation concealment

M7 Data cleaning and screening

Indicate all steps related to data quality control, e.g., outlier treatment, identification of missing data, checks for normality, etc.

Checks for normal distribution and homogeneity of variance

M8 How will missing data be handled?

Indicate any procedures that will be applied during the analysis to deal with missing data, such as (a) case deletions; (b) averaging across scale items (to handle missing items for some); (c) test of missingness (MAR, MCAR, MNAR assumptions; (d) imputation procedures (FIML vs. MI); (e) Intention to treat analysis and per protocol analysis (as appropriate).

All questionnaire items are mandatory.

M9 Other information (optional)

For example, training of raters/participants or anything else not yet specified.

Conditions and design

M10 Type of study and study design

Indicate the type of study (e.g., experimental, observational, crosssectional vs. longitudinal, single case, clinical trial) and planned study design (e.g., between vs. within subjects, factorial, repeated measures, etc.), number of factors and factor levels, etc..

It is an online experiment in mixed-subject design with the between-subject group (compulsion versus fear versus healthy) and the within-subject factor stimulus (disgust versus sweet). The examined population consists of a group of obsessive-compulsive patients, an anxious and a healthy control group.

M11 Randomization of participants and/or experimental materials

If applicable, describe how participants are assigned to conditions or treatments, how stimuli are assigned to conditions, and how presentation of tests, trials, etc. is randomized. Indicate the randomization technique and whether constraints were applied (pseudo-randomization). Indicate any type of balancing across participants (e.g., assignments of responses to hands, etc.).

All subjects go through both stimulus condition in a balanced randomized order.: First disgust condition, second sweet condition vs. first sweet condition, second disgust condition

M12 Measured variables, manipulated variables, covariates

This section shall be used to unambiguously clarify which variables are used to operationalize the hypotheses specified above (item I3). Please (a) list all measured variables, and (b) explicitly state the functional role of each variable (i.e., independent variable, dependent variable, covariate, mediator, moderator). It is important to (c) specify for each hypothesis how it is operationalized, i.e., which variables will be used to test the respective hypothesis and how the hypothesis will be operationally defined in terms of these variables. The description here shall be consistent with the statistical analysis plans specified under AP6 (below).

independent variable = mental health status

dependent variable = contamination rating, sweetness rating

mediator: looming vulnerability mediates the extent to which contamination transmission is perceived as unlimited

M13 Study Materials

Please describe any relevant study materials. This could include, for example, stimulus materials used for experiments, questionnaires used for rating studies, training protocols for intervention studies, etc.

Used questionnaires:

- FEE (Fragebogen zur Erfassung der Ekelempfindlichkeit),
- SUIS (Spontaneous Use of Imagery Scale),
- LOC (Looming of Contamination Scale),
- STAI-T (State-Trait Anxiety Inventory),
- BDI-II (Beck Depression Inventory - Revision, German version)
- PI-PR Washing 10 (Padua Inventory -PR Washing 10)

- self-produced audios for the imagination instructions

M14 Study Procedures

Please describe here any relevant information about how the study will be conducted, e.g., the number and timing of measurement time points for longitudinal research, the number of blocks or runs per session of an experiment, laboratory setting, the group size in group testing, the number of training sessions in interventional studies, questionnaire administration for online assessments, etc.

Group 1 and 3: will be diagnosed by a screening routine via telephone: Therefore, we will apply the SKID screening and the DOCS questionnaire
All groups will execute the online experiment with Chain of Contagion Task and all questionnaires (see M 13)

M15 Other information (optional)

Analysis plan

(NOTE: If this varies by hypothesis, repeat analysis plan for each)

AP1 Criteria for post-data collection exclusion of participants, if any

Describe all criteria that will lead to the exclusion of a participant's data (e.g. performance criteria, non-responding in physiological measures, incomplete data). Be as specific as possible.

Persons are excluded who

- 1) indicate a value <50 in the questions about concentration
- 2) do not meet all exclusion criteria
- 3) did not answer more than half of the questions at all or answered with "don't know/ does not apply"

AP2 Criteria for post-data collection exclusions on trial level (if applicable)

Describe all criteria that will lead to the exclusion of a trial or item (e.g. statistical outliers, response time criteria). Be as specific as possible.

not applicable

AP3 Data preprocessing

Describe all data manipulations that are performed in preparation of the main analyses, e.g. calculation of variables or scales, recoding, any data transformations, preprocessing steps for imaging or physiological data (or refer to publicly accessible standard lab procedure, cf. T12).

not applicable

AP4 Reliability analysis (if applicable)

Specify the type of scale reliability that will be estimated, whether it is internal consistency (e.g. Cronbach's alpha, omega), test-retest reliability, or some other form (e.g., a confirmatory factor analysis incorporating multiple factors as sources of variance). In a study involving measure development, researchers should specify criteria for removing items from measures a priori (e.g., largest factor loading magnitude, smallest drop in alpha-if-item removed).

not applicable

AP5 Descriptive statistics

Specify which descriptive statistics will be calculated for which variables. If appropriate, specify which indices of effect size will be used. If descriptive statistics are linked to specific hypotheses, explicitly link the information given here to the respective hypothesis.

Comparison of the demographic information of the three groups
Mean threat and threat-unrelated contamination ratings
Mean LOC scores

AP6 Statistical models (provide for each hypothesis if varies)

Specify the statistical model (e.g. t test, ANOVA, LMM) that will be used to test each of your hypotheses. Give all necessary information about model specification (e.g., variables, interactions, planned contrasts) and follow-up analyses. Include model selection criteria (e.g., fit indices), corrections for multiple testing, and tests for statistical violations, if applicable. Wherever unclear, describe how effect sizes will be calculated (e.g., for d-values, use the control SD or the pooled SD).

H1 & H2: Multivariate effects for diagnostic status on contamination ratings will be first examined using profile analysis: examination of between and within-subjects effects as well for tests of parallelism
post-hoc testing using Dunnett's T3 test, Wilks' Lambda criterion, Hotelling's Trace,
SIDAK corrected within-subjects contrasts,
H3: ANOVA, ANCOVA

AP7 Inference criteria

Specify the criteria used for inferences (e.g., p values, Bayes factors, effect size measures) and the thresholds for accepting or rejecting your hypotheses. If possible, define a smallest effect size of interest. If inference criteria differ between hypotheses, specify separately for each hypothesis and respective statistical model by explicitly referring to the numbers of the hypotheses. Describe which effect size measures will be reported and how they are calculated.

* $p < 0.05$ ** $p < 0.01$, *** $p < 0.001$

AP8 Exploratory analysis (optional)

Describe any exploratory analyses to be conducted with your data. Include here any planned analyses that are not confirmatory in the sense of being a direct test of one of the specified hypotheses.

AP9 Other information (optional)

Other information optional

(NOTE: If needed, multiple lines with other information can be included)

O1 Other information (optional)

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.

References

R1 References

Enter your references below. Use a consistent format (e.g., <https://apastyle.apa.org/style-grammar-guidelines/references/examples>)

- Abramowitz, J. S., Franklin, M. E., Schwartz, S. A., & Furr, J. M. (2003). Symptom presentation and outcome of cognitive-behavioral therapy for obsessive-compulsive disorder. *Journal of Consulting and Clinical Psychology*, 71(6), 1049.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. Fifth Edition. American Psychiatric Association, 2013.
<https://doi.org/10.1176/appi.books.9780890425596>.
- Burns, G. L., Keortge, S. G., Formea, G. M., & Sternberger, L. G. (1996). Revision of the Padua Inventory of obsessive compulsive disorder symptoms: distinctions between worry, obsessions, and compulsions. *Behaviour Research and Therapy*, 34(2), 163-173.
- DGPPN: Deutsche Gesellschaft für Psychiatrie und Psychotherapie, Psychosomatik und Nervenheilkunde (2013). S3-Leitlinien Zwangsstörungen. Online verfügbar unter: <http://www.awmf.org/leitlinien/detail/II/038-017.html>.
- Fink, J. & Exner, C. (2019). Does transcranial direct current stimulation (tDCS) improve disgust regulation through imagery rescripting? *Frontiers in Human Neuroscience*.
- Fink-Lamotte, J., Lüders, J., & Exner, C. (2020). Enhancing motivation for exposure to disgust-A feasibility study with a non-clinical sample. *Journal of Obsessive-Compulsive and Related Disorders*, 100524.
- Fink, J., Pflugradt, E., Stierle, C. & Exner, C. (2018). Changing levels of disgust through imagery rescripting and cognitive reappraisal in contamination-based obsessive-compulsive disorder. *Journal of Anxiety Disorders*, 53, 36-48.
- Görge, S. M., Hiller, W., & Witthöft, M. (2015). Die spontaneous use of imagery scale (SUIS)—Entwicklung und teststatistische Prüfung einer deutschen adaption. *Diagnostica*.
- Haberkamp, A., Glombiewski, J. A., Schmidt, F., & Barke, A. (2017). The Disgust-Related Images (DIRTI) database: Validation of a novel standardized set of disgust pictures. *Behaviour Research and Therapy*, 89, 86-94.
- Hautzinger, M., Keller, F., & Kühner, C. (2006). *Das Beck Depressionsinventar II. Deutsche Bearbeitung und Handbuch zum BDI II*. Frankfurt a. M.: Harcourt Test Services.
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 617.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (2008). *International affective picture system (IAPS): Affective ratings of pictures and instruction manual (Technical Report A-8)*. Gainesville, FL: University of Florida.
- Laux, L., Glanzmann, P., Schaffner, P., & Spielberger, C. D. (1981). *Das Stait-Trait-Angstinventar*. Beltz, Weinheim, Germany.
- MacLeod, C., Mathews, A., & Tata, P. (1986). Attentional bias in the emotional disorders. *Journal of Abnormal Psychology*, 95, 15–20.
- McKay, D. (2006). Treating disgust reactions in contamination-based obsessive-compulsive disorder. *Journal of Behavior Therapy and Experimental Psychiatry*, 37(1), 53-59.
- Olatunji, B. O., Forsyth, J. P., & Cherian, A. (2007). Evaluative differential conditioning of disgust: A sticky form of relational learning that is resistant to extinction. *Journal of Anxiety Disorders*, 21(6), 820-834.

- Rozin, P., & Fallon, A. E. (1987). A perspective on disgust. *Psychological Review*, 94(1), 23-41.
- Schienze, A., Walter, B., Stark, R., & Vaitl, D. (2002). Ein Fragebogen zur Erfassung der Ekelempfindlichkeit (FEE). *Zeitschrift für Klinische Psychologie und Psychotherapie*, 31(2), 110-120.
- Schubert, C., Voderholzer, U., Wolstein, J., Külz, A. K., & Schwartz, C. (2018). Wirkfaktoren der kognitiven Verhaltenstherapie von Zwangsstörungen: Ein kritischer Überblick über den aktuellen Forschungsstand. *Verhaltenstherapie*, 28(1), 35-43.
- Tolin, D. F., Worhunsky, P., & Maltby, N. (2004). Sympathetic magic in contamination-related OCD. *Journal of Behavior Therapy and Experimental Psychiatry*, 35(2), 193-205.

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