German Validation of the Interoceptive accuracy and attention scales. (#69170)

1) Have any data been collected for this study already?
It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

2) What's the main question being asked or hypothesis being tested in this study?
We want to carry out the German validation of two English questionnaires about interoception, the Interoceptive Accuracy Scale (IAS; Murphy et al., 2019) and the Interoceptive Attention Scale (IATS; Gabrielle et al., 2020). We expect to replicate similar findings as in previous studies in terms of construct (in relation to the heart counting task and the heart detection task) and convergent validity (in relation to other questionnaires). Because in two out of the 6 studies an older (but not the newer) version of the IAS was administered, we further want to compare two translated versions of the IAS (i.e. Old or Potsdam version and new or Vienna version) used to ensure that results from study 1 and 2 are valid.

3) Describe the key dependent variable(s) specifying how they will be measured.
Questionnaires:
1 Beck-Depression Inventory (BDI-II)
2 State-Trait Anxiety Inventory (only trait; STAI-T)
3 Anxiety Sensitivity Index 3 (ASI-3)
4 Toronto Alexithymia Scale (TAS-20)
5 Interoceptive Accuracy Scale (IAS; Vienna translation)
6 Interoceptive Accuracy Scale (IAS, Potsdam translation)
7 Interoceptive Confusion Questionnaire (ICQ)
8 Body Perception Questionnaire-Short Form (BPQ-SF)
9 Multidimensional Assessment of Interoception Awareness 2 (MAIA-2)
10 State-Emotion-Similarity Questionnaire (SES-Q)
11 Interoceptive Attention Scale (IATS).
Tasks:
12 Heart Counting Task
13 Heart Detection Task

4) How many and which conditions will participants be assigned to?
The current project does not have conditions. There will, however, be different studies that may run simultaneously. Studies will be available online (e.g. via SONA) and participants will be able to sign for any of the studies.

For each study all participants will run through all tasks used in the specific study. Task sequence will be pseudo randomized.

Study 1 (validation IAS potsdam): 1, 2, 3, 4, 5, 7, 8, 9, 10, 12
Study 2 (test-retest IAS potsdam): 4, 5, 7, 9
Study 3 (validation IAS potsdam/vienna): 5, 6, 7, 8, 11
Study 4 (test-retest IATS): 5, 6, 7, 8, 11
Study 5 (vienna lab): 4, 5, 11, 12, 13
Study 6 (vienna online): 4, 5, 6, 7, 8, 9, 11

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Study 1 will focus on validating the IAS (Postdam version) in a German sample. To do that, in a first step we will test for construct and convergent validity, using correlational analysis. We will also compute Cronbach's alpha to test the consistency of the questionnaire. The structure of the questionnaire will be tested using principal component analysis (PCA) with rotation varimax, mimicking the analysis performed in the English validation of the questionnaires (Murphy et al., 2019).

Study 2 will focus on testing the reliability of the IAS (Potsdam version) in a German sample.

Study 3 will focus on validating the IATS in a German sample. To do that, in a first step we will test for convergent validity, using correlational analysis. We will also compute Cronbach's alpha to test the consistency of the questionnaire. The structure of the questionnaire will be tested using principal component analysis (PCA) with rotation varimax, mimicking the analysis performed in the English validation of the questionnaires. In addition, in Study 3,
we will also test the similarities between the Potsdam version of the IAS and the Vienna version of the IAS. To do that, we compare the scores from both questionnaires and the correlations with other questionnaires, using t-tests.

Study 4 will focus on testing the reliability of the IATS in a German sample.

Study 5 will focus on validating the IAS (Potsdam and Vienna version) and IATS with an Austrian sample. To do that, in a first step we will test for construct and convergent validity, using correlational analysis. We will also compute Cronbach’s alpha to test the consistency of the questionnaire. The structure of the questionnaire will be tested using principal component analysis (PCA) with rotation varimax, mimicking the analysis performed in the English validation of the questionnaires.

Study 6 will focus on testing the reliability of the IAS and IATS in a larger Austrian sample, as well as the convergent validity of these measures, using correlational analysis. In addition, in Study 6, we will also test the similarities between the Potsdam version of the IAS and the Vienna version of the IAS. To do that, we compare the scores from both questionnaires and the correlations with other questionnaires, using t-tests. Finally, data from all studies will be pooled together to carry out confirmatory analysis, similar to the original validation studies.

6) **Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.**

Prior to filling out the questionnaires, participants are asked a series of questions that are criteria for exclusion. These criteria include: the presence of a psychological and/or neurological condition and/or intake of phychopharmacs at the moment of questionnaire completion. A German level lower than a C1.

In addition, the platform used to fill out the questionnaires (soscy-survey.de) offers two indexes to detect atypical pattern when completing questionnaires. These are the DEG_TIME and TIME_RSI. DEG_TIME informs about whether a participant was "too fast" when completing a questionnaire. values above 100 are considered an indication of low-quality data. TIME_RSI extracts the relative speed index with values above 2 being suspicious. Thus, participants with a DEG_TIME over 100 or a TIME_RSI over 2 will be excluded.

For the heartbeat counting and detection tasks participants will be excluded if they demonstrated a misunderstanding of the task as evaluated by verbal report and/or behavioral performance (e.g. low accuracy in the control tasks). Further, trials with ECG-artifacts impossible to correct will be rejected.

7) **How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.**

- Study 1: 300
- Study 2: 50
- Study 3: 250
- Study 4: 100
- Study 5: 80
- Study 6: 400

The numbers were defined based on prior validation studies.

8) **Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)**

Part of the data collection and analysis of 2 of the 6 studies have been carried out (Study 1 and Study 2) which includes 302 participants and 50 participants, respectively. Data from study 3 is being collected (N= 25), but has not yet been analyzed.

Analysis on the relation between interoceptive scales and questionnaires of Anxiety and Depression questionnaires will also be provided. In addition. We will provide validation and reliability analysis on the BPQ-SF after having re-translated some of the items to adapt to the formal German language.

Available at [https://aspredicted.org/e6tr3.pdf](https://aspredicted.org/e6tr3.pdf)