

The Mint Scale: A Fresh Validation of the Multimodal Interoception Questionnaire and Comparison to the MAIA, BPQ and IAS

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TO DO.

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Introduction

TODO: write general intro.

Main issues in existing questionnaires: - Either heavily based on theories (e.g., focusing on a specific dimensions), despite shaky evidence for said-theories - Do not control for context (which leads to variability in interpretation and occurrence) - Often quite narrow in the modalities covered

Study 1: Item Selection

TODO: write intro.

Goal of study 1: to generate a lot of items, analyze its structure and reduce them to a balanced set of items.

Methods

Participants

We recruited 760 English-speaking participants using Pro-
lific[©]. We excluded 191 for failing at least one attention
check, and 10 based on measures significantly related to the
probability of failing attention checks (namely, the multivariate
distance obtained with the OPTICS algorithm, Thériault
et al., 2024). The final sample includes 559 participants (age
 $= 37.0 \pm 12.2$ [18, 77]; 50.8% women; Country of residence:
63.86% UK, 26.65% USA). This study was approved by the
University of Sussex' Ethics Committee (**NUMBER**).

Item Generation

Based on the two goals outlined for this scale, namely to include different interoceptive modalities, and to explicitly state the context of the interoceptive experience (e.g., whether negative or positive), we generated items in a systematic way following a combinatorial approach, where each item's category was a combination of a specific modality and context (Figure 1).

We firstly identified 7 “modalities” (cardiac, respiratory, gastric, genital, skin & temperature, bladder & colon, and a “general state” category corresponding to a holistic and general awareness of an interoceptive state or dimension). Through iterative refinement (e.g., splitting or merging different categories together), we then settled on 6 “facets”, which encompass both *contexts* of experience (negative and positive arousal, namely anxious and sexual states), and potential distinct *mechanisms* (nociception & pleasure, sensitivity, accuracy, and confusion).

Using this orthogonal 7x6 modality/facet grid as a conceptual scaffolding, we generated 120 initial items, striving for a balanced number of items with consistent phrasing within modalities and facets¹. We additionally crafted 8 “attention

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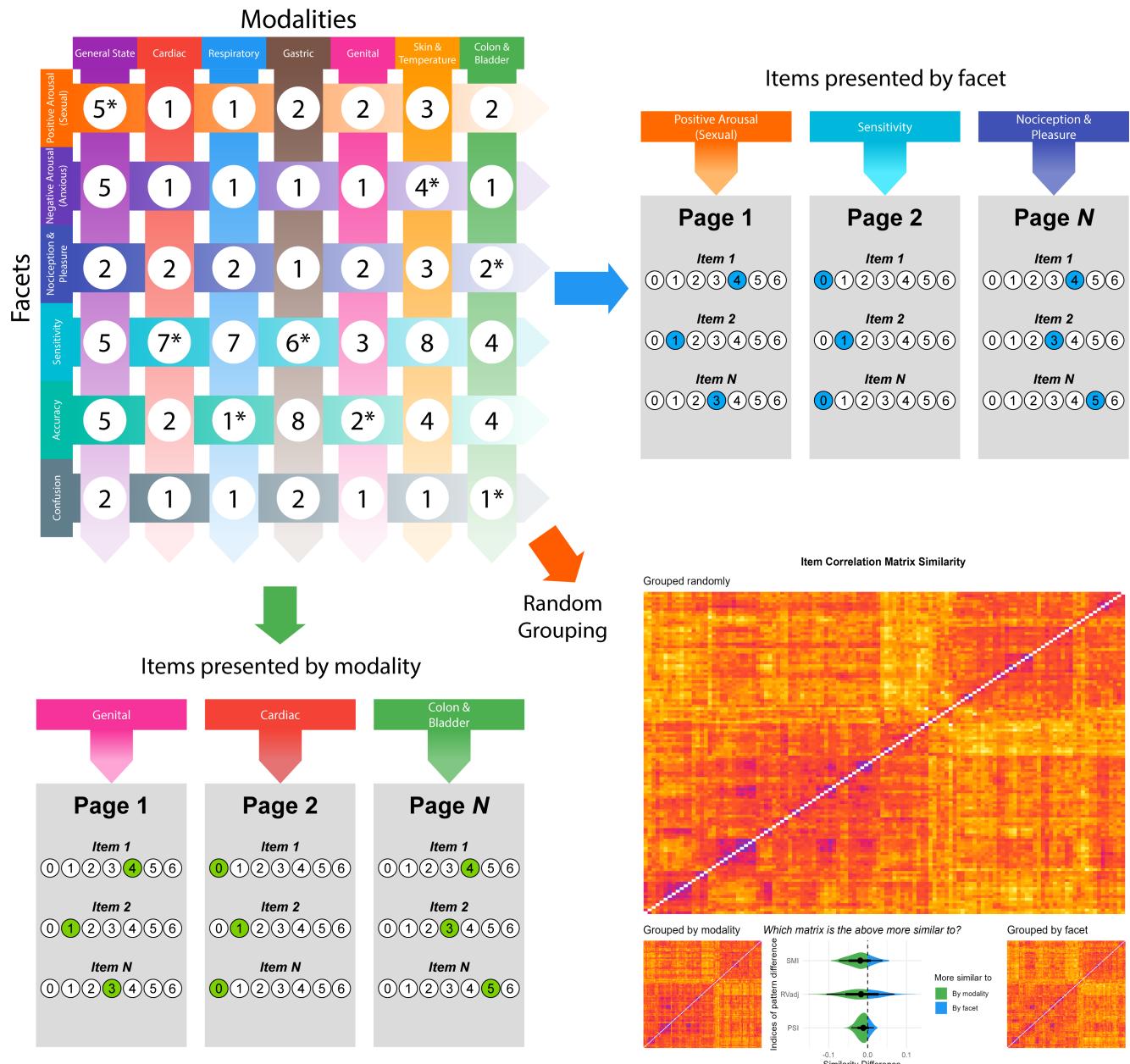
Author roles were classified using the Contributor Role Taxonomy (CRediT; <https://credit.niso.org/>) as follows: Dominique Makowski: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft; Ana Neves: Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing; Giulia Poreiro: Investigation, Methodology, Writing – original draft, Writing – review & editing

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¹The initial item list at realitybending.github.io/InteroceptionScale/study1/analysis/2_analysis.html

Figure 1

The conceptual grid used to generate the 120 initial items (top-left). Each item belong both to an interoceptive modality and a facet, with the number of each item per category indicated in the circles. The asterisk denotes the additional presence of an attention check item in that category. In the experiment, these items were presented on different pages grouped either by modality (bottom-left), by facet (top-right), or entirely randomly. The Correlation Similarity (bottom-right) analysis suggested that the correlation matrix obtained from the participants assigned to the random-grouping condition was slightly more similar (but non-significantly) to the one obtained in the modality-grouping condition, suggesting that 1) the scale's structure is robust to different presentation conditions; 2) modality-grouping might tend to facilitate the emergence of the underlying item structure (and thus be interpreted as being more natural).



check” items blending in (and distributed across) each category.

Procedure

To avoid presenting all the 120 items on a single long and discouraging page, we split them into different pages. Participants were randomly assigned to one of three conditions, driving how items were grouped on the same page: 1) items grouped by modality (i.e., all cardiac items on the first page, all colon & bladder items on the second, etc.), 2) items grouped by facet, or 3) items presented fully randomly (but balanced randomly across 6 pages). The order of the item on any given page and the order of the modalities/facets were randomized. Each participant completed the full set of 120 items, with the attention check items interspersed throughout. The online experiment was implemented using JsPsych (De Leeuw, 2015), and item responses were recorded using 7-points Likert scales (0 = Disagree, 6 = Agree).

Data Analysis

In order to test whether the grouping condition had an effect on the structure (i.e., how items relate to one-another), we compared the correlation matrix obtained in the random condition to the ones obtained in the modality and facet conditions, focusing on 3 indices of correlation matrix similarity - the Procrustes Similarity Index (PSI, Sibson, 1978), the Adjusted RV (Rvadj, Mayer et al., 2011), and the Similarity of Matrices Index (SMI, Indahl et al., 2018). For each index, we bootstrapped the difference between the similarity with the facet and modality conditions to test whether the correlation matrix in the random-grouping condition is significantly more similar to any of the two other conditions.

Items deemed “redundant” (which can distort the item structure estimation by introducing multicollinearity or local dependencies) will be identified (using the recommended threshold of 0.25) using Unique Variable Analysis (UVA, Christensen et al., 2023), a novel and principled method derived from network psychometrics.

The structure of the items will be analyzed using the recently-developed Exploratory Graph Analysis (EGA, H. F. Golino & Epskamp, 2017) framework, which allows to jointly estimate the number of dimensions (i.e., clusters of items), the structure, as well as its stability using bootstrapping (H. Golino et al., 2020). At a fundamental level, EGA conceptualizes variables as nodes in a network, with connections (edges) reflecting associations between them. Evidence has underlined its suitability as an alternative to traditional factor analysis, addressing some of its limitations such as the assumption of a “latent” source of variability, issues in estimation of the optimal factor numbers, and poor performance in complex population structures, while remaining comparable and interpretable (Christensen & Golino, 2021; Jiménez

et al., 2023). In particular, nodes communities (i.e., clusters of items) can be in practice interpreted as distinct “dimensions”, similarly to traditional latent factors - but without explicitly assuming their existence (Christensen & Golino, 2021).

After removing redundant items using UVA, we will iteratively fit hierarchical EGA models (which additionally estimates higher-order “meta” clusters) using “glasso” [REF] and the “leiden” algorithm [REF] for community detection, refining the item pool at each step. We will start by removing items with a low (< 80%) cluster stability (i.e., volatile items which jump between clusters across bootstrapped samples), followed by odd items belonging to no clusters or pairs of items (i.e., we keep items belonging to clusters of more than 2 items). Finally, for each lower-level cluster, we will select the 3 items with the highest node centrality (i.e., the highest loading in the cluster).

Results

The correlation matrix similarity analysis yielded no significant differences between the similarity of the random-grouping condition with the modality-grouping and facet-grouping conditions (PSI_{Random} vs. $Facet$ = 0.81, PSI_{Random} vs. $Modality$ = 0.82, p = .45; $RVadj_{Random}$ vs. $Facet$ = 0.77, $RVadj_{Random}$ vs. $Modality$ = 0.78, p = .74; SMI_{Random} vs. $Facet$ = 0.49, SMI_{Random} vs. $Modality$ = 0.51, p = .52).

From the 120 initial items, UVA flagged 4 redundant items that we removed. We then removed 40 items that showed low cluster stability, and 9 items that were part of clusters with less than 3 items. Finally, We kept the 3 items with the highest loading in their lower-level structure (removing 13 items in the process), resulting in 54 items in the final item pool.

The final hierarchical EGA model (Generalized Total Entropy Fit Index = -119.18) - in which all 54 items yielded a high cluster stability (> 90%) suggested 3 metaclusters and 15 lower-level clusters (each containing 3 items): “Interceptive Deficits” (containing 5 clusters: *Urinary Inaccuracy* - UrIn; *Cardiorespiratory Confusion* - CaCo; *Cardiorespiratory Noticing* - CaNo; *Olfactory Compensation* - Olfa; *Satiety Noticing* - Sati), “Interceptive Awareness” (containing 7 clusters: *Sexual Arousal Awareness* - SexA; *Sexual Arousal Sensitivity* - SexS; *Sexual Organs Sensitivity* - SexO; *Urinary Sensitivity* - UrSe; *Relaxation Awareness* - RelA; *State Specificity* - StaS; *Expulsion Accuracy* - ExAc), and “Interceptive Sensitivity” (containing 6 clusters: *Cardioception* - Card; *Respiroception* - Resp; *Signalling* - Sign; *Gastroception* - Gast; *Dermal Hypersensitivity* - Derm; *Sexual Arousal Changes* - SexC).

To further reduce and balance the remaining items, we collectively decided on removing the lower-level clusters *Sexual Arousal Awareness* (too general and overlapping with the other more specific sex-related items), *Signalling* (which

items started with “when something important is happening in my life”, which meaning we deemed too much open to interpretation), and *Sexual Arousal Changes* (low fit with the other modality-focused clusters of its group). The final set included 45 items.

Discussion

Possible (although not at all significant) bias consistent across indices in favour of a greater similarity with the modality-grouping condition.

Study 2: Validation

TODO: write intro. Goal of study 2: to validate the Mint scale against other interoception scales.

Methods

Participants

We recruited 921 English-speaking participants via Prolific© and SONA, from which 118 were excluded for failing at least one attention check and 6 based on multivariate distance (using the same procedure as for study 1). 60 participants were further excluded due to missing data following a technical error. The final sample includes 737 participants (age = 36.8 ± 14.7 [18, 87]; 57.3% women; Country of residence: 75.17% United Kingdom, 24.83% other). This study was approved by the University of Sussex’ Ethics Committee (**NUMBER**).

Procedure

The experiment included the following questionnaires.

Interoception Questionnaires.

The Multimodal Interoception Questionnaire (Mint).

The 45 items of the Mint scale were presented in a random order, with the same 7-point Likert scale as in study 1 (0 = Disagree, 6 = Agree).

Multidimensional Assessment of Interoceptive Awareness (MAIA).. The X items of the MAIA...

The Body Perception Questionnaire (BPQ).. TODO

The Interoceptive Awareness Scale (IAS).. TODO

Emotions and Cognition.

Toronto Alexithymia Scale (TAS-20). TODO

Emotion Reactivity Scale (ERS).. TODO

Cognitive Emotion Regulation Questionnaire (CERQ)..

TODO

TODO (CEFSA).. TODO

Primal World Beliefs (PI-18). TODO

Health and Wellbeing.

Life Satisfaction, Depression and Anxiety (PHQ-4).

TODO

Mental Health. Participants were asked to self-report any current, medically diagnosed psychiatric disorders using a checklist based on DSM-5 categories. If one or more conditions were endorsed, participants were asked to indicate any current treatments, including pharmacological (e.g., antidepressants, anxiolytics, antipsychotics, mood stabilizers), psychological (e.g., psychotherapy, mindfulness), or lifestyle interventions. Binary variables (0 = absent, 1 = present) were created to identify participants reporting mood disorders (MDD, GAD, Bipolar Disorder; with a stricter subgroup of participants undergoing a pharma- or psychological treatment), anxiety-centred disorders (GAD, Panic Disorder, Social Anxiety Disorder, Specific Phobias), eating disorders, addiction-related disorders, borderline personality disorder, autism spectrum disorder (ASD), and ADHD.

Somatic Health. Participants were asked to select somatic symptoms or conditions they experienced from a list of 36 options. To facilitate mechanistic interpretation and reduce redundancy, answers were grouped into four non-overlapping clusters based on shared physiological pathways and known etiological mechanisms. The *Afferent Sensitivity* cluster included conditions associated with heightened interoceptive awareness and neurogenic excitability, such as migraine, neuropathy, dizziness, nausea, muscle tension, epilepsy, and frequent urination. The *Central Sensitization* cluster comprised syndromes characterized by chronic pain and fatigue, likely reflecting central amplification of sensory signals and HPA-axis dysregulation, such as fibromyalgia, chronic fatigue syndrome, chronic pain, back pain, pelvic pain, irritable bowel syndrome (IBS). The *Autonomic Dysfunction* cluster captured disorders linked to dysregulation of the autonomic and cardiopulmonary systems, including joint hypermobility, cardiac arrhythmia, chest pain, shortness of breath, hypo-/hypertension, sleep apnea, chronic obstructive pulmonary disease (COPD), and chronic bronchitis. Finally, the *Immune-Inflammatory* cluster encompassed conditions associated with immune dysregulation, barrier dysfunction, and gut-brain axis disturbance, such as eczema, psoriasis, skin rashes, asthma, celiac disease, gluten and lactose sensitivity, inflammatory bowel diseases (Crohn’s disease and ulcerative colitis), gastroesophageal reflux disease (GERD), multiple sclerosis, and Sjögren’s syndrome. We scored each cluster as a binary variable based on whether the participant selected at least one symptom from that cluster.

Lifestyle. TODO

Physical activity.

Wearables.

Randomization. In order to avoid the repetition of similar types of questions and balance longer and shorter questionnaires, we partitioned them into three groups (and randomized their order within them): (1) interoception questionnaires (MAIA, IAS, BPQ), (2) emotions (TAS, CERQ, ERS, PI-18), and (3) pathology (somatic health, mental health, LS + PHQ-4, CEFSA). After completing demographic questions, participants always started with the Mint scale, and each following interoception questionnaire was interspersed

with two questionnaires from the emotions and pathology groups. In order to make the experiment more enjoyable, the experiment ended with a radar chart summarizing the participants' responses to the Mint scale².

Data Analysis

We will start by confirming and further refining the structure of the Mint scale using the same EGA model as in Study 1. The convergent validity of the final set of items will be assessed by computing the correlations between the Mint scale and the other interoception questionnaires (MAIA, BPQ, IAS). Then, we will test the predictive power of the Mint scale (relative to the other interoception questionnaires) on various measures. We will start by fitting regression (linear for continuous measures - e.g., depression score - and logistic for binary

Results

Discussion

General Discussion

Data Availability

Data, code, and all materials are available at <https://github.com/RealityBending/InteroceptionScale>.

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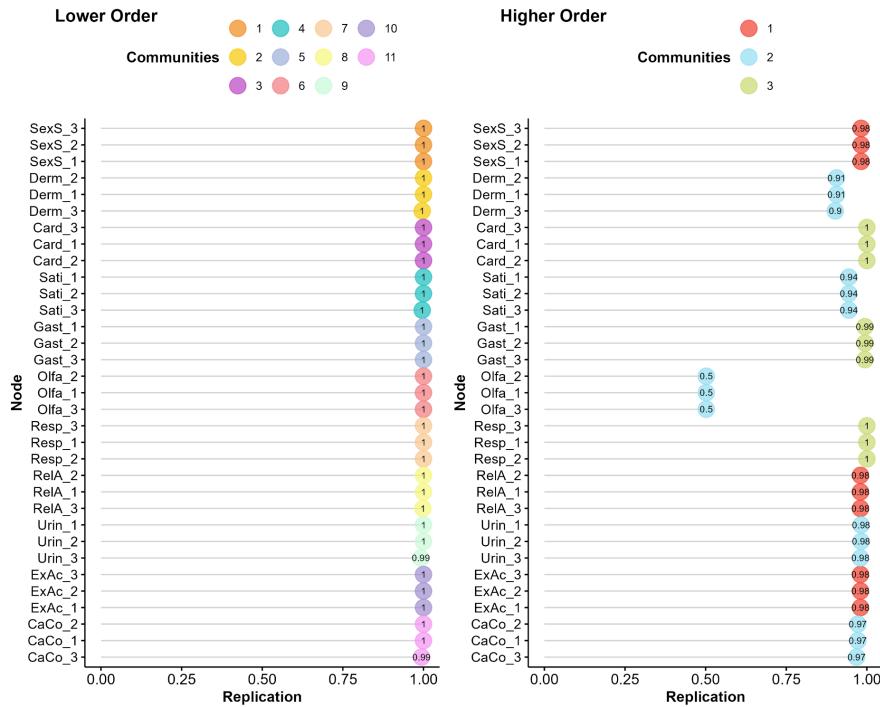
²The experiment can be tested by following the link on <https://github.com/RealityBending/InteroceptionScale>

Figure 2

TODO.

Exploratory Graphical Analysis (EGA)

Bootstrapped replication of hierarchical clusters (Method = leiden)



Hierarchical Clustering

Method = Correlation

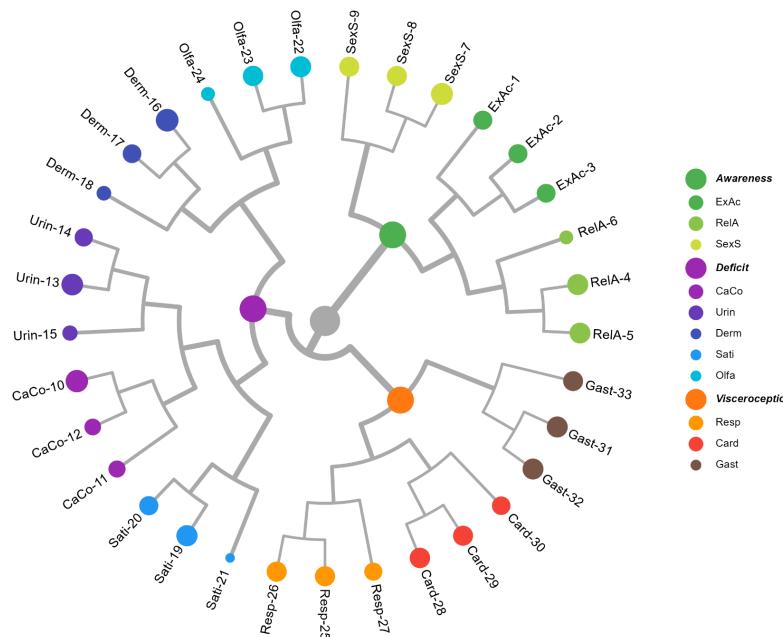


Figure 3

TODO.

Item	Label	Item Loadings										
		Node centrality										
		ExAc	RelA	SexS	CaCo	Urin	Derm	Sati	Olfa	Resp	Card	Gast
Metaclusters												
M1	Interoceptive Awareness	0.42	0.41	0.30	-0.20	-0.06	0.06	-0.07	0.08	0.13	0.02	0.12
M2	Interoceptive Deficit	0.00	-0.17	0.01	0.49	0.44	0.24	0.23	0.18	0.21	0.20	0.12
M3	Viscerception	0.02	0.15	0.02	0.20	0.01	0.11	0.00	0.13	0.60	0.58	0.33
Items												
1	I can always accurately feel when I am about to fart	0.48	0.02	0.05	0.00	0.00	0.04	-0.01	0.10	0.00	0.00	0.00
2	I can always accurately feel when I am about to sneeze	0.48	0.09	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
3	I can always accurately feel when I am about to burp	0.46	0.06	0.01	-0.02	-0.04	0.05	-0.06	0.00	0.03	0.00	0.00
4	I always feel in my body if I am relaxed	0.02	0.59	0.02	-0.04	0.00	0.00	-0.01	0.00	0.04	0.00	0.03
5	I always know when I am relaxed	0.10	0.58	0.03	-0.10	-0.07	0.00	-0.03	-0.01	0.03	0.03	0.02
6	My body is always in the same specific state when I am relaxed	0.04	0.28	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
7	During sex or masturbation, I often feel very strong sensations coming from my genital areas	0.01	0.03	0.65	-0.05	-0.04	0.00	0.00	0.00	0.00	0.00	0.00
8	My genital organs are very sensitive to pleasant stimulations	0.00	0.02	0.53	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00
9	When I am sexually aroused, I often notice specific sensations in my genital area (e.g., tingling, warmth, wetness, stiffness, pulsations)	0.08	0.02	0.53	0.00	0.01	0.03	0.00	0.02	0.00	0.01	0.02
10	Sometimes my breathing becomes erratic or shallow and I often don't know why	-0.02	-0.01	0.00	0.68	0.11	0.00	0.09	0.02	0.07	0.00	0.00
11	I often feel like I can't get enough oxygen by breathing normally	0.00	-0.07	-0.04	0.39	0.04	0.04	0.02	0.02	0.06	0.04	0.00
12	Sometimes my heart starts racing and I often don't know why	0.00	-0.07	0.00	0.37	0.06	0.05	0.03	0.00	0.00	0.16	0.00
13	I sometimes feel like I need to urinate or defecate but when I go to the bathroom I produce less than I expected	0.00	0.00	0.01	0.08	0.63	0.03	0.01	0.07	0.00	0.00	0.00
14	I often feel the need to urinate even when my bladder is not full	0.00	-0.01	0.00	0.04	0.44	0.09	0.00	0.02	0.00	0.00	0.01
15	Sometimes I am not sure whether I need to go to the toilet or not (to urinate or defecate)	-0.04	-0.06	-0.03	0.09	0.32	0.00	0.12	0.00	0.00	0.00	0.00
16	In general, my skin is very sensitive	0.00	0.00	0.00	0.01	0.00	0.70	0.02	0.00	0.04	0.00	0.01
17	My skin is susceptible to itchy fabrics and materials	0.00	0.00	0.00	0.07	0.07	0.46	0.01	0.01	0.00	0.00	0.01
18	I can notice even very subtle stimulations to my skin (e.g., very light touches)	0.13	0.00	0.04	0.00	0.05	0.30	0.00	0.00	0.02	0.03	0.04
19	I don't always feel the need to eat until I am really hungry	-0.01	0.00	0.00	0.00	0.00	0.01	0.60	0.00	0.00	0.00	0.00
20	Sometimes I don't realise I was hungry until I ate something	-0.05	-0.02	0.00	0.09	0.10	0.01	0.49	0.02	0.01	0.00	0.00
21	I don't always feel the need to drink until I am really thirsty	0.00	-0.03	0.00	0.04	0.03	0.00	0.23	0.03	0.00	-0.01	0.00
22	I often check the smell of my armpits	0.00	-0.01	0.00	0.02	0.03	0.00	0.04	0.59	0.04	0.03	0.00
23	I often check the smell of my own breath	0.00	0.00	0.01	0.02	0.00	0.00	0.02	0.55	0.04	0.00	0.04
24	I often check the smell of my farts	0.10	0.00	0.01	0.00	0.06	0.01	0.00	0.28	0.00	0.00	0.01
25	In general, I am very sensitive to changes in my breathing	0.00	0.04	0.00	0.06	0.00	0.07	0.00	0.02	0.54	0.15	0.02
26	I can notice even very subtle changes in my breathing	0.03	0.03	0.00	0.03	0.00	0.00	0.00	0.01	0.54	0.14	0.02
27	I am always very aware of how I am breathing, even when I am calm	0.00	0.02	0.00	0.04	0.00	0.00	0.01	0.04	0.43	0.05	0.06
28	In general, I am very sensitive to changes in my heart rate	0.00	0.00	0.00	0.07	0.00	0.03	-0.01	0.00	0.11	0.55	0.03
29	I often notice changes in my heart rate	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.03	0.08	0.53	0.01
30	I can notice even very subtle changes in the way my heart beats	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.17	0.45	0.05	0.05
31	I can notice even very subtle changes in what my stomach is doing	0.00	0.02	0.00	0.00	0.01	0.04	0.00	0.03	0.05	0.04	0.59
32	In general, I am very sensitive to what my stomach is doing	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.58
33	I am always very aware of what my stomach is doing, even when I am calm	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.07	0.04	0.04	0.53

Figure 4

TODO.

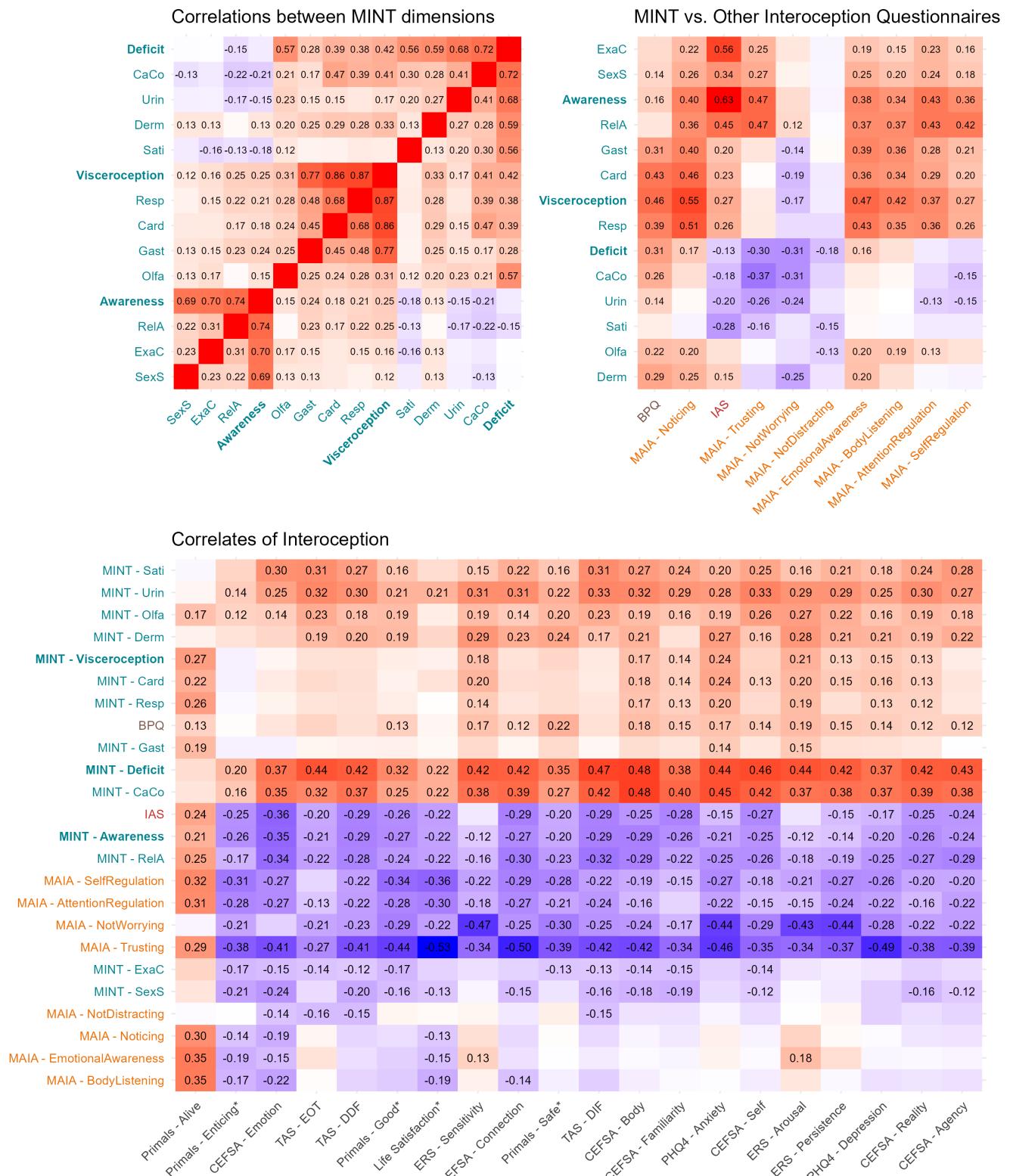


Figure 5

TODO.

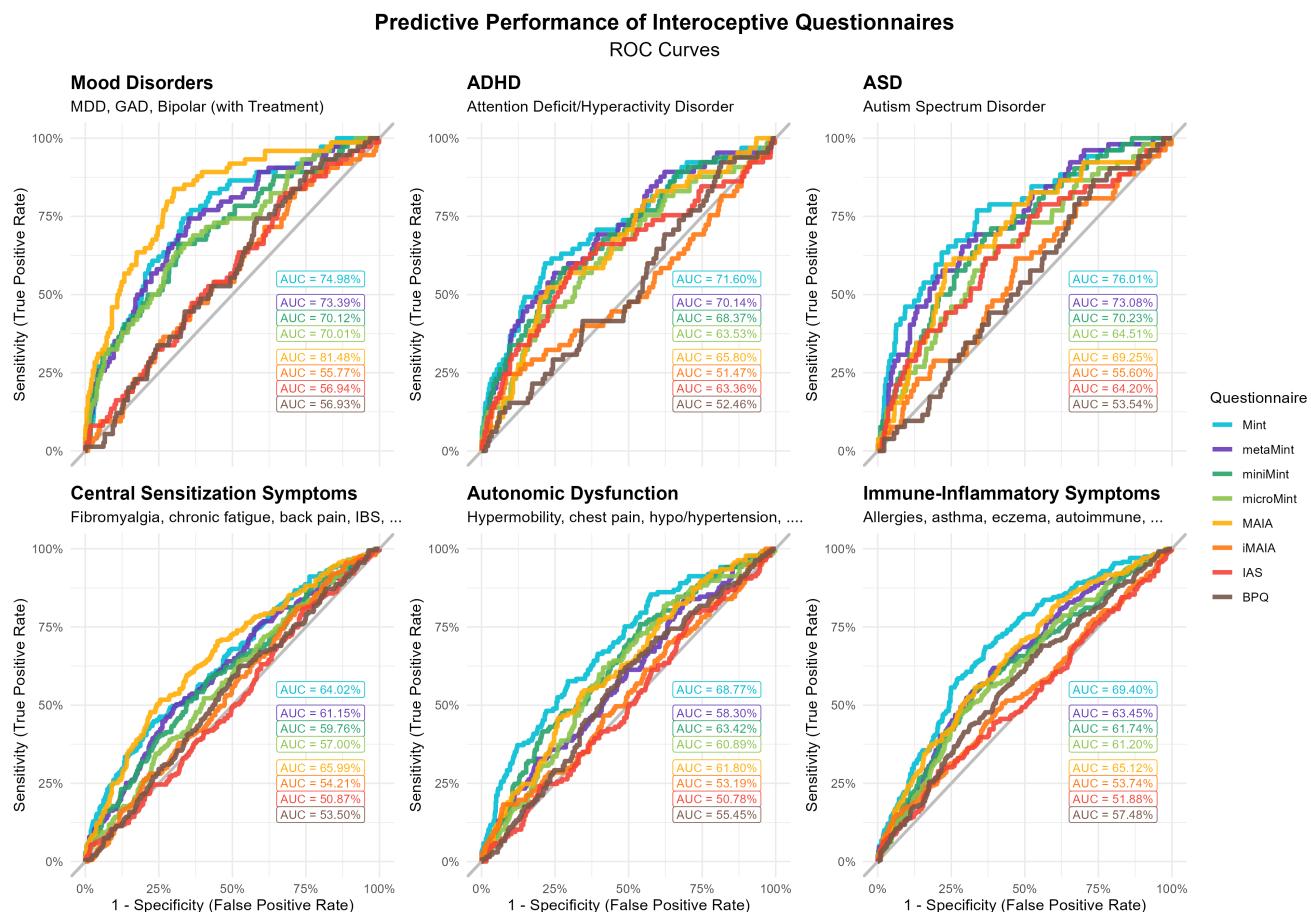


Figure 6

TODO.

Interoceptive Questionnaires Comparison MINT vs. MAIA, IAS, BPQ					
Outcome	Best Predictor (MINT)	Best Predictor (Non-MINT)	Best Models (R2)		Best Models (BIC)
Alexithymia					
Difficulty Identifying Feelings (DIF) TAS-20	Deficit (0.47)	MAIA - Trusting (-0.42)	mint > metamint > minimint > maia > micromint > ias > imaiia > bpq	metamint > mint > minimint > maia > micromint > ias > bpq > imaiia	
Difficulty Describing Feelings (DDF) TAS-20	Deficit (0.42)	MAIA - Trusting (-0.41)	mint > metamint > maia > minimint > micromint > ias > imaiia > bpq	metamint > mint > minimint > maia > micromint > ias > bpq > imaiia	
Externally Oriented Thinking (EOT) TAS-20	Deficit (0.44)	MAIA - Trusting (-0.27)	mint > metamint > minimint > maia > micromint > ias > imaiia > bpq	metamint > mint > minimint > micromint > maia > ias > bpq > imaiia	
Emotional Reactivity					
Arousal ERS	Deficit (0.44)	MAIA - NotWorrying (-0.43)	maia > mint > metamint > minimint > micromint > imaiia > bpq > ias	maia > metamint > mint > minimint > micromint > bpq > imaiia > ias	
Sensitivity ERS	Deficit (0.42)	MAIA - NotWorrying (-0.47)	maia > mint > metamint > minimint > micromint > bpq > imaiia > ias	maia > metamint > minimint > mint > micromint > bpq > imaiia > ias	
Persistence ERS	Deficit (0.42)	MAIA - NotWorrying (-0.44)	maia > mint > metamint > minimint > micromint > imaiia > ias > bpq	maia > metamint > minimint > mint > micromint > ias > bpq > imaiia	
Mood					
Life Satisfaction	Deficit (-0.22)	MAIA - Trusting (0.53)	maia > mint > metamint > minimint > micromint > ias > imaiia > bpq	maia > minimint > metamint > ias > micromint > mint > imaiia > bpq	
Anxiety PHQ-4	CaCo (0.45)	MAIA - Trusting (-0.46)	maia > mint > metamint > minimint > micromint > bpq > ias > imaiia	maia > metamint > minimint > mint > micromint > bpq > ias > imaiia	
Depression PHQ-4	Deficit (0.37)	MAIA - Trusting (-0.49)	maia > mint > metamint > minimint > micromint > ias > bpq > imaiia	maia > metamint > minimint > micromint > mint > ias > bpq > imaiia	
Mental Health					
Mood Disorder	Deficit (0.84)	MAIA - Trusting (-0.90)	maia > mint > metamint > minimint > micromint > ias > imaiia > bpq	maia > metamint > micromint > minimint > ias > bpq > mint > imaiia	
ADHD	Deficit (0.60)	IAS (-0.48)	mint > metamint > minimint > micromint > ias > imaiia > bpq	metamint > minimint > ias > micromint > bpq > imaiia > mint > maia	
Autism	Deficit (0.71)	MAIA - Trusting (-0.58)	mint > metamint > minimint > maia > micromint > ias > imaiia > bpq	metamint > minimint > ias > bpq > micromint > imaiia > mint > maia	
Somatic Health					
Afferent Sensitivity <i>Migraine, neuropathy, muscle tension, dizziness, ...</i>	Deficit (0.50)	MAIA - Trusting (-0.36)	mint > maia > metamint > minimint > micromint > imaiia > ias > bpq	metamint > minimint > micromint > bpq > imaiia > maia > mint	
Central Sensitization <i>Fibromyalgia, chronic fatigue, back pain, IBS, ...</i>	Deficit (0.38)	MAIA - Trusting (-0.36)	maia > mint > metamint > minimint > micromint > imaiia > ias > bpq	metamint > minimint > bpq > ias > maia > micromint > imaiia > mint	
Autonomic Dysfunction <i>Hypermobility, chest pain, hypo/hypertension, ...</i>	Card (0.46)	MAIA - Trusting (-0.20)	mint > minimint > maia > micromint > metamint > imaiia > ias > bpq	minimint > bpq > micromint > ias > metamint > imaiia > mint > maia	
Immune-Inflammatory <i>Allergies, eczema, autoimmune, ...</i>	Derm (0.60)	MAIA - Trusting (-0.36)	mint > maia > metamint > minimint > micromint > bpq > imaiia > ias	metamint > minimint > bpq > micromint > mint > ias > maia > imaiia	
Dissociative Symptoms					
Body CEFSA	CaCo (0.48)	MAIA - Trusting (-0.42)	mint > metamint > minimint > micromint > maia > ias > bpq > imaiia	metamint > minimint > mint > micromint > maia > ias > bpq > imaiia	
Self CEFSA	Deficit (0.46)	MAIA - Trusting (-0.35)	mint > metamint > minimint > micromint > maia > ias > bpq > imaiia	metamint > minimint > mint > micromint > maia > ias > bpq > imaiia	
Emotions CEFSA	Deficit (0.37)	MAIA - Trusting (-0.41)	mint > metamint > minimint > maia > micromint > ias > imaiia > bpq	metamint > mint > minimint > maia > micromint > ias > imaiia > bpq	
Reality CEFSA	Deficit (0.42)	MAIA - Trusting (-0.38)	mint > metamint > minimint > maia > micromint > ias > imaiia > bpq	metamint > minimint > mint > micromint > maia > ias > bpq > imaiia	
Lifestyle					
BMI	Sati (-0.17)	MAIA - NotWorrying (0.07)	mint > metamint > micromint > minimint > maia > ias > imaiia > bpq	ias > micromint > bpq > metamint > minimint > imaiia > mint > maia	
Physical Activity	RelA (0.22)	MAIA - Trusting (0.36)	maia > mint > minimint > micromint > metamint > imaiia > ias > bpq	maia > minimint > micromint > imaiia > metamint > ias > mint > bpq	
Cardiac Monitoring	Card (0.31)	MAIA - BodyListening (0.36)	mint > maia > imaiia > metamint > minimint > micromint > ias > bpq	imaiia > metamint > minimint > ias > maia > bpq > micromint > mint	
Sleep Monitoring	RelA (0.22)	MAIA - NotWorrying (-0.22)	mint > maia > metamint > minimint > micromint > bpq > ias	bpq > ias > metamint > imaiia > minimint > micromint > maia > mint	
Steps Monitoring	Awareness (0.26)	MAIA - Noticing (0.28)	mint > maia > metamint > minimint > micromint > ias > bpq	metamint > imaiia > minimint > ias > micromint > bpq > mint > maia	