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When the body knows: Interoceptive accuracy enhances physiological but not explicit differentiation between liars and truth-tellers

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ABSTRACT

Recent research suggests that people experience distinct physiological reactions to lies versus truths. It is unclear, however, if this experience is incorporated into greater truth-lie judgment accuracy. We hypothesized that individuals with high interoceptive accuracy—those with greater access to bodily experiences and stronger physiological responses to emotional stimuli—might be particularly likely to accurately discriminate high-stakes, emotional lies and truths. Participants (n = 71) completed two study sessions: the first assessed their interoceptive accuracy with heartbeat detection measures, and the second assessed their deception detection ability while measuring their physiological reactivity. Interoceptive accuracy was associated with a greater difference in vasoconstriction to liars (vs. truth-tellers), suggesting that interoception was positively associated with physiological sensitivity to deception. Interoceptive accuracy, however, was unrelated to deception detection accuracy. While better interoception may enhance physiological signals that could better discriminate lies from truths, it does not improve explicit deception detection accuracy.

1. Introduction

Deception is a common aspect of human communication (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). While many lies are minor falsehoods told for prosocial reasons (e.g., to spare someone's feelings), some lies are major and self-serving (e.g., a false alibi to conceal criminal behavior), and can cause grave harm if undetected (Ekman, 2009; Vrij, 2008). Despite the importance of discriminating liars from truth-tellers, research suggests that people are poor lie detectors. In a seminal meta-analysis, Bond and DePaulo (2006) reported that people performed at 54 % accuracy on lie-detection tasks, when 50 % accuracy would be expected by chance alone. These findings raise the dual questions of why lie detection is so poor when it is so important, and how people could become better lie detectors.

One possible reason lie detection appears so poor is that most of the tasks used to measure deception detection accuracy involve low-stakes, laboratory-created stimuli, which may differ qualitatively from liars and truth-tellers in real, high-stakes contexts where failed detection is consequential (e.g., von Hippel & Trivers, 2011). Although debate continues about which factors would increase the detectability of lies (Hartwig & Bond, 2014), accuracy rates of 60–70 % in discriminating real deceptive murderers from genuinely-distressed individuals have been reported (Wright Whelan et al., 2014; Bond & DePaulo, 2006; Levine, 2015; ten Brinke, Lee, & Carney, 2019; O'Sullivan, Frank, Hurley, & Tiwana, 2009). This improved accuracy may be associated with automatic reactions that occur outside of conscious control, and—in the case of emotional, high-stakes lies—appears to be related to cues to deception in emotional facial expressions (ten Brinke et al., 2019). Recent research suggests that observers experience increased vasoconstriction and greater generalized arousal when observing deceptive murderers versus genuinely-distressed individuals (ten Brinke et al., 2019), but not when watching unemotional, laboratory lies (i.e., mock crime interviews). Accordingly, high-stakes, *emotional* lies appear to produce the strongest physiological effects on observers, but it's unclear if these physiological reactions are epiphenomenal or whether people might use these reactions to improve their lie-detection accuracy for real, affectively-laden, high-stakes (vs. low-stakes, laboratory-created) lies.

To use one's physiological reaction to inform truth or lie judgments, people need to have access to these reactions and accurately identify when vasoconstriction, arousal, or both are occurring. As such, individual differences in interoceptive accuracy could lead to improvements

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in deception detection accuracy. Previous research suggests that interoceptive accuracy is associated with both increased physiological reactivity to emotional stimuli (e.g., Herbert, Pollatos, Flor, Enck, & Schandry, 2010; Pollatos, Herbert, Matthias, & Schandry, 2007) and increased subjective intensity of emotional experiences (Barrett, Quigley, Bliss-Moreau, & Aronson, 2004; Critchley, Wiens, Rotshtein, Öhman, & Dolan, 2004; Sokol-Hessner, Hartley, Hamilton, & Phelps, 2015; Wiens, Mezzacappa, & Katkin, 2000; Zaki, Davis, & Ochsner, 2012). Insofar as emotional lies and truths elicit differential physiological responses in observers (ten Brinke et al., 2019), observers' trait interoceptive accuracy may increase objective or experienced physiological reactions. Accordingly, trait interoceptive accuracy may provide observers with greater physiological signals and awareness of those signals, which can be applied to successfully distinguish truths from lies.

In the current study, we examine individual differences in interoceptive accuracy and physiological reactions to real, emotional, high-stakes liars (vs. truth-tellers). We predict that individuals with greater interoceptive accuracy will experience greater objective physiological differences in response to emotional liars versus truth-tellers. Specifically, interoceptive accuracy will be associated with greater vasoconstriction and arousal responses when observing emotional liars versus truth-tellers. Further, we expect that individuals with high interoceptive accuracy will leverage their subjective experience of those reactions to increase their explicit lie-detection accuracy. Deidentified data, analysis scripts, and materials for the study are publicly available via OSF at https://osf.io/crqsk/.

2. Method

2.1. Participants

A convenience sample of undergraduate participants were recruited for a two-session study that took place on two separate days, in different research labs (Days between sessions, $M = 3.45$, $SD = 2.95$, range = 0–16). There were no exclusion criteria beyond ensuring participants could understand the instructions and perceive the task. In the first session, participants completed the heartbeat detection task to measure interoceptive accuracy, and in the second session, participants completed the lie detection task. This second session was previously reported in ten Brinke, Lee, & Carney (2019; Study 3). We aimed for a final sample size of 80 participants, which would yield 80 % power to detect $\rho = 0.27$, with $\alpha = 0.05$ (one-tailed). This sample size is also similar to (but larger than) samples used in related work (i.e., Study 1 in ten Brinke et al., 2019).

2.1.1. Session one

In total, 82 undergraduate participants provided informed consent and participated in session one over the course of one year. No data exclusions were made based on physiological signal quality. However, two participants withdrew after consent but before completing the session. Thus, 80 participants (28 male; 51 female; 1 non-binary; $M_{age} = 19.56$, $SD_{age} = 2.05$) provided interoceptive data. See supplementary materials for additional descriptive statistics.

2.1.2. Session two

Of the 80 participants who completed the first session, 9 did not schedule or attend session two. Additionally, one participant completed session two but not session one. Thus, a total of 72 participants (22 male; 49 female; 1 non-binary; $M_{age} = 19.46$, $SD_{age} = 1.67$) completed the second session. Data from several participants, however, were excluded from analyses due to physiological signal quality issues. Specifically, technical difficulties with equipment resulted in a failure to record one participant's physiological data (i.e., both electrodermal activity [EDA] and pulse plethysmography [PPG]). PPG data from nine participants were excluded because a large portion (> 10 %) of their PPG waveform was obscured by movement artifacts. Finally, EDA data of nine participants were excluded due to poor connection between the electrode and skin, resulting in erratic recordings. To maximize statistical power, participants with missing or problematic data were excluded only from analyses involving those measures; they were retained for all other analyses.

2.2. Procedure

2.2.1. Session 1: heartbeat detection tasks

Participants completed two computer-based heartbeat detection tasks. Here, we focus on the main interoceptive task – a robust, conservative measure of interoceptive accuracy called the synchronization task. For additional details on consent, instructions, and setup, and for information on the second interoceptive task, see Supplemental Materials.

2.2.2. The synchronization task

The main measure of interoceptive accuracy collected was a robust synchronization-style task (Critchley et al., 2004; Eichler & Katkin, 1994; Katkin, Wiens, & Öhman, 2001; Khalsa et al., 2008; Schneider, Ring, & Katkin, 1998; Sokol-Hessner et al., 2015; Sokol-Hessner, Wing-Davey, Illingworth, Fleming, & Phelps, 2022; Wiens et al., 2000; Wiens & Palmer, 2001). On each of 160 trials, the screen would display "Attend" for 1 s, then a sequence of 10 tones (800 Hz, 100 ms square wave tones made using Audacity software) would play. Heartbeats were collected using AcqKnowledge software (Version 4.1) and an MP160 with an ECG100C module (1000 Hz gain, norm mode, 35 Hz LPN, high-pass filter at 1.0 Hz). The software automatically detected R-waves (the peak of the EKG signal during ventricular depolarization) and subsequently triggered the experiment presentation software (PsychToolBox in MATLAB) on the stimulus computer to play tones at delays of 200 ms or 500 ms. All tones within a trial were played at the same delay. Previous research shows that tones played at a 200 ms delay are generally perceived as in-sync with the heartbeat, while those played at a 500 ms delay are perceived as out-of-sync (Wiens et al., 2000). On each trial, participants judged whether all ten tones were in- or out-of-sync with their heartbeats. After the 10 tones finished playing, there was a brief 0.5 s fixation cross, participants indicated either "in sync" or "delayed" within 2 s. Next, participants had up to 3 s to indicate their confidence in that judgment from "low" to "high" on an analog scale. Following a brief intertrial interval (0.75 s or 1.25 s, $M = 1$ s), the next trial would begin. Before data collection began, participants were given six 'labeled' practice trials (i.e., the screen would indicate "in sync" or "delayed" while tones of that type played). Participants then completed 160 trials in four blocks of 40 trials each. Between each block, participants had up to 30s to rest. At the end, a random trial was selected and if participants were correct on that trial, they earned another $5 in addition to their endowment; if they were incorrect, they kept the $5 endowment; and if they did not respond on that trial, they lost the $5 endowment.

Better interoceptive performance is indicated by a greater percentage of correct in-sync/delayed judgments, calculated here in a signal detection theory framework using the unitless sensitivity measure of d' ("d-prime"): the difference between participants' normalized hit rate and false alarm rate (z(Hits) - z(False Alarms)) (Sokol-Hessner et al., 2015; Sokol-Hessner et al., 2022).

Confidence ratings allowed the quantification of participants' metacognitive awareness of their interoceptive accuracy (Fleming & Lau, 2014). For more information about confidence and metacognition, see Supplementary Materials.

At the end of the session, participants completed additional questionnaires (see Supplementary Materials). Session One took approximately 90 min.

2.2.3. Session 2: lie detection task

Session 2 was previously described as Study 3 in ten Brinke et al. (2019). Participants provided fully informed consent and sensors were applied to their left hand to collect electrodermal (EDA) and pulse plethysmography (PPG) data. Participants first watched a calming ~2 min video to establish their physiological baseline (Gross & Levenson, 1995). Participants then completed the lie detection task, viewing a total of 32 videos (in two sets) of individuals engaged in real, high-stakes truths and lies. The set of primary interest included 12 emotional pleas wherein an individual appealed for help in finding a missing relative (ten Brinke & Porter, 2012). These are of particular interest since they are highly emotional and interoceptive accuracy is associated with affective responding (Herbert et al., 2010; Pollatos et al., 2007). These *pleaders* were chosen from ten Brinke and Porter's (2012) complete sample ($N = 78$) using stratified random sampling to select six genuine (three males; three females) and six deceptive (three males; three females) pleaders. This number of stimuli is typical of deception detection research (Bond & DePaulo, 2006) and exceeds Levine, Daiku, and Masip's (2022) recent recommendation of at least 500 total judgments (12 judgments × 72 participants = 864 judgments) to achieve stable estimates of accuracy. Videos were on average 35.42 s long ($SD =$ 40.38), in English, and originally shown on television in the U.S., the U. K., Canada, or Australia between 1985 and 2009.

Participants also watched a set of 20 *game-show contestants*, lying or telling the truth about their intent to defect on their partner in a single-trial Prisoner's dilemma scenario (Oberholzer-Gee, Waldfogel, & White, 2010). While this context was also 'real' insofar as it was not created in the laboratory and featured high stakes with upwards of $20,000 of potential prize money, it was less emotional than the pleader videos and, thus, were not expected to produce the same results. See Supplemental Material for additional details and related analyses.

The sets of stimuli were presented in randomized order, and videos within each set were presented in random order. A black screen with a white fixation point (+) appeared for 0.5 s before each video. After watching each video, participants made a veracity judgment (lying or telling the truth) and rated their emotional responses (happy, sad, fear, disgust, anger, contempt, surprise; Ekman, 1992) on 7-point Likert scales. Judgments of veracity were used to calculate a percentage accuracy score: (total number of pleaders correctly classified/12)*100. Finally, participants completed a demographic questionnaire and the following (see Supplemental Materials): the *Private Body* subscale of the Body Consciousness Scale (Miller, Murphy, & Buss, 1981) and the *Observe* and *Describe* subscales of the Five-Facet Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Session Two took approximately 60 min.

Physiological waveforms during the lie detection task were collected using AcqKnowledge (Version 4.1) and an MP160 with a BN-PPGED amplifier. Signals were acquired at 5 kHz and re-sampled to 1000 Hz. For SCL, raw measures were amplified using a gain of 100 uS/Volt. Prior to analysis, an analyst blind to video veracity removed movement artifacts in PPG signals via visual inspection. MindWare BSA Version 3.0 was then used to determine mean finger pulse amplitudes (FPa) over the course of the baseline video and each pleader video. MindWare EDA Version 3.0 was used to measure tonic skin conductance levels (SCL).

Mean SCL (generalized arousal) and FPa (vasoconstriction) reactivity was calculated by subtracting participants' physiological activity during the baseline video from their physiological reactivity during each genuine and deceptive pleader video. Mean reactivity to deceptive videos was then subtracted from mean reactivity to truth videos. Because more negative FPa indicates greater vasoconstriction, positive (vs. negative) difference scores indicate greater vasoconstriction to liars (vs. truth-tellers). The opposite is true of SCL; positive numbers indicate greater arousal: negative (vs. positive) difference scores indicate greater arousal to liars (vs. truth-tellers).

To assess optimal possible accuracy for each participant—the ideal use of one of their own physiological signals—we used trial-wise SCL and FPa reactivity (separately) in a signal detection theory framework. First, we calculated all possible criterion values (ranging from below each participant's lowest physiological value to above their highest). Second, for each criterion value assessed, we calculated the percent of trials that would have been correctly categorized as deceptive (vs. truthful) using that criterion. As an illustrative example, if a participant had four trials of data wherein the first two were truthful and the last two were deceptive, and if their arousal (SCL) values were 4, 5, 7, and 8 respectively, then their maximum possible percent correct would have been 100 % (with a criterion between 5 and 7; a criterion between 4 and 5 would have yielded 75 % correct; a criterion below 4 would have yielded 50 % correct; and so on). The highest percent correct reflects an ideal (upper-bound) limit on how well the participant could possibly do, using their physiological experience as a guide. We did not expect participants to attain these levels of performance; rather, we used this simple metric to illustrate the potential use of physiological signs to inform veracity judgments.

3. Results

3.1. Interoceptive accuracy

3.1.1. Synchronization task

Participants' mean d' from the synchronization task was 0.55 ($N =$ 80; $SEM = 0.08$; range = −0.41–3.22). Although there was a wide range of performance across participants, a one-sample *t*-test indicated above-chance performance, $t(79) = 6.87$, $p = 1.3 \times 10^{-9}$, 95 % $CI_{\text{mean difference}}$ [0.39, 0.71], $d = 0.77$, 95 % CI [0.52, 1.02].

3.2. Deception detection accuracy

On average, participants' accuracy was 54.86 % ($N = 72$, $SEM =$ 1.70, range: 16.7–91.7) in discriminating genuine from deceptive pleaders, which was significantly greater than chance (50 %), $t(71) =$ 2.87, $p = .005$, 95 % $CI_{\text{mean difference}} = [1.48, 8.24]$, $d_z = 0.34$, 95 % CI [0.10, 0.57].

3.3. Physiological reactions to liars v. truth-tellers

3.3.1. Vasoconstriction

As previously reported in ten Brinke et al., 2019, participants experienced greater vasoconstriction (i.e., lower FPa) in response to deceptive ($M = -0.036$, $SD = 0.049$) versus genuine pleaders ($M = -0.027$, $SD = 0.046$), $t(62) = 4.97$, $p < .001$, 95 % $CI_{\text{mean difference}}$ [0.005, 0.012], $d_z = 0.63$, 95 % CI [0.35, 0.90].

3.3.2. Generalized arousal

However, as previously reported in ten Brinke et al., 2019, a paired samples *t*-test revealed that participants did not experience significantly greater arousal to deceptive ($M = 24.43$, $SD = 35.76$) versus genuine pleaders ($M = 24.36$, $SD = 39.26$), $t(62) = 0.04$, $p = .970$, 95 % $CI_{\text{mean difference}}$ [−3.48, 3.35], $d_z = 0.01$, 95 % CI [−0.25, 0.24].

3.4. Interoceptive Accuracy is Associated with Greater Vasoconstriction to Liars (v. Truth-Tellers)

Pearson correlations were conducted to examine relationships between measures of interoceptive accuracy—using the synchronization-style task (d') and physiological reactivity difference scores (vasoconstriction, generalized arousal) in participants who completed both sessions. Results are presented in Table 1. Notably, d' was associated with greater differences in PPG reactivity to deceptive (vs. genuine) pleaders, $r(62) = 0.302$, $p = .017$ (see Fig. 1, Panel A). As interoceptive accuracy increased, so too did the difference in participants' vasoconstriction to liars (vs. truth-tellers).

Table 1
Pearson correlations between measures of interoceptive accuracy and physiological reactivity difference scores.

	1.	2.	3.
1. Heartbeat synchronization task (d')	–		
2. Vasoconstriction reactivity difference score (truths - lies)	0.302** $N = 62$	–	
3. Arousal reactivity difference score (truths - lies)	0.080 N = 63	0.132 $N = 57$	–

** $p < .01$.

3.5. Optimal possible (v. achieved) lie detection accuracy, relying on physiological reactivity

We next sought to quantify participants' optimal possible accuracy and the gap between optimal possible accuracy and achieved accuracy in the lie detection task. Assessing participants' possible accuracy—given optimal use of physiological signals—establishes an upper-bound on what we could expect people to achieve under the best of circumstances (See Methods for more information). Results indicated that if participants had ideal access to their own vasoconstriction reactivity (PPG) and used an individually-optimal criterion to determine truth-teller or liar on the basis of that PPG signal, they could achieve an average accuracy of up to 68 % ($N = 62$; $SEM = 1.0$, range 50–83 %; see Fig. 1, Panel B). For arousal reactivity (SCL), the mean optimal possible accuracy was 66 % ($N = 63$; $SEM = 1.2$, range 50–92 %). However, in practice, people fell well short of this mark (paired t-tests versus actual accuracy; PPG: $M_{difference} = 12.9$ %, $t(61) = 31$, $p = 4.7\text{e-}39$; SCL: $M_{difference} = 11.5$ %, $t(62) = 30$, $p = 1.4\text{e-}38$), indicating that participants' explicit deception detection performance was, on average, significantly suboptimal on an individual basis.

3.6. Interoceptive accuracy does not improve actual lie detection accuracy

Although interoceptive accuracy was associated with greater differences in physiological reactivity—for vasoconstriction, specifically, in response to deceptive pleaders vs. genuine pleaders—interoceptive accuracy was not associated with deception detection performance. Performance on the heartbeat synchronization task (d') was unrelated to deception detection accuracy (%), $r(69) = -0.02$, $p = .868$ (see Fig. 1, Panel C).

Additionally, we find that interoceptive accuracy (d') does not moderate the relationship between physiological reactivity difference scores and deception detection accuracy (Model 1; Hayes, 2018). Specifically, the relationship between vasoconstriction difference scores and deception detection accuracy is not moderated by performance on the heartbeat synchronization task (d'), $F(1, 58) = 2.29$, $p = .106$, $R^2_{change} = 0.04$, nor was the relationship between arousal difference scores and deception detection accuracy moderated by d', $F(1, 59) = 0.93$, $p = .338$, $R^2_{change} = 0.02$.

4. Discussion

Previous research suggests that people may be better at detecting real, emotional, high-stakes lies, relative to laboratory-created truths and lies (e.g., O'Sullivan et al., 2009; Wright Whelan, Wagstaff, & Wheatcroft, 2014), and that people may experience physiological responses to observing deception (ten Brinke et al., 2019; see also van 't Veer et al., 2015). We hypothesized that individual differences in trait interoceptive ability would be positively related to vasoconstriction and arousal responses to lies (vs. truths), and that interoceptive ability may moderate the relationship between these physiological responses and explicit lie detection accuracy. Based on previous research indicating that interoceptive accuracy is positively associated with physiological reactivity to emotional stimuli and subjective intensity of emotional experience (e.g., Barrett et al., 2004; Herbert et al., 2010), we predicted that more interoceptive individuals may experience greater physiological reactions to emotional lies (vs. truths) and would have the subjective experience necessary to incorporate this information into their truth-lie judgments, achieving greater deception detection accuracy. Consistent with our hypotheses, we found that interoceptive accuracy was associated with a greater difference in vasoconstriction to liars (vs. truth-tellers). This result is consistent with previous research suggesting that trait interoceptive ability is associated with stronger physiological responses to emotional stimuli (e.g., Herbert et al., 2010; Pollatos et al., 2007) and extends these findings to suggest that individuals with high interoceptive accuracy may also be more physiologically responsive to subtle emotional cues related to deception.

By calculating the optimal criterion for each participant, we determined that participants could achieve an average of 68 % accuracy on the deception detection task by relying on their PPG reactivity. Although there was no mean difference in EDA (specifically, skin conductance level) responses to liars and truth-tellers, an optimal decision-making criteria on that reaction would produce a similar average optimal

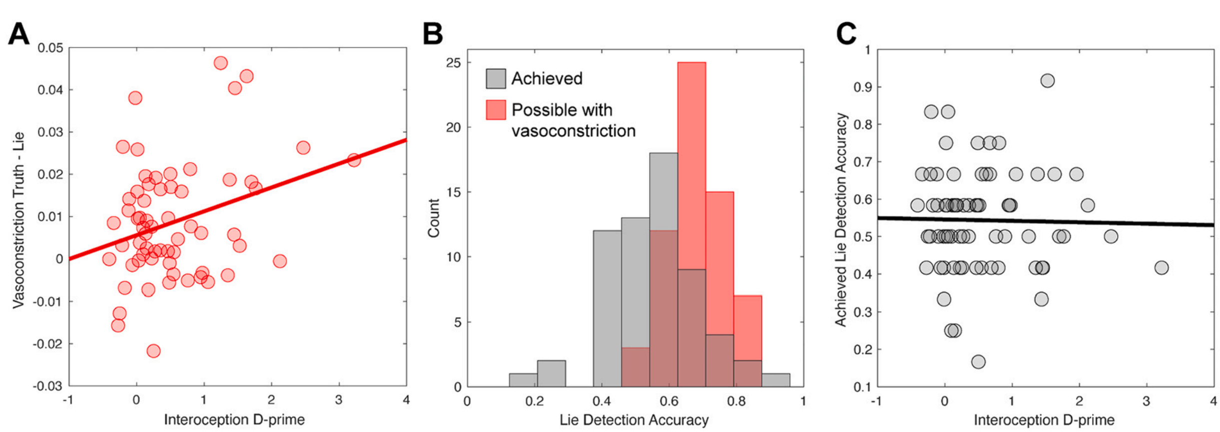

Fig. 1. Panel A provides a scatterplot and line of best fit visualizing the relationship between interoception on the synchronization task (d′) and the difference in vasoconstriction reactivity to truths and lies. Panel B provides layered histograms, with optimal accuracy that could be achieved using vasoconstriction scores in red and actual deception detection accuracy achieved by participants in grey. Panel C provides a scatterplot and line of best fit visualizing the (lack of) relationship between interoception on the synchronization task (d′) and achieved lie detection accuracy. In short, Panel A illustrates that interoceptive performance is associated with a greater physiological signal to discriminate lies from truths. Panel B illustrates how well participants could do by relying on that signal, optimally. Panel C illustrates that more interoceptive participants do not take advantage of their physiological responses to improve their deception detection accuracy. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

deception detection accuracy of 66 %. However, average achieved accuracy fell far short of this level (55 %) and—contrary to hypotheses—highly interoceptive participants did not outperform others on this task; interoceptive accuracy (d') was unrelated to achieved deception detection accuracy. These findings suggest that even when people ostensibly have access to internal signals that may indicate deception, they do not incorporate those signals into their judgments. Although van 't Veer et al. (2015) did not measure interoception directly, they also found no relationship between physiological reactivity (i.e., finger temperature) and veracity judgments, despite evidence indicating that physiological reactions to truths and lies differ. We build on this work to show that even for individuals who experience larger physiological reactions and are most attuned to their body, these experiences and abilities do not translate into deception detection accuracy.

4.1. Limitations and future directions

The current findings suggest that interoceptive individuals do not leverage their somatic experience to achieve greater lie detection accuracy; however, this investigation provides little insight into why this relationship may not exist. ten Brinke, Vohs, and Carney (2016) argue that people are not solely concerned with optimizing accuracy when making deception detection judgments, and that reputational costs associated with calling someone a liar may reduce people's willingness to do so, even if their suspicion is aroused (Bergsieker, Leslie, Constantine, & Fiske, 2012; Dunning, Anderson, Schlösser, Ehlebracht, & Fetchenhauer, 2014). Future research might examine whether interoceptive individuals are more likely to report feeling suspicious in response to liars (vs.truth-tellers), and whether that tracks with physiological reactivity. For example, vasoconstriction might track positively with suspicion, but may not rise to the threshold necessary to call someone a liar or may be uncorrelated with deception detection accuracy (ten Brinke et al., 2016). That said, training participants to attend to their physiological reaction can impact their deception detection judgments. ten Brinke et al. (2019) found that brief interoception training led to improved deception detection (increase of 5 % and 6 %; Experiments 4 & 5, respectively) compared to a no-training control condition. Training decreased truth bias, although findings were equivocal on sensitivity. These findings indicate that decision criterion can be manipulated, and that more complex training interventions such as biofeedback may help participants to move their criterion closer to optimal use. Moreover, the current study was not pre-registered. Future work should pre-register hypotheses with a greater number of participants and more (genuine and deceptive) stimuli to better detect possible relationships between interoception and lie detection. The current study also collected and examined multiple measures of interoceptive accuracy and physiological reactivity which warrants caution against excessively strong interpretation of results. Relatedly, future work should consider collecting other measures of interoceptive accuracy and affective responses, particularly measures that may be more sensitive to detecting differences. Nevertheless, these findings add to the growing literature examining the roles of individual differences in affective and social contexts.

5. Conclusion

Although interoceptive performance was associated with greater physiological reactivity to lies versus truth, and optimal use of this information would produce deception detection accuracy that far exceeded chance, interoceptive individuals did not leverage their increased body accuracy to improve their judgments of veracity. Findings advance previous research on the physiological reactivity of interoceptive individuals to reveal that they are sensitive even to subtle cues to deceptive emotion. Again, however, attempts to find accurate lie detectors are stymied, suggesting that truth-lie judgments may be influenced by more than just the desire for accuracy.

CRediT authorship contribution statement

P. Sokol-Hessner and L. M. ten Brinke conceived of the idea and designed the study. Study programming for Session One was written by P. Sokol-Hessner and for Session Two, L. M. ten Brinke. Data collection was performed by C. A. Gunderson, Ali Watson, Eric Andrews, and Thanh Viet Anh Vo. Analyses were performed by P. Sokol-Hessner and L. M. ten Brinke. The manuscript was jointly written by C. A. Gunderson, P. Sokol-Hessner and L. M. ten Brinke. All the authors approved the final manuscript for submission.

Declaration of competing interest

The authors did not receive support from any organization for the submitted work. The authors have no relevant financial or non-financial interests to disclose.

Data availability

Deidentified data, analysis scripts, and materials for the study are publicly available via OSF at https://osf.io/crqsk/ (deidentified link).

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2022.112039.

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