Interoception and Personality: A Mind–Body Integrative Framework for Understanding Emotional and Social Functioning

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ABSTRACT

This study presents a narrative integrative review examining the relationship between interoception and personality across neuroscientific, psychological, and Gestalt perspectives. Peer-reviewed literature (2000-2024) from PubMed, Google Scholar and Scopus was reviewed using search terms related to interoception, personality traits, embodied cognition, and Gestalt therapy, with inclusion criteria emphasizing empirical studies of psychophysiological correlates of personality (extraversion-introversion, neuroticism-stability) and theoretical work linking neuroscientific evidence to experiential frameworks. By synthesizing theoretical convergences and identifying empirical gaps, the review proposes a testable integrative framework in which personality traits—introversion, extraversion, and neuroticism—are reinterpreted as stable patterns of interoceptive self-regulation and embodied modes of relational contact with the environment.

The framework conceptualizes personality not as a fixed set of traits, but as a dynamic process of organismic self-regulation shaped by the integration of bodily and mental processes in social context. This perspective has implications for psychotherapy, education, and organizational settings, where interoceptive awareness training may enhance emotional regulation, empathy, and relational functioning. The proposed model offers an interdisciplinary contribution that bridges neuroscientific and phenomenological approaches, providing testable hypotheses for future empirical research on the embodied foundations of personality and social behavior.

Keywords: interoception; personality; embodiment; emotion; Gestalt; self-regulation.

INTRODUCTION

Interoception, the perception and interpretation of internal bodily states, has emerged as a fundamental dimension for understanding how subjective experience is constructed. Modern neurobiological models of consciousness describe perceptual experience as a phenomenon that emerges from the interaction between interoceptive and proprioceptive processes on the one hand and exteroceptive information on the other [1, 2, 3]. This integrative perspective aligns with embodied cognition theory, which reconceptualizes cognitive processes not as disembodied computational operations, but as rooted in the organism's continuous sensorimotor and affective engagement with its environment [4]. The present work adopts a neurophenomenological framework [5, 6], which seeks to bridge first-person phenomenological experience with third-person neuroscientific evidence, recognizing that neither biological mechanisms nor subjective reports alone can fully account for the embodied nature of mind.

Gestalt psychotherapy shares this non-dualistic view but extends it beyond the cognitive dimension toward a radically relational and phenomenological understanding of experience. In the Gestalt paradigm, the body is conceptualized as the primary organ of contact: the locus where experience becomes present and meaningful through engagement with the environment [7, 8]. Contact, in this framework, refers to the dynamic process

through which the organism meets and responds to environmental demands, regulating its boundaries and needs in real time [9]. Organismic regulation denotes the self-adjusting capacity of the organism to maintain equilibrium by modulating arousal, attention, and action in response to the field [10]. Within this organism-environment field theory, experience emerges neither as purely internal nor external, but at the contact boundary, the relational interface where self and world co-constitute each other [9, 10]. Interoception, therefore, is not merely the perception of isolated bodily signals; it constitutes a foundational dimension of contact, through which the organism orients itself in the field, assesses relational demands, and regulates its adaptive responses.

In Gestalt theory, the "es" function encompasses bodily and emotional experiences, i.e., deeply interoceptive processes that influence perception and are in turn modified by perception itself, in a dynamic circularity reminiscent of that described by modern neurobiological models of consciousness [9, 3, 11]. While neuroscience describes how the body communicates with the brain through afferent pathways and specific brain structures, Gestalt redefines this communication in the context of lived experience and relationship with the environment. In this perspective, rather than being traced back to brain configurations or psychometric traits, the concept of personality can be described as the form that the contact process takes over time, the relatively stable mode through which an organism organizes its own activation, perceives and responds to the field, and regulates the boundary between itself and the environment [8].

Gestalt theory offers a conceptual paradigm that can serve as a unifying framework for integrating neuroscientific evidence on interoception with psychological models of personality [7, 8, 9, 10]. Three elements make this perspective particularly promising:

1. Overcoming mind-body dualism: Gestalt conceives of human experience as a unitary process that unfolds at the contact boundary, avoiding both biological reductionism and cognitive abstraction. In this framework, interoceptive processes and personality traits are not separate entities to be correlated, but co-emergent aspects of a single organismic process.
2. The relational dimension: while many approaches to interoception treat it as a predominantly individual and introspective phenomenon, Gestalt situates it in the context of the organism-environment relationship. Interoception is not only self-perception, but orientation in the field, regulation of contact, modulation of relational presence.
3. The focus on process: Gestalt does not limit itself to describing states or traits, but focuses on the dynamic processes through which experience is organized moment by moment. This allows us to understand personality not as a fixed structure, but as a relatively stable processual pattern of organismic self-regulation, rooted in recurring modes of perception, arousal, and contact.

This article does not intend to present new empirical data, but to propose a theoretical-conceptual reflection on the relationship between interoceptive processes and personality traits, with the aim of integrating neuroscientific, psychological, and Gestalt perspectives into a unified mind-body model.

METHODOLOGY

This work is a theoretical-conceptual reflection based on an integrative narrative review approach. Unlike systematic reviews, which aim for exhaustive coverage and quantitative synthesis, narrative reviews synthesize diverse bodies of literature to generate new theoretical frameworks and identify conceptual patterns [12, 13]. The following electronic databases were consulted: Google Scholar, PubMed and Scopus, covering publications from 2000 to 2024. Search terms were combined using Boolean operators across four domains: (1) Interoception: "interoception" OR "interoceptive awareness" OR "interoceptive sensitivity" OR "interoceptive accuracy"; (2) Personality: "personality traits" OR "Big Five" OR "extraversion" OR "introversion" OR "neuroticism" OR "Eysenck"; (3) Embodiment: "Gestalt therapy" OR "phenomenology" OR "embodied cognition" OR "embodied self-regulation" OR "organism-environment field"; (4) Psychophysiology: "arousal" OR "autonomic nervous system" OR "psychophysiology" OR "heart rate variability". Articles were included if they were peer-reviewed studies in English or Italian with explicit focus on interoception, personality traits, embodied self-regulation, or phenomenological approaches to mind-body integration, with particular emphasis on empirical studies investigating psychophysiological correlates of personality (specifically extraversion-introversion and neuroticism-stability dimensions) and theoretical works linking neuroscientific evidence to experiential or

relational frameworks. Exclusion criteria eliminated non-peer-reviewed studies, articles focused exclusively on neurological disorders without reference to personality or interoception, literature not available in full text, and studies on animal populations not directly relevant to the human neurobiological models discussed.

The selection process was conducted iteratively: initial screening based on titles and abstracts identified potentially relevant articles, followed by full-text examination to assess relevance and quality. Additional contributions were identified through snowballing (bibliographic analysis of reference lists) to capture seminal works not retrieved in the initial search, including foundational Gestalt therapy texts and classic arousal-personality studies. Given the integrative nature of this review, no formal quality assessment tool was applied; however, priority was given to empirical studies published in high-impact peer-reviewed journals, theoretical works with established citation impact, and convergent evidence across multiple independent research groups. The analysis focused on identifying conceptual convergences across three domains: (1) neurobiological models of interoception (insular circuits, autonomic nervous system, afferent pathways, predictive coding frameworks); (2) arousal-based personality theories (Eysenck model, Big Five, Gray's RST, Cloninger's psychobiological model); (3) phenomenological and embodied perspectives (Gestalt organism-environment field theory, embodied cognition, neurophenomenology). The goal was not to conduct a quantitative meta-analysis or exhaustive literature mapping, but to propose a qualitative synthesis aimed at mapping conceptual overlaps between disciplinary domains, identifying gaps and inconsistencies in empirical findings, generating testable hypotheses for future research, and providing a coherent integrative framework transcending mind-body dualism. As a narrative review, this work does not claim exhaustive coverage of all relevant literature; the selection reflects the authors' theoretical interests and interpretive lens, particularly the Gestalt psychotherapy perspective. Future systematic reviews with meta-analytic techniques would be valuable to quantitatively assess effect sizes and moderators in the interoception-personality relationship.

Interoception: definitions and models

In the context of this theoretical reflection, interoception is a key construct for understanding the link between body, emotion, and personality. It describes the way in which individuals experience and attribute meaning to internal physiological states, forming an essential basis for self-awareness and emotional regulation processes.

Interoception differs from exteroception, which is the perception of stimulation coming from outside the body, and proprioception, which is the perception of the body's position in space [14]. Generally, interoceptive signals are considered to be those related to hunger, satiety, itching, thirst, muscular, bladder, gastrointestinal, respiratory, and cardiac effort, temperature, blood (pH, glucose level), vasomotor flushing, air hunger, shivering, sensual touch, genital sensation, bruising, headache, broken bones, and many other visceral sensations [15]. Definitions of this construct tend to consider as interoceptive those bodily signals that are sent through lamina 1 to the anterior insula or anterior cingulate cortex [16], or through the cranial nerves (vagus and glossopharyngeal) to the nucleus of the solitary tract [17].

An important aspect of interoception, currently the subject of scientific debate, is the multiple levels of cognitive representation at which this phenomenon can occur implicit homeostasis, conscious perception of a signal without recognition of the specific signal, recognition without the need for a verbal label, and verbal labeling of the signal [18]. Measurements of interoception, therefore, concern different levels of this hierarchy.

In order to distinguish between objective, subjective, and metacognitive aspects of interoception, Garfinkel and Critchley (2013) developed a tripartite model that distinguishes this construct into three aspects or levels of processing [19]: interoceptive accuracy, which is the process of accurately detecting internal bodily sensations; interoceptive sensitivity, which represents the individual's self-reported beliefs about their own attention and accuracy in perceiving internal signals; and finally, interoceptive awareness, which represents a metacognitive measure of the correspondence between objective interoceptive accuracy and self-assessed interoceptive sensitivity.

With regard to the measurement of this construct, most studies on interoceptive accuracy have relied almost exclusively on measures of heartbeat counting (HCT) or discrimination (HDT). Respiratory and gastric tests are also measures used to assess interoceptive ability. There are also self-assessment measures that evaluate self-

reported interoception, or interoceptive sensitivity [19], such as the Body Perception Questionnaire (BPQ) [20] and the Multidimensional Assessment of Interoceptive Awareness (MAIA) [21]. Table 1 shows the three dimensions of the construct (accuracy, sensitivity, awareness), their level of analysis (physiological, subjective, metacognitive) and the typical measurement methods.

Tab. 1 – The three dimensions of interoception

Dimension	Definition	Level of Analysis	Typical Measures
Interoceptive Accuracy	Objective detection of internal signals	Physiological	Heartbeat Detection Task
Interoceptive Sensitivity	Self-reported attention to bodily signals	Cognitive/Subjective	BPQ, MAIA subscales
Interoceptive Awareness	Metacognitive correspondence between accuracy and sensitivity	Metacognitive	Difference scores, awareness indices

Contemporary theoretical frameworks: predictive coding and active inference

Recent neuroscientific models have expanded our understanding of interoception beyond simple signal detection. According to predictive coding and active inference frameworks, interoceptive experience emerges from the brain's ongoing process of generating predictions about internal bodily states and comparing these predictions with actual sensory input [11, 22]. In this view, the brain functions as a predictive machine that continuously constructs and updates internal models of the body's physiological condition.

Seth and Friston (2016) propose that emotions and feelings arise through active interoceptive inference: the brain generates top-down predictions about expected interoceptive signals, and discrepancies between predictions and actual signals (prediction errors) are minimized either by updating beliefs or by changing physiological states through autonomic control [22]. This framework bridges interoceptive processing with emotion regulation, suggesting that individual differences in how prediction errors are weighted and resolved may contribute to personality variations in emotional reactivity and stability.

Recent empirical work supports this theoretical integration. Allen and Tsakiris (2018) demonstrated that individual differences in interoceptive accuracy relate to the precision-weighting of interoceptive prediction errors, with implications for emotional experience [23]. Critchley and Garfinkel (2017) further elaborated on how aberrant interoceptive predictive processing may underlie anxiety and mood disorders [24]. These contemporary models provide a mechanistic account of how physiological arousal, interoceptive processing, and subjective experience interact, a perspective that resonates with the embodied and processual view of personality proposed in this article.

Interoception in emotional and social functioning

In psychology and cognitive neuroscience, interoception has been studied mainly in relation to the phenomenon of emotional processing: interoceptive accuracy, which is fundamental for detecting emotional signals and judging emotional intensity [25], is related to emotional lability [26], emotion regulation [27; 28], focus on arousal [30], and emotional intensity [27, 30, 31, 32, 33] and reduced pain tolerance [34, 35]. There are also associations between specific internal states and particular emotions, such as that between disgust and cardiac and gastric activity [36], anger and increased heart rate and temperature [37, 38], fear and increased heart rate and blood pressure [37, 39], and surprise and increased skin conductance and decreased pulse blood volume (variation in blood volume per heartbeat).

In addition to this, some studies have shown that, in addition to influencing self-focused emotional processing, interoceptive abilities are linked to greater reactivity to the emotions of others [40, 41, 42].

Given the importance of interoception in typical functioning, which affects not only emotional processing but also learning and decision-making, many studies have investigated interoceptive impairment in various psychopathological conditions: atypical interoception is, in fact, ubiquitous in all psychiatric and neurological

conditions [43, 44, 45]. Most of the existing work on interoception and psychopathology, however, consists of correlational designs, suggesting that the relationship between these two phenomena is complex and potentially variable depending on the conditions [18, 46].

Taken together, this evidence suggests that interoception is a fundamental dimension of subjective experience and psychological regulation. Not only does it enable the perception of bodily states, but it also acts as a bridge between somatic experience and processes of meaning-making, thus paving the way for integration with personality models and psychotherapeutic theories that recognize the body as a locus of awareness and relationship.

Terminological clarifications: interoception, arousal, and excitement

Before proceeding with the discussion of arousal and excitement in the Gestalt framework, it is essential to clarify the operational definitions of key constructs employed throughout this article, as they span multiple levels of analysis and derive from distinct research traditions. **Table 1bis** provides a systematic overview of these constructs, their definitions and measurement methods.

Table 1bis operationalizes the key constructs used in this integrative framework, distinguishing between neurobiological, phenomenological, and relational levels of analysis to avoid terminological confusion and clarify how these dimensions relate without collapsing into reductionism.

Construct	Operational Definition	Level of Analysis	Measurement/Assessment Method
Interoceptive Accuracy (IAcc)	Objective precision in detecting internal bodily signals	Physiological/ Behavioral	Heartbeat counting task (HCT), heartbeat discrimination task (HDT), respiratory tracking
Interoceptive Sensitivity (IS)	Self-reported subjective attention to and awareness of bodily sensations	Cognitive/Subjective	Body Perception Questionnaire (BPQ), MAIA subscales
Interoceptive Awareness (IA)	Metacognitive insight: correspondence between objective accuracy and subjective sensitivity	Metacognitive	Correlation or difference scores between IAcc and IS
Physiological Arousal	Objective activation level of the autonomic nervous system (ANS)	Neurobiological	Heart rate (HR), heart rate variability (HRV), skin conductance level (SCL), cortisol
Basal Arousal	Individual's characteristic resting level of neural excitation (ARAS activity)	Neurobiological (trait)	Resting HRV, baseline cortisol, EEG alpha power
Perceived Arousal	Subjective interpretation and conscious awareness of physiological arousal states	Phenomenological/ Subjective	Self-report scales (e.g., STAI-state), phenomenological interviews
Excitement (Gestalt)	Energy mobilized by the organism in response to an emerging need; includes physiological arousal + intentional meaning	Phenomenological/ Relational	Clinical observation in therapy, client self-report in here-and-now
Contact (Gestalt)	Dynamic relational process through which organism meets environmental demands, regulating boundaries and needs in real-time	Relational/ Processual	Therapeutic observation of contact cycle, phenomenological description
Organismic Self-Regulation	Organism's capacity to maintain equilibrium by modulating arousal,	Systemic/Relational	Gestalt contact cycle assessment, homeostatic regulation markers

	attention, and action in response to field demands		
Personality Trait (Psychometric)	Stable pattern of cognition, emotion, and behavior across situations	Dispositional	Big Five Inventory (BFI), NEO-PI-R, Eysenck Personality Questionnaire (EPQ)
Personality (Gestalt)	Relatively stable processual pattern of interoceptive self-regulation and embodied contact style with environment	Processual/Embodied	Phenomenological case formulation, longitudinal observation of contact patterns

The construct of interoception and the concept of physiological arousal are often used interchangeably in the literature but represent distinct theoretical concepts. **Physiological arousal** refers to the objective level of activation of the autonomic nervous system, measurable by cardiovascular and electrodermal parameters. **Interoception** represents the subjective perception and interpretation of these physiological states [47, 49].

In this article, when referring to Eysenck's personality theory and the ARAS (ascending reticular activating system), we distinguish between **basal arousal** and the **perception of arousal**. The former represents an individual's objective level of neural excitation, which varies systematically and is higher in introverts and lower in extroverts. The perception of arousal (interoception) represents the subjective awareness and cognitive evaluation of basal arousal.

In the Gestalt perspective, the term **"excitement"** is used in a broader and more phenomenological sense, referring not only to physiological arousal but also to the energy mobilized by the organism in response to an emerging need, with a strong component of meaning and intentionality [7].

This distinction will be important for understanding how neuroscientific data on arousal translates into the language of embodied experience and relationship.

Personality: neuropsychological and psychological perspectives

The study of personality has always been a central theme in psychology, as it reflects the uniqueness of the individual and their way of perceiving, feeling, and acting in the world. In this article, the integrated perspective links the analysis of personality with that of interoception, both interpreted as ways in which the organism organizes internal and external experience, maintaining a dynamic balance between arousal, regulation, and contact [49].

Eysenck's arousal-based model: a functional reference point

According to Eysenck's personality theory (1967), individual behavior is linked to relatively stable and partly hereditary traits [50]. Personality differences, attributable to biological factors, depend on the balance between excitatory and inhibitory neural mechanisms.

It is important to clarify the epistemological position adopted in this article regarding Eysenck's model. We do not endorse a reductionist view that reduces personality to brain mechanisms alone. Rather, we use Eysenck's arousal-based framework as a functional reference point that describes one level of analysis, the neurobiological substrate, which must then be integrated with phenomenological and relational dimensions to achieve a comprehensive understanding of personality. As we will argue, the neurobiological patterns described by Eysenck become meaningful only when understood as embodied in lived experience and expressed through characteristic modes of organism-environment contact.

Eysenck's model distinguishes three main traits: extraversion, neuroticism, and psychoticism, associated with two fundamental brain systems: the reticular-cortical and reticular-limbic circuits, regulated by the ARAS (ascending reticular activating system) in the reticular formation of the brainstem [50, 51].

Extraversion-introversion is influenced by the arousal of the reticular-cortical circuit in response to external stimuli. In introverts, the ARAS generates high neural activation, inducing behaviors aimed at limiting external stimulation. In extroverts, on the other hand, the ARAS is less active, promoting stimulus-seeking behaviors to compensate for underactivation [52, 53].

Neuroticism is related to the arousal of the limbic reticular circuit in response to emotional stimuli. Individuals with high levels of neuroticism show greater arousal in response to emotional stimuli, while more emotionally stable individuals show more restrained responses [52, 53]. Neuroimaging evidence confirms the relationship between personality traits and the structure/functioning of specific brain regions [54]. Based on these data, it can be hypothesized that those with high introversion and neuroticism exhibit higher autonomic activity than those who are extroverted and emotionally stable.

Psychophysiological evidence: bridging neurobiology and subjective experience

Cardiovascular and electrodermal measures are common tools for observing differences in arousal between personality types [53]. Studies such as those by Richards and Eves (1991) [55] and Matthews and Gilliland (1999) [53] have confirmed that introverts show an increase in heart rate in response to auditory stimuli, a result consistent with that observed by Harvey and Hirschmann (1980) [56]. On an electrodermal level, Wilson (1990) [57] found higher levels of skin conductance in introverts, which was confirmed by Matthews and Gilliland (1999) [53]. More recent studies emphasize the importance of neuroticism: Norris et al. (2007) [58] found that it predicts greater electrodermal reactivity to aversive visual stimuli, while Reynaud et al. (2012) observed more intense skin responses to scary movies in neurotic subjects [59].

These psychophysiological findings represent a **critical bridge** between neurobiological arousal and interoceptive experience. When we observe that introverts show heightened cardiovascular reactivity, we are not merely documenting a biological fact—we are identifying the physiological substrate of what becomes, at the experiential level, a denser and noisier internal field. The elevated skin conductance in neurotic individuals is not just an autonomic response; it constitutes the bodily material that, when interoceptively perceived and interpreted, contributes to the subjective experience of anxiety and emotional vulnerability.

This is where the **phenomenological translation** becomes essential. Neuroscience describes what happens at the physiological level (increased heart rate, heightened electrodermal activity), but it cannot directly access how this is experienced by the individual. Gestalt theory and interoception research provide the conceptual tools to understand how these neurobiological patterns are lived, felt, and expressed in the organism's relationship with its environment. The neurobiological arousal documented in laboratory settings becomes meaningful only when we understand how it is interoceptively processed and integrated into the individual's characteristic style of contact with the world.

Considering this evidence and the characteristics of personality traits related to arousal, a correlation between personality type and sensitivity to internal stimuli, that is, interoception, becomes not only plausible but theoretically necessary. Neuropsychological models, therefore, can serve as a bridge between bodily and mental functioning, suggesting that personality traits reflect stable modes of interoceptive regulation. In this sense, introversion and neuroticism could be associated with greater sensitivity to internal states, while extraversion and emotional stability could be associated with different patterns of interoceptive resonance.

Complementary models: Gray and Cloninger

While Eysenck's model provides the foundational framework for this article, contemporary theories offer complementary perspectives enriching our understanding of personality-arousal relationships.

Gray's Reinforcement Sensitivity Theory (RST) proposes the Behavioral Inhibition System (BIS), sensitive to threat and associated with anxiety, and the Behavioral Activation System (BAS), sensitive to reward and linked to impulsivity [60]. The BIS overlaps conceptually with neuroticism and heightened interoceptive monitoring,

while BAS shares features with extraversion and reduced interoceptive salience [61]. Cloninger's psychobiological model identifies temperament dimensions linked to neurotransmitter systems [62], with harm avoidance showing conceptual overlap with neuroticism and associations with heightened interoceptive sensitivity [63].

These models converge on a fundamental insight: stable individual differences in personality reflect systematic variations in how the nervous system generates, regulates, and responds to internal arousal states. What differs is primarily the emphasis, arousal regulation (Eysenck), motivational orientation (Gray), or neurochemical substrates (Cloninger), but all point toward personality as embodied patterns of psychophysiological self-regulation. This convergence sets the stage for examining how these neurobiological arousal patterns are transformed into subjective experience through interoceptive processes, a central focus of the integrative framework proposed in this article.

From neurobiology to embodied personality: toward an integrative synthesis

The neuropsychological evidence reviewed in this section establishes that personality traits have identifiable neurobiological correlates in patterns of arousal, autonomic reactivity, and neural circuit functioning. However, this is not the endpoint of our analysis but rather its starting point.

The crucial theoretical move, and the distinctive contribution of this article, is recognizing that these neurobiological patterns do not exist in isolation from lived experience. They become personality as we know it only through the mediating process of interoceptive awareness and regulation. The introvert's heightened ARAS reactivity becomes the phenomenological experience of an "activated internal field" through interoceptive processing. The neurotic individual's limbic hyperreactivity translates into subjective anxiety through the perception, interpretation, and often misinterpretation of autonomic signals.

This is where the Gestalt perspective becomes indispensable. Gestalt theory does not reject the neurobiological level but insists that it be understood within the larger context of organism-environment field dynamics. Arousal is never merely a brain state; it is always arousal in relation to an environmental demand, a relational context, an emerging need. Personality, from this integrated perspective, emerges at the contact boundary, where neurobiological arousal, interoceptive processing, and relational meaning-making converge into characteristic, repeatable patterns of experience and action.

The following section examines the empirical evidence linking interoception and personality, guided by this integrated theoretical framework that refuses to reduce personality to either neurobiology alone or subjective experience alone, instead understanding it as the dynamic interplay between body, mind, and relational field.

Interoception and personality: theoretical convergences

The analysis of interoception and personality shows relevant theoretical convergences: both describe how the organism regulates its internal states in relation to the context, translating physiological processes into relatively stable subjective experiences. Neuropsychological and psychophysiological models indicate that personality is not only cognitive, but a dynamic set of bodily, emotional, and relational patterns, suggesting possible relationships between personality and interoception

According to biological personality theory, one would expect a close connection between sensory interoception and personality types related to arousal. Sensory behavioral measures, such as heart rate detection, are direct tools for investigating the relationship between actual (personality-related) and perceived (interoceptive) arousal.

Empirical evidence: an inconsistent landscape

Despite increasing theoretical interest, empirical findings on the relationship between interoception and personality remain inconsistent. Existing studies have focused primarily on heart rate detection tasks or unidimensional questionnaires such as the BPQ [64], making it difficult to draw definitive conclusions. Table 2 summarizes representative studies on interoception and personality, highlighting variability in measurement methods, sample composition, and outcomes.

Table 2 – Key empirical findings linking interoception and personality traits

Study	Sample	Interoception Measure	Personality Measure	Key Findings	Limitations
Pollatos et al. (2007)	Adults (N=80)	Heartbeat perception (accuracy)	STAI (trait anxiety)	Positive correlation between trait anxiety and interoceptive accuracy	Limited to cardiac domain; anxiety ≠ neuroticism directly
Critchley et al. (2004)	Adults (N=19)	Heartbeat detection + fMRI	Not specified	Greater insular activation in high interoceptive accuracy	Small sample; no explicit personality assessment
Dunn et al. (2010)	Adults (N=89)	Heartbeat detection	Affective traits	Interoceptive accuracy linked to emotional experience	Correlational design; university sample only
Ferentzi et al. (2018)	University students (N=120)	Body Awareness Questionnaire (subjective)	Big Five Inventory	No significant correlation with extraversion or neuroticism; correlation with somatosensory amplification	Self-report only; restricted age range; subjective measure
Lyyra & Parviainen (2018)	Adults (N=60, age 20-60)	Heartbeat discrimination task (objective)	Karolinska Scales + Adult Temperament Questionnaire	Positive association between interoceptive accuracy and introversion	Cross-sectional; cardiac-focused
Mallorquí-Bagué et al. (2014)	Adults with joint hypermobility (N=42)	Heartbeat detection	STAI (state/trait anxiety)	Relationships between anxiety and interoceptive sensitivity, moderated by hypermobility	Clinical subsample; limited generalizability

This heterogeneity in findings reflects methodological variability across several dimensions: (1) different operationalizations of interoception (objective accuracy vs. subjective self-report), (2) diverse personality frameworks (Big Five, Eysenck, temperament models), (3) sample characteristics (age, clinical vs. non-clinical), and (4) predominantly correlational designs that cannot establish causal directionality. The field would benefit significantly from multidimensional and cross-method approaches combining behavioral, physiological, and self-report measures within unified theoretical frameworks.

Theoretical predictions and empirical patterns

Despite methodological inconsistencies, certain patterns emerge that align with theoretical predictions derived from arousal-based personality models. Using Eysenck's framework as a reference point, neuroticism-stability could be linked to higher-order interoceptive dimensions, such as the ability to "trust" one's bodily sensations, as assessed by the MAIA [21].

The reticular-limbic circuit, responsible for neuroticism, regulates emotional reactivity to stimuli and subsequent experiences [54]. Neurotic individuals, characterized by high sensitivity to bodily stimuli and greater concern about them, may find it difficult to respond affirmatively to MAIA questions such as "I trust my bodily sensations." This difficulty may reflect not reduced interoceptive accuracy per se, but rather impaired metacognitive awareness and dysfunctional interpretation of accurately detected signals.

Several studies support associations between anxiety-related traits and interoception. Pollatos et al. (2007) [32] found a positive correlation between trait anxiety and interoceptive awareness (heartbeat perception score), which can be explained by the increased reactivity of the autonomic system in anxious individuals. Critchley et al. (2004) and Dunn et al. (2010) [67, 68] observed similar results in fMRI studies, demonstrating heightened

insular activation during interoceptive processing. Ewing et al. (2017) [69] showed that poor sleep quality increases interoceptive sensitivity in people with anxiety and/or depression. Ehlers et al. (2000) found greater interoceptive awareness in subjects with panic disorder [70].

Studies on subclinical populations, such as those by Mallorquí-Bagué et al. (2014) [71], show relationships between state anxiety and interoceptive sensitivity, with more pronounced effects in hypermobile subjects. Overall, this evidence suggests a positive link between interoception and anxiety, and indirectly with traits such as neuroticism, which predicts trait anxiety [72] and greater autonomic arousal [50].

However, not all studies confirm these associations. Ferentzi et al. (2018) highlighted the scarcity of empirical studies on the relationship between personality and interoception [73]: their study found no significant correlations between extraversion-introversion or neuroticism-stability and interoceptive sensitivity, while a relationship with somatosensory amplification emerged. In contrast, Lyyra and Parviainen (2018) observed a positive association between interoceptive accuracy and introversion [74].

Critical analysis of empirical evidence: mixed results and possible explanations

The empirical literature on the relationship between interoception and personality presents conflicting results that warrant further discussion. While some research supports the hypothesis of a correlation between greater interoceptive sensitivity and introversion-neuroticism, other studies find no significant associations.

Lyyra and Parviainen (2018) [74] reported a positive association between interoceptive accuracy (measured with a heartbeat discrimination task) and introversion, using both the Karolinska Scales of Personality and the Adult Temperament Questionnaire. Similarly, several correlational studies have documented positive associations between neuroticism and interoceptive sensitivity in clinical and subclinical populations [31, 67, 70]. These findings are consistent with Eysenck's theory of the relationship between basal arousal and personality.

However, Ferentzi et al. (2018), in a study of university students, found no significant correlations between extraversion-introversion or neuroticism-stability (measured with the Big Five Inventory) and interoceptive sensitivity (measured with the Body Awareness Questionnaire) [73]. They found a correlation only with somatosensory amplification, which reflects a tendency to interpret bodily sensations as symptoms of illness, rather than an ability to detect them accurately. This discrepancy suggests that the relationship between personality and interoception may be more complex than a simple direct association.

The presence of such discrepancies in the empirical landscape could be explained by three methodological factors. First, the studies described used different operationalizations of interoception. Lyyra and Parviainen used an objective measure of accuracy, namely a behavioral cardiac discrimination task, while Ferentzi et al. used a self-administered body awareness questionnaire, which is a subjective measure [74, 73]. As described in Garfinkel and Critchley's tripartite model, accuracy and awareness represent distinct aspects of interoception. It is possible that personality traits correlate differently with each aspect: for example, neuroticism may be associated with greater self-reported sensitivity (hypervigilant concern with bodily sensations) but not necessarily with greater objective accuracy in detecting signals.

The sample chosen may represent another methodological factor responsible for the empirical divergences observed. Ferentzi et al. used only university students, while Lyyra and Parviainen included participants of various age groups [73, 74]. The effects of age [75] gender [76, 77] on interoception have been documented. It is possible that the relationship between personality and interoception manifests differently at different stages of life or across genders.

Furthermore, a gap in the literature is the role of conscious regulation and cognitive interpretation of interoceptive signals. For example, a neurotic individual may have high interoceptive accuracy that allows them to detect bodily signals but even higher self-managed sensitivity due to anxious hypervigilance. An emotionally

stable individual may have moderate interoceptive sensitivity but superior metacognitive awareness [19]. These fine distinctions are not always captured by the measures used in studies.

Based on the available theoretical and empirical evidence, it can be hypothesized with reasonable confidence that introversion is associated with greater interoceptive accuracy. It is plausible, although requiring further verification, that neuroticism correlates with greater self-managed sensitivity and metacognitive impairment. Finally, it is proposed as a working hypothesis that emotional stability is characterized by integrated interoceptive awareness. This gradual model, which distinguishes empirically supported aspects from more speculative ones, provides a basis for future empirical investigations using Garfinkel and Critchley's comprehensive tripartite model, rather than unidimensional measures of interoception, and sets the stage for the Gestalt reinterpretation that follows.

Toward a Gestalt interpretation: personality traits as embodied contact style

The theoretical and empirical evidence outlined thus far suggests that the neural foundations of interoception functionally overlap with those of arousal-related personality traits, particularly extraversion-introversion and neuroticism-stability.

This psychophysiological correlation, however significant, does not exhaust our understanding of the phenomenon. This is where the Gestalt perspective offers an essential interpretative contribution, allowing us to move from describing correlations to understanding the process through which interoception and personality co-constitute each other in lived experience.

In Gestalt theory, the body represents the "measure" of experience: it is through its resonances, tensions, and rhythms that the organism continuously evaluates the quality of contact with the environment [4]. In this perspective, interoception, rather than a mere detection of discrete physiological signals (heartbeat, muscle tension, gastric activity), constitutes the background tone of the subjective field, the affective tone through which the organism feels present to itself and to the world.

When we talk about interoceptive sensitivity in this article, it is important to distinguish between the neurobiological level of arousal and the phenomenological level of embodied experience. At the neurobiological level of arousal, introverts have a higher basal arousal; at the phenomenological level, this translates into an experience of a denser and more activated internal field. The ability to perceive, tolerate, and modulate this activation (interoception) is therefore the bridge between neurobiological data and lived experience.

From this perspective, personality traits could be understood as relatively stable modes of organizing arousal and contact, rooted in characteristic interoceptive patterns. This aspect differs from the main traits discussed.

Introversion and increased interoceptive sensitivity: Introverts, characterized by greater reactivity of the ascending reticular activating system (ARAS) and therefore higher basal arousal levels [50], would experience a noisier and more stimulating internal field. In Gestalt terms, we could say that introverts have a greater density of figures emerging from the interoceptive field**:** bodily sensations, affective states, and visceral resonances tend to emerge more easily in the figure, requiring attention and processing. This explains both the tendency to withdraw from excessive external stimuli (which would add further arousal to an already activated system) and the preferential orientation towards the internal world. The greater interoceptive accuracy of introverts, documented empirically [74], could represent a constitutive feature of their contact style: they would be more "tuned in" to their own bodies because the body speaks louder.

Extroversion and exteroceptive orientation: Extroverts, on the other hand, with a less reactive ARAS and therefore lower basal arousal, experience a relatively 'quiet' internal field. Bodily sensations tend to remain in the background and do not easily emerge into the foreground. This would explain the active search for external stimulation: extroverts need more environmental input to reach optimal levels of arousal. In terms of contact, it can be hypothesized that extroverts are predominantly oriented toward the outside world, toward others, toward

action in the world. Lower interoceptive sensitivity would not necessarily represent a deficit, but rather an adaptive characteristic of this style that allows the individual to have more fluid and relaxed contact with the environment, unburdened by excessive bodily self-monitoring.

Neuroticism and interoceptive dysregulation: Neuroticism, related to the hyperreactivity of the reticular-limbic circuit to emotional stimuli [57], could be understood gestaltically as a difficulty in modulating emotional arousal. Neurotic individuals not only perceive interoceptive signals more intensely (as documented by correlations with autonomic arousal), but also tend to interpret them dysfunctionally, as signals of danger or loss of control. This recalls the "Trust" dimension of MAIA [21]: the difficulty in trusting one's bodily sensations would represent an interruption of intimate contact with oneself. In Gestalt terms, this dynamic is reminiscent of the clinical picture of impairment of the ego function of the self, although this connection remains an interpretative hypothesis to be verified empirically. According to this perspective, the individual is unable to take actions that satisfy their needs and interrupts contact with themselves and their environment through contact interruption mechanisms. These mechanisms are anachronistic responses to past situations and may no longer be functional in the present. In this dynamic, arousal does not flow naturally towards contact and its resolution, but is held back, monitored anxiously, and amplified by the attention focused on it. This would create a vicious circle in which interoceptive hypervigilance increases arousal, which in turn fuels anxiety and hypervigilance.

Emotional stability and interoceptive integration: Emotional stability, on the other hand, would seem to be characterized by an integrated capacity for self-regulation, in which interoceptive signals are perceived in a balanced way, neither ignored nor amplified, and used as reliable guides for action. From a Gestalt perspective, this dynamic could be seen in the light of the proper functioning of the two functions of the Self (Ego function and Personality function) [7]: the organism accurately perceives its bodily and emotional needs, integrates them into the context of the field, and mobilizes the energy necessary for their satisfaction without excess or deficiency. The body becomes an ally in contact, not an obstacle or a source of concern.

The Gestalt contact cycle [7, 89], which includes the phases of pre-contact, contact initiation, full contact, and post-contact, has a rhythmic pattern that is reflected in the oscillations of interoceptive states. In pre-contact, a vague bodily sensation emerges that signals a need; in contact-taking, bodily arousal intensifies and focuses; in full contact, there is a peak of activation and involvement; in post-contact, the organism relaxes and integrates the experience. From a Gestalt perspective, when the natural contact/withdrawal movement of the cycle is interrupted and goes out of rhythm, pathology emerges. Different personality traits may correspond to different modulations of this interoceptive rhythm.

Introverts may have a slower, more internalized rhythm, with a prolonged pre-contact phase characterized by careful processing of emerging sensations. Extroverts may experience faster transitions, with less processing in the pre-contact phase and more energy in the full contact phase with the environment and post-contact (focus on the environment). Finally, neurotics may show difficulties in transitions, with a pre-contact phase characterized by anticipatory anxiety and a post-contact phase compromised by an inability to let go activated energy (Gestalt excitement) and return to equilibrium. In such cases, the contact cycle tends to manifest itself in a discontinuous and fragmented manner, rather than in a fluid flow of self-regulation.

The Gestalt perspective allows us to understand personality not as a set of abstract traits or as the mere result of neurobiological configurations, but as an embodied gestalt: a relatively stable processual configuration of perception, arousal, contact, and regulation that emerges from the continuous interaction between organism and environment and is rooted in characteristic interoceptive patterns.

In this framework, interoception would represent the voice of the body in the organism-environment dialogue: through sensitivity to internal states, the organism orients itself, evaluates, decides, and acts [90]. Personality, then, could be considered as the characteristic way in which an individual "listens" to this voice, whether they amplify or attenuate it, whether they trust or distrust it, whether they integrate it fluently into the contact process or experience it as a source of discomfort and concern. Table 3 and Figure 1 illustrate the proposed integrative model, showing how interoception bridges neurobiological arousal and lived experience, shaping distinct Gestalt contact styles and rhythmic patterns associated with different personality traits.

Tab. 3 - Integrative model linking personality traits, neurobiological arousal, interoceptive experience, and Gestalt contact styles

Personality Trait	Neurobiological Level	Interoceptive Experience	Gestalt Contact Style	Contact Rhythm Pattern
Introversion	↑ Basal arousal (high ARAS reactivity)	Dense, noisy internal field – high interoceptive sensitivity	Inward orientation, careful bodily listening	Slow rhythm – long pre-contact phase
Extraversion	↓ Basal arousal (low ARAS reactivity)	Quiet internal field – low interoceptive salience	Outward orientation, action toward environment	Fast rhythm – quick transitions to contact
Neuroticism	↑ Reticular-limbic reactivity	Amplified interoceptive signals, hypervigilance	Difficulty modulating arousal, distrust of body	Fragmented rhythm – stuck between pre- and post-contact
Emotional Stability	Balanced autonomic regulation	Integrated interoception – signals as reliable guides	Harmonious self-regulation, fluid arousal modulation	Fluid rhythm – full, rhythmic contact cycle

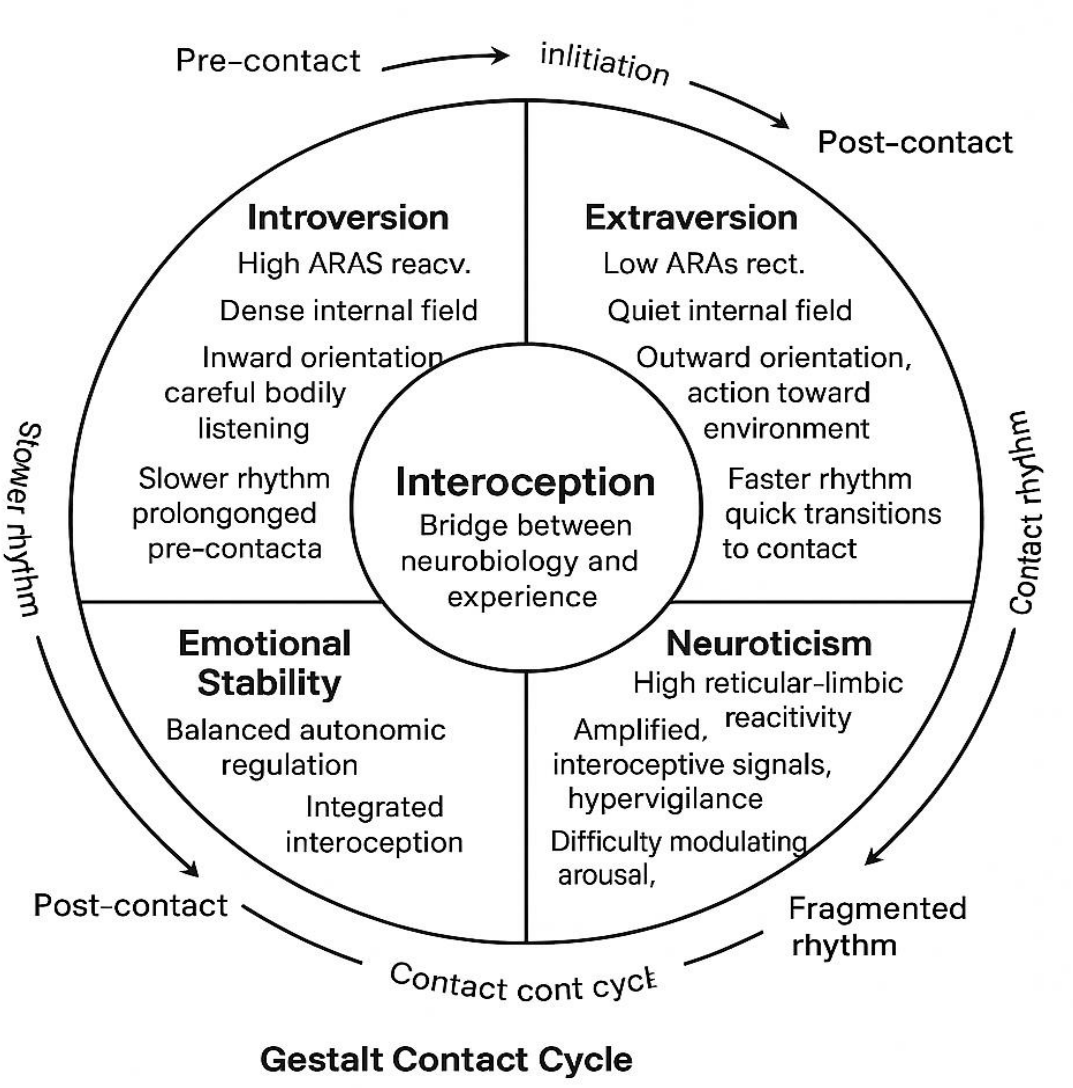

Figure 1. Gestalt Contact Cycle and Personality Traits as Embodied Contact Styles

The model illustrates how interoception functions as a bridge between neurobiology and lived experience, shaping distinct rhythmic patterns of the Gestalt contact cycle across different personality traits (introversion, extraversion, neuroticism, and emotional stability).

DISCUSSION AND IMPLICATIONS

This article has proposed considering interoception not as an isolated process, but as the core through which the neurobiological patterns of personality are embodied in lived experience. By integrating neuroscientific evidence, personality models, and the Gestalt perspective, a unified theoretical framework emerges that transcends the mind-body dualism.

The integrated model: from neurobiology to relational meaning

At the neurobiological level, the ascending reticular activating system (ARAS) and the reticular-limbic circuit modulate the organism's basal level of arousal [57]. These circuits generate arousal patterns that manifest as specific bodily states: cardiac acceleration, muscle tension, visceral activation. Interoception, through insular and anterior cingulate cortex circuits, transforms these physiological signals into neural representations accessible to consciousness [16, 19].

However, neural translation does not exhaust the phenomenon. At the phenomenological-experiential level, these signals become embodied meanings: physiological arousal becomes subjectively experienced as emotion. Gestalt field theory illuminates this passage, framing interoceptive signals not as isolated elements but as the affective backdrop through which the organism organizes perception and action. Interoception is not the perception of isolated elements, but the manifestation of the figure-ground dynamic through which the organism continuously organizes its experience.

At the relational and behavioral level, according to the Gestalt perspective, this process can be interpreted as the crystallization of stable modes of contact: personality. In this theoretical framework, the introvert's greater interoceptive sensitivity may represent not a neurological deficit, but an adaptive feature of a contact style that favors internal processing. The extrovert's search for stimulation would reflect a less "noisy" interoceptive field, which requires more external input. The neurotic's pattern of interoceptive hypermonitoring and distrust of bodily sensations would represent, instead, an interruption of the contact cycle in which arousal is retained and amplified by anxiety, generating a vicious circle of dysregulation.

Emotional stability, on the other hand, would seem to be characterized by an integrated capacity for self-regulation in which interoceptive signals are accurately perceived, interpreted in a balanced way, and used as reliable guides for action. A possible Gestalt interpretation For Gestalt, this represents the proper functioning of the two functions of the Self (Ego function and Personality function) [4]: the organism perceives its own bodily and emotional needs, integrates them into the relational context, and mobilizes the energy necessary for conscious contact.

The Gestalt reading of the neuroscientific evidence on interoception does not intend to propose an overlap between models belonging to different levels of analysis, but rather their functional coherence. Neuroscience describes the physiological mechanisms of internal regulation and arousal, while the phenomenological and relational perspective of Gestalt offers a language for understanding how these processes are experienced and expressed in subjective and interpersonal experience. In this sense, the proposed integration does not aim to explain neurobiological phenomena in psychotherapeutic terms, but to promote a conceptual translation between the bodily and experiential planes, recognizing both as complementary aspects of the same embodied self-regulatory process.

The integration proposed here is functional rather than ontological, acknowledging distinct explanatory levels between neuroscience and phenomenology. Rather than merging paradigms, the model seeks coherence across them, recognizing that neurobiological and experiential accounts address complementary dimensions of embodied self-regulation.

Clinical and applicative implications

This integrated model suggests that psychotherapeutic intervention should aim at the conscious integration of interoceptive processes, not their elimination or cognitive control. In Gestalt practice, working on awareness in

the here and now [4] allows the client to recognize their characteristic interoceptive pattern and to experience new ways of connecting with their body and environment. For a neurotic individual, therapeutic work could focus on awareness of interoceptive hypervigilance and the development of trust in one's bodily sensations, reducing the use of mechanisms that limit emotional engagement with bodily experience. For an extrovert, therapy could involve consciously exploring their capacity for internal contact, developing access to more reflective dimensions of experience.

Understanding personality in the light of more or less stable interoceptive patterns allows us to abandon a pathologizing view of individuals' relational and behavioral difficulties. From this perspective, they take on the connotation of organic adaptations that have served a useful function for the survival of individuals in a specific phase of life. Therefore, they can be renegotiated in the context of an authentic relationship and conscious contact such as that established between patient and therapist in a Gestalt setting.

Clinical practices such as Mindfulness-Based Stress Reduction (MBSR), Body Awareness Therapy, and Somatic Experiencing exemplify how interoceptive training can foster emotional regulation and embodied presence, principles consistent with Gestalt therapy's focus on awareness and contact.

Implications for the social sciences, education, and organizational contexts

Although this article is rooted in the neuroscientific understanding of personality and psychotherapeutic practice, the proposed integrated model has significant implications for broader fields of social sciences. This section briefly explores these connections.

Understanding personality as a configuration of characteristic interoceptive patterns offers a new perspective on how individuals learn [80]. Students with more pronounced introversion profiles may benefit from learning environments that value internal reflection, deep processing, and mindful contact with their own cognitive processes. Conversely, students with higher extroversion profiles may thrive in collaborative learning contexts with greater external stimulation and social interaction. Recognizing that these styles reflect stable modes of interoceptive self-regulation, rather than deficits or capricious preferences, could support a more inclusive and personalized pedagogy. Furthermore, developing somatic awareness programs in schools could help students recognize their characteristic interoceptive patterns and regulate their behavior more consciously [81].

In the organizational context, understanding personality as an embodied contact style has implications for communication, teamwork, and leadership style. Leaders with heightened interoceptive sensitivity may excel in emotional reading and empathetic support of employees but may be vulnerable to excessive emotional involvement. Conversely, leaders with lower interoceptive sensitivity may be less vulnerable to emotional stress but may have difficulty recognizing the emotional needs of teams. Organizations that implement body awareness and self-regulation programs based on Gestalt practice may improve communication, reduce burnout, and promote a more mindful and relational work environment [82, 83].

At the public health level, promoting somatic awareness practices, such as body scans or mindful movement, may support emotional regulation and stress reduction. Furthermore, recognizing how different personality traits correlate with distinct interoception patterns could inform more targeted public health intervention strategies, particularly for neurotic individuals who may benefit from interventions focused on trust in bodily signals and reduction of hypervigilance.

The theoretical implications outlined open up multiple avenues for future research, including ethnographic studies on the processes through which individuals with different personality profiles experience and interpret organizational and cultural contexts, as well as evaluative research on the effectiveness of body awareness programs in educational and organizational settings. Cross-cultural comparative analyses aimed at investigating differences in the interpretation and valorization of interoceptive sensitivity between Eastern and Western cultural traditions are also particularly relevant.

From an educational standpoint, promoting body literacy and self-regulation skills in students may enhance emotional competence, while in organizations, embodied leadership training can improve empathy and resilience.

Cultural and Gender Considerations

Interoceptive awareness and its interpretation are influenced by cultural norms and gendered patterns of socialization. Women often report higher body awareness but also greater interoceptive anxiety [76, 77, 91, 92], while cultural contexts differ in how bodily sensitivity is valued: Eastern traditions often emphasizing balance and attunement, Western ones emphasizing control and mastery [93, 93]. Future research should address how these variables mediate the relationship between interoception, personality, and relational functioning.

Future Directions and Research Implications

This article has proposed a theoretical-conceptual reflection on the relationship between interoception and personality, integrating neuroscientific evidence, psychological models of personality, and the phenomenological-relational perspective of Gestalt psychotherapy. The main contribution is to propose that personality cannot be reduced to either brain configurations or abstract psychometric constructs, but can be defined in light of the interoceptive and relational processes through which an organism stably modulates its contact with the environment.

Limitations and methodological considerations

It is important to emphasize that this work is a theoretical-conceptual reflection, not an empirical study. Although the neuroscientific and psychophysiological evidence cited supports the proposed hypotheses, the explicit connection between the three areas (neurobiology, interoception, and Gestalt personality) remains largely speculative and requires empirical validation. Furthermore, the existing literature presents significant methodological biases: studies on interoception have mainly focused on measuring cardiac awareness (heartbeat detection task), underrepresenting other interoceptive dimensions (gastrointestinal, respiratory, thermoregulatory). This limits the generalizability of the conclusions. Most studies have used small samples (university students), raising questions about the transferability of results to populations that differ in age, culture, and clinical context.

The Gestalt reinterpretation proposed in this work is a hermeneutic operation that aims to integrate empirical data into a coherent phenomenological-relational framework [84]. This methodological approach is consistent with the tradition of second-generation affective neuroscience and embodied cognition, which recognize the need to integrate neuroscientific levels of analysis with phenomenological and experiential dimensions [8, 86]. Integrative approaches such as interpersonal neurobiology [87] have demonstrated the fruitfulness of models that link neurobiological patterns to relational and processual dynamics without biological reductionism. Although not directly verifiable through individual empirical studies, this type of theoretical synthesis performs an essential heuristic function: it generates testable hypotheses, guides future research, and offers clinicians conceptual frameworks for understanding complex phenomena that elude one-dimensional perspectives.

Future research directions

Future research should aim to empirically validate the proposed theoretical connections between interoceptive processes and personality traits. Longitudinal and cross-sectional studies could explore how individual differences in accuracy, sensitivity, and interoceptive awareness (assessed, for example, using the Multidimensional Assessment of Interoceptive Awareness, MAIA) [21, 88] relate to the main personality dimensions measured using standardized instruments (such as the NEO-PI-R or the Big Five Inventory) [89, 90].

The integration of subjective and physiological measure, such as heart rate variability, electrodermal activity, and brain imaging of the insular and cingulate regions, would allow for a multilevel analysis capable of linking biological regulation, subjective awareness, and personality expression.

From a psychosocial perspective, research could investigate how interoceptive sensitivity influences emotional regulation, empathy, and interpersonal behaviors in everyday contexts. For example, individuals with greater body awareness may show finer affective attunement and greater relational competence, while low interoceptive sensitivity may be associated with externalizing tendencies or lower emotional awareness. These hypotheses

could be tested in educational, clinical, and organizational contexts to assess how interventions focused on interoception or mindfulness affect emotional competence, stress regulation, and relational well-being [95, 96].

Further comparative and cross-cultural studies could also clarify how sociocultural norms influence the interpretation and regulation of bodily sensations, highlighting the role of interoception as a mediator between biological processes and social behavior. Experimental interventions aimed at enhancing body awareness could provide practical guidance for improving self-regulation, resilience, and well-being in different populations. With solid empirical support, the proposed theoretical integration could contribute to a broader and more embodied understanding of personality and social functioning.

CONCLUSIONS

This paper has proposed an integrated theoretical model linking interoception and personality through the lenses of embodied cognition and Gestalt theory. Personality is here understood as a dynamic process of bodily and relational regulation rather than a static set of traits.

In summary, the proposed framework integrates three interdependent levels:

(1) neurobiological regulation, describing autonomic and neural mechanisms of arousal;

(2) interoceptive awareness, capturing the subjective and metacognitive perception of bodily states;
(3) relational contact, as conceptualized in Gestalt theory, where self-regulation unfolds in the organism–environment field.

This interdisciplinary perspective bridges neuroscientific and phenomenological domains, offering a coherent account of the embodied foundations of personality. While conceptually robust, the framework requires empirical validation through multilevel studies integrating physiological and experiential measures. Such research could substantiate the proposed links between body awareness, emotional regulation, and relational functioning, contributing to a more grounded understanding of human experience.

Ethical Approval Statement: This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and the Ethical Code for Research in Psychology of the Italian Association of Psychology (AIP), approved in 2015 and updated in July 2022 to comply with GDPR regulations. Since the study did not involve clinical interventions or the collection of sensitive data requiring formal approval from an ethics committee, obtaining a specific ethical approval code was not necessary. However, all procedures adhered to ethical standards to protect participants, ensuring anonymity, data confidentiality, and obtaining informed consent.

Data Availability Statement: This article is a theoretical and conceptual reflection based on an integrative narrative review of previously published studies. No new empirical data were collected or generated; therefore, data sharing is not applicable.

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