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THE INTELLIGENCE UNDERLYING CONSCIOUSNESS

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ABSTRACT: The present study aims to investigate the hypothesis of the existence of a form of intelligence that transcends consciousness, characterized as implicit, instinctive, and subjective. This intelligence operates independently, modulating personality formation and, consequently, behavior. The analysis starts from the consideration of the cerebral subregions involved and, if necessary, the integration with genomic data to identify possible bases for this cognitive structure. The focus is on the interpretation of the "unspoken," that which has no explicit explanation but still shapes the individual. It proposes the existence of a primitive memory, an unconscious psychoconstruction that structures the being, in which intention expresses emotions as if they were endowed with an intelligence adjacent to consciousness. Such intelligence would generate its own records in an implicit memory, susceptible to emerging or not to consciousness through specific stimuli or triggers.

KEYWORDS: implicit intelligence; consciousness; unconscious memory; psychoconstruction; genomics; personality; behavior.

INTRODUCTION

Much of the brain activity responsible for social interpretation, reading intentions, and judging authenticity is supported by a distributed network, often called *the social brain*, which includes the amygdala, hippocampus, anterior cingulate cortex, anterior insula, and medial prefrontal regions. These circuits integrate emotion, memory, and motivation, but do not always fully reach the cognitive elaboration associated with the dorsolateral prefrontal cortex, which explains why part of social evaluation remains implicit, without access to deliberate conscious perception (Xu et al., 2021). Consciousness accesses only a fraction of social processing, while distributed circuits, including the amygdala, hippocampus, insula, and anterior cingulate cortex, maintain implicit evaluations that modulate emotions and behavior. These subsystems function in parallel with consciousness, generating interpretations and affective records that can, in certain contexts, be integrated into the prefrontal regions responsible for deliberative perception. In most cases, however, this integration does not occur fully, so that the records remain implicit, yet still shaping the personality and the way the individual interacts socially (Xu et al., 2021).

The article "DWRI as a New Neurobiological Perspective of Global Intelligence: From Synaptic Connectivity to Subjective Creativity" proposes that, in the DWRI (Development of Wide Regions of Intellectual Interference) model, intelligence results from the synergistic orchestration of multiple brain networks. These networks encompass regions associated with logic, emotion, subjective creativity, and social cognition, functioning in an integrated and diffuse manner. The text highlights that synaptic connectivity between these regions is fundamental for implicit interpretations to sustain consciousness; otherwise, they remain at implicit levels, influencing personality and behavior in an indirect and formative way. Thus, the DWRI model corroborates the idea that multiple brain regions generate implicit interpretations that only reach consciousness when synaptic connectivity is sufficiently stable, otherwise remaining as formative forces of personality (Abreu; Rodrigues, 2025).

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The central objective of this study is to understand a form of intelligence that has been little described in the scientific literature. Just as cells perform their functions autonomously and efficiently, configuring intelligent activity without relying on conscious deliberation, any operation that translates into efficiency and adaptive assertiveness can be considered intelligence. Consciousness, in this sense, corresponds to the notion, never absolute but functional, of a perceived result. There are, however, adjacent intelligences that operate independently, which may remain outside the conscious reach, manifest themselves only partially and diffusely, or require specific triggers to be integrated more clearly into conscious experience.

METHODOLOGY

This study takes as its starting point an original concept developed by the first author, according to which part of neural activity can be understood as a form of implicit intelligence that does not reach consciousness but remains recorded in subcortical circuits, influencing personality and behavior. To theoretically support this formulation, a narrative literature review was conducted in open access scientific databases, including PubMed, Scielo, and Frontiers, with an emphasis on peer-reviewed articles describing the neural circuits involved in social cognition, implicit memory, and the integration between the amygdala, hippocampus, and prefrontal cortex. The main objective of the web y was to gather evidence to corroborate the proposed hypothesis, while investigating the relevance of this mechanism for understanding subjective experience and its relationship with the formation of personality traits.

Artificial intelligence was used as an auxiliary resource in two stages of the process: in the search and filtering of relevant scientific articles and in the improvement of the writing, in order to ensure technical clarity compatible with an academic article and, at the same time, accessibility for non--specialist readers. It should be noted that the authorship of the concept and the elaboration of the hypothesis remain exclusively attributed to the first author, with the technology being used only as a methodological support tool.

Thus, the proposed methodology is not limited to the theoretical validation of the concept, but is also guided by the need to disseminate this understanding, seeking to provide a basis for the improvement of educational and cognitive practices that consider the impact of implicit memories on the modeling of human behavior.

IMPLICIT DYNAMICS OF CONSCIOUSNESS: HYPOTHETICAL EXAMPLES

To begin the development of this study, I resort to elementary hypothetical examples that allow me to illustrate, in an accessible way, the logic of the proposed concept.

Example 1: The mother listens to her son mechanically, aware of her emotional obligation. The medial prefrontal cortex and temporoparietal junction activate social representations to maintain interactional coherence, but genuine motivation is not involved. The child perceives attention and consciously registers an experience of maternal interest. However, regions associated with the implicit processing of emotional signals (such as the amygdala and fusiform gyrus) pick up subtle discrepancies. This

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"unconscious intelligence" recognizes that the interest was not real, but this assessment is neither verbalized nor directly accessed.

Example 2: This time, the mother engages with genuine affection. The same regions of social reading and emotional evaluation are triggered, but in sync with dopaminergic reward circuits and the empathic activation of the orbitofrontal cortex. The child brings the experience of authenticity to consciousness, and implicit intelligence confirms the congruence between intention and behavior.

This contrast shows that the mind is not limited to consciousness: there are parallel evaluations, supported by networks such as the Default Mode Network and limbic structures, which function as layers of tacit intelligence. Consciousness is only the accessible phenomenological snapshot; most cognitive sophistication operates silently (Pinto, 2023; DOI: 10.38087/2595.8801.182).

SIMPLIFIED EXAMPLES OF THE IMPLICIT FUNCTIONING OF CONSCIOUSNESS

Example 1 – Mechanical attention without emotional engagement

In this scenario, the mother maintains the interaction only out of obligation, without genuine emotional involvement. What matters is how the child's brain processes this experience.

1. **The medial prefrontal cortex (mPFC)** is one of the main nodes of the mentalization network, responsible for sustaining the minimum coherence of social interaction. It contributes to the registration of formal attention and the construction of basic social representations, although not always with deep activation of empathic networks, which depend on greater affective engagement (Arioli et al., 2021).
2. **The temporoparietal junction (TPJ)** is one of the main nodes of the mentalization network, being recruited for the inference of other people's mental states. This activation corresponds to a predominantly cognitive theory of mind, which allows the individual to interpret that the other is engaged, even without necessarily involving deep affective empathy (Arioli et al., 2021).
3. The dorsal **anterior cingulate cortex** plays a key role in monitoring conflicts and regulating attention in the face of violations of expectations. This region increases its activity when there is a discrepancy between the expected and actual results, signaling the need to adjust the attentional focus. Thus, the dorsal ACC acts as a mechanism for error detection and adaptive realignment, allowing the experience to be recorded even without full conscious clarity (Bryden et al., 2011). Despite its relevance in monitoring errors and conflicts, the activity of the dorsal anterior cingulate cortex does not necessarily guarantee that such records are integrated into consciousness. Evidence suggests that, although this region signals discrepancies and redirects attentional resources, part of its action may remain

implicit, influencing subsequent processing without reaching the conscious narrative level. In this sense, the ACC functions as an internal marker of incongruity, whose communication with superior prefrontal areas may be partial or insufficient to generate explicit perception (Bryden et al., 2011; Arioli et al., 2021). The dorsal ACC hub may fail when its functional connectivity with lateral prefrontal regions is compromised, causing conflict signals to be processed without reaching full consciousness. This occurs due to the under-recruitment of prefrontal regions, reduced cognitiv y flexibility, and difficulty in maintaining sustained attention and inhibitory processes (Sharp et al., 2005).

4. **The amygdala** and **anterior insula** play a central role in detecting subtle emotional signals, functioning as nuclei for implicit assessment of affective relevance. Both structures are particularly sensitive to incongruities between intention and expression, such as discrepancies in tone of voice or body posture, registering the absence of affective synchrony even without this information being translated into conscious narrative. This functioning corresponds to the affective component of mentalization, in which the amygdala assigns emotional valence and the insula translates these records into visceral perceptions of the internal state (Arioli et al., 2021). This subjective intelligence is intrinsic to consciousness, but it may not go beyond the anterior cingulate cortex and reach explicit perception due to factors such as immaturity of the prefrontal cortex or cognitive conditions that compromise limbic-prefrontal integration (Sharp et al., 2005). In children: consciousness interprets that "she is listening to me," but implicit processing (amygdala and insula) detects the absence of real engagement.

5. **The fusiform gyrus** plays a key role in face processing, being particularly sensitive to dynamic expressions and facial subtleties. Its activation contributes to the detection of microexpressions and the integration of visual cues that support the implicit interpretation of emotional states, reinforcing affective registers that do not necessarily reach consciousness (Zinchenko; Yaple; Arsalidou, 2018).

6. **The hippocampus** acts as an integrator between the emotional register and the context in which the experience occurs. While its dorsal portion contributes to the encoding of the environment, the ventral portion is more directly linked to the affective component. This complementarity allows emotional experiences to be associated with the context in which they occurred, even without generating explicit memory. In many cases, the result is the formation of an implicit trace, capable of being reactivated by similar situations at later times. Not only that, projec-

tions from the hippocampus to the medial prefrontal cortex modulate the integration between memory and executive control, although they do not always result in conscious access, remaining as implicit records that guide behavior (Pronier et al., 2023).

7. **The precuneus** actively participates in the integration of information related to subjective experience and sense of self. Its activation is associated with the adoption of a first-person perspective and the construction of social consciousness. However, this processing tends to remain at an implicit level, without necessarily consolidating a structured conscious narrative (Arioli et al., 2021). When articulated with emotional records from the amygdala, hippocampus, and anterior cingulate cortex, the precuneus contributes to maintaining a representation of self rooted in implicit memory traces. The medial prefrontal cortex, in turn, acts as a mediator between these representations and the possibility of conscious access, integrating subcortical signals and modulating their expression in social evaluations. The orbitofrontal cortex complements this circuit by assigning affective value to experiences, functioning as an evaluator of authenticity and social reward. The ventral striatum, especially the nucleus accumbens, reinforces this process through dopaminergic release, consolidating memories of reward that strengthen trust and affective bonding. The anterior cingulate cortex adds an essential regulatory role to this system: its dorsal portion monitors conflicts between expectation and perception, often keeping processing at an implicit level, while its ventral portion promotes emotional integration, ensuring affective coherence and strengthening social synchrony. Thus, even if the experience is not fully translated into conscious reporting, the precuneus–mPFC–OFC–ACC–limbic–striatal circuit structures an implicit framework that guides judgments of authenticity, trust, and emotional bonding (Arioli et al., 2021).

This nonverbal record can consolidate as an emotional predisposition, influencing future interpretations of authenticity or rejection.

Example 2 – Genuine attention with affective engagement

1. When there is congruence between intention and behavior, the child's brain (an example, since it is immature compared to an adult's) recruits broader networks that support genuine empathy and social reward. In this condition, the **medial prefrontal cortex (mPFC)** and **orbitofrontal cortex (OFC)** are strongly engaged, promoting authentic reading of mental states and the attribution of affective value to the experience. The **ventral anterior cingulate cortex (ACC)** integrates emotion

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and behavior, reducing internal conflicts and promoting affective coherence. The **amygdala** and **hippocampus** consolidate positive emotional memory, while the **ventral striatum,** especially the **nucleus accumbens,** reinforces the experience through dopaminergic release, consolidating the interaction as a social reward. Not only that, but perceptual areas such as the **fusiform gyrus** and **anterior insula** contribute to the reading of dynamic facial expressions and body signals, ensuring that the perception of authenticity is integrated in a visceral and affective way. This set of activations transforms the experience into reliable memory, strengthening emotional bonds and sustaining affective security (Arioli et al., 2021; Zinchenko; Yaple; Arsalidou, 2018).

2. The **orbitofrontal cortex (OFC)** plays a central role in the conscious assessment of the authenticity of social experience. This region associates perceived signals with an affective value, linking them to pleasure, trust, and security in interpersonal bonds. Through this attribution of value, the OFC contributes to transforming emotional records into conscious perceptions of authenticity, functioning as a mechanism for affective validation of the experience (Arioli et al., 2021).

3. The **medial prefrontal cortex (mPFC)** and **temporoparietal junction (TPJ)**, when engaged more deeply, support the theory of empathic mind. This network enables the conscious interpretation of the mental states of others, ensuring that the child recognizes the mother's interest as authentic. The integration of these regions provides the neurocognitive basis for the explicit reading of intentions and the construction of relational trust (Arioli et al., 2021).

4. The **ventral anterior cingulate cortex (ventral ACC)** acts in the integration between emotion and behavior, ensuring that affective experience translates into coherent and socially adjusted responses. In this function, it connects limbic emotional records to prefrontal representations, allowing awareness of the bond to be accompanied by congruence between feeling and acting (Arioli et al., 2021).

5. The **amygdala**, by attributing affective valence to social experiences, records the emotional authenticity of the bond, while the **hippocampus** associates this record with the context in which it occurred. This complementarity allows for the consolidation of a positive affective memory, which becomes accessible to consciousness as a reliable and structuring experience of the bond (Arioli et al., 2021; Pronier et al., 2023).

6. The **ventral striatum**, especially the **nucleus accumbens**, is responsible for the dopaminergic response that accompanies authentic social experiences. This activation reinforces the pleasure of interaction and contributes to

consolidating the experience as a positive memory, strengthening motivation for future affective bonds (Arioli et al., 2021).

7. The **anterior insula** integrates visceral and emotional signals, promoting a conscious perception of the authenticity of the interaction. By translating affective registers into explicit bodily sensations, it strengthens the empathic bond and consolidates the experience as socially meaningful (Arioli et al., 2021).

In children, conscious recognition of genuine interest occurs when the limbic and prefrontal networks integrate efficiently. The perception of authenticity depends not only on implicit affective detection (amygdala and insula), but also on the engagement of areas such as the **OFC** and **ventral ACC**, which attribute affective value and emotional coherence to the experience. **The ventral striatum/nucleus accumbens** also reinforces the experience through a dopaminergic response, consolidating it as a positive and reliable memory, the basis for future emotional security. This process differs from situations in which attention is perceived as formal but not genuine, in which information remains implicitly recorded without reaching full consciousness (Arioli et al., 2021; Zinchenko; Yaple; Arsalidou, 2018).

Even in cognitively more advanced children, emotional incongruity detected by implicit circuits does not always reach consciousness. This is due, in part, to the late maturation of the prefrontal cortex, especially in its lateral and dorsal portions, whose connectivity with regions such as the ACC is essential for integrating conflict signals into conscious perception. When this circuit is not fully established, the records remain implicit, shaping emotional predispositions without explicit narrative. There is also an adaptive component: accepting attention as genuine functions as a defense mechanism, since conscious recognition of incongruity could generate greater emotional dissonance and affective insecurity (Sharp et al., 2005).

COMPARATIVE SYNTHESIS BETWEEN IMPLICIT AND CONSCIOUS FUNCTIONING

In **Example 1**, where the mother's attention is only mechanical and without affective engagement, the child accesses a limited conscious perception: he registers that he was heard, but without clarity of the emotional incongruity. Processing relies mainly on **implicit** circuits**,** with activation of the **amygdala** and **anterior insula,** which detect subtle emotional discrepancies, and the **dorsal ACC,** which monitors conflicts without necessarily generating explicit awareness. The **fusiform gyrus** contributes to decoding facial microexpressions, reinforcing the implicit perception of disharmony (Zinchenko; Yaple; Arsalidou, 2018). The result is the formation of implicit memories that shape future emotional predispositions, without consolidation into a conscious narrative.

In **Example 2**, when there is congruence between intention and behavior, the child's brain engages **explicit and conscious** networks. The **mPFC** and **TPJ** support the theory of empathic mind, allowing conscious interpretation that the mother's interest is genuine. The **ventral ACC** integrates emotion and behavior, while the **OFC** assigns affective- y value to the experience. The **amygdala** and **hippocampus** record and contextualize positive emotion, consolida-

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ting it as reliable conscious memory (Pronier et al., 2023). **The ventral striatum/nucleus accumbens** reinforces the experience through dopaminergic reward, and the **anterior insula** translates authenticity into conscious visceral perception (Arioli et al., 2021).

Thus, the essential difference between the two scenarios lies in the level of integration:

- In **the implicit (Example 1)**, emotional detection and unconscious monitoring circuits prevail, generating latent affective records.
- In **the conscious (Example 2)**, networks of mentalization, empathy, and reward act in an integrated manner, consolidating the experience as explicit memory and structuring affective trust.

IMPLICIT MEMORY THAT ESCAPES CONSCIOUSNESS

The hypothetical examples discussed above demonstrate that there is a level of intelligence that operates beyond explicit consciousness. In Example 1, the child unconsciously perceives the mother's lack of authenticity, but their consciousness does not access this record, so they believe they have received genuine attention (to a certain extent). This phenomenon indicates that there are records stored in subcortical circuits that do not fully reach the prefrontal cortex, the region where the conscious narrative of the ''self'' is organized.

These records do not disappear; on the contrary, they remain stored in different brain subregions, composing an implicit bank of affective memories that shape emotional predispositions and modulate behavior:

- **Amygdala (basolateral and central nuclei):** acts as the central nucleus of this system, recording the emotional charge of incongruity and storing a ''feeling without words," capable of persisting for years and implicitly influencing future reactions (Arioli et al., 2021).
- **Anterior insula:** translates emotional records into visceral signals, generating the bodily perception that "something is not right" or, conversely, that "this is genuine," functioning as the neural basis of what is popularly described as "energy" (Arioli et al., 2021).
- **Hippocampus:** associates emotional charge with context, linking the record to a specific space-time. Often, this process does not generate explicit memory, but rather implicit traces that can be reactivated by similar situations (Pronier et al., 2023).
- **Anterior cingulate cortex (ACC):** signals conflicts between expectation and perception. In its dorsal portion, it monitors discrepancies without ensuring conscious access; in its ventral portion, it can integrate emotion and behavior, promoting affective coherence (Bryden et al., 2011; Sharp et al., 2005).
- The **medial prefrontal cortex (mPFC)** and **orbitofrontal** cortex **(OFC)** function as potential mediators of these records, assigning

them affective value and preparing them for eventual conscious integration. However, for these contents to be fully transformed into explicit narrative, the participation of **the dorsolateral prefrontal cortex (dlPFC),** a region associated with executive control and deliberative consciousness, is necessary. When connectivity between these regions is insufficient, part of the processing remains implicit but still influences future evaluations and judgments (Arioli et al., 2021).

Thus, memories not communicated to the frontal lobe remain latent, forming lasting emotional predispositions, such as mistrust, insecurity, or, in some cases, a search for validation. Specific triggers—such as microexpressions, tone of voice, or body postures—can reactivate these records. This reactivation can emerge in a diffuse way, as discomfort without conscious explanation, or as a clear intuition that "I have experienced this before and it was not genuine."

In Example 2, the process is complete: the mother engages authentically, the amygdala registers congruent emotion, the hippocampus contextualizes it, the ventral ACC integrates emotion and behavior, and the ventral striatum releases dopamine. In this case, the mPFC and OFC receive the record in full and translate it into explicit awareness of trust and bonding (Arioli et al., 2021; Pronier et al., 2023).

In summary, what is popularly referred to as "energy" can be understood as the action of this system of implicit records, supported by the amygdala, insula, hippocampus, ACC, and prefrontal connections. Even when they do not reach the conscious narrative domain, these silent memories shape personality and influence the way we feel and react to the world (Zinchenko; Yaple; Arsalidou, 2018).

RELATIVE ACTIVATION BY EXAMPLE

Legend: ↑ mild, ↑↑ moderate, ↑↑↑ high.

Central interpretation:

In **Example 1 (mechanical attention)**, the child brings to consciousness only the feeling that they "were heard." However, regions such as the amygdala, anterior insula, and dorsal ACC register affective incongruity, but the signal is not fully integrated into the mPFC and OFC e . Thus, the conscious experience is superficial, while implicit memory remains active in subcortical circuits, conditioning personality traits and modulating future behaviors.

In **Example 2 (genuine attention)**, there is integration between the amygdala, hippocampus, ventral ACC, mPFC, and OFC, with strong dopaminergic reinforcement in the ventral striatum. This synchrony promotes the conscious emergence of authenticity, consolidating positive affective memory and structuring bonds of trust.

Region	Example 1 – Mechanical attention	Example 2 – Genuine attention
Amygdala	↑↑ detection of incongruity	↑ congruent affective registration
Hippocampus	↑ implicit contextual association	↑↑ positive affective consolidation
Anterior insula	↑↑ visceral sense of incongruity	↑ visceral sense of authenticity

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Dorsal ACC	↿↿ monitor of conflict betwe-en obligation and affection	↿ reduced con-trol, less conflict
Ventral ACC	↿ low affective coupling	↿↿ emo-tion–behavior integration
mPFC	↿ automatic social models	↿↿ empathic theory of mind
OFC	↿ superficial valuation	↿↿ social reward evaluation
TPJ	↿ superficial theory of mind	↿↿ reading of real mental states
Ventral striatum	↔ minimal reinforcement	↿↿↿ dopaminer-gic reinforcement
Fusiform gyrus	↿ incongruent microexpressions	↿ congruent faces, stability
Precuneus	↿↿ fragile integration of the implicit self	↿↿↿ self cohe-sion, conscious integration
Thalamus	↿ basic sen-sory relay	↿↿ affective-sen-sory integration with cortex
dlPFC	↔ minimal participation (no conscious narrative)	↿↿ executive control and integration into consciousness
Superior parietal cortex	↿ superficial attention	↿↿ support for sustained attention
Superior temporal cortex	↿ formal audi-tory perception	↿↿ Auditory--emotional integration

IMPLICIT MEMORY IN THE AMYGDALA: NEUROFUNCTIONAL SUBSTRATES AND GENETIC INFLUENCE

The amygdala, especially its basolateral and central nuclei, plays a central role in rapid emotional evaluation, functioning as a hub that implicitly detects and stores affective incongruities. Unlike the hippocampus, which is responsible for the formation of context-dependent explicit memories that can be consciously evoked via the prefrontal cortex, the amygdala records emotional traces that do not require voluntary evocation. These traces are automatically reactivated in response to similar stimuli, modulating autonomic, hormonal, and behavioral responses, even in the absence of verbal reporting.

The storage of these memories does not occur in isolation in a single nucleus. The basolateral amygdala records associations between sensory stimuli and their emotional charge, while the central amygdala connects these records to autonomic responses through projections to the hypothalamus and brainstem. Associated structures, such as the insula and anterior cingulate cortex, retain implicit marks related to visceral sensations and conflict detection. The hippocampus, in turn, adds contextual elements, but in a less structured way than in explicit memories.

This dynamic explains why such records do not reach consciousness. The amygdala → hippocampus → prefrontal cortex pathway, necessary to integrate emotion and context into explicit narrative, is not always fully activated. Thus, the records remain in the synaptic connectivity of the amygdala, forming an implicit memory that influences judgments and behaviors without necessarily emerging as conscious experience.

MECHANISMS THAT SUPPORT IMPLICIT MEMORY

The consolidation of non-declarative emotional records relies on NMDA receptor-dependent synaptic plasticity mechanisms. The activation of these receptors promotes calcium influx and intracellular cascades that support long-term potentiation (LTP), the physiological basis for the lasting fixation of mnemonic traces, particularly in the hippocampus and limbic-cortical circuits (Kumar, 2015).

Systemic modulators such as stress hormones directly interfere with the induction and maintenance of LTP. Glucocorticoid signaling and redox status influence NMDA receptor dynamics and the persistence of synaptic changes, offering a plausible mechanism by which emotionally charged experiences consolidate even when they do not become conscious memories (Kumar, 2015).

In the trophic axis, the BDNF family plays a central role in regulating synaptic strength. Evidence shows that proBDNF metabolites act as neuromodulators in hippocampal synapses, with effects opposite to those of mature BDNF on excitability and plasticity, and that such dynamics are associated with affective states. In functional terms, the proBDNF/BDNF balance can favor synaptic transmission depression or its strengthening, contributing to the stabilization of implicit affective traits that may or may not be integrated into conscious reporting (Zhong et al., 2019).

GENETIC FACTOR OF IMPLICIT MEMORY

The consolidation of implicit emotional memories is also modulated by genetic factors that influence synaptic plasticity in limbic-cortical circuits. Among the most studied genes, BDNF plays a central role in regulating synaptic strength. The Val66Met functional polymorphism alters protein secretion and transport, affecting the efficiency of hippocampal and amygdala-dependent plasticity and, consequently, modulating the persistence of emotional records (Savage et al., 2018).

Another relevant gene is COMT, responsible for dopamine catabolism in the prefrontal cortex. Polymorphisms such as Val158Met influence dopaminergic availability, affecting executive control processes and the integration between emotional and cognitive signals, which can determine the extent to which implicit memories reach consciousness or not (Savage et al., 2018).

Genome-wide association studies (GWAS) indicate that variants in genes related to the regulation of glutamatergic and dopaminergic signaling, such as GRIN2B, which encodes NMDA receptor subunits, exert a significant influence on the efficiency of synaptic plasticity and on cognitive traits linked to implicit memory (Sniekers et al., 2017; Savage et al., 2018).

This evidence suggests that individual vulnerability to the fixation of implicit emotional memories, as well as the likelihood of their integration into conscious narratives, depends not only on the limbic-prefrontal circuit, but also on a genetic basis that regulates plasticity, excitability, and dopaminergic and glutamatergic modulation.

DISCUSSION

The conceptual findings of this study suggest that implicit emotional records that remain outside consciousness result from the interaction between structural maturity, functional dynamics, and adaptive suppression mechanisms.

A first point is the maturational mismatch between limbic structures and the prefrontal cortex. The amygdala is already functional in childhood, while prefrontal areas, especially the dorsolateral cortex, show late development that can extend into adulthood. This mismatch favors emotional memories being recorded in the amygdala but not converted into conscious narratives, since PFC-dependent integration of the amygdala is not yet fully established (Casey; Jones, 2010).

Even in adult brains, connectivity between the amygdala, hippocampus, and prefrontal regions is modulated by context, attention, and emotional states. In highly affective situations, the amygdala can reinforce contextual records in the hippocampus, but transmission to prefrontal areas may be partial or fail, resulting in implicit traces that remain inaccessible to consciousness (Yang et al., 2017). Furthermore, when the circuit that includes the dorsal anterior cingulate cortex does not communicate efficiently with prefrontal regions, conflict signals remain as internal records without explicit translation (Feng et al., 2014).

Another aspect is adaptive suppression. The PFC may consciously or unconsciously inhibit the integration of emotional records as a way to reduce affective dissonance and preserve cognitive balance. At the same time, conditions of intense stress and cortisol release impair hippocampal-PFC communication and, at the same time, strengthen amygdala consolidation, favoring implicit memories to become more resistant and lasting (Kredlow et al., 2022).

Therefore, the permanence of emotional records outside the conscious domain should not be understood as a failure, but as the result of multiple factors: incomplete brain maturation, functional limitation of integration between networks, inhibitory regulation, and neuroendocrine impact. This dynamic helps explain why individuals can "feel without knowing": they possess implicit affective marks that guide behavior and personality, even without conscious narrative.

CONCLUSION

Memory not evoked by the prefrontal cortex remains, in large part, in the basolateral amygdala, strengthened by mechanisms of glutamatergic, dopaminergic, and epigenetic synaptic plasticity. It does not need to be consciously recalled: it remains latent and influences behavior whenever a trigger reactivates the network. The genetic component defines the individual predisposition to consolidate and maintain these implicit memories, with some individuals tending to erase them more quickly, while others carry them throughout their lives. We can consider the existence of a limbic amygdala intelligence, formed by emotional memories that may or may not properly reach the prefrontal cortex. The hippocampus acts as a contextual modulator, assisting in the consolidation of these records in specific subregions of the cortex. It is a form of active memory, but one that remains outside the conscious domain. It can be reactivated by environmental stimuli or remain silent, implicitly shaping personality and subjective phenomena such as intuition. This subjective intelligence constitutes an active record in neural networks, but is not accessible by the PFC in the same way as declarative memory. Its reactivation occurs through contextual or sensory triggers, modulating behaviors and intuitions in a silent and decisive way, being crucial both for the structuring of personality and for survival mechanisms. In simple terms, we can say that subjective and primitive intelligence is located mainly in the amygdala, in close connection with circuits traditionally called «reptilian." The hippocampus participates in this process by providing context, together with the anterior cingulate cortex, especially in its ventral portion, reaching the ventromedial and orbitofrontal areas in a more limited way. However, it rarely reaches the dorsolateral prefrontal cortex, the region most associated with deliberative consciousness. In functional terms, it is as if there were not enough synaptic power for these records to reach the most anterior portion of the brain, remaining in the implicit field. This phenomenon can be explained by factors such as the late maturation of the frontal lobe, characteristic of human development; psychiatric conditions that affect the integration between the amygdala and the cortex; educational influences and early experiences; in addition to the individual cognitive level, which conditions the ability to transform implicit emotional records into narrative consciousness. Even in children with greater cognitive development, the emotional incongruity recorded by implicit circuits does not always translate into conscious perception. This is because the lateral and dorsal prefrontal cortex matures late, and its connectivity with the anterior cingulate cortex is crucial for transforming conflict signals into explicit experience. When this integration fails, the records remain implicit, influencing emotional predispositions without conscious narrative. Sometimes, this limitation can also act as an adaptive resource: accepting attention as genuine functions as a defense mechanism, preventing the recognition of incongruity from causing greater emotional dissonance and fragility in the bond (Sharp et al., 2005). Finally, in relation to genetics, genes regulate the synthesis of neurotransmitters and hormones, and it is the interrelationship between these elements that conditions the functional outcome. Different alleles modulate the balance between excitatory and inhibitory activities, favoring the equilibrium necessary to sustain the ideal homeostasis of brain mechanisms.

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