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Interpersonal Neurobiology (IPNB)

Understanding the connection between mind, brain and relationships

10 min read



How do our experiences shape the way we think, feel, and relate to others? Why do we sometimes react automatically, even when we would prefer to respond differently? And how can greater awareness help us navigate ourselves and our relationships with more understanding and care?

Interpersonal Neurobiology (IPNB) offers a framework for exploring these questions. Developed by Dr. Daniel J. Siegel, IPNB brings together insights from neuroscience, psychology, biology, attachment research, and other disciplines to explore the interconnectedness of the mind, the brain, the body, and our relationships.

At its heart, IPNB invites us to understand human experience as an interconnected process. Our thoughts, emotions, bodily sensations, relationships, and life experiences continually influence one another. We are shaped by our biology and our experiences, as well as by the relationships and environments in which we live.

Understanding these connections can help us approach ourselves and others with greater awareness, compassion, and curiosity.

We are shaped by our relationships

From the earliest stages of life, our relationships influence how we experience the world, develop a sense of self, respond to stress, and connect with others.

Through our interactions, we learn how to recognize and express emotions, seek support, establish trust, and navigate closeness and separation. These experiences can shape patterns that continue into adulthood, influencing how we respond to challenges and relate to the people around us.

Yet development does not stop in childhood. Throughout life, new experiences, relationships, and intentional practices can create opportunities for learning, change, and growth.

Recognizing the influence of our past does not mean that we are defined by it. Rather, it allows us to understand our patterns with greater compassion and discover new possibilities for responding.

Integration: bringing the parts together

Integration is a central concept in IPNB.

Dr. Siegel describes integration as the linking of differentiated parts into a connected whole. This principle can be explored within the brain, within our mental and emotional experience, and within our relationships.

In our inner world, integration involves developing awareness of our thoughts, emotions, bodily sensations, memories, and impulses, and learning to relate to these experiences without being overwhelmed by any one of them.

In our relationships, integration means respecting each person's individuality while remaining connected. We can acknowledge differences, communicate our needs, and make space for perspectives that differ from our own without losing sight of the relationship.

Integration is not about eliminating differences or avoiding conflict. It is about creating connections between different parts while allowing each to retain its unique qualities.

From this perspective, greater integration supports flexibility, adaptability, emotional balance, and more coherent ways of responding to life's challenges.

Mindsight: becoming aware of our inner world

Closely associated with IPNB is the concept of **mindsight**, developed by Dr. Siegel. Mindsight refers to our capacity to observe and understand our own mental processes and to become more aware of the inner experiences of others.

It invites us to notice what is happening within us — our thoughts, feelings, bodily sensations, and habitual reactions — rather than automatically identifying with them or acting on them.

For example, there is a difference between being caught up in anger and recognizing:

“I notice that I am feeling angry.”

This shift can create space to explore what has triggered the emotion, what matters to us, and how we would like to respond.

Developing this awareness can help us recognize familiar patterns, become more intentional in our choices, and approach ourselves with greater kindness.

Mindsight also extends to our relationships. By becoming more aware of our own inner world, we can develop a greater capacity to remain curious about the experiences of others, even when their perspectives differ from ours.

The Hand Model of the Brain: understanding what happens when emotions take over

How can we understand what happens in our brain when we feel overwhelmed, threatened, or emotionally activated?

Dr. Daniel J. Siegel's **Hand Model of the Brain** offers a simple, visual way to explore how different brain regions contribute to our bodily responses, emotions, and capacity for reflection and regulation.

Using one hand to represent the brain, the model helps illustrate why we may sometimes find it difficult to think clearly, listen openly, or respond in ways that reflect our intentions.

Understanding the model

Make a fist by placing your thumb across your palm and folding your fingers over your thumb. In this simplified representation:

- ◆ **The wrist** represents the spinal cord, which connects the brain with the rest of the body.
- ◆ **The palm** represents the brainstem, which contributes to essential bodily functions and survival-related responses.
- ◆ **The thumb** represents limbic regions, which are involved in emotional processing, motivation, and memory.
- ◆ **The folded fingers** represent the cerebral cortex, the outer layer of the brain involved in perception, thinking, and many complex processes.
- ◆ **The fingertips** represent prefrontal regions, which contribute to planning, decision-making, reflection, empathy, and aspects of emotional regulation.

These regions do not operate independently. They are interconnected and continually influence one another. The hand model is a simplified illustration that helps us visualize some of these relationships.

What happens when we “flip our lid”?

Imagine that you are in a difficult conversation. Someone says something that feels hurtful or dismissive. Your heart begins to beat faster, your body becomes tense, and you feel an urge to defend yourself, raise your voice, withdraw, or leave.

In moments of intense emotional activation, our attention can narrow, and familiar protective responses may become more prominent. We may find it harder to think flexibly, consider another person's perspective, or choose our words carefully.

In the hand model, this is illustrated by lifting your fingers away from your thumb — a gesture commonly known as *flipping your lid*.

The gesture represents a temporary reduction in the coordination between systems involved in emotional and bodily responses and the cortical processes that support reflection and regulation.

It does not mean that the thinking part of the brain switches off completely. Rather, intense stress can make some of our reflective capacities less accessible in the moment.

Our reactions are influenced by our nervous system, our experiences, and the meaning we give to what is happening. Understanding this can help us respond to ourselves with compassion instead of adding self-criticism to an already difficult situation.

From automatic reactions to conscious responses

When we recognize that we are becoming overwhelmed, we can begin to create conditions that support regulation and reflection.

We might pause a conversation, notice our bodily sensations, name our feelings, or take some time before responding. We might also seek support from someone who can listen calmly and respectfully.

Sometimes, the first step is to support ourselves. At other times, a calm and empathic presence from another person can help us regain a sense of safety and connection.

The aim is not to suppress emotions or remain calm at all times. Emotions carry important information. The intention is to develop the capacity to recognize what is happening within us and respond with greater awareness and flexibility.

The hand model is a useful reminder that, when emotions run high, we may need to attend to our inner state before attempting to solve a problem or continue a difficult conversation.

Connection, empathy and co-regulation

Human beings are relational. Our experiences are influenced not only by what happens within us, but also by the people with whom we interact.

In supportive relationships, feeling heard, respected, and accompanied can help us navigate difficult emotions and experiences. Through attentive presence, empathy, and responsive communication, we can contribute to conditions in which people feel safer to explore what is happening within them.

This process is often described as **co-regulation**: the ways people influence and support one another's emotional and physiological regulation through their interactions.

Co-regulation does not mean taking responsibility for another person's emotional state or removing every source of discomfort. It means recognizing that our presence, tone, responsiveness, and behaviour can affect the quality of an interaction.

When we combine self-awareness with empathy for others, we create more opportunities for connection, understanding, and mutual growth.

Bringing IPNB into everyday life

The principles of IPNB can be explored through simple practices in everyday life:

- ◆ **Notice your inner experience.** Pay attention to thoughts, emotions, bodily sensations, and impulses without immediately judging them.
- ◆ **Recognize patterns.** Become curious about familiar reactions and how past experiences may influence your responses in the present.
- ◆ **Create space to pause.** When emotions become intense, take a moment to notice what is happening before deciding how to respond.
- ◆ **Practise empathy.** Listen to yourself and others with curiosity, allowing room for experiences that may be different from your own.
- ◆ **Nurture meaningful relationships.** Make space for honesty, trust, mutual respect, and connection while honouring individual boundaries.
- ◆ **Remain open to change.** Recognize that learning and development continue throughout life, and that new experiences can create opportunities for new ways of relating.

These practices are not about achieving perfection. They are invitations to become more aware of ourselves, our relationships, and the patterns that shape our lives.

IPNB and the Wellness Navigators approach

At Wellness Navigators, Interpersonal Neurobiology offers a valuable perspective for understanding the interconnectedness of our inner experiences, our relationships, and the environments in which we live.

It encourages us to look beyond isolated behaviours and explore the wider context in which they arise. It invites us to approach ourselves with curiosity rather than judgment, to recognize the importance of relationships, and to understand personal growth as an ongoing process.

Together with approaches such as Nonviolent Communication (NVC), IPNB can help us explore how awareness, empathy, and connection may support more conscious ways of living and relating.

Where IPNB offers a framework for understanding how the mind, brain, body, and relationships interact, NVC provides practical ways to recognize feelings and needs, express ourselves honestly, and listen with empathy.

Both approaches invite us to slow down, become curious about our experience, and create more space for understanding and choice.

Awareness creates the possibility of change. Through understanding ourselves and nurturing our connections with others, we can continue to learn, grow, and navigate life with greater compassion, flexibility, and care.

To learn more about Interpersonal Neurobiology and the Hand Model of the Brain, visit Dr. Dan Siegel's website:

EXPLORE FURTHER

Interpersonal Neurobiology

Dr. Dan Siegel's introduction to IPNB

<https://drdansiegel.com/interpersonal-neurobiology/>

The Hand Model of the Brain

The hand model explained by Dr. Siegel

<https://drdansiegel.com/hand-model-of-the-brain/>

Mindsight

About the concept of mindsight

<https://drdansiegel.com/mindsight/>



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