

Life is a process. Improve the quality of the process and improve life itself.
- Moshe Feldenkrais



The Nested & Embedded Brain

[George Northoff](#)

Georg Northoff uses the metaphor of a *Russian doll* to describe the nested nature of brain activities. This metaphor fits well because it illustrates how different layers of brain activity are contained within each other, similar to how smaller dolls are nested within larger ones. This concept of nestedness highlights the **hierarchical and interdependent structure of brain functions**.

Nested

- **Definition:** "Nested" refers to a hierarchical structure where elements are contained within each other. George Northoff uses "nested" to describe how different types of brain activity are interdependent and contained within each other.
- **Example:** Spontaneous activity contains pre-stimulus activity, which in turn contains early post-stimulus activity

Embedded

- **Definition:** "Embedded" refers to something being integrated or firmly fixed within a larger structure. In neuroscience, "embedded brain" describes how consciousness and brain functions are integrated and cannot be separated.
- **Example:** Consciousness is embedded in the brain's activity, meaning it is an integral part of how the brain functions.

"The embedded brain" is a scientific concept used in neuroscience and philosophy to describe how consciousness is integrated into the brain's functions. According to this model, the brain and consciousness cannot be separated; consciousness is embedded in the brain and is part of its activity.

This concept has been developed to better understand how the brain spontaneously analyzes and creates models of the world, both when we are conscious and unconscious. It means that the brain is active and aware even at rest, which has important clinical implications for patients with brain injuries.

Georg Northoff, a prominent figure in psychiatry, neuroscience and neurophilosophy, uses the concept of the "embedded brain." He explores how the brain's functions are integrated with the body and the environment, emphasizing the *interconnectedness of mental and neural processes*

He also uses the term "nested" to describe the relationship between different types of brain activity. He explains how spontaneous activity contains pre-stimulus activity, which in turn contains early post-stimulus activity, highlighting their interdependence. "Nested" is used to describe the hierarchical and interdependent nature of these activities within the brain.

Both terms, embedded and nested highlight the interconnectedness and integration of brain activities but from slightly different perspectives. "Nested" emphasizes the hierarchical containment, while "embedded" focuses on integration within a larger structure.

