

PARALLELISM

Authored by
mohammad looti

October 11, 2025

RECOMMENDED CITATION

mohammad looti (2025). *PARALLELISM*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=43135>

PARALLELISM

Primary Disciplinary Field(s): Philosophy (Metaphysics, Philosophy of Mind), Psychology, Linguistics, Computer Science, Geometry

1. Core Definition

The term **parallelism** fundamentally refers to the quality or state of being parallel, structurally alike, or possessing correlating aspects. In its most general usage, derived from geometry, it describes two or more entities that extend in the same direction, are equidistant at all points, and never converge. This concept of structural similarity and non-interaction forms the basis for its application across diverse fields, ranging from rhetorical construction in literature to concurrent processing in computing. However, the term assumes a specific and profound meaning within philosophy, particularly in addressing the enduring **mind-body problem**.

In the context of metaphysics and philosophy of mind, **parallelism** is a specific proposition asserting a strict correspondence between mental events and physical events, where these two realities, even though constituting individual and distinct substances (dualism), operate in synchronicity. This philosophical view posits that the body and the mind function in parallel, such that reactions appear holistic and instantaneous, giving the illusion that the two realms exert causal control over one another. For example, the mental decision to raise an arm (the volition) is perfectly matched by the physical movement of the arm, but the movement is not caused by the volition; rather, both are merely correlated events occurring simultaneously along separate, non-interacting tracks.

The core difficulty that parallelism seeks to resolve is the problem of **causal interaction**: if the mind is non-spatial and non-physical (*res cogitans*) and the body is physical and spatial (*res extensa*), how can one possibly influence the other? Interactionist dualism (such as that proposed by René Descartes) struggles to explain the mechanism by which non-physical thought can initiate a physical change. Parallelism offers a radical solution by denying interaction entirely, maintaining dualism while asserting a pre-determined or natural harmony between the mental and physical series of events.

2. Parallelism in Philosophy: Psychophysical Parallelism

Psychophysical parallelism is the specific philosophical doctrine concerned with the relationship between consciousness and brain activity. It maintains that every mental state has a corresponding physical state, and vice versa, without any causal link passing between the two domains. Instead of the mind causing the body to move, or the body influencing the mind (interactionism), both series of events are merely synchronous. If a person feels pain (mental event), there is a

corresponding firing of neurons (physical event); the feeling of pain does not cause the neurons to fire, nor does the neural firing cause the feeling of pain directly; they simply run concurrently, like two clocks set perfectly to the same time.

This approach is a form of non-interactionist substance dualism. While it upholds the distinct nature of mental and physical substances, it side-steps the interaction problem that plagued Cartesian thought. Crucially, parallelism does not deny the reality of mental states; unlike reductionist theories (such as identity theory), it acknowledges the irreducibility of subjective experience. Instead, it posits an arrangement, often explained by a pre-established harmony, which ensures that the two realms remain perfectly correlated from the inception of existence.

The major implication of psychophysical parallelism is a complete restructuring of our intuitive understanding of agency and causality. When we decide to act, we intuitively feel that our mental choice caused the physical action. Parallelism insists that this feeling is illusory; the action occurs not because of the mental choice, but alongside it. The efficacy of the will is internal to the mental realm, and the efficacy of physical forces is internal to the physical realm. The appearance of causal control is simply a function of perfect temporal correlation, reinforcing the view that complex biological systems, like the human being, act in a seemingly holistic manner.

3. Historical Roots and Philosophical Proponents

The development of psychophysical parallelism is primarily attributed to the German philosopher and polymath, **Gottfried Wilhelm Leibniz** (1646-1716). Leibniz sought to provide a consistent metaphysical explanation for the observed correlation between mind and body that did not resort to constant divine intervention (occasionalism) or face the logical contradictions of interactionism.

Leibniz's solution was the doctrine of **Pre-established Harmony**. According to this view, the universe is composed of infinite, non-interacting spiritual substances called **monads**. Each monad is a self-contained entity that reflects the entire universe from its unique perspective. God, as the supreme architect, designed and programmed all monads (including the mind and body monads of a single person) at the moment of creation such that their internal, independent sequences of states would perfectly correspond forever. Thus, the mind and body behave as two highly accurate clocks that chime simultaneously, not because one caused the other to chime, but because they were perfectly synchronized by the clockmaker at the start.

Parallelism also emerged in response to other non-interactionist dualistic theories, notably **Occasionalism**, championed by philosophers like Nicolas Malebranche. Occasionalists held that apparent mind-body causality was merely the occasion for God to intervene and directly cause the corresponding event in the other substance. Parallelism is often viewed as a more elegant and comprehensive solution than occasionalism because it removes the need for perpetual divine intervention, relying instead on a single, powerful act of synchronization at creation. Later

philosophers, such as Benedictus de Spinoza, also developed theories involving a form of parallelism, viewing mind and body as merely two different attributes of a single underlying substance (neutral monism), thereby explaining correlation through shared origin rather than pre-established harmony.

4. Parallelism in Linguistics and Rhetoric

Outside of metaphysics, **parallelism** is a central concept in linguistics and rhetoric, referring to the repetition of similar grammatical structures in a sentence or across adjacent sentences. This structural similarity is employed deliberately to create rhythm, clarity, balance, and rhetorical force. The effective use of rhetorical parallelism is crucial for emphasizing key ideas and enhancing the memorability and persuasiveness of speech and writing.

There are several established forms of rhetorical **parallelism**. For instance, **anaphora** involves repeating a word or phrase at the beginning of successive clauses ("We shall fight... We shall never surrender..."), while **epistrophe** involves repetition at the end of successive clauses. A balanced sentence, utilizing similar phrasing for contrasting ideas, relies heavily on parallelism: "Ask not what your country can do for you; ask what you can do for your country." In this context, parallelism ensures that the weight and structure given to the two opposing clauses are equal, highlighting the contrast and reinforcing the message.

The underlying mechanism of parallelism in language is the expectation of structural coherence. When listeners or readers encounter repeated grammatical forms, their brains process the information more efficiently, recognizing the pattern and anticipating the rhythm. This makes the prose clearer and more impactful. The original example provided, "The two objects exhibit a concise example of **parallelism**," demonstrates the structural congruence that characterizes the general definition, which is then applied in a sophisticated manner in rhetorical composition.

5. Parallelism in Computing and Engineering

In computer science and engineering, **parallelism** refers to the technique of running multiple instructions or processes simultaneously. This is distinct from concurrency, which deals with managing multiple tasks that may appear to run at the same time but might be executed sequentially on a single processor core through time slicing. **Parallel computing**, conversely, requires multiple processing units (cores, processors, or distributed machines) working concurrently on parts of a single problem to dramatically increase execution speed.

The necessity of parallelism in modern computing stems from the limits of increasing clock speed (sequential performance) and the demand for processing large datasets (e.g., machine learning, complex simulations). By dividing a large task into smaller, independent subtasks that can be executed concurrently, a significant speedup, known as **throughput**, can be achieved. Key

architectural examples include Multi-Core Processors (using shared memory) and Distributed Computing Systems (using message passing across networks).

However, achieving effective parallelism requires careful algorithmic design. A process must be easily divisible into independent parts, minimizing the need for the subtasks to communicate or synchronize frequently, as communication overhead can negate the performance gains. This pursuit of efficiency has led to the development of sophisticated parallel programming models and languages designed to manage resource allocation and synchronization locks, ensuring that multiple operations proceed simultaneously without corrupting shared data.

6. Debates and Criticisms of Psychophysical Parallelism

While philosophical parallelism offers an elegant solution to the interaction problem, it faces significant conceptual and empirical challenges, primarily focused on the nature of the correlation itself.

One major criticism revolves around the **complexity of the pre-established harmony**. Critics argue that requiring God or nature to set up a perfect, eternal synchronization between every mental state and every corresponding physical state throughout the life of every sentient being is an excessively complex and implausible mechanism. This reliance on a massive, singular divine act of coordination is often seen as introducing an unnecessary metaphysical burden, violating the principle of parsimony (Ockham's Razor). If interactionism is complex, requiring parallelism to explain non-interaction seems equally complex in its own way.

Furthermore, parallelism is criticized for being **epistemologically deficient**. If the mind and body do not interact, how can we truly know the external world? Our knowledge of the world relies on the body (sensory input) causally affecting the mind (perception). Parallelism must explain perception by claiming that the sequence of mental states reflecting the external world was perfectly pre-programmed to correlate with the sequence of physical sensations, rather than being caused by them. This raises concerns about whether parallelism can truly account for the adaptive nature of consciousness and the learning processes that involve causal feedback loops between action and consequence.

Finally, some critics argue that **parallelism fails to fully avoid the causal problem**; it merely displaces it. Instead of explaining how the mind causes the body to move, it must explain why the two series are correlated in the first place. If the correlation is perfect and invariant, doesn't that suggest a deeper, common cause or structure that underlies both, thereby moving away from dualism toward monism (as Spinoza proposed)? If the correlation is purely accidental, then parallelism collapses into an untenable belief in miraculous coincidence.

7. Further Reading

[Stanford Encyclopedia of Philosophy: Parallelism](#)

[Wikipedia: Psychophysical Parallelism](#)

[Wikipedia: Rhetorical Parallelism](#)

[Wikipedia: Parallel Computing](#)

[Wikipedia: Gottfried Wilhelm Leibniz](#)

ARABPSYCHOLOGY.COM