▸ JOÃO MARCOS, *When Attitudes Matter Most: A Bilateral Theory of Consequence.*
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The received approach to logical consequence, due to Tarski, takes the judgment of assertion as the single primitive notion underlying inference. On this picture, a logic is a relation between sets of premises and conclusions, which is typically presented by a proof system and determined by classes of logical matrices with a single distinguished set of designated truth-values. This picture, however, is lopsided.

This tutorial explores what happens when a second primitive judgment, namely denial, is placed on an equal footing with assertion. The resulting framework, known as bilateralism, leads naturally to a two-dimensional notion of logical consequence in which a single entailment relation simultaneously tracks the preservation of the cognitive attitude of acceptance and the preservation of the cognitive attitude of rejection. We situate this notion within a spectrum of increasingly general abstract consequence relations, including intermediate non-Tarskian notions that arise naturally between the one-dimensional setting and the richer two-dimensional one.

At the abstract level, the passage to two dimensions resolves a fundamental failure of expressiveness in the one-dimensional theory: the loss of a tight correspondence between consequence relations and their associated spaces of theories. On the semantic side, we develop the theory of two-dimensional non-deterministic matrices, equipped with both designated and anti-designated truth-values. On the proof-theoretic side, we introduce symmetrical Hilbert-style calculi with tree-shaped derivations, which can be effectively extracted from finite sufficiently-expressive matrices and used to perform bounded proof search, with notable consequences for decidability and axiomatizability.

[1] Carolina Blasio, João Marcos, and Heinrich Wansing, *An inferentially many-valued two-dimensional notion of entailment*, ***Bulletin of the Section of Logic***, vol. 46 (2017), no. 3/4, pp. 233–262.

[2] Carolina Blasio, Carlos Caleiro, and João Marcos, *What is a logical theory? On theories containing assertions and denials*, ***Synthese***, vol. 198 (2021), pp. 5481–5504.

[3] Vitor Greati, Sérgio Marcelino, and João Marcos, *Proof search on bilateralist judgments over non-deterministic semantics*, ***International Conference on Automated Reasoning with Analytic Tableaux and Related Methods*** Springer, 2021, pp. 129–146.

[4] Vitor Greati and João Marcos, *Finite two-dimensional proof systems for non-finitely axiomatizable logics*, ***International Joint Conference on Automated Reasoning*** Springer, 2022, pp. 640–658.

[5] João Marcos, Adam Přenosil, and Paul Egré, *Many-Valued Logic*, ***The Stanford Encyclopedia of Philosophy*** (Edward N. Zalta and Uri Nodelman, editors), Metaphysics Research Lab, Stanford University, 2026, https://plato.stanford.edu/entries/logic-manyvalued/.