

paradoxes were interpreted as a threat to logic.

The paper throws some light on the origins of modern logic and helps us to understand the fate shared by logic and set theory — and so to logic and mathematics — during this relevant period.

Miguel Espinoza, "El desmigajador de la realidad: Wittgenstein y las matemáticas," *Mathesis X*, no. 2 (May 1994), 171–186.

Reviewed by

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In this thought-provoking paper, Wittgenstein's philosophy of mathematics is explained and criticized. Wittgenstein's view is classified as anthropocentric constructivism and also as empiricism or behaviorism. Espinoza asks: "¿Cómo no calificar de empirismo o de conductismo la idea de que el significado de un concepto sea dado por la práctica, por la acción o por su uso?" (p. 174). It is probably not *behaviorism* but the *pragmatism* label which goes better with Wittgenstein's philosophy of mathematics. In any case, it is true that Wittgenstein denies that numbers have an essence and that there is a mathematical reality outside of and apart from the use we make of it. Espinoza argues that Wittgenstein's thesis of linguistic games has the effect of destroying mathematical unity and coherence and thus one of the roots or features of interest that mathematics has for our system of knowledge.

Espinoza considers that, for Wittgenstein, mathematics is essentially algorithmic and that this can be seen in the importance he attaches to proofs. The author stresses the similarities between Wittgenstein and Brouwer regarding their philosophies of mathematics and shows how Brouwer's view is deeper than Wittgenstein's. The philosophy of mathematics favored by Espinoza is *realism*, the thesis that mathematical objects are independent of our minds. From this point