Refutation of Bourbaki’s fixed point theorem and the axiom of choice

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Abstract: We evaluate Moroianu’s and the Tarski-Bourbaki fixed point theorem and axiom of choice (AC). Two versions of the theorem and then seven theorems and corollary which follow are also not tautologous. Therefore these conjectures form a non tautologous fragment of the universal logic VL4.

We assume the method and apparatus of Meth8/VL4 with Tautology as the designated proof value, F as contradiction, N as truthity (non-contingency), and C as falsity (contingency). The 16-valued truth table is row-major and horizontal, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)

From: Zarouali-Darkaoui, M. (2019). On the Bourbaki’s fixed point theorem and the axiom of choice. arxiv.org/abs/1905.09782 mohssin.zarouali@gmail.com

Lemma 2 (Tarski–Bourbaki). Let E be a set, S ⊆ P(E), and ϕ:S→E a map such that ϕ(X) ∉ X for all X ∈ S. Therefore there is a unique subset M of E that can be well-ordered satisfying 1) for all x ∈ M:S ∈ x and ϕ(S ∈ x) = x; 2) M ∉ S. (2.1.1)

Remark 2.1.1: We map Eq. 2.1.1 with a conjunctive consequent of 1) and 2).

Remark 2.1.3: If we map the consequent to a weakened condition of 1) implies 2), then:

Eqs. 2.1.2 or 2.1.3 are not tautologous, to refute Moroianu’s and the Tarski-Bourbaki fixed point theorem and axiom of choice (AC). The seven theorems and corollary which follow are also not tautologous.