Refutation of short circuit evaluation for propositional logic by commutative variants

From: Ponse, A.; et al. (2018). Propositional logic with short-circuit evaluation: a non-commutative and a commutative variant. arXiv:1810.02142 a.ponse@uva.nl

At A.4. Theorem 6.3, the four-valued truth table is for the connective "o^" as a short-circuited operator And.

We substitute the logical values {0, 1, 2, 3} by the 2-tuple as respectively {00, 01, 10, 11}:

o^	00	01	10	11
00	00	00	10	10
01	00	01	10	11
10	10	10	10	10
11	10	11	10	11

Our two examples are:

11 o^ **0**0 = **1**0
11 o^ **1**0 = **1**0

Therefore, (**1** o^ **0**) = (**1** o^ **1**), implying **0** = **1**.

The truth table for o^ is *not* bi-valent and exact but a vector space and hence probabilistic.

The short circuit evaluation for propositional logic by commutative variants is *not* tautologous, and thereby refuted.