

Refutation of the multi-valued neutrosophic logic (and as a theory of everything in logics)

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We assume the method and apparatus of Meth8/VL4 with \top tautology as the designated *proof* value, \mathbf{F} as contradiction, \mathbf{N} as truthity (non-contingency), and \mathbf{C} as falsity (contingency). Results are a 16-valued truth table in row-major and horizontal, or repeating fragments of 128-tables for more variables.

LET p, q, r, s : $-0, 0, 1, 1+$ as $\langle \text{nonA} \rangle, \langle \text{A} \rangle, \langle \text{antiA} \rangle, \langle \text{neutA} \rangle$;
 $\&$ And; $>$ Imply; $=$ Equivalent; $@$ Not Equivalent;
 $(q@q)$ $0, \mathbf{F}$; $(r=r)$ $1, \top$.

From: Smarandache, Florentin. (2010). Neutrosophic logic as a theory of everything in logics. fs.gallup.unm.edu/NLAsTheoryOfEverything.pdf (not accessible on August 22, 2018).

In neutrosophy we can combine $\langle \text{A} \rangle$ and $\langle \text{nonA} \rangle$, getting a degree of $\langle \text{A} \rangle$ a degree of $\langle \text{neutA} \rangle$ and a degree of $\langle \text{antiA} \rangle$. (1.1)

$$(q\&p)>((q\&s)\&r); \quad \mathbf{TTF} \mathbf{TTF} \mathbf{TTF} \mathbf{TTTT} \quad (1.2)$$

$\langle \text{A} \rangle$ actually gives birth to $\langle \text{antiA} \rangle$ and $\langle \text{neutA} \rangle$... (2.1)

$$q>(s\&r); \quad \mathbf{TTF} \mathbf{TTF} \mathbf{TTF} \mathbf{TTTT} \quad (2.2)$$

Remark: We combine Eqs. 1.1 and 2.1 to define fully the logic system. (3.1)

$$((q\&p)>((q\&s)\&r))\&(q>(s\&r)); \quad \mathbf{TTF} \mathbf{TTF} \mathbf{TTF} \mathbf{TTTT} \quad (3.2)$$

Eqs. 1.2 and 2.2 are *not* tautologous, and 3.2 produces the same truth table as from 2.2.

This refutes the multi-valued logic system of neutrosophy, and as a theory of everything in logics.