

Refutation of quinary logic in neutrosophy

We evaluate the quinary logic of neutrosophy from:

Patrascu, V. (2018). Entropy, neutro-entropy and anti-entropy for neutrosophic information. vixra.org/pdf/1805.0023v1.pdf

We assume the method and apparatus of Meth8/VL4 where T tautology is the designated *proof* value, F is contradiction, N is truthity (non-contingency), and C is falsity (contingency). The 16-valued truth table is row-major and horizontal, but not needed here as evaluation is in one variable only, p .

LET # necessity, for all; % possibility, for one or some;
 + Or; \ Not And; > Imply; < Not Imply; = Equivalent; @ Not Equivalent;
 (%p>#p) 1, N ; (%p<#p) 2, C.

Figs. 1, 2: The five features and prototypes of bifuzzy information [*in the neutrosophic lozenge*]

truth	T	(1,0)		(1.1.1)
Truthity (Non contingency)	N	01	(%p>#p)	(1.1.2)
ignorance	U	(0,0)		(1.2.1)
Tautology (Proof)	T	11	(p=p)	(1.2.2)
contradiction	C	(1,1)		(1.3.1)
Contradiction (Absurdum)	F	00	(p@p)	(1.3.2)
falsity	F	(0,1)		(1.4.1)
Falsity (Contingency)	C	10	(%p<#p)	(1.4.2)
ambiguity (U+C)/2	A	(0.5,0.5)		(1.5.1)
(T+F)/C	N	(11+00)\10= 01	(%p>#p)	(1.5.2)
ambiguity (T+F)/2	A	(0.5,0.5)		(1.6.1)
(N+C)/C	N	(01+10)\10=01	(%p>#p)	(1.6.2)

From Eqs. 1.5.2 and 1.6.2 as rendered, the notion of ambiguity A (0.5,0.5) is *not* tautologous but rather truthity.

Remark: The abstract of the captioned paper introduces the modal words of possibility and necessity which unfortunately are not mentioned in the text.

We conclude that there is no provision in the neutrosophic cube to introduce modal operators.

Because neutrosophy has no bivalent square of opposition, but rather a non-bivalent lozenge with a multiple-defined midpoint, the quantified operators are prohibited from definition and hence are disparate from neutrosophy. This means neutrosophic logic is unable to map and support modal or alethic logic.