Unification by neutrosophic logic not tautologous

From: Christianto, V.; Smarandache, F. (2017). How a synthesizer works. vixra.org/pdf/1711.0442v1.pdf

"Neutrosophic Logic is a general framework for unification of many existing logics, such as fuzzy logic (especially intuitionistic fuzzy logic), paraconsistent logic, intuitionistic logic, etc.

The main idea of NL is to characterize each logical statement in a 3D Neutrosophic Space, where each dimension of the space represents respectively the truth (T), the falsehood (F), and the indeterminacy (I) of the statement under consideration, where T, I, F are standard or non-standard real subsets of]-0, 1+[with not necessarily any connection between them.

For software engineering proposals the classical unit interval [0, 1] is used.

For single valued Neutrosophic logic, the sum of the components is:

$0 \leq t+i+f \leq 3$ when all three components are independent; (3.1.1)
$0 \leq t+i+f \leq 2$ when two components are dependent,
while the third one is independent from them; (2.1.1)
$0 \leq t+i+f \leq 1$ when all three components are dependent. (1.1.1)

When three or two of the components T, I, F are independent, one leaves room for incomplete information (sum < 1), paraconsistent and contradictory information (sum > 1), or complete information (sum = 1). (3.2.1)

If all three components T, I, F are dependent, then similarly one leaves room for incomplete information (sum < 1), or complete information (sum = 1)." (1.2.1)

We assume the apparatus of the Meth8 modal logic model checker implementing variant system VŁ4. Meth8 allows to mix four logical values with four analytical values. The designated *proof* value is T.

Definition	Axiom	Symbol	Name	Meaning	2-tuple	Ordinal
1	p=p	T	Tautology	proof	11	3
2	p@p	F	Contradiction	absurdum	00	0
3	%p>#p	N	Non-contingency	truth	01	1
4	%p<#p	C	Contingency	falsity	10	2

LET: ~ Not; + Or; = Equivalent to; @ Not equivalent to; > Imply, greater than;
all, necessity; % some, possibility; (p=p) 11, three; (%p>#p) 01, one;
p q r s f i t sum=f+i+t; Note ($0 \leq s$) is equivalent to ~(0 > s).

Results are the repeating proof table(s) of 16-values in row major horizontally.

We evaluate Eqs. 3.1.1 and 3.2.1 as an axiom or definition with rules.

(s=((p+q)+r))&((~((p@p)>s)&~(s>(p=p)))>(((s<(%p>#p))+(s>(%p>#p)))+(s=(%p>#p)))) ;

`TFFF FFFF FTTT TTTT` (3.3)

We do not evaluate Eq. 2.1.1 because it has no rules.

We evaluate Eqs. 1.1.1 and 1.2.1 as an axiom or definition with rules.

(s=((p+q)+r))&((~((p@p)>s)&~(s>(%p>#p)))>((s<(%p>#p))+(s=(%p>#p)))) ;

`TFFF FFFF FTTT TTTT` (1.3)

Eqs 3.3 and 1.3 are *not* tautologous, and in fact produce the same proof table.

This means neutrosophic logic is not bivalent, but a probabilistic vector space, and hence inexact.

What follows is that neutrosophic logic cannot unify other logics in a tautology.