

Refutation of Frauchiger-Renner paradox

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Abstract: We evaluate unique conjunctive combinations of four statements, and as doubles and triples, which are *not* tautologous. This means the experiment is framed on conjectures for a flawed model and form a *non* tautologous fragment of the universal logic $V\mathbb{L}4$.

We assume the method and apparatus of Meth8/ $V\mathbb{L}4$ 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.)

LET \sim Not, \neg ; + Or, \vee, \cup, \sqcup ; - Not Or; & And, $\wedge, \cap, \square, \cdot, \otimes$; \ Not And;
 $>$ Imply, greater than, $\rightarrow, \Rightarrow, \mapsto, \succ, \supset, \Rightarrow$; $<$ Not Imply, less than, $\in, <, \subset, \neq, \neq, \ll, \lesssim$;
 $=$ Equivalent, $\equiv, :=, \Leftrightarrow, \leftrightarrow, \triangleq, \approx, \simeq$; @ Not Equivalent, \neq, \oplus ;
 $\%$ possibility, for one or some, \exists, \diamond, M ; # necessity, for every or all, \forall, \square, L ;
 $(z=z)$ **T** as tautology, \top , ordinal 3; $(z@z)$ **F** as contradiction, \emptyset , Null, \perp , zero;
 $(\%z\#z)$ **N** as non-contingency, Δ , ordinal 1; $(\%z\#z)$ **C** as contingency, ∇ , ordinal 2;
 $\sim(y < x)$ ($x \leq y$), ($x \subseteq y$), ($x \sqsubseteq y$); $(A=B)$ ($A\sim B$).
 Note for clarity, we usually distribute quantifiers onto each designated variable.

From: Gurappa, N. (2019). Resolving Schrödinger’s cat, Wigner’s friend and Frauchiger-Renner’s paradoxes at a single-quantum level. vixra.org/pdf/1909.0397v1.pdf

[Text not reproduced for the four statements for brevity.]

LET	p,	q,	r,	s,	t,	u,	v,	w,	x:
	-F,	F,	-W,	W,	t,	fw,	bk,	up,	dn.

p>(t>(s>u)) ;	(1.2)
q>(w>(p>t)) ;	(2.2)
r>(u>(q>w)) ;	(3.2)
s>(v>(r>v)) ;	(4.2)

Eqs. 1.2-4.2 are required as a conjunctive for the experiment.

$((p>(t>(s>u)))\&(q>(w>(p>t))))\&((r>(u>(q>w)))\&(s>(v>(r>v)))) ;$

TTTT	TTTT	TTTT	TTTT	}
TTTT	TTTT	FTF	FTF	}
TTTT	TFF	TTTT	TFF	}
TTTT	TFF	TTTT	TFF	}x2

TTTF	TTTF	TTTF	TTTF	}
TTTT	TTTT	FTF	FTF	}
TTTF	TTTF	TTTF	TTTF	}
TTTT	TTTT	TTTT	TTTT	}x2

Eqs. 1.2-4.2 as a conjunctive are *not* tautologous.

Unique combinations of 1.2-4.2 as conjunctives of doubles and triples are also *not* tautologous. Hence the experiment is framed on conjectures which are *not* tautologous and is a flawed model.