

Refutation of Vongehr's paradigm shift rendering QM "natural"

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We assume the method and apparatus of Meth8/VL4 with τ autology 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.

LET: p, q : state of affairs, observation; \sim Not; $\&$ And; $+$ Or; $>$ Imply, greater than;
 $@$ Not Equivalent; $\%$ possibility, for one or some; $\#$ necessity, for all or every.

From: Vongehr, S. (ca. 2011). Realism escaping Wittgenstein's silence: the paradigm shift that renders quantum mechanics natural. fqxi.org/data/essay-contest-files/Vongehr_Vongehr_1.pdf; science20.com/alpha_meme/wheeler's_utterly_simple_idea_demands_quantum-93600.

(Page 3 of 10, with emphasis as quoted):

1) Totality encompasses the total of all possibilities. Something *impossible* is, for example, the square of a real number being negative. The impossible is always unobservable, but the observable/unobservable distinction should differ somehow from the possible/impossible one, in order to be significant language. Thus, we separate "possible" from "observable": Some **unobservable is possible** (0.0)

Totality encompasses the total of all possibilities. (1.1)

$\#(p\&q) > \#(((\%p\&q) + (\%p\&\sim q)) + ((\sim\%p\&q) + (\sim\%p\&\sim q)))$; TTTT TTTT TTTT TTTT (1.2)

The impossible is always unobservable [impossible state is always unobservable state] (2.1)

$\sim\%p > \#(p\&\sim q)$; CTCT CTCT CTCT CTCT (2.2)

observable/unobservable distinction should differ ... from the possible/impossible one (3.1)

$((\%p\&q) @ (\%p\&\sim q)) @ ((\sim\%p\&q) @ (\sim\%p\&\sim q))$; TTTT TTTT TTTT TTTT (3.2)

Some unobservable is possible [some unobservable state is possible state] (4.1)

$(\%p\&\sim q) > \%p$; TTTT TTTT TTTT TTTT (4.2)

We test the argument: If (necessarily all possibilities), then ((impossible is always unobservable) and (distinct combinations differ) and (some unobservable is possible)). (5.0)

If 1.2, then ((2.2 and 3.2) and 4.2). (5.1)

$(\#(p\&q) > \#(\%p\&\%q)) > (((\sim\%p > \#(p\&\sim q)) \& (((\%p\&q) @ (\%p\&\sim q)) @ ((\sim\%p\&q) @ (\sim\%p\&\sim q)))) \& ((\%p\&\sim q) > \%p))$; CTCT CTCT CTCT CTCT (5.2)

Eq. 5.2 as rendered is *not* tautologous. This refutes Vongehr's paradigm shift rendering QM "natural".