

Refutation of non-existence proof of free will

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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.

From: Luan, Q. (2018). A rigorous non-existence proof of free will in an indeterministic universe. vixra.org/pdf/1805.0193v1.pdf

LET \sim Not; $\&$ And; $+$ Or; $-$ Not Or; $>$ Imply, greater than; $<$ Not Imply, less than;
 $=$ Equivalent; $@$ Not Equivalent; $\#$ necessity, for all; $\%$ possibility, for one or some;
 $p, q (\sim q), s$: freewill; outcome (\sim alternative outcome); personal entity in the universe;
 $\%(q+\sim q)$ at least one choice.

If free will exists in an indeterministic universe, all of the following three statements are valid and non-contradictory. (S.4.1)

There is at least one entity with free will in the universe. Let F be an entity with free will in the universe. (S.1.1)

$\%p>\%s$; TCTC TCTC TTTT TTTT (S.1.2)

As per the definition of free will, F has made at least one non-random choice. (S.2.1)

$\%p>(\%s>\%(q+\sim q))$; TTTT TTTT TTTT TTTT (S.2.2)

Let t_c be the time when F non-randomly chose one from multiple different physical possibilities. Let the possibility chosen be p_c . (S.3.1)

$\%p>((\%p>(\%s>\%(q+\sim q)))>(\%s\&\%(q+\sim q)))$; TCTC TCTC TTTT TTTT (S.3.2)

Use of the phrase "non-randomly" is ignored because the definition of Eq. S.2.1 includes that. We interpret the possibility chosen p_c not as a single variable such as q but rather as either variable $(q+\sim q)$ so as not to *assume* which is chosen.

The injections of both the temporal variable t for time or the name universe for possible worlds are not needed because the possible existence of at least one personal agent as $\%s$. Therefore we ignore both injections.

These exclusions actually help the arguments by making Eq. S.3.1 (not a tautology) irrelevant, and hence Eq. S.3.2 could be excluded in our evaluation here.

As rendered, only Eq. 3.2.2 is tautologous. This disagrees with Eq. S.4.1 where all Eqs. 3.n.2 should be tautologous.

At t_c , the universe either contained or did not contain the information that p_c was chosen.

At t_c , if the universe did not contain the information that p_c was chosen, F as defined is an entity in the universe and therefore did not contain the information that p_c was chosen. (C.1.1.1)

$$(((q+\sim q)=(q@q))\&(\%p\>\%s))\> \sim((\%p\>\%s)\>(q+\sim q)) ; \quad \text{TTTT TTTT TTTT TTTT} \quad \text{(C.1.1.2)}$$

Therefore, the choice at t_c was not non-randomly made, (C.1.2.1)

$$(((q+\sim q)=(q@q))\&(\%p\>\%s))\> \sim((\%p\>\%s)\>(q+\sim q))\> \sim(\%p\>(q+\sim q)) ; \quad \text{FFFF FFFF FFFF FFFF} \quad \text{(C.1.2.2)}$$

which contradicts the statement "Let t_c be the time when F non-randomly chose one from multiple different physical possibilities." (C.1.3.1)

$$((((q+\sim q)=(q@q))\&(\%p\>\%s))\> \sim((\%p\>\%s)\>(q+\sim q)))\> \sim(\%p\>(q+\sim q)) = (\%p\>((\%p\>\%s\>\%(q+\sim q))\>(\%s\&\%(q+\sim q)))) ; \quad \text{FNFN FNFN FFFF FFFF} \quad \text{(C.1.3.2)}$$

We also test if Eq. C.1.2.2 is equal to Eq. S.2.2. (C.1.3.3.1)

$$((((q+\sim q)=(q@q))\&(\%p\>\%s))\> \sim((\%p\>\%s)\>(q+\sim q)))\> \sim(\%p\>(q+\sim q)) = (\%p\>(\%s\>\%(q+\sim q))) ; \quad \text{FFFF FFFF FFFF FFFF} \quad \text{(C.1.3.3.2)}$$

At t_c , if the universe contained the information that p_c was chosen, there wouldn't be other different physical possibilities than p_c , (C.2.1.1)

$$((q+\sim q)=(q=q))\>\sim(\%(q+\sim q)=(p=p)) ; \quad \text{FFFF FFFF FFFF FFFF} \quad \text{(C.2.1.2)}$$

which again contradicts the statement "Let t_c be the time when F non-randomly chose one from multiple different physical possibilities." (C.2.2.1)

$$(((q+\sim q)=(q=q))\>\sim(\%(q+\sim q)=(p=p))) = (\%p\>((\%p\>\%s\>\%(q+\sim q))\>(\%s\&\%(q+\sim q)))) ; \quad \text{FNFN FNFN FFFF FFFF} \quad \text{(C.2.2.2)}$$

We also test if Eq. C.2.1.2 is equal to Eq. S.2.2. (C.2.2.3.1)

$$(((q+\sim q)=(q=q))\>\sim(\%(q+\sim q)=(p=p))) = (\%p\>(\%s\>\%(q+\sim q))) ; \quad \text{FFFF FFFF FFFF FFFF} \quad \text{(C.2.2.3.2)}$$

Eqs. C.1.2.2 and C.2.2.2 are *not* tautologous as expected. Eqs. 1.3.2 and 2.2.2 are *not* contradictory as expected. However, only by weakening the arguments do they become contradictory in Eqs. C.1.3.3.2 and C.2.3.3.2. Nevertheless, we therefore conclude that the non-existence proof of free will is refuted.