

## Refutation of the no-cloning theorem in statistical models

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**Abstract:** The assumptions comprising the conjecture of the no-cloning theorem on statistical models is refuted. What follows is that the no-cloning theorem itself is also refuted.

We assume the method and apparatus of Meth8/VL4 with Tautology as the designated *proof* value, **F** as contradiction, **N** as truthity (non-contingency), and **C** as falsity (contingency). Results are a 16-valued truth table in row-major and horizontal, or repeating fragments of 128-tables for more variables.

LET  $p, q, r, s: \langle \phi|\psi \rangle, \langle \phi|\psi \rangle^2, \langle \phi|\psi \rangle^4, s;$   
 $\sim$  Not; + Or,  $\vee$ ; - Not Or; & And,  $\wedge$ ; > Imply;  
 % possibility, for any one or some,  $\exists$  # necessity, for every or all,  $\forall$ .  
 (s=s) **T** tautology; (s@s) **F** contradiction;  
 (%s>#s) 1, **N** truthity; (%s<#s) 0, **C** falsity;

From: Nagata, K.; Nakamura, T. (2018). The no-cloning theorem based on a statistical model. [vixra.org/pdf/1809.0552v1.pdf](http://vixra.org/pdf/1809.0552v1.pdf)

The following assumptions are made:

$$\langle \phi|\psi \rangle^2 = 0 \vee \langle \phi|\psi \rangle^2 = 1 \tag{5.1}$$

$$q = (((s@s)+q) = (%s>#s)) ; \quad \text{NNNN NNNN NNNN NNNN} \tag{5.2}$$

$$\langle \phi|\psi \rangle^4 = 0 \vee \langle \phi|\psi \rangle^2 = 1 \tag{6.1}$$

$$r = (((s@s)+r) = (%s>#s)) ; \quad \text{NNNN NNNN NNNN NNNN} \tag{5.2}$$

$$\langle \phi|\psi \rangle = 1 \wedge \langle \phi|\psi \rangle^4 = 0 \tag{23.1}$$

$$p = (((%s>#s) \& r) = (s@s)) ; \quad \text{FTFT NCNC FTFT NCNC} \tag{23.2}$$

Eqs. 5.1, 6.1, and 23.1 as rendered are *not* tautologous. This refutes those assumptions and the conjecture of the no-cloning theorem on statistical models. What follows is that the no-cloning theorem itself is also refuted.