Refutation of translation invariance in superposition calculus

We assume the method and apparatus of Meth8/VŁ4 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: A, B, X, Y;
~ Not; + Or; & And; > Imply, greater than, →; < Not Imply, less than;
# necessity, ∀, for all or every; % possibility, ∃, for one or some.

From: en.wikipedia.org/wiki/Knuth–Bendix_completion_algorithm

> [I]f a rewriting system is used to calculate minimal representatives then the order < should also have the property ... called translation invariance.

$$A < B \rightarrow XAY < XBY \text{ for all words A,B,X,Y} \tag{1.1}$$

((p<q) > (((r&p)&s) < ((r&q)&s))) & #((p&q)&(r&s)) ;
FFFF FFFF FFFF FFFN (1.2)

> If we distribute the universal quantifier over each word, and remove the quantified consequent in Eq. 1.2, then:

(#p<#q) > (((#r&p)&#s) < ((#r&#q)&#s)) ; TCTT TCTT TCTT TTTT (1.3)

Eqs. 1.2 and 1.3 are *not* tautologous. Eq. 1.2 is nearly contradictory, excepting one non-contingency value N. Eq. 1.3 is closest to tautology, excepting the three contingency values C. Hence the property of translation invariance is refuted.