Refutation of Whewell's axiom of causality

We assume the method and apparatus of Meth8/VŁ4 with ᴛautology as the designated *proof* value, ꜰ as contradiction, ɴ as truthity (non-contingency), and ᴄ as falsity (contingency). Results are a 16-valued truth table in row-major and horizontal.

> LET p; q; r; s: effect or reaction; cause or action; magnitude of effect; magnitude of cause;
> ~ Not; & And; \ Not And; + Or; - Not Or; > Imply.

From: en.wikipedia.org/wiki/Axiom_of_Causality

> "According to William Whewell [1794-1866] the concept of causality depends on
> three axioms: (4.1)
>
>> 1. Nothing takes place without a cause   (1.1)
>> 2. The magnitude of an effect is proportional to the magnitude of its cause   (2.1)
>> 3. To every action there is an equal and opposed reaction.   (3.1)
>
> A similar idea is found in western philosophy for ages (sometimes called principle of
> universal causation (PUC) or law of universal causation, for example:
>
>> In addition, everything that becomes or changes must do so owing to some
>> cause; for nothing can come to be without a cause. — Plato in Timaeus
>
> [The m]odern version of PUC is connected with Newtonian physics, but is also
> criticized for instance by David Hume. ... Kant opposed Hume in many aspects,
> defending the objectivity of universal causation."

#q>p ;   `TTCT TTCT TTCT TTCT`   (1.2)

((r=(p\q))&(s=(q\p)))>(((s=r)>(q=p))+(((s>r)>(q>p))+((s<r)>(p>q)))) ;

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ `TTTT TTTT TTTT TTTT`   (2.2)

#q>(#p=~#q) ;   `TTTC TTTC TTTC TTTC`   (3.2)

> **Remark:** Weakening Eq. 3.2 to #q>(#p>~#q) produces the same truth table.

((#q>p)&((((r=(p\q))&(s=(q\p)))>(((s=r)>(q=p))+(((s>r)>(q>p))+
((s<r)>(p>q))))))&(#q>(#p=~#q)) ;   `TTCC TTCC TTCC TTCC`   (4.2)

Eqs. 2.2 is tautologous. Eqs. 1.2, 3.2, and 4.2 as rendered are *not* tautologous. This means the concept of causality as produced from Whewell's three axioms is refuted.

> **Remark:** From a metaphysical view, the axiom of causality is a bar to miracle because
> first cause is always assumed. This is overcome with the axiom "The necessity of effect
> implies the possibility of cause *or* no cause": #q>%(p+~p) ; `TTTT  TTTT  TTTT  TTTT` .