

Refutation of Huemer's confirmation theory

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Abstract: Huemer proposed a confirmation theory to solve the problem of induction. In lieu of the excess of content from Popper and Miller, the proposed replacement is also *not* tautologous, so we correct it for the intended use. That applied to the subsequent proposal in three parts shows one part is *not* tautologous, hence denying the proposal. Therefore Huemer's confirmation theory is a *non* tautologous fragment of the universal logic $\forall\exists\forall$.

We assume the method and apparatus of Meth8/ $\forall\exists\forall$ with Tautology 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, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)

LET \sim Not, \neg ; + Or, \vee , \cup , \sqcup ; - Not Or; & And, \wedge , \cap , \sqcap , $;$; \ Not And;
 $>$ Imply, greater than, \rightarrow , \Rightarrow , \mapsto , \succ , \supset , \rightsquigarrow ;
 $<$ Not Imply, less than, \in , $<$, \subset , \prec , \preceq , \ll , \leq ;
 $=$ Equivalent, \equiv , $:=$, \Leftrightarrow , \leftrightarrow , \triangleq , \approx , \simeq ; @ Not Equivalent, \neq ;
 $\%$ possibility, for one or some, \exists , \diamond , **M**; # necessity, for every or all, \forall , \square , **L**;
 $(z=z)$ **T** as tautology, \top , ordinal 3; $(z@z)$ **F** as contradiction, \emptyset , Null, \perp , zero;
 $(\%z>\#z)$ **N** as non-contingency, Δ , ordinal 1;
 $(\%z<\#z)$ **C** as contingency, ∇ , ordinal 2;
 $\sim(y < x)$ ($x \leq y$), ($x \subseteq y$); $(A=B)$ ($A\sim B$); $(B>A)$ ($A\vdash B$); $(B>A)$ ($A\neq B$).
 Note for clarity, we usually distribute quantifiers onto each designated variable.

From: Huemer, M. (1993). Confirmation theory: a metaphysical approach.
owl232.net/papers/confirm.htm#N_18 bmsjrqrna@snkmail.com

I. Problem: The purpose of confirmation theory, ultimately, is to solve the problem of induction.
 D. The Bayesian Approach, Objections

For Bayesianism to solve the problem of induction, it would have to show that for typical inductive arguments, the evidence confirms the excess content of the hypothesis above the observations. This notion of "excess content" is worth looking into. Karl Popper and David Miller claim that for any h and e , the excess content of h above e is equal to $(h \vee \neg e)$, for reasons which are unnecessary to examine since they're wrong. Intuitively, the excess content of $(A \& B)$ above A should be B , not $((A \& B) \vee \neg B)$. (D.1.1),(D.2.1)

LET $p, q: A, B$.
 $((p\&q)\backslash p)=q$; **FFTF FFTF FFTF FFTF** (D.1.2)
 $((p\&q)+\sim q)=q$; **FFFT FFFT FFFT FFFT** (D.2.2)

Remark D: Eqs. D.1.2 and D.2.2 as rendered are *not* tautologous. The intention of excess content in D.1.1 is:

$((((p\&q)\backslash p)-q)+q)=q$; or alternatively **TTTT TTTT TTTT TTTT** (D.1.3)
 $((p\&q)\backslash p)-q=(p@p)$; **TTTT TTTT TTTT TTTT** (D.1.4)

The corrected form of Eqs. D.1.3 or D.1.4 is used below.

My proposal is this:

(a) If h can be written as a conjunction (e & x), where e and x are propositions *about different things* (separate and distinct classes), then the excess content of h above e is x; (3.1.1)

$$\text{LET } p, q, r: e, h, x. \\ ((q=(p\&r))\&(p@r))>((((p\&q)\p)-q)+q)=q)=r); \\ \text{TF}TT \text{ TTTT } \text{TF}TT \text{ TTTT} \quad (3.1.2)$$

(b) If e entails h [h implies e], then the excess content of h above e is nothing (or a tautology); (3.2.1)

$$(q>p)>((((p\&q)\p)-q)+q)=q)=((p@p)+(p=p)); \\ \text{TTTT } \text{TTTT } \text{TTTT } \text{TTTT} \quad (3.2.2)$$

(c) Otherwise, the excess content of h above e is h. (3.3.1)

Remark 3.3.1: The otherwise is taken to mean Not(h implies e).

$$\sim(q>p)>((((p\&q)\p)-q)+q)=q)=q); \quad \text{TTTT } \text{TTTT } \text{TTTT } \text{TTTT} \quad (3.3.2)$$

Eq. 3.1.2 as rendered is *not* tautologous. This refutes the proposal of (a), (b), and (c) as a confirmation theory.