Refutation of analogy as inference

Abstract: The definitions of analogy in its stronger and weaker forms are not tautologous. This forms a non tautologous fragment of the universal logic VL4.

We assume the method and apparatus of Meth8/VŁ4 with Tautology as the designated proof value, F as contradiction, N as truthty (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, \(\lor\), \(\cup\); \(-\) Not Or; \(\&\) And, \(\land\), \(\cap\), \(\cdot\), \(\otimes\); \(\\setminus\) Not And;
\(\succ\) Imply, greater than, \(\rightarrow\), \(\Rightarrow\), \(\supset\), \(\ni\); \(\prec\) Not Imply, less than, \(\in\), \(\subset\), \(\not\ni\), \(\not\subset\);
\(\equiv\) Equivalent, \(\cong\), \(\equiv\), \(\approx\), \(\approx\); \(\not\equiv\) Not Equivalent, \(\neq\), \(\oplus\);
\(\%\) possibility, for one or some, \(\exists\), \(\exists!\), \(\Diamond\), \(\Box\); \# necessity, for every or all, \(\forall\), \(\square\), \(\blacklozenge\);
\((z=z)\) \(T\) as tautology, \(\top\), ordinal 3; \((z\not=z)\) \(F\) as contradiction, \(\emptyset\), \(\text{Null}\), \(\bot\), zero;
\(\%z\not\#z\) \(N\) as non-contingency, \(\Delta\), ordinal 1; \(\%z\#z\) \(C\) as contingency, \(\nabla\), ordinal 2;
\(~(y\prec x)\) \((x\preceq y)\), \((x\preceq y)\), \((x\in y)\), \((A=B)\) \((A\sim B)\).

Note for clarity, we usually distribute quantifiers onto each designated variable.

From: en.wikipedia.org/wiki/Analogy#cite_ref-Shelley_6-0

Premises
\(a\) is C, D, E, F, G
\(b\) is C, D, E, F

Conclusion
\(b\) is probably G. \((1.1.1)\)

\[
\begin{align*}
\text{LET} & \quad p, q, r, s, t, u, v: \quad a, b, C, D, E, F, G. \\
((p=((r&s)&(t&u))&v))&(q=((r&s)&(t&u)))\succ(q=\%v) ; & \begin{array}{c}
\text{NTTT NTTT NTTT NTTT(3)} \\
\text{NTTT NTTT NTTT TTCT(1)} \\
\text{FTTT FTTT FTTT FTTT(3)} \\
\text{FTTT FTTT FTTT TTTT(1)}
\end{array} \\
\end{align*}
\]

\((1.1.2)\)

Remark 1: If the word probably is not used, the conjecture is stronger: \((1.2.1)\)

\[
\begin{align*}
(p=((r&s)&(t&u))&v))&(q=((r&s)&(t&u)))\succ(q=v) ; & \begin{array}{c}
\text{TTTT TTTT TTTT TTTT(3)} \\
\text{TTTT TTTT TTTT TTTT(1)} \\
\text{FTTT FTTT FTTT FTTT(3)} \\
\text{FTTT FTTT FTTT TTTT(1)}
\end{array} \\
\end{align*}
\]

\((1.2.2)\)

Eqs. 1.1.2 and 1.2.2 as rendered are not tautologous, hence refuting the conjecture of analogy as inference.