PHILOSOPHY, SOFTWARE

Jan. 3, 1921

CORRELATION NOT CAUSATION

28.09.2017

I am following up some references Rudi Balling showed in his talk yesterday. Sure, correlation is not causation,

Unfortunately we can not deal with chains of fact nonlinear relations by mere multiplication of the path	tors which involve
component links. In the present paper, unless other	wise stated, it will
be assumed that all correlations are	
essentially linear.	/ A

Correlation and Causation

EFFECTS OF COMMON CAUSES

Suppose that two variables, X and Y, are affected by a number of causes in common, (B, C, D). Let A represent causes affecting X alone and E causes affecting Y alone (fig. 2).

Let $p_{X \cdot A} = a$ $p_{Y \cdot A} = o$ $p_{X \cdot B} = b$ $p_{Y \cdot B} = b'$ $p_{X \cdot C} = c$ $p_{Y \cdot C} = c'$ $p_{X \cdot D} = d$ $p_{Y \cdot D} = d'$ $p_{X \cdot E} = o$ $p_{Y \cdot E} = e'$

B, C, and D are assumed to be independent of each other—that is, $r_{BC} = 0$, etc.

Hence px.B = rxB, etc.

X C C C Y C C F

Pig. 2.—Diagram showing relations between two variables, X and Y, whose values are determined in part by common causes, B, C, and D, which are interested of each other.

An excerpt of the famous Wright paper 1921

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ing any useful hypothesis.

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