PATH ANALYSIS OF CAREERS OF 696 CLASSICAL COMPOSERS

PATH COEFFICIENTS

Creative productivity – .56 → Eminence
i.e., 1 SD in first → .56 SD in second

DIRECT EFFECTS

Creative productivity – .42 → Creative longevity

e.g., if 1 SD above mean in productivity, or 24 + 74 = 98,
then 10 + .42 × 12 = 15 years long (rather than 10)

DIRECT & INDIRECT EFFECTS

e.g., Creative precociousness → Creative longevity

Direct effect: 1 SD below → 1/3rd SD above
   If 24 rather than 33, 10 + .33 × 12 = 14 years long, not 10

Indirect effect: one via life span, other via productivity
   Life span: -.22 × .25 = -.06 (more precocious, shorter life)
   Productivity: .34 × .42 = .14

Sum of three effects: .33 + .14 - .06 = .41 (i.e., for every year delay in career onset, career shorter by 200 days)

N.B.: .41 close to r = .40 because latter decomposed

SPURIOUS RELATIONSHIPS ("Correlation does not prove causation")

Correlation - (Direct + Indirect Effects) = Spuriousness and/or noncausal effects

e.g., Correlation between longevity & eminence   = .56
Portion due to direct effect (no indirect effect)   = .30
Difference that is spurious   = .26

Most of this is due to productivity (.56 × .42 = .24)

SUPPRESSION EFFECTS ("No correlation does not prove no causation")

e.g., Correlation between role-models & productivity = -.02

but this is the sum of direct effect = -.10 and an indirect effect via precociousness = .08 (i.e., .24 × .34) which cancel each other out almost perfectly!!

RESIDUAL COEFFICIENTS: Effect of unmeasured variables.

Squared & subtracted from 1 = proportion of variance explained.

   e.g., .63 → Eminence => 1 - .63² = .60 (or 60%)

N.B.: These usually the biggest path coefficients!!!