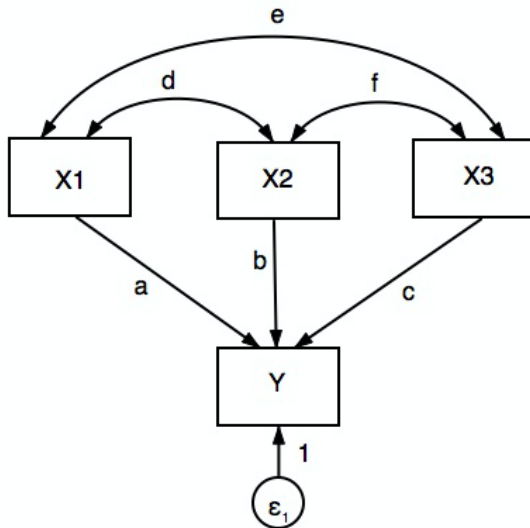


Path Analysis

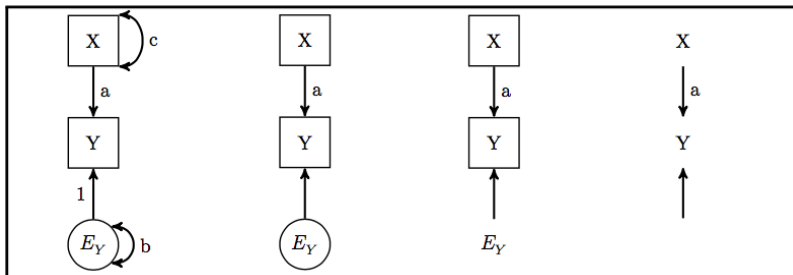
Todd K. Hartman
Senior Lecturer in Quantitative Methods
Sheffield Methods Institute

5 May 2021

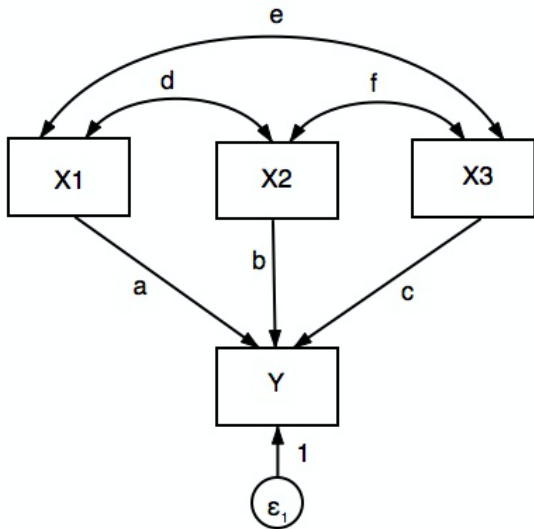
Path Model



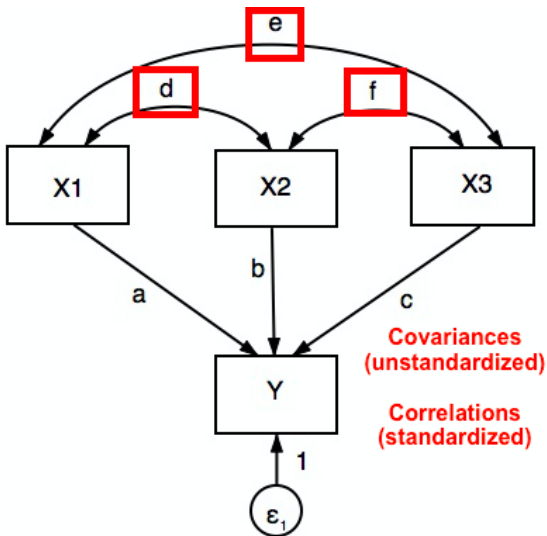
Path Model Variations



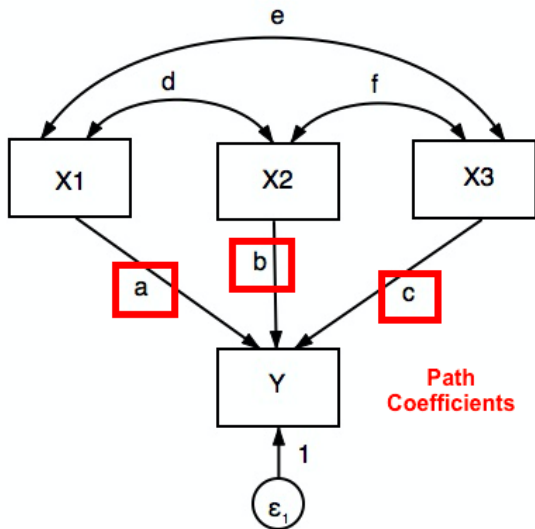
Path Model: Example



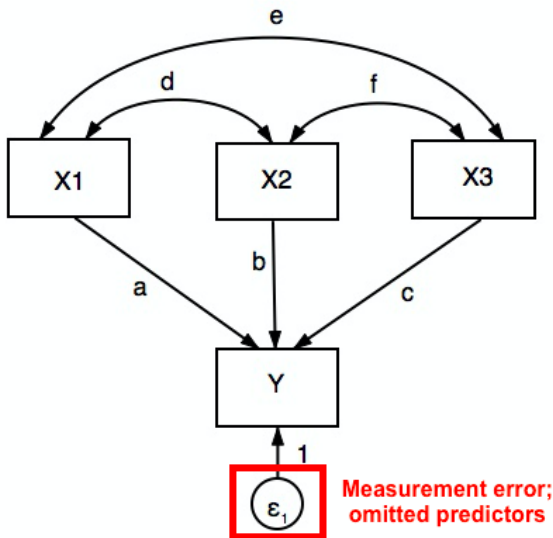
Path Model: Covariances / Correlations



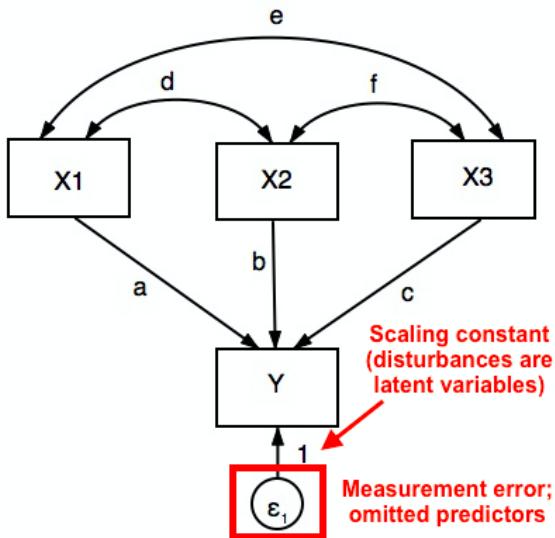
Path Model: Partial Regression Coefficients



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(Un)Standardized Path Coefficients?

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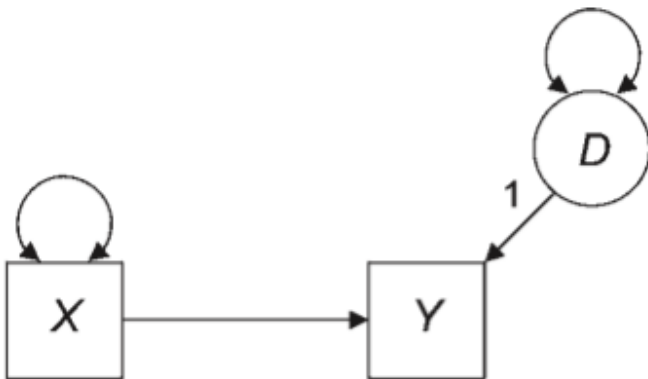
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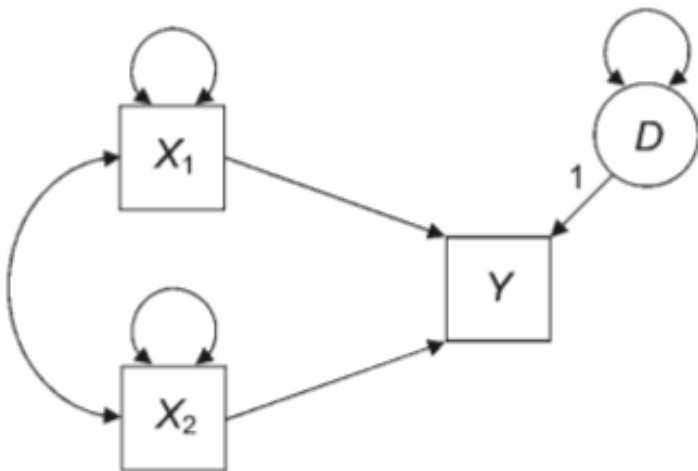
Standardized Regression Estimate

$$\beta^* = \beta \frac{\sigma_X}{\sigma_Y}$$

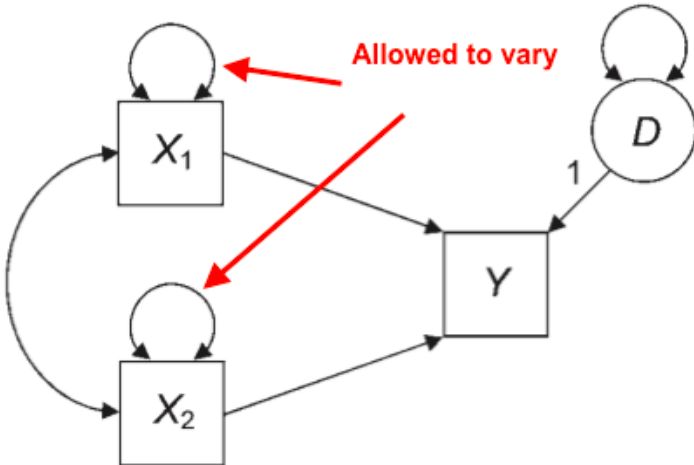
Path Model: Single Cause



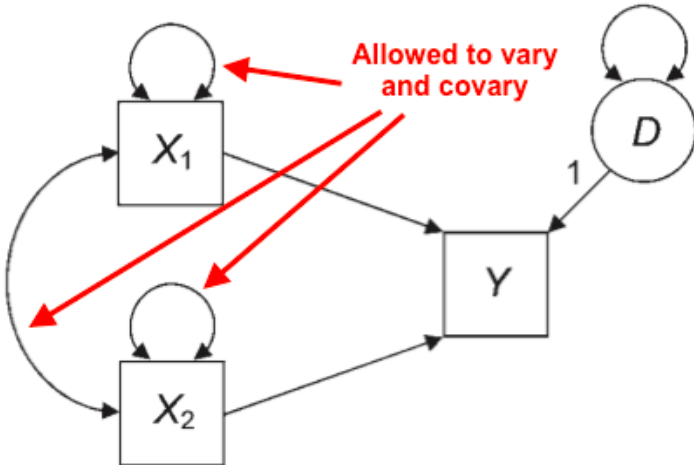
Path Model: Correlated Causes



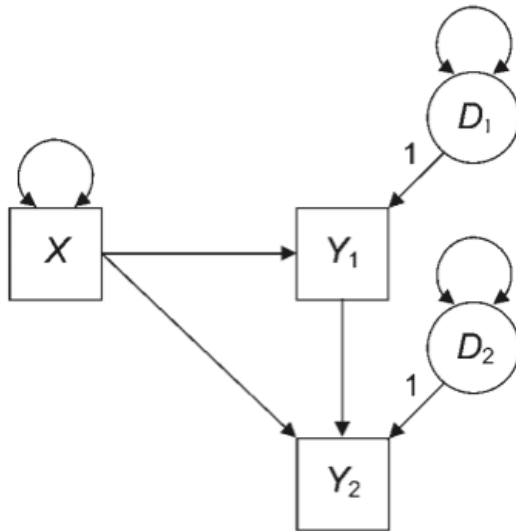
Path Model: Correlated Causes



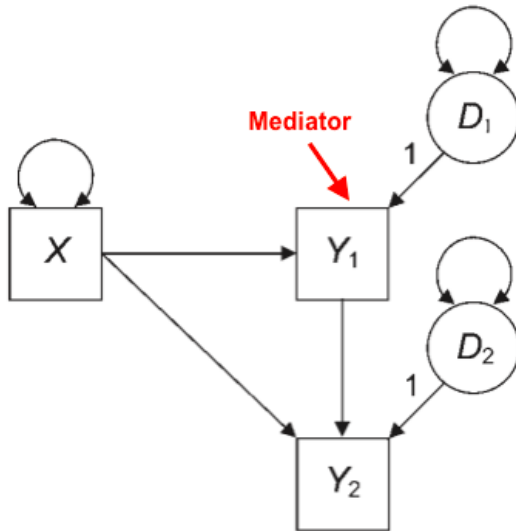
Path Model: Correlated Causes



Path Model: Indirect Effects



Path Model: Indirect Effects



Types of Structural Models

- 1 Recursive models

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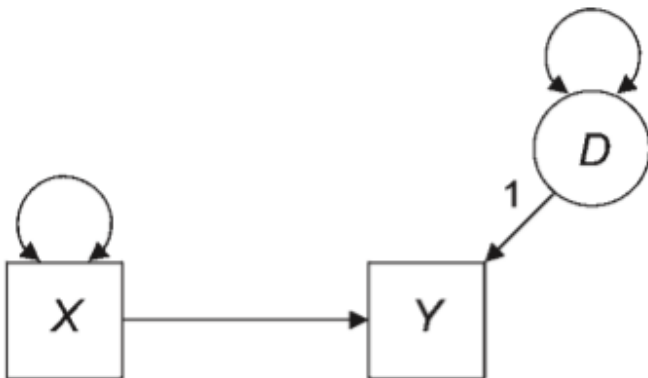
Types of Structural Models

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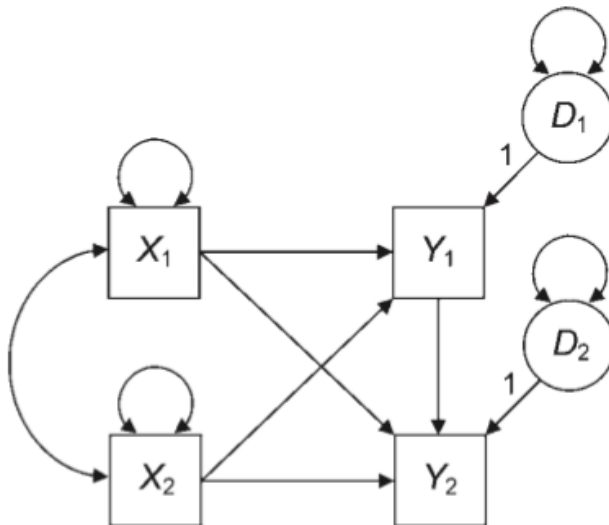
Types of Structural Models

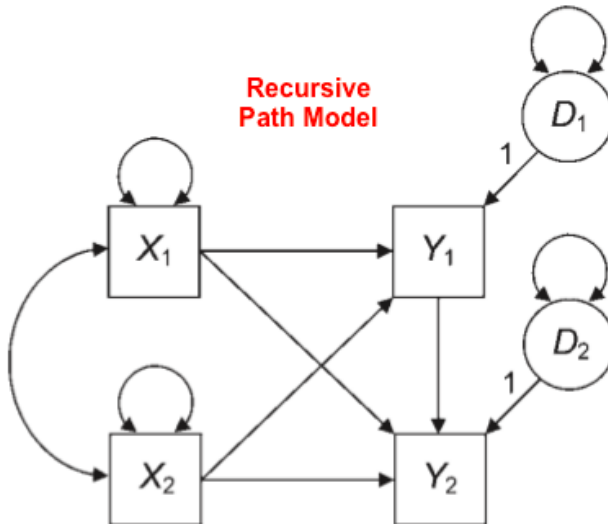
- ① Recursive models
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 - Unidirectional causal effects
- ② Nonrecursive models
 - Correlated disturbances
 - Feedback loops

Recursive or Nonrecursive?

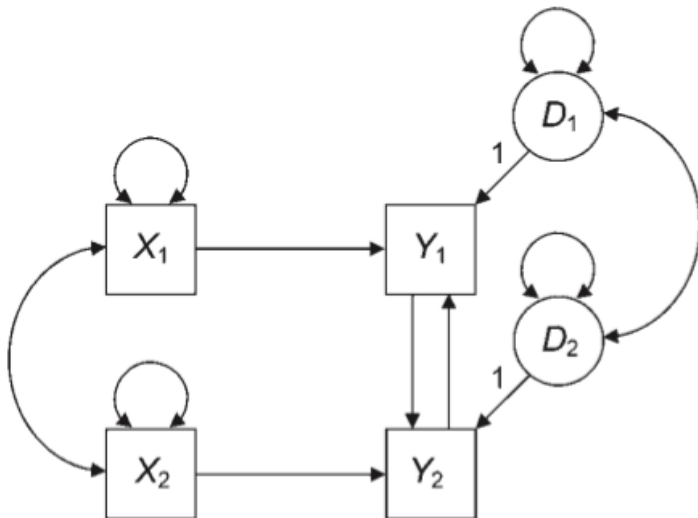


Recursive or Nonrecursive?

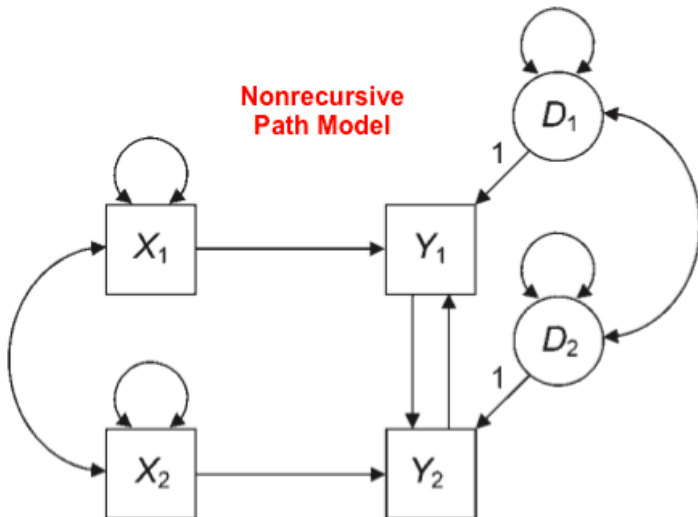




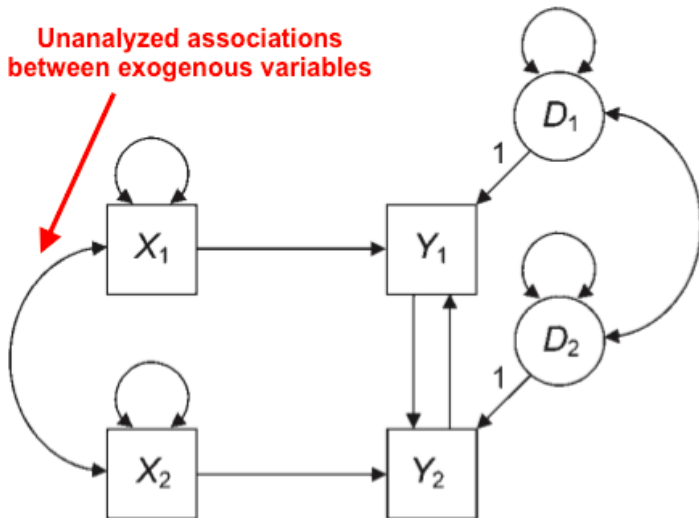
Recursive or Nonrecursive?



Nonrecursive



Nonrecursive



Nonrecursive

