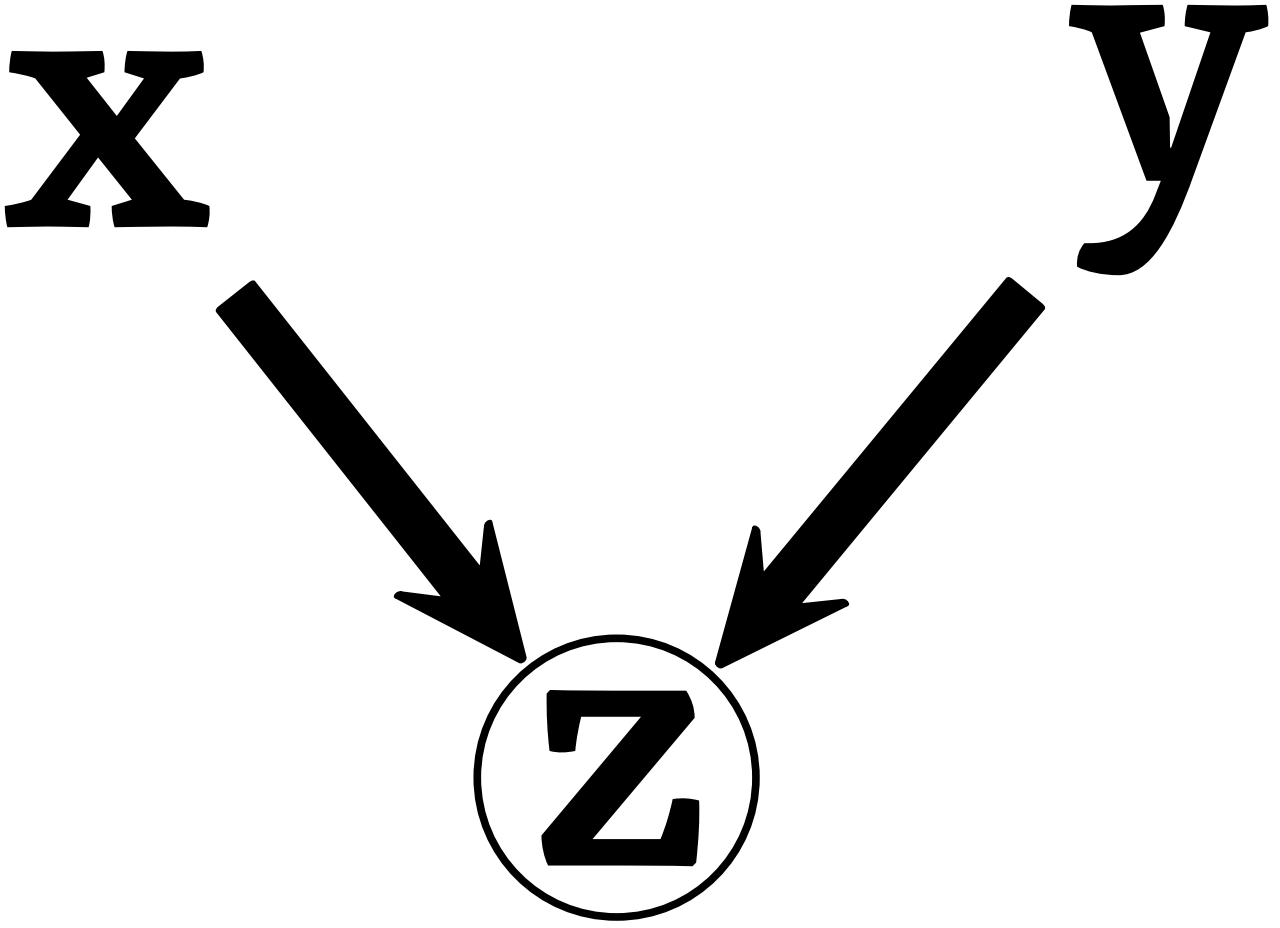
NO EFFECT OF X ON Y, BUT BOTH AFFECT Z


X
Y
Z

Math

$$y \sim Normal(\alpha_y, \sigma_y)$$

$$x \sim Normal(\alpha_x, \sigma_x)$$

$$z \sim Normal(\alpha_z + \beta_{zx}x + \beta_{zy}y, \sigma_z)$$

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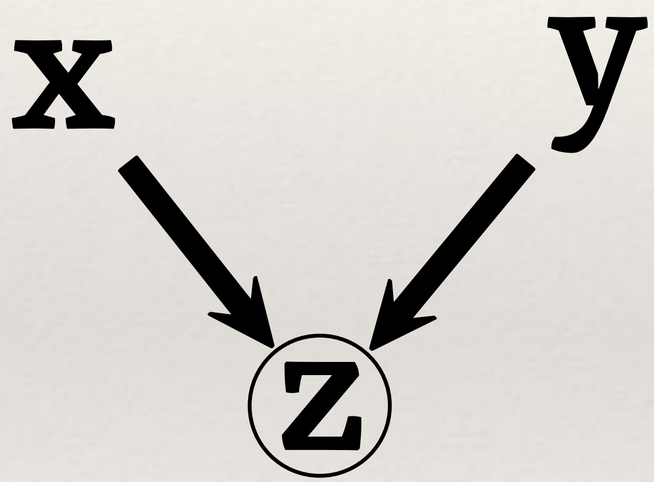

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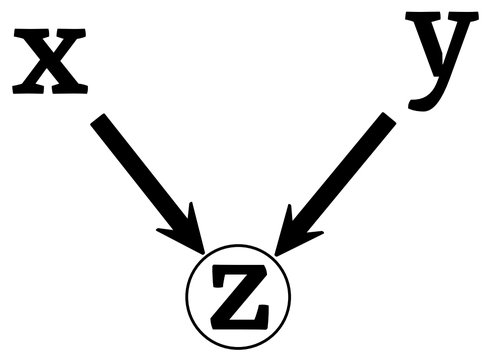
```
set.seed(1)
N = 100
x = rnorm(N)              # x ~ normal(0, 1)
y = rnorm(N)              # y ~ normal(0, 1)
z = rnorm(N, 1 + x + y) # z ~ normal(1 + x + y, 1) -> collider

m1 = ulam(alist(
    y ~ normal(a + bx*x, sigma),
    a ~ normal(0, 0.3),
    bx ~ normal(0, 0.3),
    sigma ~ exponential(1)),
    data = list(y = y, x = x),
    iter = 1000, chains = 4, cores = 4)
```