

Last week a student asked how you would represent measurement error in measured confounders in a causal diagram.

Hernan's book shows this on page 118 (page 111 on contents) of [https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1268/2018/12/hernanrobins\\_v1.10.37.pdf](https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1268/2018/12/hernanrobins_v1.10.37.pdf) :-

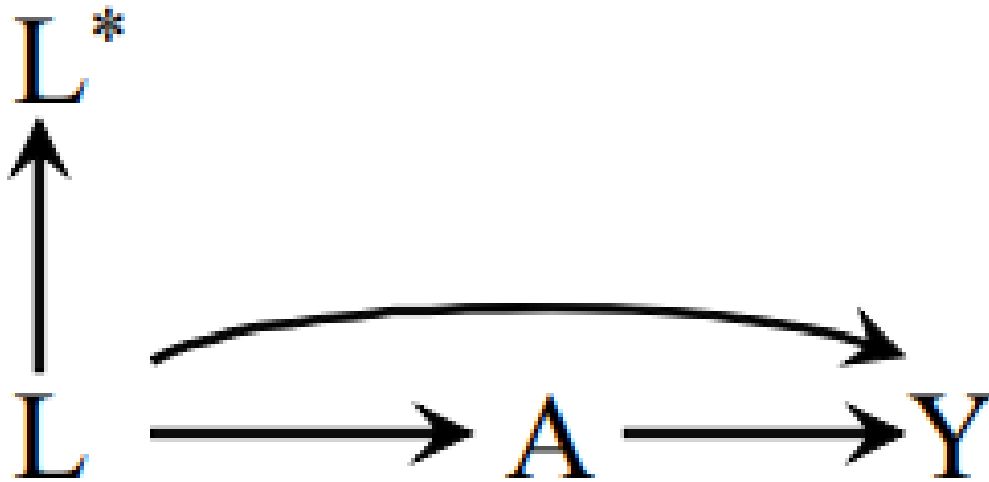


Figure 9.8

$L$  is the confounder (or common cause) and  $L^*$  is an imperfect measurement of  $L$ . Since you are conditioning on  $L^*$  and not  $L$ , there is still a backdoor path. Hernan's argues that, conceptually, this is can be thought of as unmeasured confounding.