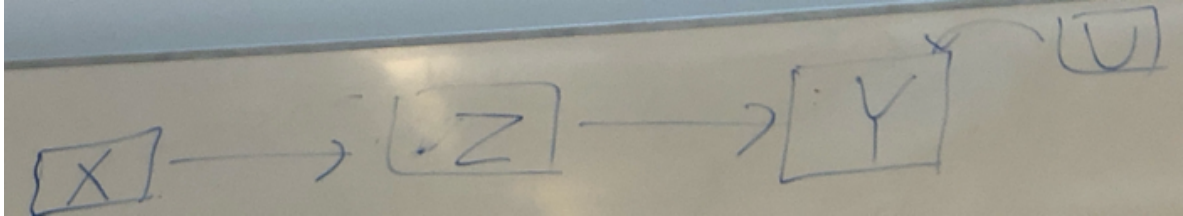


L4 More About Interventions

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For any value of Z (if the value is fixed), the causal effect will tell us the causal effect on Y.

On the graph to be exactly right, we should remove the link from X to Z.

If we know the causal effect from X on Z and Z on Y, we should know the causal effect from X on Y.

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$$\sum_z \left[P(z, \dots) \sum_{x'} \left[P(y, \dots) P(x) \right] \right]$$

A little explanation on the full formula; parenthesis explicitly shown to explain the x vs x_prim.

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The z-specific effect

We have a probability of Y, given some conditional set Z and some interventions (X) we do.

Whenever the "do" appears, we must have fixed the graph. Only then we can start talking about the probabilities.

$$P(Y | Z, do(X))$$

For example:

Y = effect on the patient

Z = age of the patient

X = treatment given