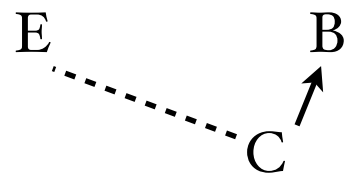


(a) With confounder before conditioning on A



(b) With confounder after conditioning on A

Figure S4: The conditional independence test fails in the presence of hidden confounders. When A and B are both regulated by a hidden confounder C , which is independent of E (left), A becomes a collider and conditioning on A would introduce inter-dependency between E and C , which maintains $E \rightarrow B$ regulation (right).