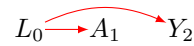
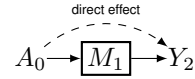
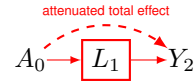
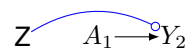
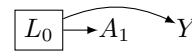
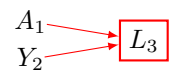
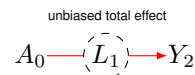
| Symbol | Meaning | Example |
|---|---|---|
| | **Graphical Machinery** | |
| $X$ | **Node:** variable, denoted by a letter | $A$ |
| $X_t$ | **Time-indexed node**: denotes relative chronology | $A_1$ $Y_2$ |
| $X_{\phi_t}$ | **Time-indexed node assumed but not known**: relative chronology **asserted**. | $A_{\phi_1}$ $Y_{\phi 2}$ |
| $\longrightarrow$ | **Path with an arrow** causal association | $A_1 \longrightarrow Y_2$ |
| $\longrightarrow$ | **Red arrow:** pathway of bias |   |
| $\dashrightarrow$ | **Dashed arrow:** causal effect not through a mediator (direct effect). |   |
| $\dashrightarrow$ | **Dashed red arrow:** pathway of biased causal association. |   |
| $\multimap$ | **Effect-modification path** We assume $A \longrightarrow Y$ and focus on the modification within levels of another variable.**Blue path is not evaluated for causality and need have a causal interpretation**. |   |
| $\boxed{X}$ | **Boxed variable:** conditioning/adjustment |   |
| $\boxed{X}$ | **Red boxed variable** variable that when conditioned upon induces bias. |   |
| $\textcircled{X}$ | **Dashed circle:** no adjustment for variable |   |
| $\mathcal{R} \longrightarrow A$ | **Randomisation into treatment:** such that $A \coprod Y(a) \mid \mathcal{R}$ | $\mathcal{R} \longrightarrow A_1$ $Y_2$ |
| | **Statistical Machinery** | |
| $A \coprod B$ | **Statistical independence (unconditional)** | $A \coprod Y(a)$ |
| $A \not\coprod B$ | **Statistical dependence (unconditional)** | $A \not\coprod Y(a)$ |
| $A \coprod B \mid C$ | **Conditional statistical independence** | $A \coprod Y(a) \mid L$ |
| $A \not\coprod B \mid C$ | **Conditional statistical dependence** | $A \not\coprod Y(a) \mid L$ |