

# In the language of Global States

- **Recall that a distributed system moves from one global state to another global state, via causal steps**
- **Liveness w.r.t. a property Pr in a given state S means**
  - S satisfies Pr, or there is **some** causal path of global states from S to S' where S' satisfies Pr
- **Safety w.r.t. a property Pr in a given state S means**
  - S satisfies Pr, and **all** global states S' reachable from S also satisfy Pr