

There is a set $N = \{1, 2, \dots, n\}$ of *agents*. Each agent i has an *opinion*, or *belief*, $x_i \in [0, 1]$. The opinions are meant to track a *true state* $\mu \in (0, 1)$.

Time goes by in discrete steps $t \in \{0, 1, 2, \dots\}$. Agent i 's *opinion at time t* is x_i^t .

Agents are connected by a *social network* $G = (N, E)$, which is a directed graph. An edge from i to j indicates that agent i pays attention to agent j . Agent i 's (*out-*)*neighborhood* $N(i)$ is the set of agents that i pays attention to:

$$N(i) = \{j \in N \mid (i, j) \in E\}.$$

Each agent i distributes a total weight of 1 across the agents in $N(i)$:

$$\sum_{j \in N(i)} w_{ij} = 1,$$

where $w_{ij} > 0$ is the *weight* that agent i places on agent j 's opinion.

At each new time step, agents *update* their opinions to a weighted average of the opinions of agents they pay attention to:

$$x_i^{t+1} = \sum_{j \in N(i)} w_{ij} x_j^t.$$