

Modeling Opinion Dynamics

Homophily, Heterophily, and Exophily

Marko Tešić

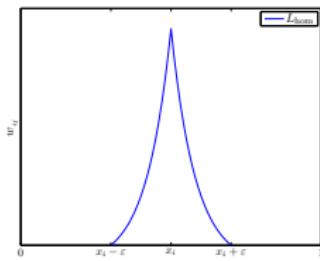
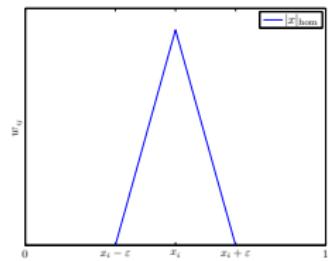
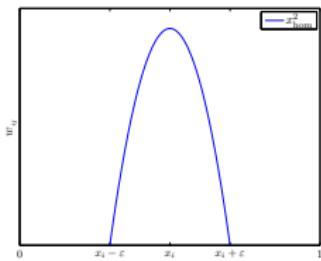
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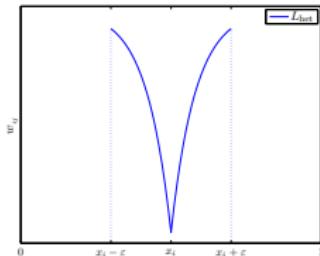
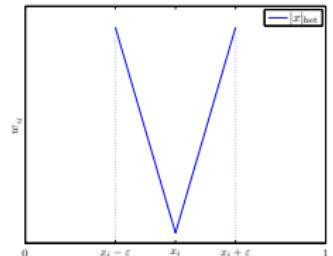
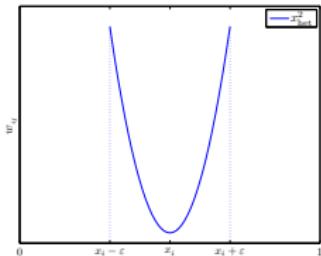
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The Bounded Confidence Model

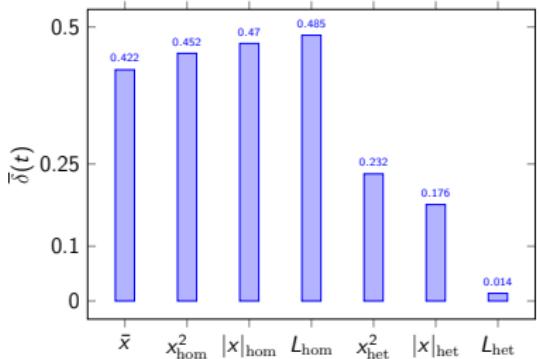
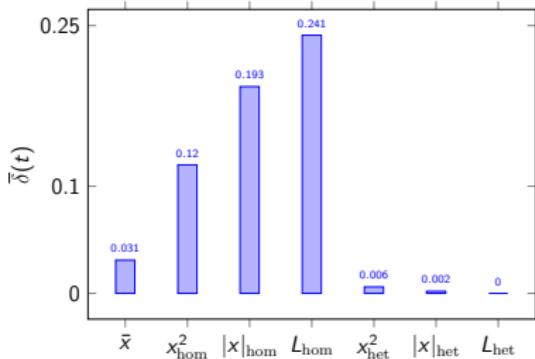
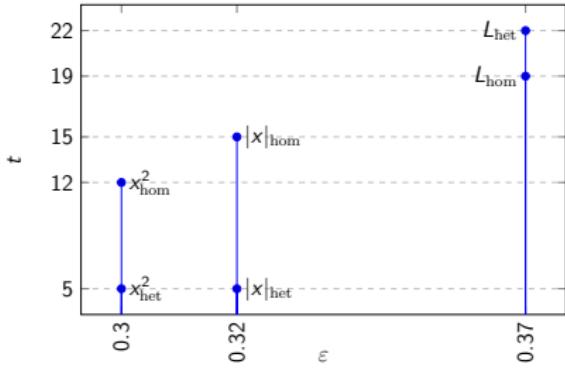
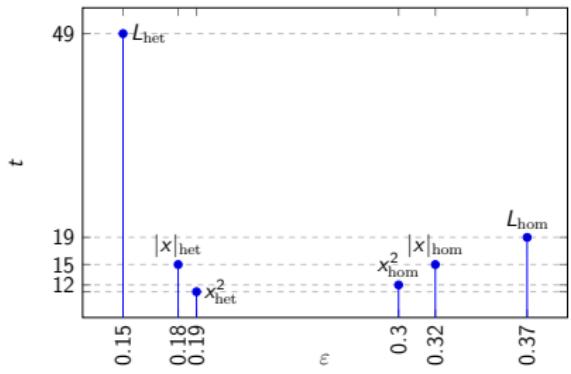
- $x_i(t+1) = |I(i, x(t))|^{-1} \sum_{j \in I(i, x(t))} x_j(t)$
- $x_i(t+1) = \alpha_i T + (1 - \alpha_i) |I(i, x(t))|^{-1} \sum_{j \in I(i, x(t))} x_j(t)$
- Homophilious weight distributions: x_{hom}^2 , $|x|_{\text{hom}}$, L_{hom}



- Heterophilious weight distributions: x_{het}^2 , $|x|_{\text{het}}$, L_{het}

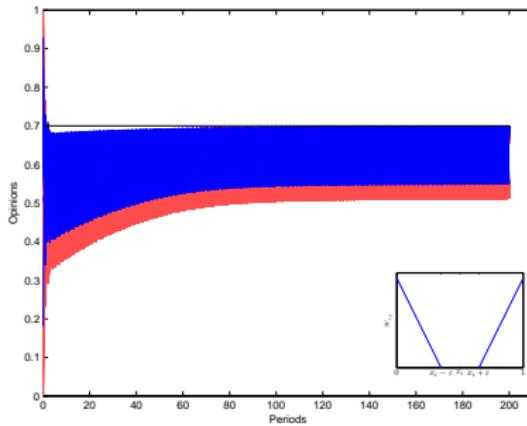
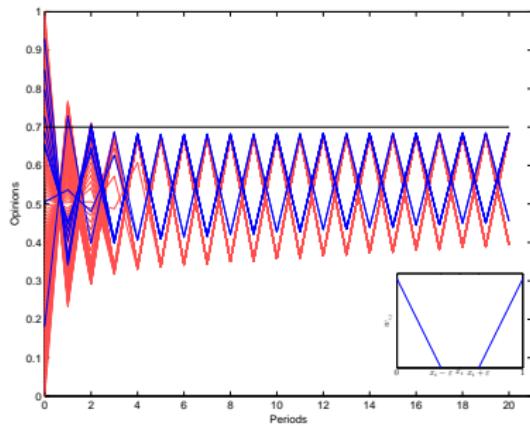


Homophily and Heterophily



Exophilic

- Exophilic agents are those that give positive weight to opinions that lie *outside* of their confidence interval



- ➊ No conditions under which all agents reach the truth
- ➋ No conditions under which all agents reach the consensus
- ➌ The opinion dynamics often do not stabilize