

Group Affinity and Fashion Sense

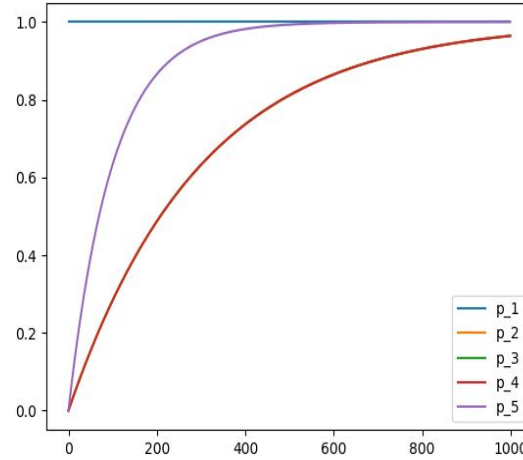
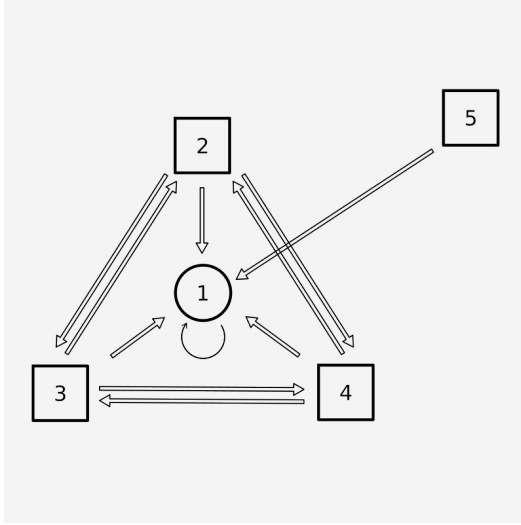
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Model Overview

$$\frac{dP_i}{dt} = \sum_{j=1}^n A_{ij} * \left\{ \begin{array}{l} P_j, \text{ if Person } i \text{ likes Person } j \\ 1 - P_j, \text{ if Person } i \text{ has contempt for Person } j \end{array} \right\} - P_i$$

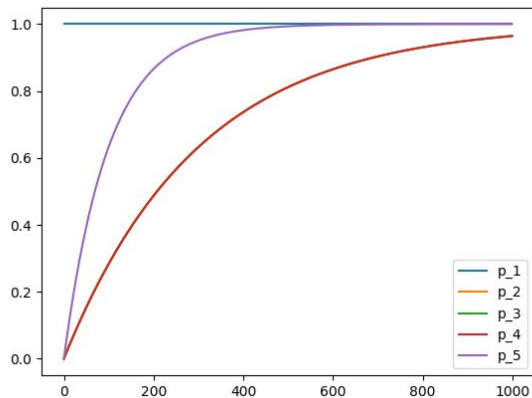
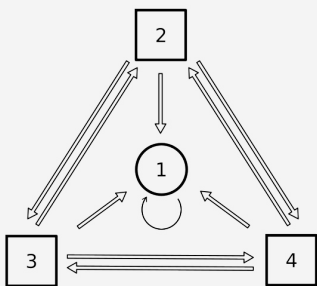
$$P_i \in [0, 1]$$

A is the adjacency matrix where $A_{ij} \in [0, 1]$ denotes the influence Person i gets from Person j

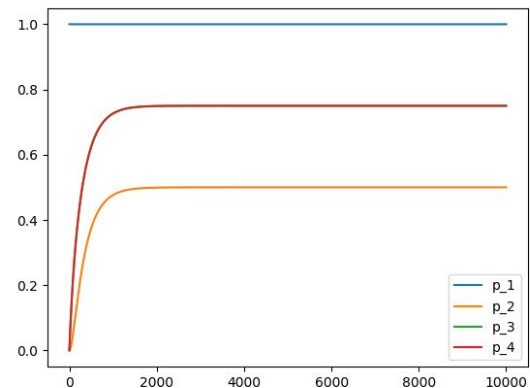
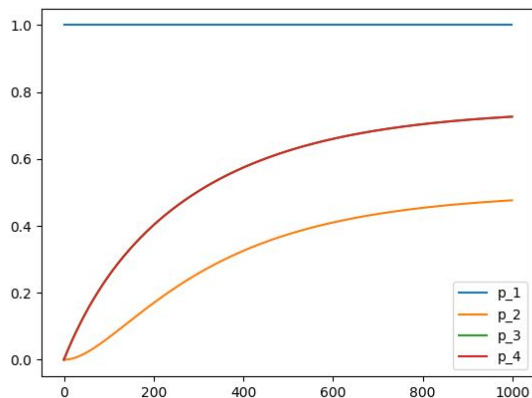
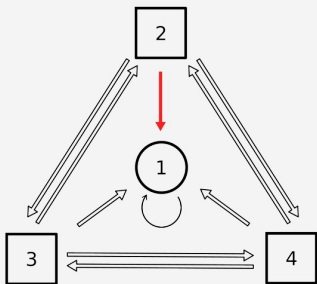


- Key
 - Circle: Adopter
 - Square: Non-adopter
 - Arrow: Person i gets influence from Person j
- Circle is an activist
- Squares are people who have not adopted change
- Person 5 acts as the control group
- Rate of adoption is slower for the group

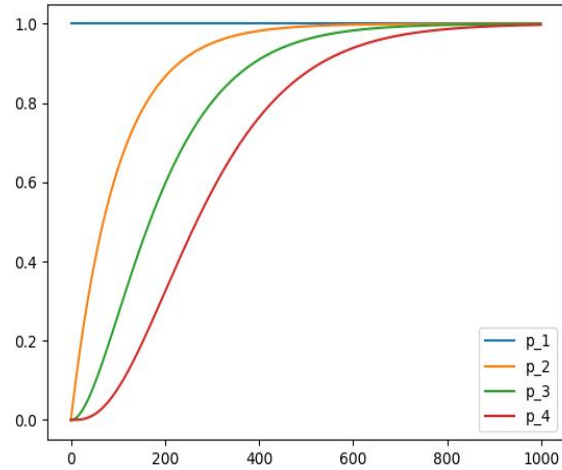
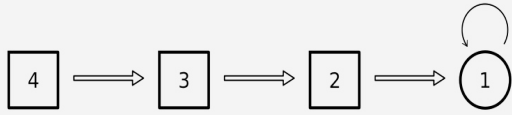
Activists are less influential to groups than people alone.



- Group as a whole may not completely adopt change with a denier.
- Denier slows down the rate of adoption

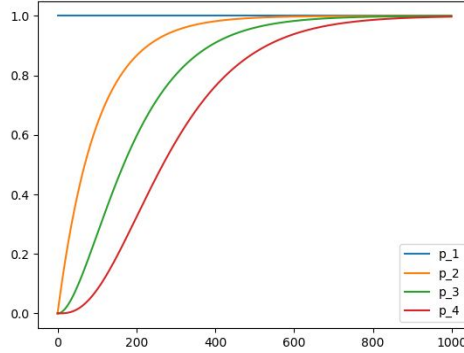
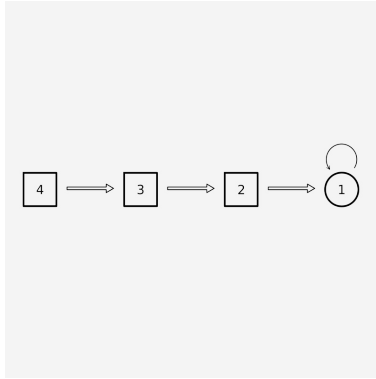


What happens if a person in a group does not follow an activist?

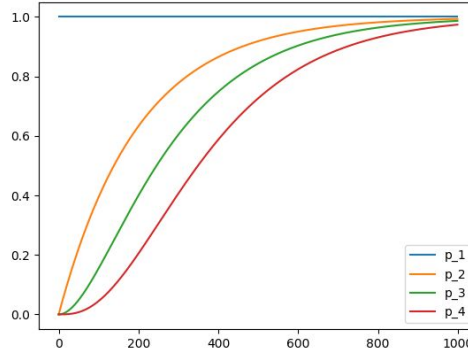
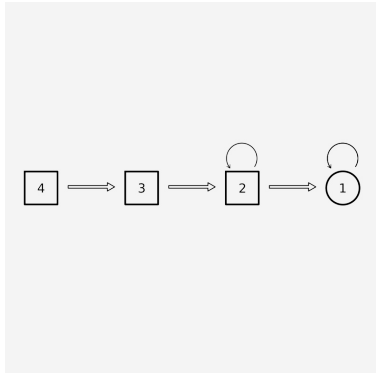


- People further down the chain adopt change later than those closer to the activist/influencer.
- Information takes time to travel

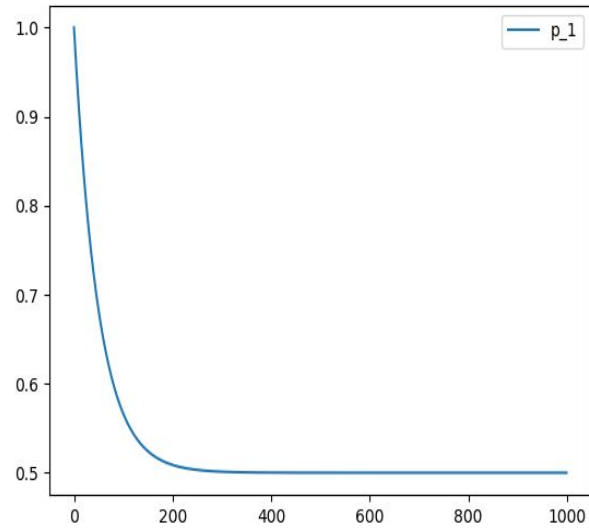
How does influence propagate through a chain?



- Person who thinks for himself/herself slows down the adoption rate.
- Overall slowdown propagated down the chain.

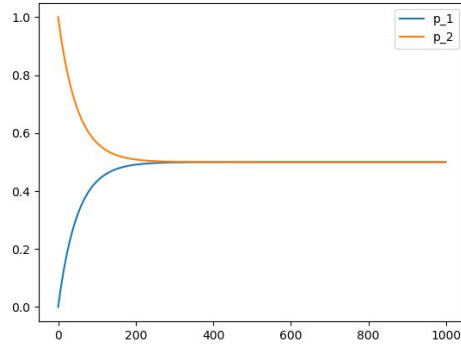
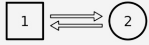


What happens if a person thinks for him/herself in a chain?

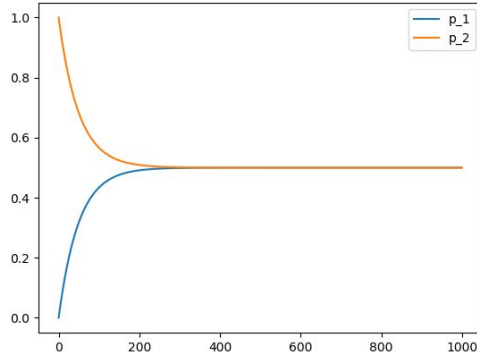


- Self-conflict leads to probability of adoption being a coin toss.

Self-conflict

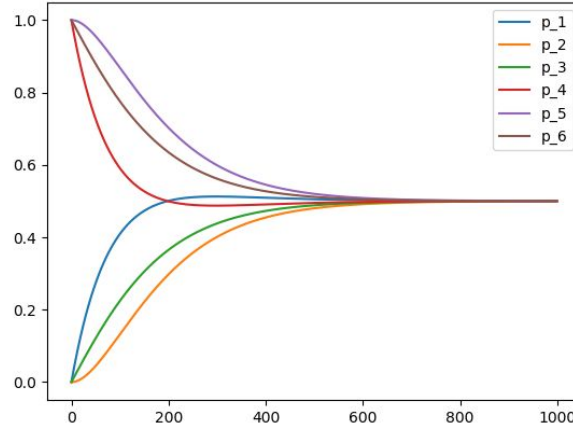
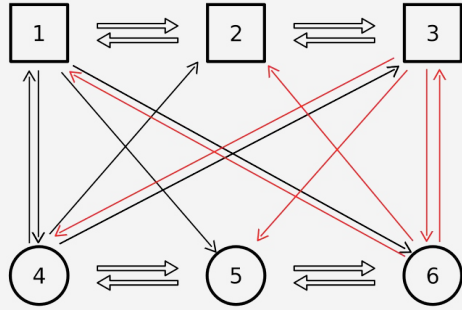


- Situation 1
 - Equal influence over each other leads to both parties having a 50-50 adoption probability.



- Situation 2
 - Surprisingly is the same as Situation 1
 - As Person 2 approaches Person 1's state, Person 1 is compelled to move in the opposite direction of Person 2. Thus both are pushed to a 50-50 adoption probability.

Interaction between two people



- Top row is a group of non-adopters
 - Bottom row is a group of adopters
 - Middle nodes are “leaders” who gain influence from peers.
 - Left side has nodes who are open to opposition’s idea
 - Right side has nodes who resist opposition’s idea
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- Left side was fastest to adopt
 - Right side was slowest to adopt
 - Leader nodes followed right side more closely as influence to adopt opposition’s idea decayed from left side.

Factional dynamics