

The Spread of a Meme Across a Social Network

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Motivation

Main Question: To what degree do the following influence factors contribute to the spread of a meme across a social network?

- Social interactions
- Media influence
- Popularity of the trend-setter
- Subject matter of the meme

The Model

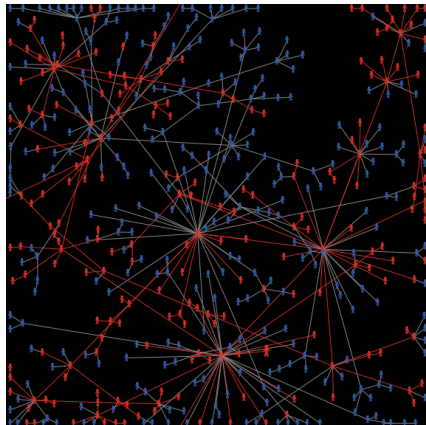


Fig. 2: The Network

The Agents

Turtles: People

Links: Relationships

Patches: Media

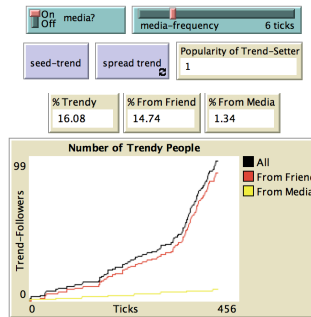


Fig. 1: Part of The Basic Interface

The Social Network

Preferential attachment: connections are randomly generated with a bias in favor of nodes with the highest degrees.

The Spread

- A random person starts a meme.
- If a person follows a meme, they try to pass it on to their friends.
- Person: “interest category”
- Meme: “trend category”
- The more relevant the meme is to a person’s interest, the more likely they are to accept it.
- Media: random patch becomes a “TV” at a given frequency

Analysis

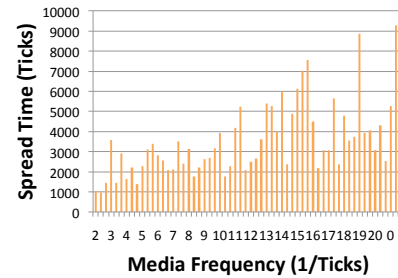


Fig. 3: The Influence of Media on Spread Completion Time

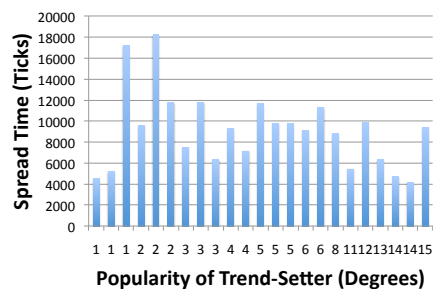


Fig. 5: Popularity of Trend-Setter

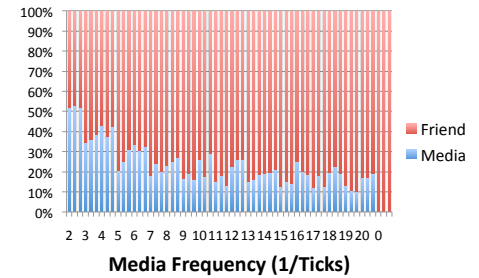


Fig. 4: The Sources of the Meme Influence of People

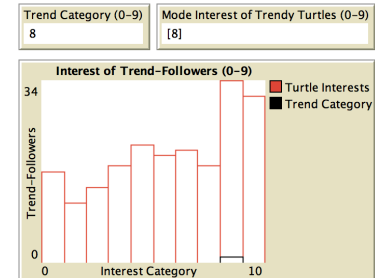


Fig. 6: The Interest Categories of Trend-Followers at 41.2% Trendy

Conclusion

Overall, a person’s social interactions are more influential than the media in terms of their acceptance of a meme. The popularity of the trend-setter does not necessarily influence the spread time of a meme. A person’s interest category is important in the beginning of the meme’s spread, but as a spread reaches completion, the distribution will deviate from the trend-category.