Information Evolution in Social Networks

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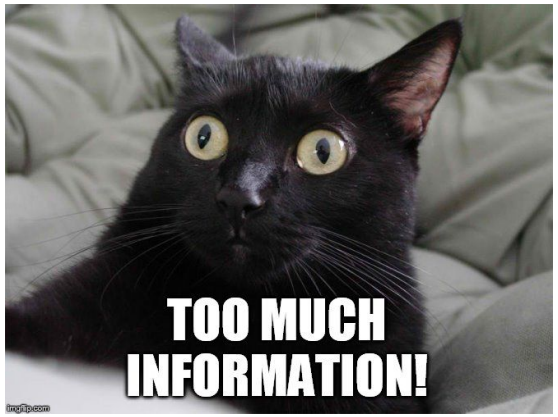
Note - This is an in-depth study of the derived theories from the paper. Please refer to the research work for Mathematical formulation. Here is a short video of Lada Adamic's explanation of the paper : https://www.youtube.com/watch?v=O8Zhy-6cr9A



Goal: Study the dissemination and evolution of memes to understand how we interpret information that reaches us through social media

Scaling in Networks:

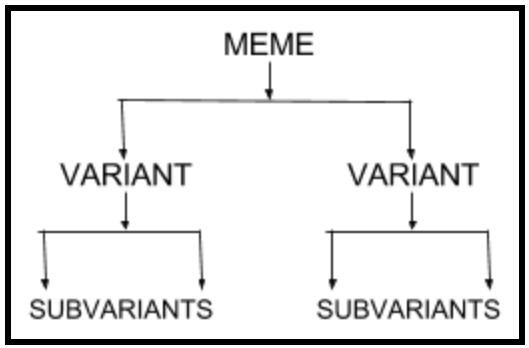
- Growth
  - Replication Instructions
- Preferential Attachment
  - Uneven Popularity

Outliers of the Data Set (Refer Slides)

- Promoted memes
- Distribution beyond Facebook
- Customizable memes
- Meme survival beyond lifetime

Meme: "Behavioral unit of gene"

- Has: **Genotype** (Information) and **Phenotype** (Behavior Instructions)



Meme + Variant = Popularity

Memes can:

- Replicate
- Mutate
- Propagate

They seem to follow Darwin's Theory of Evolution

Similarities between Meme and Gene:

- Probabilistic
- Unique Characteristic
- Coded Information
- Mutation and Replication
- Transformation at boundaries
- Natural selection

Differences between Meme and Gene:

- Meme is cultural, Gene is biological
- Vast differences in time for evolution
- Blind and non-blind fitness functions

Scope of Future Study:

- What other kinds of Information can we consider?
- What about other social networks?
- Application to other fields of Informatics?
- Applying Graph Theory to memetics
- Role reversal - Applying memetics to genetic theories

Handout for I-520: Intro to Informatics
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