IMPACT OF UNIVERSITY ADMISSION ON FRESHMEN'S EGOCENTRIC NETWORK

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Having strong and supportive relationships, characterized by closeness and emotional intensity, is essential for health and wellbeing.

High cost to maintain relationships

**Time**

Social network maintenance is time-consuming

**Brainpower**

Maintaining relationships is difficult and requires a lot of effort
« THERE ARE PLENTY MORE FISH IN THE SEA »
How egos divide their communication effort?

Is ego social strategy correlated with his or her neighbours social strategies?
Goals

Try to understand better the way that people divide their communication effort under different circumstances.

We focus on the way that egos divide their communication efforts among alters, and how persistent the observed patterns are over time.

Try to understand which parameters and especially network parameters are correlated to the social strategy.
- **Anonymized ids**
- **Contacts**
  - number: 12 Billions
  - type: calls, sms, mms
  - u, v = caller id, callee id
  - t, d = timestamp, length
- **Student Flag**
  - All Students: 16,000
  - Freshmen: 977
We use the social signature introduced in [1] as a metric in order to represent social strategy of each ego.

1. rank edges
2. normalize

PERSISTENCE IN TIME OF SOCIAL STRATEGY
Social signature examples

Jan 2014 – Sept. 2015
Computed for each ego per 3 months
(21 months → 7 social signatures)

Different types of social strategy: from exclusive to spread strategies

- **High intensity contacts**
  - Focus strategy
  - Ex: best friend, family

- **Many equal contacts**
  - Spread strategy
Social signature examples

Jensen–Shannon divergence (JSD)

Different types of social strategy: from exclusive to spread strategies

- **Focus strategy**: high intensity contacts
  - ex: best friend, family

- **Spread strategy**: Many equal contacts
Experiment
Compare self social signatures over 3-month periods to social signatures between individuals

P1

P2

3-month periods
Social Signatures Ind. Persistence

Experiment
Compare **self** social signatures over 3-month periods to social signatures between individuals

Social signature is persistent in time
NETWORK CORRELATIONS WITH SOCIAL STRATEGY
Experiment: compare social signatures of connected egos

Correlations between the social signature of u and v:
JSD(u, v) < JSD(u, w)?
Network correlations

**Experiment**: compare social signatures of connected egos

Connected students have closer social strategies than not connected students
Nodes connected with stronger ties have closer social strategies.
Three Main Perspectives

- Evolution of ego network while entering to the university
- Socioeconomic correlations in social strategies of students
- Correlations between the social strategy and the success after university
Thank you for your attention

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