On the complementary roles of face-to-face and mediated social interactions

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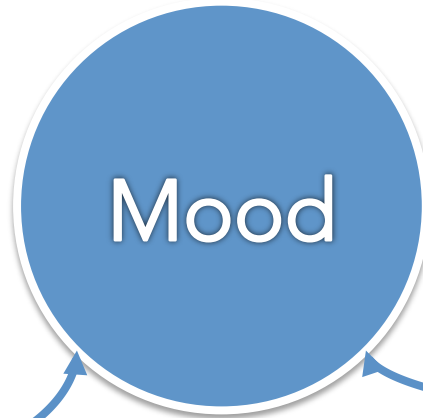NetMob, April 15'

Motivation

Mood

Mediated interaction (Phone, Text …)

Face-to-face interaction

Motivation

Mood

Ongoing: can we find a deeper underlying connection?

Mediated interaction (Phone, Text …)

Face-to-face interaction

Previous Work

- Understand the affects of using Facebook, E-Mail and face-to-face interactions in the workplace[1]
  - 5 days experiment limited to the workplace.
  - Face-to-face associated with a positive mood throughout the day.
  - Facebook use associated with a positive feeling at the EOD.
  - E-Mail use associated with negative affect
- *Methodological* [2]:
  - Constructing social interactions graphs [2]
  - Using Bluetooth scans/proximity networks as a face-to-face proxy. [2] [3]

[1] Capturing the Mood: Facebook and Face-to-Face Encounters in the Workplace, Mark et al.
[2] Friends don't Lie - Inferring Personality Traits from Social Network Structure, Staiano et al.
[3] Inferring Social Network Structure using Mobile Phone Data. PNAS, Eagle, et al. (2007)

Datasets – Friends and Family

- **12 months** tracking of a closed community of couples affiliated with a major research university (**n=130**)

- **Sensing**: BT scans (5m intervals), Call & Text logs

- **Surveys**: daily surveys. Mood measured on a 1-7 normal scale.

Datasets – Mobile Territorial Lab

- **N=70** participants, over the duration of **6 weeks**.

- **Sensing**: BT scans (5m intervals), Call & Text logs.

- **Surveys**: daily surveys. Mood measured using the Positive and Negative Affect Schedule (**PANAS**).
  - Computed the rounded average PA to create a 1-5 scale.

Main Results

- Mediated interactions (Call/Text) follow similar patterns.

- **Complementary relation** between mediated and face-to-face interactions.

- **Extreme mood** (happy/unhappy) correlates with **calling/texting**.

- **Average mood** correlates with more **face-to-face** interactions.
  - Statistically significant (TODO)
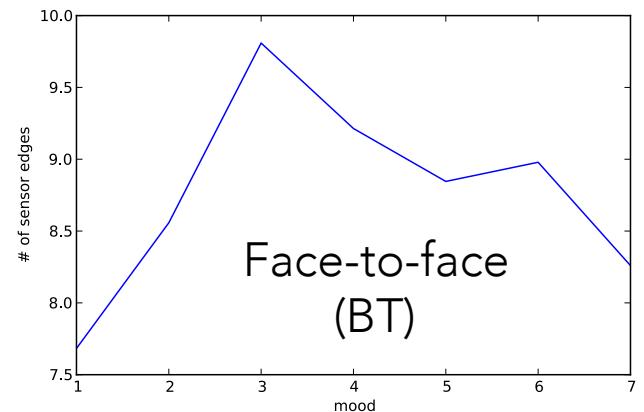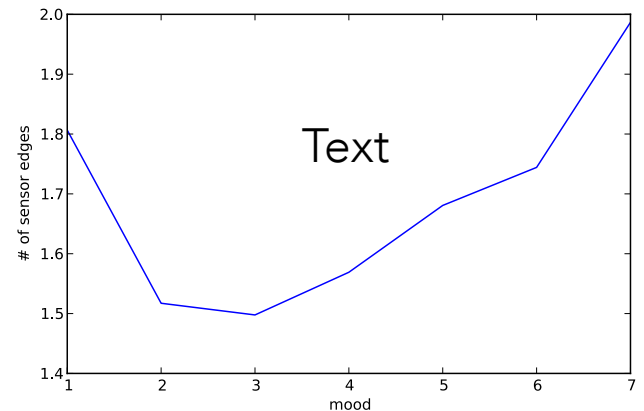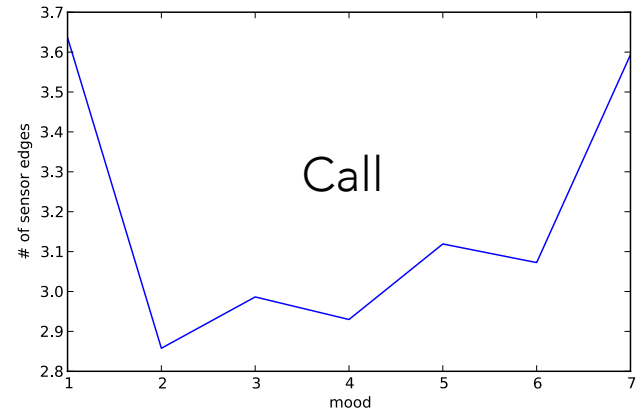
Main Results

- Same **complementary pattern.**

- Results also hold for average **NA** (opposite pattern).
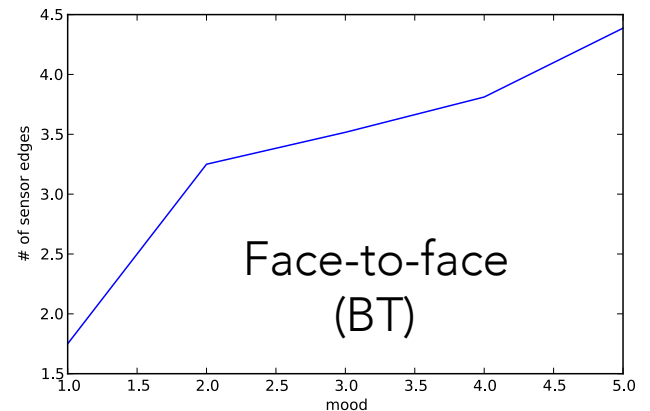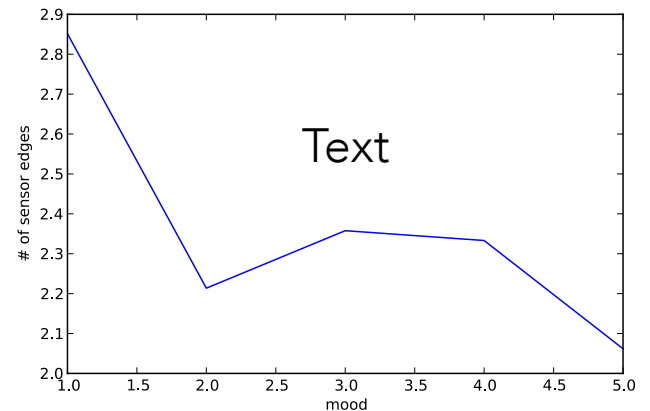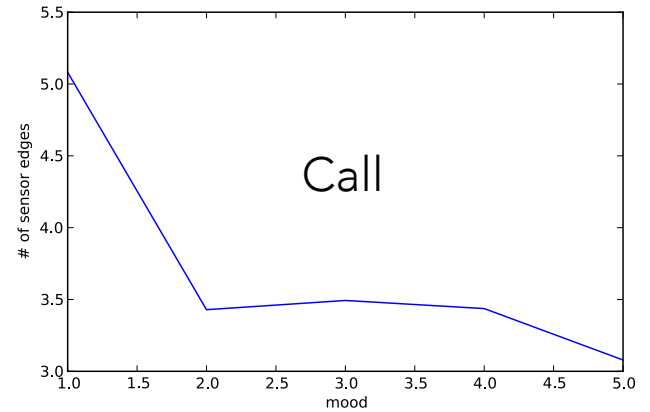
Applications

- Predicting well-being through CDR/ Spatiotemporal data.
  - Data is common and readily available
- Learning how our interaction patterns reflect our mood.
- Understanding how remote communication relates to 'classical' face-to-face communication.
  - This is a starting point. Much more to explore!

Conclusions and Future Work

- Depending on the mood, people use different communication methods on average.

- In future work, explore:

  – Controlling for personality traits, strength of ties.

  – Examining this relationship in more detail, looking for an underlying casual explanation.

  – Generalize beyond mood.

Questions?