CS 4803 Social Computing: Social Text I

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Diurnal and Seasonal Mood Vary with Work, Sleep, and Day length Across Diverse Cultures
Summary

• One of the early works examining relationship between social media mood and behavior and psychological theories.
• The potential of online social media to study individual behavior.
• Identify daily and seasonal mood variations and relate it to work, sleep and daylight.
• Validate circadian rhythms in humans.
  – PA spike in the morning, NA increases as the day progresses
• Measure positive affect and negative affect based on the lexicon LIWC.
• PA and NA are not mirror images of each other.
Not All Moods Are Created Equal! Exploring Human Emotional States in Social Media
Summary

• Analysis of human moods beyond typically examined PA and NA.
• Use of amazon’s mechanical turk to determine a corpus of mood indicative words.
• Basic idea: use hashtagged moods as self-reported information on the emotional state of a person.
• Use of the circumplex model to examine characteristics of identified moods.
  • This is because moods not only have a valence attribute, but also an activation attribute.
• The mood corpus is used to examine aspects of human behavior: degrees of mood usage, sociality, activity and participatory patterns such as information sharing (via links) and conversation.
Modeling Public Mood and Emotion: Twitter Sentiment and Socioeconomic Phenomena – (Bollen, Pepe, Mao, 2010)

• Examine how Twitter moods reflect social, political, and economic events
• Use POMS (profile of mood states) for detecting mood-indicative twitter posts.
  • POMS dimensions: tension, depression, anger, vigor, fatigue and confusion
• Investigate how a six vector representation of moods deviates during different big scope events.
• High stress/tension during elections; excitement/vigor during thanksgiving.
Our investigation of the produced public mood time series shows 4.2 General correlation drivers versus public events, namely the U.S. Presidential election of November 4, 2008, and after the US presidential election on November 4, 2008, and the Thanksgiving holiday in the U.S., on our time line diagram of Fig. 9. Starting from the top, Fig. 9 displays 1. a timeline of the most important social, cultural, political and economic events; particularly short-term events; 2. the DJIA and WTI trend lines; 3. Twitter activity from 8/1/2008 to 12/31/2008, with the y-axis corresponding to mood z-scores, expressed in standard deviations from the mean as shown in Fig. 9. This is used to assess changing mood levels over time in relation to long-term changes in socio-economic indicators. We calculate pairwise Spearman Rank order correlations between these 4 periods and run across all mood dimensions to provide a visual frame of reference.

The results of our data collection, aggregation and time series whose variance has been normalized to a scale of 1 standard deviation. This ensures the visibility of mood changes in that period of time. The spikes in Vigour and Tension surmounts remain nearly at baseline levels with the exception of the election, and calls for action and concern and/or excitement over the election. The Dow Jones remained stable during the period of time.

Average Mood Scores

- **Tension**: The average mood score for Tension was held on November 4, 2008. The mood curves in these periods of time.

- **Depression**: Depression swings from -1 standard deviation, but not their mean. This confirms the picture of Thanksgiving as a happy, energetic holiday.

- **Fatigue**: A significant drop in Fatigue. November 4 is characterized by a drop in fatigue. This is followed by a sharp peak in Tension, indicating tweets that express calls to action and concern.

- **Vigour**: A large drop in Fatigue, followed by a significant spike in Vigour of the entire period we study, i.e. 0 to +2 standard deviations, and after Thanksgiving on November 27, 2008.

- **Anger**: A notable drop in Fatigue that started two days before the US presidential election, a further drop in Fatigue and a distinct rise in Vigour on election day which leads to a spike in Tension.

- **Confusion**: The average mood score for Confusion to baseline levels, a further drop in Fatigue and a positive spike in Vigour over the election period.

Events

- **2008 Presidential elections**: Our study period includes the important social, cultural, political and economic events, particularly short-term events; namely the U.S. Presidential election of November 4, 2008, and the failures of several large, international companies, which contain no statistically significant changes in the price of oil during the period of study.

- **Thanksgiving**: Thanksgiving corresponds to the most significant event of the period, with a large drop in Fatigue and a distinct rise in Vigour over the holiday.
Many of the sentiment theories used are grounded in psychology: what is the utility of studying Twitter?
Twitter is used by millions, but could it also have bias?
Dictionary approach of mood detection: what is its limitation?
True emotion versus displayed emotion on social media: how would you tackle this issue?
People use social media for all kinds of reasons and purposes. Would that affect the moods they express?
Would “self-presentation”, “social comparison” or identity impact the kinds of moods shared?
Can social media manifested emotion have a cultural, demographic, or geographical bias?
Could the moods of certain Twitter users be more “important” than others? (Hint: influencers and contagion)
What are some of the other aspects, not considered in the papers, they may impact mood? (Hint: Aristotle said: “man is a social animal”)
One possible application is to study Twitter moods during important events, and how they impact each other. However can public displays of mood from others impact our opinions?
Now let’s talk about the Facebook emotion contagion study!