

# Why Are They Excited?

## Identifying and Explaining Spikes in Blog Mood Levels

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### Blogs and the blogosphere

- **Blogs** are frequently updated web pages, with entries shown in reverse chronological order
- Many blogs function as online diaries
- **Blogosphere**—the totality of blogs—offers unique window into people's thoughts, feelings, and moods

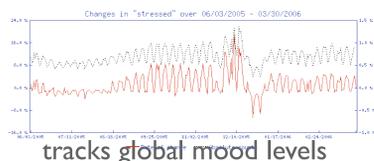
### LiveJournal

- One of the most popular blogging platforms
- Allows bloggers to indicate their mood at the time of blogging
- A corpus of time-stamped mood-annotated texts

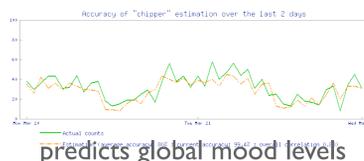
### Tracking moods

- MoodViews tracks the aggregate mood of the blogosphere, from a number of angles

#### Moodgrapher

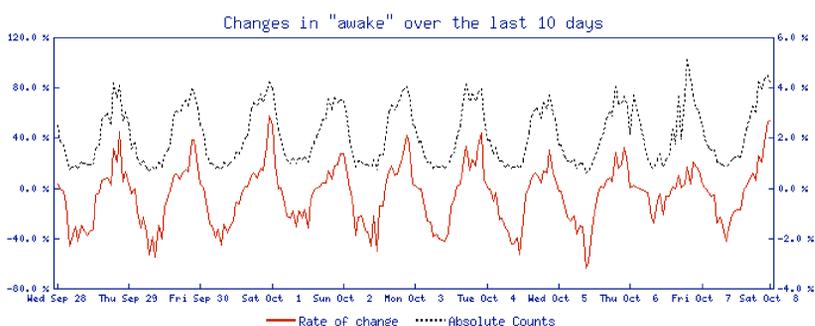


#### Moodteller

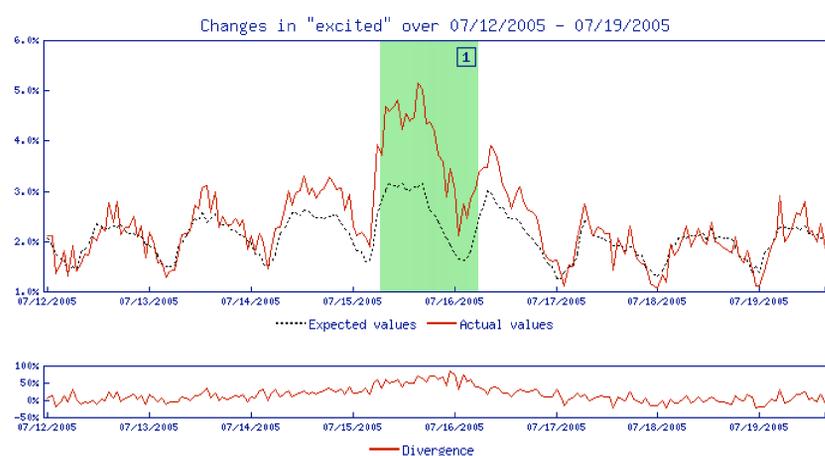


### Spikes in moods

- Some moods display cyclic behavior (awake, drunk, ...)



- Others impacted by global events, cultural, political or otherwise



### Moodsignals

- Detects and explains unusual peaks in global mood levels
- Explanations use language model divergence as well as online news archive

### When moods diverge

- Spike detection needs to deal with these cyclic events and aim at finding global changes
- *Divergence* (D) reflects changes in a given mood's level.
- If D exceeds a threshold a spike has occurred:

$$\text{Divergence} = \text{Actual} / \text{Expected mood level}$$

where expected mood levels are calculated based on prior observations

### Explaining peaks

#### Overused words

- Identify changes in language usage
- Compare word frequencies across two corpora using log-likelihood test
  - 1) *standard* corpus – full set of blog posts
  - 2) *sample* corpus – corpus associated with peaks

#### Finding explanations

- Form query from given start and end dates of peak and a list of overused words from this period
- Submit query to (headlines of) a news archive

### Example

Peak (1) July 15 11:00 – July 16 17:00, 2005

#### Overused (stemmed) terms during peak period

harri, potter, book, hbp, excit, princ, factori, read, midnight, input, spoiler, charli, valu

#### Related global events

[2005-07-16] Harry Potter and the Half-Blood Prince released

### Online demo

- To try out any of the mood tracking tools, visit <http://moodviews.com>
- Current news archive used is WikiNews

### Sponsoring

MoodViews is sponsored by the University of Amsterdam and by the Netherlands Organization for Scientific Research (NWO) under project number 220-80-001



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