



Search Cornell

# CHRONICLE ONLINE

Search Chronicle Online

Sept. 29, 2011

## Tweets study: People across the globe report similar, ever-changing moods

By George Lowery

Around the world, the day dawns full of promise. But moods go downhill over the course of the day, rebounding again in the evening, according to a Cornell analysis of the public Twitter messages of 2.4 million people in 84 countries. Equanimity perks up again on weekends -- but later in the morning, suggesting mass sleeping-in.



Lindsay France/University Photography

Scott Golder at the Cornell Center for Advanced Computing's Web Lab in Rhodes Hall.

Seasonal variations in day length and sleep cycles affect people in similar ways across cultures, report

Cornell researchers Scott Golder, a doctoral student in the field of sociology, and Michael Macy, the Goldwin Smith Professor of Sociology, in a study published in the Sept. 30 issue of the journal Science.

They discovered peaks in positive tweets in the early morning and late at night, on weekdays as well as weekends, across cultures. "In some ways, the study confirms longstanding assumptions that people experience similar moods at similar times of the day," Golder said. The researchers also found that people were generally in a better mood on weekends than on weekdays, regardless of the time of day, which points to the effects of work and commuting. In the United Arab Emirates, for example, the Sunday through Thursday workweek produces more positive tweets on Fridays and Saturdays.



Macy

"We saw the influence of something that's biological- or sleep-based: Regardless of the day of the week, the shape of the mood rhythm is the same," Golder said.

"The difference between weekdays and weekends has to do with the average mood, which is higher on the weekends than the weekdays, but the shape was the same every day. Even in the face of different social and cultural demands, the results are consistent across days."

Twitter made its data available to the researchers through a public interface, and processing the data at the Cornell Center for Advanced Computing's Web Lab gave them a "huge efficiency gain," Golder said.

Access to tweet content let the researchers make hourly observations of large, culturally diverse populations over time; other studies had relied on small, homogenous groups of U.S. undergraduates, and previous psychology research on mood rhythms was inconclusive.

"We started looking at how moods are distributed across the course of the day," Golder said. "We've never had the opportunity to measure behavior in this way before. Digital traces of online activity let us do social science in a new way, and to ask questions we've always wanted to ask. How do entire societies work? How are relationships patterned? We're starting to get the data to answer these questions."

The researchers associated the tweets with the length of the day. The study also addresses the possible influence of the sun -- or lack of it -- on seasonal affective disorder (aka "winter blues"). "Living in Ithaca, of course, we're interested in how long, cold, dark winters affect people," Golder said. The study finds, he



### Media Contact:

Syl Kacapyr  
(607) 255-7701  
vpk6@cornell.edu

### Cornell Chronicle:

George Lowery  
(607) 255-2171  
gpl5@cornell.edu

### Related Information:

Keyword search site

Social Dynamics  
Laboratory

Scott Golder

Michael Macy

### Share:

Twitter

Digg

Reddit

del.icio.us

Google

Yahoo! MyWeb

Facebook

MySpace

StumbleUpon

... said, "It's not how much daylight you're getting, it's the relative daylight -- whether the days are getting longer or shorter -- that makes a difference in positive mood."

In conjunction with the paper, the researchers have developed the website <http://timeu.se/> that allows users to enter keywords (e.g., breakfast, traffic, fishing) to see how behaviors are distributed throughout the day.

The National Science Foundation supported this research.

##

| [September story index](#) | [Cornell Chronicle Online Home Page](#) |