

The Emotional State of the Blogosphere

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Abstract

We have begun to study the behavior of emotional contagion in the on-line social network, Twitter. Humans have a tendency to be influenced by and feel the emotions of others. This can lead to the transmission and spread of emotions throughout a social network, hence the concept of emotional contagion. We have explored the dynamic relationship between a person's emotional state and their role in a social network, specifically, how positive or negative changes in emotional state affect the people directly and indirectly connected to that individual. We have found that happiness is likely to be mimicked by happiness, and even more strongly, that sadness is mimicked by sadness. We have found that a person's valence correlates with the number of people they are connected with. We have found interesting daily, weekly, and seasonal cycles in the valence (representative of happiness) of the population as a whole. This psychological data set is unprecedented considering the number of participants ($\sim 10^6$) and the frequency of status updates (real time). We have developed a software library capable of parsing and performing statistical analyses on people's messages using UVM's supercomputer at the Vermont Advanced Computing Center.