Affect Recognition

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What is affect recognition?

- Affect recognition: The task of automatically determining how a given input makes would be characterized, based on some specified range of categories
  - Happy vs. sad
  - Extroverted vs. introverted
  - Friendly vs. distant

Affect Recognition

- Typically framed as a supervised learning task

- Large datasets:
  - N-gram features

- Very large datasets:
  - N-gram features, pruned based on frequency or **pointwise mutual information (PMI)**
    - $\text{PMI}(x; y) = \log \frac{p(x,y)}{p(x)p(y)}$

Features from External Lexicons

- **Indicator Function:**
  - $f_L(x) = \begin{cases} 1 & if\ \exists w : w \in L\ \&\ w \in x \\ 0 & \text{otherwise} \end{cases}$
- **Count-Based Function:**
  - $f_L(x) = \sum_{w \in x} \text{count}_L(w)$
- **Weighted Count-Based Function:**
  - $f_L(x) = \sum_{w \in x} \theta_w^L \text{count}_L(w)$

Lexicon-based features can shed new light on interesting social science problems!

- Does one's use of positive language correlate with one's level of extroversion?

- Is more concrete language likely to evoke more neutral emotions?

- Is there a relationship between the number of "difficult" words and the overall subjectivity of an input?