Measuring Social Values using Emotive Biometrics

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Finding a way to connect emotive biometrics to social media data.

I. Key Idea

Attaching emotion words to social media data is ineffective because emotions themselves are concepts and different for everybody. Using emotive biometrics that are not socially constructed, such as heart rate, breathing, EEG, and skin conductance is more effective and relatively simple to do.

II. Key Issue

This research project requires collaboration with medical labs at universities to gather emotive biometric data at scale, a team with both data science and bioscience experience to make biometric data accessible to machine learning algorithms, collaboration with private industry for computational and social media data resources.

III. Making the Argument (methodologies and references added)

Define what they are and how to find and measure: emotion, affect, concepts, words.
What is wrong with current methodologies?
What methodology is proposed? (combining emotive biometrics to social media data)

IV. How can you measure social value of violence, shame?

Many #MeToo's gets 100+ likes… tags and likes are a way to measure social value, and then to analyze the emotional content of the words

1. Take the physical reaction to certain words across a group of people to get baselines (**body**, measuring affect)
2. Use ML to analyze emotion sentiment of certain #hashtags (**mind**, measuring words)

These data points allow us to predict and track spread of affect across large scales using easily-accessible word data and hashtag data from social media.

V. Why is this important?

This gives us a gauge to community-wide affect, and allows us to track spread of affect, which the human mind attaches concepts to.

The human mind is often not aware that it is making up a story to match it's underlying physical sensations, and as a result, actions come from misguided concepts.

Knowing when unpleasant affect is surging in a population allows us to predict and counteract violent events by using effective language and media campaigns.

Edited: 30 October 2017

Who can do this already?

Currently asking around.

Emotion Recognition in the Wild via Convolutional Neural Networks and Mapped Binary Patterns

Affective Neuroscience Lab, Northeastern, Feldman-Barrett

Affectiva

Apple's Secret Exercise Lab

Funding

What grants are there available?
NSF, DOD, Templeton
List from Northeastern Affective Neuroscience Lab

Venture Capital
Collaborative Fund, others

Team (volunteer basis)

(tentative commitments)
2 Machine Learning Professionals
1 Social Media Data Analyst
1 Science and Grant Writer

(needed)
Data Scientists
Affect Measurers (collaboration needed with medical lab)

Plan of Action

Begin to establish Compassionate Technologies as research nonprofit (1-year)
Draft research methodology, research proposal
Begin contacting labs, soft circling commitment to assist if funding comes through
Apply for funding, NIH Grant Funding**,** Templeton, etc.

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III. Making the Argument

Current methodologies for analyzing emotion rest on the theory that emotions run on genetically derived circuits shared by all humans around the world and that these emotions can be detected in microexpressions on the face, across cultures, such that you can even create an Atlas of Emotions, as endorsed by the Dalai Lama.

Companies like Affectiva, which has raised $14 million, use this theory for analyzing facial expressions to determine affective (emotive) context with application to marketing products or determining how people feel about a given topic [research, funding].

The theory of constructed emotion posits that emotions are different for everyone, and are the end result of body budgeting algorithms constantly taking into account body sensation (stomach full, hands hot, neck tight, etc.) and resulting in an underlying affect which the mind attaches emotion concepts to, depending on context [research].

The concept of **affective realism**, that we can read emotions from people's faces, arises from living in a shared social reality where among certain groups of people who share a culture, certain facial expressions mean certain things. However, in other groups or even among individuals of the same group, facial expressions are not necessarily code for deeper meaning.

For example, the common belief that smiling with the eyes crinkled (the Duchenne's marker) is a true smile, whereas others are fake, might hold true in post-1900s United States — it would not hold true in ancient Rome, where there wasn't even a word for smile.

*This project proposes to take away the middle-man of emotive words or facial expressions, going straight to the **affect reality**, or physical sensations and reactions in the body.*

Affective Baselines: Scientists can measure the affect of individuals reading individual words or words in context, to gather a baseline for what a population of shared demographic background physically feel when they read certain words or experience certain concepts.

Emotions Concepts and Culturally Appropriate Action: The next step is to attach emotion concepts and culturally acceptable action to the affective data, to understand how the individual is interpreting his or her physical state, and what they see as an appropriate action in light of that affect. For example, if they feel heat in their hands and feel angry, and violence under certain situations is an acceptable response in the culture (such as self-defense is a socially acceptable cause for murder in the U.S. legal system), then you can reasonably assume that if enough people feel a certain way with certain concepts in certain contexts, then violence is likely to emerge.

Prediction: Using these baselines, you can predict the affective reality of a population based on easily mineable social media text data. By mapping affective baselines, emotion concepts, and culturally appropriate action, you can predict physically or emotionally violent events.

Antidote & Resolution: If certain words or concepts make certain populations feel unpleasant sensation, then an antidote of healing words and emotions can help those populations feel pleasant affect. Combined with awareness and education, the conceptual source of unpleasant affect can be decoupled from the sensations, allowing for deeper and non-judgmental peace without resorting to manipulative and/or secretive propaganda techniques.