

# Generating Emotional Impact in Narrative

## Problem

People live their lives by stories. We respond to stories not only because of the information they contain, but also because stories have emotional impact. They make us laugh and cry, they surprise us and they leave us awestruck. Creating emotional impact is challenging. Popular opinion says that writing a narrative or a movie or a song with emotional impact requires the magic of inspiration. However, professionals know that it is not magic, that there is a process. However, while there is a process, it is hard to articulate at a level that novices can follow. Discovering a reproducible process to create emotional impact will help novices become creative experts and will help us to scientifically understand emotional impact in narrative.

## Solution

Generating emotional impact is a complex problem: it takes different forms across many different disciplines, it is hard to isolate emotional impact from content, and often people disagree about what has emotional impact and what does not. Our solution is to isolate several domains of emotional impact that are easiest to study. One domain that we have chosen to explore is humor; it is short so we can iterate on it quickly, and it has the obvious emotional impact of laughter, which we can reliably evaluate. We will investigate whether our methods carry over to another domain of emotional impact: the suspense generated through the telling of life and death situations.

To create the process for humor, we studied the humor literature: philosophical theories from Plato to Daniel Dennett and humorists' advice from Bob Hope to Judd Apatow. With these theories, we take a novel approach: instead of deciding which theories are right or wrong, we assume that they all have partial validity, but that no strategy is completely correct. For example, one popular theory is that jokes are funny because they violate our expectations. However, not all things that violate expectations are funny. There must be more to the process of generating humor than just violating expectations. Our challenge is to fit the theories together into a process that we can validate.

## Goal

Our goal is to decompose the act of creating emotional impact into a process that novices can follow on a website in under 5 minutes. Eventually, the novices will perform as well as experts. Although we start with humor because it is a good testing ground, we will generalize to more challenging domains, such as deciding whether a life and death event is compelling enough for interesting narrative. We may also extend our work to education, journalism, and diplomacy.

## Related Work

**Crowdsourcing** research has effectively decomposed problems into sub-problems so that people can collaborate on them better. However, no project has ever decomposed something as hard or subjective as generating humor. **Creativity tools** have shown that human creative abilities can be augmented with software in domains such as the visual arts and music. Often, these tools do not decompose the process fully, but rather focus on enhancing one aspect of it. **Natural Language Processing (NLP)** has scientifically shown that emotion plays a strong impact in communication. However, thus far computers alone cannot detect emotional impact nor generate it. We need a tool like crowdsourcing to fill in the gaps of what computers cannot yet do and to provide data that can be used to begin to shape natural language programs that can take on these tasks.

## Preliminary Work

We began this work by discovering a process for generating humor. We selected the subdomain of news satire, and in particular we wrote funny man-on-the-street style responses to actual news headlines in the style of the American Voices section of *The Onion*, a popular news satire website. By reading the literature on humor and validating it against novice humor writers, we developed a process with seven central modules. Three of those are depicted below (Figure 1). So far, our responses are 37% as funny as *The Onion*. *The Onion* is a high bar, yet we can still improve. For some headlines, we were rated funnier than the *Onion*.

Real News Headline: **Uber Adding Panic Button for Chicago Passengers**

Humorous Response:



"It's nice to know that Uber is willing to do everything it can to protect its customers short of properly screening its drivers."

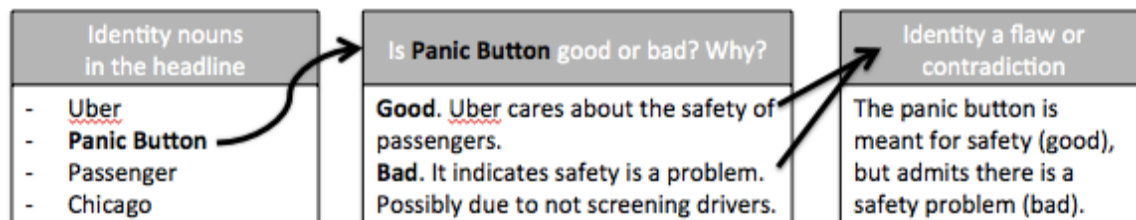


Figure 1. (Top) Example of a real news headline, and a humorous man-on-the-street style response. (Bottom) Three example steps of generating the humorous response: (1) reading the headline and identifying its nouns, (2) reacting to each noun/aspect individually, and (3) identifying the premise of the joke. Not shown are steps for voicing the premise in an unexpected way.

## Social Impact

People want to be funny, especially on social media because it is a place to influence your friends and a way to be heard by strangers. Our website for learning humor will help people write funny tweets that express their opinions in response to live events such as The State of the Union Address. Through this process, people can learn how to have emotional impact on their audience.

## Broader Impact

Generating emotional impact in narrative will affect many domains of communication. Educational content can be made more engaging and can make its message stick with the audience – make students laugh, get them excited, and fill them with a sense of wonder. Journalism can be put into new forms such as satire that appeal to youth. The reach of emotional impact cannot be underestimated, even in world affairs. Recordings of Kennedy's cabinet during the Cuban Missile Crisis show that to avoid nuclear war, McNamara had to suggest a blockade *without sounding weak*. Emotional impact has global impact.

## Proposed Plan and Outcomes

Sept – Dec 2015: We will expand on our initial humor work and build a web site for people to learn the process and collaborate on jokes. Our target is to produce 1,000 verifiable jokes, to teach the process to 1,000 people and to beat *The Onion* on funniness.

Jan – Mar 2015: We will generalize the process of creating emotional impact to the new domain of detecting and generating suspenseful narrations of live and death situations.

Apr – Aug 2015: We will partially automate the process of generating suspenseful narratives by jointly using crowdsourcing and natural language processing.

## References

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