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Why do urban legends go viral?

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ABSTRACT

Urban legends are a genre of modern folklore, consisting of stories about rare and exceptional events, just plausible enough to be believed, which tend to propagate inexorably across communities. In our view, while urban legends represent a form of “sticky” deceptive text, they are marked by a tension between the credible and incredible. They should be credible like a news article and incredible like a fairy tale to go viral. In particular we will focus on the idea that urban legends should mimic the details of news (*who, where, when*) to be credible, while they should be emotional and readable like a fairy tale to be catchy and memorable. Using NLP tools we will provide a quantitative analysis of these prototypical characteristics. We also lay out some machine learning experiments showing that it is possible to recognize an urban legend using just these simple features.

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1. Introduction

Urban legends are a genre of modern folklore consisting of stories told as true – and plausible enough to be believed – about some rare and exceptional events that supposedly happened to a real person or in a real place.

Whether urban legends are produced by individual authors or emerge spontaneously, they typically spread “virally” across communities and tend to change over time with repetition and embellishment, like memes (Dawkins, 2006). For example the sewer alligator, that originally “appeared” in New York City (Coleman, 1979), also appeared in different cities to suit regional variations. Though it is considered synonymous of “false belief”, the term urban legend refers to a subtler and more complex phenomenon. The crucial factor is that the story is told as true in the absence of verification. Folklorists are generally more interested in the social context and meaning of urban legends than their truth value. From an NLP point of view, instead, it is interesting to computationally explore those linguistic characteristics that make them appealing and bring people to circulate them. With the advent of the Internet, urban legends gained new lifeblood, as they began to be circulated by e-mail.

In Heath and Heath (2007), the authors discuss the idea of “stickiness” popularized by the book “The Tipping Point” (Gladwell, 2000), seeking to explain what makes an idea or concept memorable or interesting. They also focus on urban legends and claim that, by following the acronym “SUCCES” (each letter referring to a characteristic that makes an idea “sticky”), it is possible to describe their *prototypical* structure:

- Simple – find the core of any idea
- Unexpected – grab people’s attention by surprising them

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Table 1

Examples of urban legend claims.

A tooth left in a glass of Coca-Cola will dissolve overnight
A stranger who stopped to change a tire on a disabled limo was rewarded for his efforts when the vehicle's passenger, Donald Trump, paid off his mortgage
Walt Disney arranged to have himself frozen in a cryonic chamber full of liquid nitrogen upon his death, and he now awaits the day when medical technology makes his re-animation possible
Drugged travelers awaken in ice-filled bathtubs only to discover one of their kidneys has been harvested by organ thieves
Facebook users can receive a \$5000 cash reward from Bill Gates for clicking a share link

- Concrete – make sure an idea can be grasped and remembered later
- Credible – give an idea believability
- Emotional – help people see the importance of an idea
- Stories – empower people to use an idea through narrative

Such features are allegedly placed at the core of persuasive and viral language; urban legends constitute an ideal framework with which to computationally verify these assertions. Table 1 displays a few examples of urban legends claims.

In particular we will investigate some of the prototypical characteristics that can be found in urban legends as compared to similar literary genres. In our view, urban legends are viral since they are stressed by a tension between credible and incredible: credible like a *news* and incredible like a *fairy tale*. We will focus on the idea that urban legends should mimic the details of news (*who, where, when*) to be credible, and they should be *emotional* and *readable* like the story of a fairy tale to be catchy and memorable. We will verify these psychological hypotheses – appeared in the literature – using NLP tools, to drive a *quantitative* analysis of these *qualitative* theories. For example, the idea that urban legends derive much of their credibility from details concerning the location where the situation took place, is presented in Brunvand (1981). Anecdotally, the television series “1000 Ways to Die” – that recreates unusual supposed deaths and debunked urban legends in a way similar to the Darwin Awards¹ – introducing each story with the location and date of each supposed incident, to render it more credible.

In the tension between credible and incredible, details should be neither too specific, like in the news, nor too few, as in fairy tales: effective urban legends should be credible but not verifiable. Similarly, emotions should be enough to make it sticky/catchy but not too much to render it not-credible. Finally urban legends should be easy to read, similar to fairy tales, to render them more memorable. As an example consider the following excerpt, taken from the “Kidney Theft” urban legend, as reported by snopes.com:

Dear Friends:

I wish to warn you about a new crime ring that is targeting business travelers. This ring is well organized [...] and is currently in most major cities and recently very active in New Orleans. The crime begins when a business traveler goes to a lounge for a drink [...] A person in the bar walks up as they sit alone and offers to buy them a drink. The last thing the traveler remembers until they wake up in a hotel room bath tub, their body submerged to their neck in ice, is sipping that drink. There is a note taped to the wall instructing them not to move and to call 911. [...] The business traveler is instructed by the 911 operator to very slowly and carefully reach behind them and feel if there is a tube protruding from their lower back. The business traveler finds the tube and answers, “Yes.” The 911 operator tells them to remain still, having already sent paramedics to help. The operator knows that both of the business traveler’s kidneys have been harvested. This is not a scam, it is real. It is documented and confirmable. If you travel, please be careful.

Regard

Jerry Mayfield.

There is no very strong emotional wording in this example, it is the situation itself that is scary; on the contrary the email contains locations, the signature of a presumed Jerry Mayfield, and – noticeably – credibility is also explicitly addressed in the text with the adjectives “real”, “documented” and “confirmable”.

In the following sections we first review relevant work that addresses the problem of deceptive language and behavior both in online and offline scenarios, followed by an overview of work that addresses the virality of online content. Then we describe the data collected for our experiments and the features extracted to model the aforementioned prototypical characteristics of urban legends. We use these features in both descriptive statistics and generalization tasks and we report the best performing features. Finally we discuss future research on further prototypical characteristics of urban legends.

2. Related work

The topic of deceptive and/or false messages is a burning topic within the NLP community. A seminal work on the linguistic recognition of lies can be found in Mihalcea and Strapparava (2009). Still, defense from subtle persuasive language in

¹ The Darwin Awards are an ironical honor, granted to individuals who have contributed to human evolution by “self-selecting themselves out of the gene pool” via incredibly foolish actions; Darwin Awards explicitly try to disallow urban legends from the awards. See darwinawards.com.

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