

# Unjust Equivalence: Are Irony and Sarcasm Truly the Same in NLP?

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## Abstract

### 1. Introduction

Human communication is a convoluted subject, being a topic of discussion and investigation across multiple fields of research. There are various forms of human communication which are particularly intriguing to linguists and psychologists, with irony and sarcasm being of paramount importance due to their complexity and the depth of insight they provide into human cognition and social interaction.

### 2. Irony and sarcasm in NLP

The relationship between irony and sarcasm is unfortunately a heavily contested subject in NLP. This problem is the easiest to notice when looking at different sarcasm and irony datasets, where we can find cases when they are treated as completely separate concepts (Nikhil, 2020), when sarcasm is treated as a subset of irony (Van Hee et al., 2018) or even vice versa (Oprea and Magdy, 2020). Searching for a consensus in the realm of linguistics is a futile effort as well, however we have found two distinctions between the two that have merit in the context of NLP.

#### 2.1. Sarcasm - irony's meaner cousin

The online Merriam-Webster dictionary defines sarcasm as "a sharp and often satirical or ironic utterance designed to cut or give pain" (Merriam-Webster, 2024). This definition seems to be in line with the general consensus that sarcasm is a form of irony that is more patronizing and mean-spirited. The iSarcasm dataset (Oprea and Magdy, 2020) is a good example of this categorization, as the "sarcasm" label is, in fact, a subset of the unfortunately named "sarcastic" label, which actually indicates any kind of ironic speech.

In this context, irony refers to any type of speech that is based on polarity - expressing with words the opposite of what we mean. Although this definition works on paper, there are some pitfalls. Most notably, the line between sarcasm and irony is unclear, as whether or not a statement is mean-spirited is subjective. Also, tweets that contain irony and aren't directed at a specific person can still be considered sarcastic, as they often target a group of people, concepts, ideas or themselves in the form of self-deprecating humor. How the object of the irony affects the classification is a question that remains unanswered.

All things considered, this distinction is a solid starting point for NLP research, and the iSarcasm (Oprea and Magdy, 2020) dataset does a solid job at distinguishing between the two. However, the usefulness of this distinction

is limited, as both concepts are based on dishonest speech, meaning that in practice there isn't much use in distinguishing between the two.

In this paper, we will take a closer look at how different models perform on the separate tasks of irony and sarcasm detection, with the goal of determining the amount of overlap between the two tasks and the potential benefits of treating them as separate concepts in NLP. We will do so using a combination of the iSarcasm (Oprea and Magdy, 2020) and the SemEval-2018 (Van Hee et al., 2018) datasets, both of which contain tweets that are labeled as either ironic or sarcastic based on this distinction.

#### 2.2. Sarcasm - the figure of speech

### 3. Experimental setup

#### 3.1. Sarcasm detection dataset

(Oprea and Magdy, 2020)

### 4. Results

### 5. Discussion

### 6. Conclusion

## Acknowledgements

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