

# Detecting patterns of implicit offensive language in multilingual data

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## INTRODUCTION

Computational approaches to developing methods of automatic detection and classification of offensive language use various terms to denote socially inappropriate use of language that insults and offends others, varying from *incivility* (Stoll et al., 2020) and *toxic language* (Kunupudi et al., 2020) to *abusive language* (Caselli et al., 2020; Waseem et al., 2017; Wiegand et al. 2021), *offensive language* (Zampieri et al., 2019) and *hate speech* (Gao et al., 2017; ElShierief et al., 2021; Schmidt and Wiegand, 2017).



Although there are differences in terms used, there is a general consensus in classifying offensive language into explicit and implicit forms, and in identifying the target of the offense as an individual or group. Methods for the detection of explicit instances of offensive language have been well developed (Zampieri et al. 2019, Kumar et al., 2018, Gao et al. 2017), but detecting implicit offensive language remains a challenge (Waseem et al. 2017), partly due to a lack of rigorous linguistic analysis in existing typologies of offense. While hate speech datasets in languages other than English have also been developed (Beyhan et al. 2022; Ljubešić, Fišer and Erjavec, 2021), the focus is still very much on creating English datasets, which can result in biased and limited training data.

## METHODOLOGY

### 1<sup>st</sup> task

Our first task is to annotate comparable English, Slovene and Croatian datasets for implicit offensive language. The FRENK dataset, consisting of comments to Facebook posts of news articles of mainstream media outlets from Croatia, Great Britain, and Slovenia, on the topics of migrants and LGBT (Ljubešić, Fišer and Erjavec, 2021), will be used for this. Each dataset contains whole discussion threads, which have been annotated for the type of socially unacceptable discourse (SUD) and its target. Each dataset consists of training and testing data, divided into separate discussion threads.

| text (string)  | target (string) | topic (string) | label (class label) |
|--|-----------------|----------------|---------------------|
| "happy pride"  | "No target"     | "lgbt"         | 0 (Acceptable)      |
| "It's funny how people who voted for Trump accuse others of having mental issues - 🤡🤡🤡"  | "Other"         | "lgbt"         | 1 (Offensive)       |
| "Love is love. Also you uber religious people need to practice the whole not casting stones, and loving thy neighbor and all..." | "No target"     | "lgbt"         | 0 (Acceptable)      |
| "hey, Australian here. I'll be voting YES. 🇺🇸🇺🇸🇺🇸"   | "No target"     | "lgbt"         | 0 (Acceptable)      |
| "DO YOU NOT KNOW THE WICKED WILL NOT INHERIT THE KINGDOM OF GOD? DO NOT BE DECEIVED; NEITHER THE SEXUALLY IMMORAL NOR..."        | "Topic"         | "lgbt"         | 1 (Offensive)       |
| "What's wrong with being proud of coping with any set back? If having enough to distribute for you, it's fine for you to ha..."  | "No target"     | "lgbt"         | 0 (Acceptable)      |
| "You are so stupid!"   | "Commentor"     | "lgbt"         | 1 (Offensive)       |
| "Why are normal people called narrow minded??? How about we are not mentally ill..."   | "Topic"         | "lgbt"         | 1 (Offensive)       |

An excerpt from the English subset of the FRENK dataset, available on HuggingFace dataset hub.

We will then identify common syntactic constructions used to express implicit offense, such as similes or comparisons (e.g. *looks like*, as in *Looks like reading and understanding is not your strongest point, Looks like you need to check your facts*), **negative constructions** containing positive sentiment adjectives (e.g. *not your brightest idea*), and **rhetorical questions** (e.g. *You think any of those women would look at you?*). **Figurative comparisons** are particularly significant as they convey sentiment, which is crucial in hate speech analysis. A compiled list of typical syntactic constructions can then be used to detect more examples in larger corpora.

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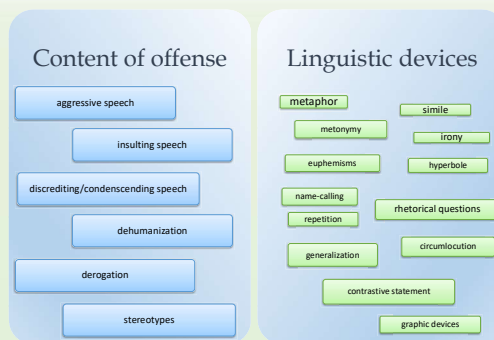
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## OBJECTIVE

We propose to conduct research on developing multilingual datasets of implicit offensive language, which could be used to train language models and improve text classification and sentiment analysis for smaller and under-resourced languages. We will apply a newly proposed typology of implicitly offensive language based on an extensive linguistic analysis of an English dataset of sentences annotated as implicitly offensive (Despot and Ostroški Anić, 2022).

This typology differs between the content of offense and the linguistic devices used to express it. We categorize implicit offensive language as aggressive, insulting, and discrediting/condescending speech, as well as dehumanization, derogation, and stereotypes. Common linguistic devices used to convey offense include metaphor, metonymy, simile, irony, hyperbole, euphemisms, repetition, rhetorical questions, circumlocution, name-calling, generalizations, contrastive statements, and the use of graphic and non-verbal devices.



### 2<sup>nd</sup> task

The second task involves creating specific training datasets, such as datasets of comparisons, which can be automatically annotated with syntactic dependency annotations to identify constructions of implicit offense within them. Created datasets can be also used to investigate the role of metaphor in universal construction of offense, e.g. in expressing dehumanization as a type of offense (e.g. *You will never be anything more than a replaceable component to be put to work*). We hope to develop and describe a procedure that can be applied in detecting common syntactic patterns used in expressing implicit offense, which not only leads to further improving the detection of offensive language, but also to better understanding universal features of implicitness.



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### comparisons

- *It's not me who looks like an idiot in this discussion.*
- *Looks like reading and understanding is not your strongest point.*
- *Ever notice that the more intelligent a person is the more they do not like blacks?*

### dehumanization

- *You will never be anything more than a replaceable component to be put to work.*
- *Trailer park trash in the comments still crying.*

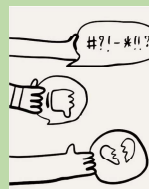


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*You only see what you want to see. Pretty much like ostrich.*

*Wow, just...let me bash my head over the sheer amount of stupidity in your comments...*

*I see that you're a blonde, case close.*

*Can you just return to your residence and get out of your holiday picture area? Perhaps you should be excluded from travel to other holiday destinations?*

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