



Graduate School of Communication

Initial Thesis Proposal

Please indicate a) the theme of your Master thesis research b) a preliminary research question and c) academic and societal relevance, on this form.

Then, please submit this proposal online via sst-prd.ic.uva.nl/masterthesisproposal at the latest on **December 4, 2020**

Name:	Janice Butler
Student number:	12356093
Email address:	Janice.butler@gmx.ch
Name supervisor:	Damian Trilling
Supervisor has agreed to supervision:	<u>Yes</u> / No* (if no, also fill out box below)
*Name proposed alternative supervisor:	

**The theme that I choose for my master thesis is:**

To determine what effect humour has on the influence of political communication. Is humour necessary at all? When applied, what effect does it have on the sphere of influence and which types of humour are effective for different types of actors in the realm of political communication?

There are some tacit assumptions about the importance of humour in communication science. Existing research is now beginning to provide automated determination of whether a text is funny or not, but with minimal differentiation according to degree and types of humour such as sarcasm, irony etc. NLU in general is still missing several pillars of understanding (as opposed to mere semantic parsing), one of which is humour. This research may, in this respect, help in closing the gap in decrypting communicative intent.

Novel methods utilising neural language models with fine-tuning for the application of humour-detection and evaluation will be employed, facilitating a big data/deep learning approach. The verification of results will be assessed in terms of humour type and degree based on segmentation of the dataset (into training/optimization and verification data). Having thus established the means for humour degree and classification, the verification of analysis of humour on political messaging is then achieved through cross-referencing the humour of large numbers of political tweets with their “virality” as determined via analysis of the tweets’ relational networks.

The preliminary research question and hypothesis of my master thesis research is as follows:

RQ1: Is it possible to automatically detect different degrees of humour in political messaging using fine-tuned neural language models?

RQ2: Is it possible to automatically detect the type of humour in political messaging using fine-tuned neural language models?

RQ3: Are there differences in detection-precision of the degree of humour using language models based on the auto regressive pattern (e.g. GPT-2/3,) as opposed to those using the denoising autoencoder pattern (e.g. DistilBERT, XLNET) when an equivalent fine-tuning is applied?

RQ4: Are there differences in detection-precision of the type of humour using language models based on the auto regressive pattern (e.g. GPT-2/3,) as opposed to those using the denoising autoencoder pattern (e.g. DistilBERT, XLNET) when an equivalent fine-tuning is applied?

H1: Neural language models based on the denoising autoencoder pattern are more precise in detecting degree and type of humour.

RQ5: Is there a particular type of humour that is most effective in achieving high levels of propagation of political messaging?

H2: The most effective type of humour for political messaging is irony



Graduate School of Communication

RQ5: Is there a particular level of humour that is most effective in achieving high levels of propagation by political messaging?

H3: Higher levels of humour (from a given actor) improve the propagation of political messaging, whilst entirely serious messages may – in the case of highly topical subject matter – be quite effective propagators, but in proportionately fewer instances.

Three academic publications that lie at the heart of my research theme are as follows:

- Annamoradnejad, I. (2020). ColBERT: Using BERT Sentence Embedding for Humor Detection. ArXiv:2004.12765 [Cs]. <http://arxiv.org/abs/2004.12765>
- Davis, J. L., Love, T. P., & Killen, G. (2018). Seriously funny: The political work of humor on social media. *New Media & Society*, 20(10), 3898–3916. <https://doi.org/10.1177/1461444818762602>
- Howard, P. N., Woolley, S., & Calo, R. (2018). Algorithms, bots, and political communication in the US 2016 election: The challenge of automated political communication for election law and administration. *Journal of Information Technology & Politics*, 15(2), 81–93. <https://doi.org/10.1080/19331681.2018.1448735>

Societal and scientific relevance:

Humour is a key factor for influencers and on social media networks humour can be a powerful initiator of information propagation. In a commercial sense, it promotes consumer engagement – i.e. bonding to a brand. In a political setting, the right kind of humour enthuses voters and evokes a “man of the people” effect.

- Humour can be used to provide differentiation from other information sources and increase viral-propagation
- The right amount of humour exacerbates the uptake of proposed ideas (eg. In politics, sales...) thus humour can be used to gain influence (in both on- or off-line communication)
- Humour can be used as an effective factor in the promotion tool of the marketing mix (whether in business, politics or entertainment)
- Humour can work particularly well interactively - but only in a context where humour is appropriate (i.e. can be expected) and of a type fitting the discourse. This is particularly relevant in the application of chatbots where a reliable detection and classification of degrees of humour is needed.

All this indicates that humour plays an important part in people’s lives. Davis, Love and Killen (2018) find that nearly 70% of tweets of the 2016 US presidential election that are politically funny demonstrate some form of a political agenda which shows that humour on social media shows is a means for meaningful political engagement.



Graduate School of Communication

Regarding the scientific relevance of this thesis, the method employed aims to analyse various sentence embedding techniques to create an optimal “humour detector”.

Sentence Embeddings have recently begun to be used (e.g. Annamoradnejad in April 2020), but there don't seem to be any comparisons in humour research using embeddings other than BERT. There has been further research using word embeddings (Ghosh, 2015) in the domain of humour detection, but little employing sentence embeddings as the technique is relatively novel.

Please make sure that the filled-in form is no longer than 3 pages A4