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## ACL Paper Summary

### **Title, Author List, and Affiliations**

The title of this work is “Should a Chatbot be Sarcastic? Understanding User Preferences Towards Sarcasm Generation”. The authors are, from left to right, Silviu Vlad Oprea, Steven R. Wilson, and Walid Magdy. Oprea and Magdy are affiliated with the School of Informatics at the University of Edinburgh. Magdy is also affiliated with The Alan Turing Institute in London. Wilson is affiliated with the School of Engineering and Computer Science at Oakland University in Rochester, MI.

### **Summary of Problem Addressed by the Paper**

The authors address the problem of, in sarcasm generation research, first needing to ask the question of when a chatbot should be sarcastic as opposed to starting with the “how”. They say that humans consider sarcastic responses mostly inappropriate, which makes understanding the “when” important. Once the “when” is answered, then they move on to the question of how to generate sarcasm using a chatbot.

### **Summary of Prior Work**

The earliest sarcasm generation system is called SarcasmBot. The authors found that the eight generators used by the bot only focus on the sentiment of the input or the presence of swear words. They say the generators do not consider the meaning of whatever is inputted. They also found in their experiments with the bot that there would be fall-back generator used which would just concatenate a random positive phrase and random negative phrase together for the output. The phrases weren’t related to the input.

In general, the authors found that previous sarcasm generators identified sarcasm with linguistic incongruity, which they say is not sufficient for sarcasm to occur. They also found that these

generators did not work with positive-sentiment inputs, instead only working with negative inputs.

### **Unique Contributions of This Paper**

The approach taken by the authors in this paper allowed them to understand people's preferences as to when sarcasm should be used and how it should be formulated. Using those two things, the authors can go ahead and provide guidelines for future work with generating sarcasm. Second, being able to observe people's preferences about sarcasm allowed the authors to be able to quantitatively evaluate the advantages of the formal linguistic theory that grounds Chandler. Chandler is a novel modular sarcastic response generation framework that the authors recently introduced.

### **How the Authors Evaluated Their Work**

The authors selected a set of sample utterances and, for each utterance, generated responses using Chandler as well as some other systems. The authors then asked participants to rate these responses based on the level of sarcasm, humor, coherence, and specificity in each of them. Next, the participants were instructed to choose their preferred response. Finally, they were asked to rate how appropriate it was to respond with sarcasm to the given input. Based on the results, the authors came across four main findings. First, people seem to find sarcasm inappropriate when used to respond to most inputs. The suitable times for sarcasm to be used were found to be when the input was either positive or a joke. Second, most people don't find sarcasm appropriate even in "appropriate" situations. They also don't tend to like it when sarcasm is very specific. Third, it is important to include both pragmatic insincerity and emotional markers when generating sarcasm since they have a significant influence when it comes to perceiving sarcasm. Finally, people seemed to prefer the simpler responses offered by SarcasmBot more than the generation models that are more advanced. However, since it has a

limited variety in what it can output, the authors feel there will need to be more investigation to see if a simpler solution would be preferred in longer conversations.

### **Number of Citations Received on Google Scholar**

The paper itself has not yet received any citations on Google Scholar. My guess is that, since it is still only about a year old, it will take some time before it gets some citations. As for the authors, Oprea has received 206 citations, Wilson has received 440 citations, and Magdy has received 3617 citations. This makes Magdy the one with the most citations by a considerable amount.

### **Brief Conclusion of Why I Think the Authors' Work is Important**

I think that if developers want chatbots to use sarcasm effectively, the focus can't just be on how to generate sarcasm. That's only part of the problem, with the other part being the chatbot's ability to know when it's appropriate to use sarcasm in a conversation. So, in this sense, I agree with the authors' view of focusing on the "when" first before moving on to the "how". I think their work here will be helpful in guiding future sarcasm generation research and will help make chatbots more effective and natural with their use of sarcasm with human users.