

Conversational Analysis of Daily Dialog Data using Polite Emotional Dialogue Acts

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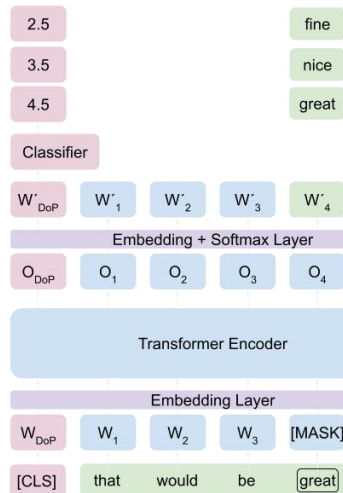
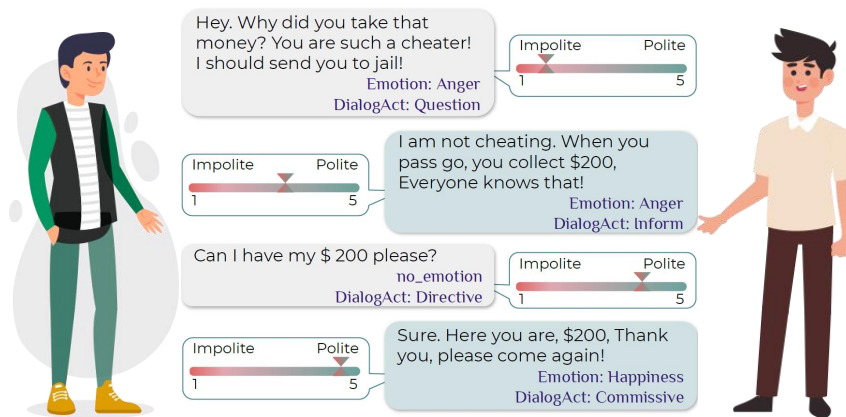
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Conversational Analysis

- Socio-linguistic cues
- Dialogue Acts, Emotion, Politeness, etc.
- Relationship of Emotions and Dialogue Acts [1]
- Emotional Dialogue Acts
- Co-relation between cues are helpful
- Drive the dialogue flow - dialogue system
- Pragmatic conversational analysis
- Human-robot/computer interaction

DailyDialog Dataset

- Conversation topics of daily life [2]
- Ordinary life and Financial topics
- Manually labelled with
- Emotion and Dialogue Act classes
- Bi-turn dialogue flows of dialogue acts
- Question & Inform and
- Directive & Commissive
- Annotate with Politeness values between scale of 1 and 5



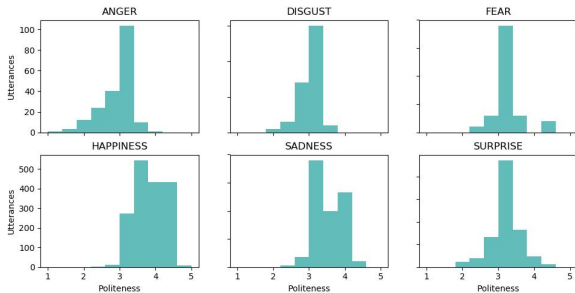
BERT for Politeness Analysis

- Politeness regressor model [3]
- Combine two politeness datasets [4] and [5]
- Pre-training a BERT-based model [6]

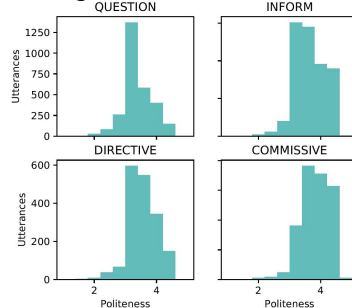
Annotated Utterances from DailyDialog

| DoP | Dialogue Act | Emotion | Utterance |
|------|--------------|------------|--|
| 4.63 | Inform | Happiness | Sure, that would be great! Thank you! |
| 4.63 | Commissive | Happiness | That would be great! Thanks a lot! |
| 4.62 | Inform | Happiness | This is exciting! Thank you so much! |
| 3.34 | Inform | no_emotion | Just a minute. It's ten to nine by my watch. |
| 3.34 | Inform | no_emotion | You may check out books or videos. |
| 3.34 | Question | no_emotion | That's a small fee? |
| 1.59 | Inform | Disgust | Don't dress like that. You'll make fool yourself. |
| 1.47 | Directive | no_emotion | Get up, you lazybones! |
| 1.46 | Directive | Surprise | You idiot! Don't say that! Do you want this job, or not? |
| 1.37 | Directive | Anger | Get out of my store, you jerk! |

Emotions vs Politeness



Dialogue Acts vs Politeness



Concluding on Politeness for Conversational Analysis

- Discover how politeness functions in a dialogue
- Behavioural analysis of conversation partners

Annotated dataset, code and other information is available at:

<https://github.com/bothe/politeEDAs>

References

- [1] Bothe, C., Weber, C., Magg, S., and Wermter, S. (2020). EDA: Enriching Emotional Dialogue Acts using an Ensemble of Neural Annotators. LREC 2020.
- [2] Li, Y., Su, H., Shen, X., Li, W., Cao, Z., and Niu, S. (2017). DailyDialog: A manually labelled multi-turn dialogue dataset. In Proceedings of the Eighth International Joint Conference on Natural Language Processing (Volume 1: Long Papers), pages 986-995.
- [3] Bao, et al. (2021). Conversations Gone Alright: Quantifying and Predicting Prosocial Outcomes in Online Conversations. In The Web

- Conference 2021 - Proceedings of WWW 2021, pages 1134-1145.
 -> <https://github.com/wujunjie1998/Politeness/>
 [4] Danescu-Niculescu-Mizil, et al. (2013). A Computational Approach to Politeness with Application to Social Factors. In Proceedings of the 51st Annual Meeting of the ACL, pages 250-259.
 [5] Wang, Z. and Jurgens, D. (2018). It's going to be okay: Measuring Access to Support in Online Communities. In Proceedings of the Conference on EMNLP, pages 33-45.
 [6] Devlin, et al. (2019). BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. In Proceedings of the Conference of the NA-AACL, pages 4171-4186.