Maastricht University

Project title: Can computers tell lies from truths?

Project leader: Glynis Bogaard, PhD

Function: Lecturer

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Proposal (250 words):

Introduction:
With an average of 54% correct classification, both lay people and professionals perform poorly when it comes to detecting deception. Nonetheless, judging the veracity of statements of victims, suspects and witnesses is important in the criminal justice system. Therefore, several lie detection tools have been developed that can improve our deception accuracy, especially when they focus on the content of people's narratives. Indeed, substantial empirical support exists, showing there are qualitative and quantitative differences in true and false statements. However, these tools have been criticized because they are not standardized, and because they vulnerable to biases (e.g., contextual bias). These criticisms trace back to problems associated with human coders to assess the presence of verbal cues within statements, and to make consequent judgments about the statements' veracity. Moreover, verbal lie detection tools do not specify a cutoff score as to when a statement should be considered truthful. These critical shortcomings make the practical application of verbal lie detection tools very limited.

Hypothesis and Objectives:
The current proposal aims to improve verbal lie detection by creating a credibility judgment algorithm that can be applied to statements of victims, suspects and witnesses. This algorithm will make it possible to judge people's credibility in a standardized and objective way, by increasing the diagnostic accuracy.

Setting and Methods:
Experimental laboratory and field studies

Impact:
If successful, this project would provide practicioners such as police officers with the much needed appropriate methods to assess the credibility of doubtful statements.

Requirements candidate: Highly motivated student with good English communication skills and proactive and resolute attitude.

Keywords: lie detection,

Top 5 selected publications:

1. **Bogaard, G**., Meijer, E., Vrij, A., Broers, N. J., & Merckelbach, H. (2014). Contextual Bias in Verbal Credibility Assessment: Criteria Based Content Analysis (CBCA), Reality Monitoring

(RM), and Scientific Content Analysis (SCAN). *Applied Cognitive Psychology, 28*, 79–90. doi: 10.1002/acp.2959

Number of times cited = 20

2. **Bogaard, G**., Meijer, E., Vrij, A., & Merckelbach, H. (2016). Scientific Content Analysis (SCAN) cannot distinguish between truthful and fabricated accounts of a negative event. *Frontiers in Psychology, 7*, 243. doi: 10.3389/fpsyg.2016.00243

Number of times cited = 15

3. **Bogaard, G**., Meijer, E., & Vrij, A. (2014). Using an example statement increases information but does not increase accuracy of CBCA, RM, and SCAN. *Journal of Investigative Psychology and Offender Profiling, 11*, 151-163. doi: 10.1002/jip.1409

Number of times cited = 9

4. **Bogaard, G**., Meijer, E., Vrij, A., & Merckelbach, H. (2016). Strong but wrong: beliefs about verbal and non-verbal cues to deception. *PLoS ONE, 11*(6): e0156615.

Number of times cited = 9

5. **Bogaard, G**., Meijer, E., Vrij, A., Broers, N. J., & Merckelbach, H. (2013). SCAN is largely driven by 12 criteria: Results from sexual abuse statements. *Psychology, Crime and Law, 20*, 430-449. doi: 10.1080/1068316X.2013.793338

Number of times cited = 9