

The Media Psychology Division (NeFCA) organizes a preconference at the ETMAAL 2017.

WHEN: Thursday 26 January 2017, 9 AM- 11 AM

WHERE: University of Tilburg (exact location tba)

THEME: Moving beyond self-report: Measuring arousal, emotional, and cognitive responses to media through physiological measures

AIM: In order to better understand media effects, communication scientists are increasingly interested in arousal, emotional, and cognitive responses as mediators of such effects. Although most research currently relies on self-reported responses to media, this measurement method has well-known disadvantages (e.g., social desirability bias, questions about whether participants have insight into emotional and cognitive processes, reporting that takes place after instead of during exposure). Physiological measures such as heart rate, skin conductance, facial movements, and neurological response patterns provide an opportunity to overcome many of these disadvantages. For example, such physiological responses can be measured *during* exposure and take place outside of the participants' overt cognitive control, which offers clear advantages over using self-report measures.

Obviously, physiological measures also have their disadvantages and they certainly pose a much bigger challenge in terms of measurement, analysis, and interpretation of the data. This may make the use of physiological measures seem like a daunting task. In order to encourage communication scientists to consider such measures, this preconference will focus on **the opportunities and pitfalls of using physiological responses in communication research**. This is done via a series of paper presentations from scholars answering media-related questions employing a range of physiological measures, such as face-reader software, measures of physiological arousal and valence of emotions, as well as brain activity. Each presentation will highlight the methodological approach used and present do's and don'ts to other researchers who might also be interested in using physiological measures. These presentations will be followed by a discussion of how to move forward using best practices in physiological communication research.

PROGRAM

- 8.45 – 9.00 Coffee
- 9.00 – 9.10 Opening
- 9.10 – 10.30 12-minute presentations of six invited speakers
- 10.30 – 11.00 Plenary discussion about moving forward with physiological measurement in communication science led by Professor Moniek Buijzen

SPEAKERS & TOPICS

1. On the start-up of a neuro lab: from Facereader to EEG studies & beyond

Professor dr. Iris Vermeir & Professor dr. Hendrik Slabbinck both at the Department of Marketing Ghent University.

The start-up of a neuro-lab is not straightforward. We will talk about the development of our neuro lab and how we are currently moving forward from relatively easy study designs (e.g. eye-tracker & automatic coding of emotion) to more complex study designs (e.g. EEG & automatic synchronization of multiple methods). Next to the learnings on how (not) to use the neuro tools, we will also focus on the importance of a more nuanced view on the types of behaviors to study with neurological measures.

2. Economic messages alter the brain's response to error prediction and consequent behavioral decisions

Diamantis Petropoulos-Petalas, MSc., PhD candidate at the Behavioral Science Institute, Radboud University Nijmegen; in collaboration with Dr. Hein van Schie and Dr. Paul Hendriks Vettehen.

Can news messages about the economy shape people's economic decisions? In this study we tested how a simple message about possible changes in outcome variation in the context of the BART task can alter behavioral and electrophysiological (EEG) responses associated with processing of risk and benefit, namely N1, P2, P3a, P3b and error prediction signals. The results indicate that description-based beliefs (priors) may exert strong influence on the decision-making process by biasing processing of information from experience. This mechanism may capture the psychological reality of a lay-person's response to actual economic news. We discuss implications for media-fulfilling prophecy effects.

3. Exploring children's responses to entertainment using heart rate and skin conductance

Dr. Karin Fikkers, Postdoctoral researcher at the Amsterdam School of Communication Research, University of Amsterdam; in collaboration with Dr. Jessica Piotrowski and Prof. Dr. Patti Valkenburg

Children's emotional, cognitive, and arousal responses to media entertainment are believed to be important predictors of media effects. In the summer of 2016, we collected data in the Amsterdam Nemo Science Museum. Circa 200 children were shown a positive and a negative clip from *Spykids* while recording their skin conductance and heart rate. After each clip, they self-reported on their responses, while their parents filled out a questionnaire on individual difference variables. Through this combination, we aim to learn which children experience the strongest responses to media entertainment – and which children are therefore potentially most susceptible to media entertainment effects.

4. The relation between skin conductance level and acoustic properties of speech as indicators of stress

Dr. Marie Postma, Assistant Professor at the University of Tilburg

Bodily reactions accompanying acute stress, such as increase in heart rate, rapid blood flow, activation of sweat glands, and increase in the respiration rate can be measured with sensor technology. Contrary to self-reports, these methods offer the advantage of continuous assessment of affective responses. Like psychophysiological measurements, vocal characteristics are important sources of information about speakers' affective states. For example, increased muscle tension associated with increased levels of stress would result in higher vocal pitch that might give rise to the perception of a 'strained' voice and be experienced by the speakers as 'a lump in the throat' and an actual muscle tension in the larynx. In my research, I examine the link between galvanic skin response and vocal properties as possible indicators of stress in doctor-patient interactions.

5. Politics isn't cool. It is hot! Physiological Responses to Political Communication

Dr. Bert Bakker, Assistant professor at the Amsterdam School of Communication Research, University of Amsterdam; in collaboration with Dr. Gijs Schumacher and dr. Matthijs Rooduijn.

We often read that political communication sparks citizens emotions and that these emotions cause attitude change. Our study tests whether pro and counter attitudinal political messages spark physiological arousal (using skin conductance & arousal) and whether the experienced emotions are positive or negative (using electromyogram). Moreover, we assess whether the experience of these emotions underlie the change in political attitudes. We report the results of a lab-in-the-field experiment conducted during Lowlands. Our results show that politics is sometimes hot and that emotional reactions to political communication are associated with attitude change.

6. Automatically measuring facial expressions with FaceReader

Dr. Anouk den Hamer, Business Developer at Noldus Information Technology

The human face provides a number of signals essential for interpersonal communication. It is one of our most direct means of communication and allows us to recognize someone's affective state and intentions. However, annotating facial expressions objectively can be a challenge. In this presentation, the software tool FaceReader will be presented. FaceReader is a unique tool that is capable of automatically analyzing facial expressions, providing users with an objective assessment of a person's emotion.

MORE DETAILS ABOUT THE CONFERENCE

For whom?

This preconference is intended for all junior and senior researchers who are interested in learning more about applications of physiological measurement in communication science.

Costs

Participation is free – but **please register (before January 20, 2017) by sending an email** to Karin Fikkers (k.m.fikkers@uva.nl) and Bert Bakker (b.n.bakker@uva.nl).

To guarantee that NeFCA can organize meetings and workshops in the future, it is highly recommended that you become a NeFCA member (student membership €75 a year, regular membership €125). You can register at <http://www.nefca.eu/page/membership.aspx>.

Organization

Dr. Karin Fikkers & Dr. Bert Bakker (University of Amsterdam)

In collaboration with the NeFCA Media Psychology Division:

Dr. K. Beullens (KU Leuven)

Prof. Dr. M. Buijzen (Radboud Universiteit)

Prof. Dr. S. Eggermont (KU Leuven)

Dr. T. Hartmann (VU University Amsterdam)

Dr. G. van Koningsbruggen (VU University Amsterdam)