Psychophysiology of Positive and Negative Emotions (POPANE) – a dataset of over 1000 participants

Szymon KupiÅ?ski

Abstract*—Subjective experience along with physiological activity are fundamental components of emotional responding. We present a publicly available dataset of psychophysiological responses to positive and negative emotions of 1157 healthy participants, collected across seven studies. In our studies were continuously recorded affect and physiological activity during resting baseline and emotional responding. We recorded physiological responses using electrocardiography (EKG), impedance cardiography (ICG), electrodermal activity (EDA), photoplethysmography (PPG, the blood pressure measures), respiratory, and temperature sensors. In our studies, we elicited emotions with films, pictures, speech preparation, and expressive writing. We studied a wide range of positive and negative emotions, including: amusement, anger, disgust, excitement, fear, gratitude, sadness, tenderness, and threat. To the best of our knowledge, Psychophysiology of Positive and Negative Emotions (POPANE) database is the largest, consistent psychophysiological dataset on emotions ever collected and publicly shared. We hope that POPANE will provide individuals, companies, and laboratories with the data they need to perform their own analyses, corroborate their results, and create robust psychophysiological models of emotions.

I. Introduction

This document provides a paper-style view of the Research Object (RO) "*Psychophysiology of Positive and Negative Emotions (POPANE) – a dataset of over 1000 participants*"[1] , which is a *snapshot* generated from the live RO "*Psychophysiology of Positive and Negative Emotions (POPANE) – a dataset of over 1000 participants*"[2]. The ROs have been created, managed and preserved via ROHub platform [1]. Please refer to [2] for a general introduction to the RO concept, to [3] for a detailed description of the RO model, and to [4] for more information about ROHub platform.

The RO is of type *"Data-centric", which represents an aggregation of related resources where data resources (e.g., datasets, documents, files) play the central role.* [3].

Additionally, this RO has been enriched automatically with the following annotations:

- concepts (most frequently mentioned in the RO): *electrocardiography, activity, dataset, emotions*
- domains (fields of knowledge in which the main concepts are commonly used): *physiology*
- frequent expressions (most frequently mentioned noun phrases): *recorded affect, impedance cardiography*

[1] *http://sandbox.rohub.org/rodl/ROs/POPANE-snapshot-1/*

[2] *http://sandbox.rohub.org/rodl/ROs/POPANE/*

[3] See RO types definitions at http://w3id.org/ro/earth-science#

Acknowledgment

The Research Object was uploaded to ROHub by *Szymon KupiÅ?ski*. ROHub portal development was supported by EVER-EST EU project (HORIZON 2020 grant 674907).

References

[1] The Research Object Management Platform - ROHub http://www.rohub.org/.

[2] K. Belhajjame, O. Corcho, D. Garijo, J. Zhao, P. Missier, D. Newman, R. Palma, S. Bechhofer, E. García Cuesta, J. M. Gómez-Pérez, S. Soiland-Reyes, L. Verdes-Montenegro, D. De Roure, and C. Goble "Workflow-Centric Research Objects: First Class Citizens in Scholarly Discourse", Proceedings of Workshop on the Semantic Publishing, SePublica Crete, Greece 28 May 2012.

[3] Belhajjame K., Zhao J., Garijo D., Gamble M., Hettne K., Palma R., Mina E., Corcho O., Gómez-Pérez J. M., Bechhofer S., Klyne G., Goble C. "Using a suite of ontologies for preserving workflow-centric research objects", Journal of Web Semantics: Science, Services and Agents on the World Wide Web Available online 11 February 2015 ISSN 1570-8268.

[4] Palma R., Corcho O., Gómez-Pérez J. M., Mazurek, C. "ROHub - A Digital Library of Research Objects Supporting Scientists Towards Reproducible Science". In Semantic Publishing Challenge of Proc. Extended Semantic Web Conference (ESWC) Crete, Greece 25-29 May 2014