

Facial Behavior Modifications Following the Diffusion of the Use of Protective Masks Due to COVID-19

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Abstract : Our study explores the usefulness of implementing facial expression recognition capabilities and using the Facial Action Coding System (FACS) in contexts where the other person is wearing a mask. In the communication process, the subjects use a plurality of distinct and autonomous reporting systems. Among them, the system of mimicking facial movements is worthy of attention. Basic emotion theorists have identified the existence of specific and universal patterns of facial expressions related to seven basic emotions -anger, disgust, contempt, fear, sadness, surprise, and happiness- that would distinguish one emotion from another. However, due to the COVID-19 pandemic, we have come up against the problem of having the lower half of the face covered and, therefore, not investigable due to the masks. Facial-emotional behavior is a good starting point for understanding: (1) the affective state (such as emotions), (2) cognitive activity (perplexity, concentration, boredom), (3) temperament and personality traits (hostility, sociability, shyness), (4) psychopathology (such as diagnostic information relevant to depression, mania, schizophrenia, and less severe disorders), (5) psychopathological processes that occur during social interactions patient and analyst. There are numerous methods to measure facial movements resulting from the action of muscles, see for example, the measurement of visible facial actions using coding systems (non-intrusive systems that require the presence of an observer who encodes and categorizes behaviors) and the measurement of electrical "discharges" of contracting muscles (facial electromyography; EMG). However, the measuring system invented by Ekman and Friesen (2002) - "Facial Action Coding System - FACS" is the most comprehensive, complete, and versatile. Our study, carried out on about 1,500 subjects over three years of work, allowed us to highlight how the movements of the hands and upper part of the face change depending on whether the subject wears a mask or not. We have been able to identify specific alterations to the subjects' hand movement patterns and their upper face expressions while wearing masks compared to when not wearing them. We believe that finding correlations between how body language changes when our facial expressions are impaired can provide a better understanding of the link between the face and body non-verbal language.

Keywords : facial action coding system, COVID-19, masks, facial analysis

Conference Title : ICBMBA 2023 : International Conference on Behavior Modification and Behavior Analysis

Conference Location : Istanbul, Türkiye

Conference Dates : January 30-31, 2023