

## **Children's Facial and Motor Emotional Expressions in Emotion Regulation**

Tal Shafir, Yun Yi He, Chit Yuen Yi, Rosa Angulo-Barroso, Alison Miller, Sheryl Olson, Niko Kaciroti, Twila Tardif (University of Michigan)

During the preschool years, children begin to control and adjust their emotional expressions to “fit” social situations and cultural demands. In this study we obtained time-dense samples of motor behavior and facial expressions to examine how the emotion regulation system operates in response to a disappointing situation in the presence and absence of an unfamiliar adult. Fifty US English-speaking 4-year-old children rank-ordered a series of potential “prizes” together with a familiarized adult (basal phase), followed by the least familiar prize given by an unfamiliar adult (1<sup>st</sup> regulation phase). The child was then left alone for an additional minute (2<sup>nd</sup> regulation phase). Finally, the first experimenter returned and then told the child a mistake was made and gave the child the most highly-ranked prize (resolution phase). Children’s behaviors were recorded with two video cameras, one focused on the face, and the other on the entire body. These were then coded using the Observer program with 1-second resolution and segmented according to the four task phases. Facial expressions were coded using an adapted AFFEX coding system and motor with movements hypothesized to express discrete emotions (e.g., collapsed torso for sadness). Using confirmatory factor analysis, motor behaviors were aggregated into 3 factors: 1) negative bodily expressions; 2) avoidant/distracting movements; and 3) coping movements involving positive engagement with the prize. Facial expressions were also divided into 3 factors: 1) negative; 2) happy; and 3) neutral/interest. RM ANOVAs and post-hoc analyses showed significant differences between the 4 phases in frequency of avoid/distract movements and coping movements, but not of negative movements; all 3 types of facial expressions also showed significant differences across task phases. Neither individual- nor frequency-based analyses showed associations between facial and motor expressions of emotion across task phases. Nonetheless, several correlations were found between motor factors during the regulation phases and the parental questionnaires (e.g., CBQ anger/frustration and CBCL aggressiveness and externalizing subscales) but no significant correlations were found between the facial expression factors and parental questionnaires. Preschool express emotions differently through subtle motor vs. more obvious facial expressions, indicating a certain level of social awareness and emotional regulation. Although our frequency analyses did not reveal congruence across motor and facial domains of emotional expressions, we are currently examining second by second co-occurrences of facial and motor expressions, as well as individual and cultural differences in the relations between facial and motor expressions of emotion.