



## **Military and civilians: Detection of aggression by emotional facial expressions**

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Assume a boxer's stance, invade personal space, clench hands and make threats are perceived as behavioral indicators of imminent acts of violence (Johnson & Aaron, 2013). Derivatives of anger, two facial expressions precursors of aggression, perceived as warning signs of imminent violence, have been identified by Matsumoto and Hwang (2014). These expressions are better identified by persons frequently confronted with situations of assault like policemen.

During their in the field peacekeeping missions, military agents are faced with situations of danger and assault. However, are they better than civilians in identifying emotional facial expressions precursors of assault? To our knowledge, no-one has investigated the ability of soldiers to detect facial expressions precursors of aggression (A Signal Detection Theory task, Green & Swets, 1966), and whether they process these specific emotions better and faster than civilians.

Standardized pictures of 6 posed emotional facial expressions were used as stimuli (premeditated assault [PA], loss of control assault [LCA], anger-joy [AJ], anger-contempt [AC], anger-disgust [AD] and neutral expressions [NE]). Conformity of emotional expressions have been evaluated by two Facial Action Coding System coders. Faces were presented sequentially to 47 participants - military and civilians. Their task was to determine as fast as possible if the emotional facial expression represents a person who will attack them. Responses and reaction time were recorded.

Concerning SDT indexes, military agents were more conservative (more misses and correct rejections,  $p < .001$ ) and less efficient in detecting assault expressions ( $p < .001$ ). Our results are consistent with facial expressions of assault identified by Matsumoto and Hwang (2014). Detection rates for PA and LCA were more associated with aggression than other expressions. We also observed higher detection rates of aggression for LCA than for PA. AD were identified as more dangerous than other ones. AC, AJ, and NE have very low rates of assault, which means that they were clearly identified as displaying non-dangerous facial expressions.

Concerning reaction time, there was no difference between military and civilians. However, overall participants reacted to expressions precursors of assault (PA & LCA) slower than both chimera (AJ, AC & AD) and NE ( $ps < .001$ ). Expressions precursors of assault seem to have a longer cognitive processing whatever the response given. On the field, this latency isn't optimal behavior in a dangerous situation. There is leeway to improve ability of detecting emotional facial expressions precursors of assault.

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