Abstract

In order to orient ourselves in the environment our senses have evolved so as to acquire optimal information. The optimization, however, incurs mistakes. To avoid costly ones, the over-perception of patterns (in humans) augments the decision making. I tested the decision-making in two modalities, acoustic and visual. A set of stimuli (using computer-generated graphics, based on output from a very good pseudo random generator) was produced: masks with a random pattern with varying degree of transparency over geometrical figures were used, followed by similar task that involved black and white high-contrast patterns. In both cases, I was able to find, using a Bayesian statistical approach, that the ability to detect the correct pattern presence (or lack thereof) was related to respondents' thinking styles, specifically Rationality and Intuition. Furthermore, I used ambiguous facial expressions, and accompanying vocalizations, of high-intensity affects (pain, pleasure and fear) and low-intensity (neutral and smile/laughter). My findings evidenced that the high-intensity facial expressions and vocalizations were rated with a low probability of correct response. Differences in the consistency of the ratings were detected and also the range of probabilities of being due to chance (guessing). When arousal was manipulated in the respondents by using the harmless, but reliable, method Cold Pressor Task, the ratings of unimodal stimuli shifted towards higher accuracy for facial expressions of pleasure and laugh, and decreased in accuracy for vocalizations of laughter and neutral speech; all only for male stimuli. When the two modalities are presented simultaneously and in congruence, the probability of correct ratings did not increase for high-intensity displays but the due-to-chance calculations showed that none of the displays were rated due to chance except for the intersexual assessment of pleasure. In other words, when responding to the other-sex stimulus of pleasure, the valence is guessed by the respondent. In the incongruent conditions (for which no correct rating can exist), I found that most of the decisions are based on the auditory modality, the visual one being suppressed. The one exception was the facial expression of pleasure combined with neutral speech; it resulted in cross-talk — namely, a doubly incorrect rating.