Perceive, Express and Respond to Emotional Expression

FEEL, Interact, eXpress: a Global approach to development with Interdisciplinary Grounding
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What develops?

The main objective of this interdisciplinary focus is to explore the effect of emotional expression as an initiator or a response to social interaction between human and nonhuman agents. Human-machine interactions are of special interest as an open avenue emerging from this focus and leading to implement robotic architectures embedding key aspects of expression in socially situated development.

Comparing emotional expressions in different species

Human baby and baby chimp expressing joy, mouth wide open. The expressions are coded with the babyFACS and chimpFACS.

Analogs of facial Action Units are generated by the servomechanisms via the use of the Facial Action Coding System (FACS).

Emotional resonance to robotic expression

Humans resonate to robotic expressions as readily as to human expressions.

Human brain perceives expressive robotic faces

Robot recognizes human emotional expression

Use of a mathematical model that does not suppose a first step of face detection.

Objective: implement robotic architectures embedding key aspects of expression in socially situated development.

Implications for Robotics

- Electrical brain responses evoked by human or robotic emotional expressions.
- Time course of neuronal activity from its onset to its processing through different brain structures -> different stages of information processing -> dynamic topography of expressive face processing.

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