

The relationship between basic and complex emotions: The case of generative art

Collina S.1, De Simone F.1, Febbraio F.1, Tarantino I.1, Tzenci B.2, Chiesa S.2

1. *Università degli Studi Suor Orsola Benincasa*

2. *Re-Lab*

This study aims to investigate the representation of complex emotions (e.g. envy) and their relationship with basic emotions (e.g. fear). Emotions represent an important topic in psychological research. Given their pervasive nature in everyday life they have been studied under different perspectives; their representation, organization, and the neural mechanisms supporting their processing (Eckmann, 1992 Feldmann Barrett, 2012). Clinical and cognitive psychology, for example, studied them according to the impact they have on adaptive mechanisms. However, while clinical psychology attempted to build models taking into account emotions such as *fear* or *envy* mostly from a qualitative perspective, cognitive literature has been mainly devoted to the experimental investigation of the basic emotions (e.g. fear, sadness, disgust, happiness, surprise, anger) – neglecting complex emotions whose experience is an important part of human processing. This dissociation brought a lack of data to interpret the psychological experience enhancing the gap between experience and processing, with an impact on behavioral models and AI simulations. According to Eckman's view complex emotions can be traced back to the combination of basic emotions. In a series of behavioral studies, this principle has been applied to build a matrix of complex emotions. Participants were required to indicate the basic emotions and the percentage of them responsible for a given complex emotion. The data obtained has been used to generate an AI matrix able to interface with generative art algorithms. The results will be discussed in light of the recent developments in art psychology.

References

- Ekman P. (1992) Facial expressions of emotion: new findings, new questions. *Psychological Science*, 3:34-38.
- Feldman-Barrett L. (2012) Emotions are real. *Emotion*, 12 (3), 413-429.