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**From:** Joscha Bach <[REDACTED]>  
**Sent:** Sunday, February 8, 2015 9:54 PM  
**To:** Jeffrey Epstein  
**Subject:** Re:  
**Attachments:** signature.asc

The facial expressions are a function of multiple affect dimensions. Existing models use dimensions like valence (pleasure/displeasure, as a reaction to satisfaction/frustration of a drive), arousal/indifference, tension/relaxation, submission/dominance, confusion/determination, enjoyment/disgust, introversion/extraversion. Each dimension is mapped to sets of facial muscles. Alternatively, one can use emotion prototypes (happiness, sadness, anger, fear, surprise, disgust), and code each as a particular facial expression (i.e. a configuration of excitations of the 3 relevant muscles). I believe that basic emotional states are best understood as configurations of affect dimensions.

Ekman has shown that you can interpolate between these facial expressions, and these interpolations match interpolated emotional states (or affect dimensions). He systematized facial expressions as the Facial Action Coding System (FACS), which is used for training interrogators, animate computer generated faces, etc.

Socially relevant drives and cognitive modes include affiliation (desire for approval and group integration), caring (desire to make others happy/reduce their suffering), affection, libido, power/dominance. Especially affiliation (legitimacy signals, which reflect reputation, using smiles and frowns, and belonging, through synchronized actions) has strong relation to emotion expression. Beyond that, I am not sure that group goals exist on a functional level. It is probably sufficient to have individual goals, and let the group goals emerge. Or am I missing something?

Please elaborate if you'd like a more detailed answer from me.

— Joscha

PS: Hope you are well; please let me know if I or PED can do something for you.

> happy sad , all have facial expressions attached, clearly a social signal. , with your goal definitions how do you break it into group and individual goals

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> please note

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