

Cogsci 300
Week 7: Emotion and Affective Computing

Please turn off and put away all electronics.

dreamstime.com

1

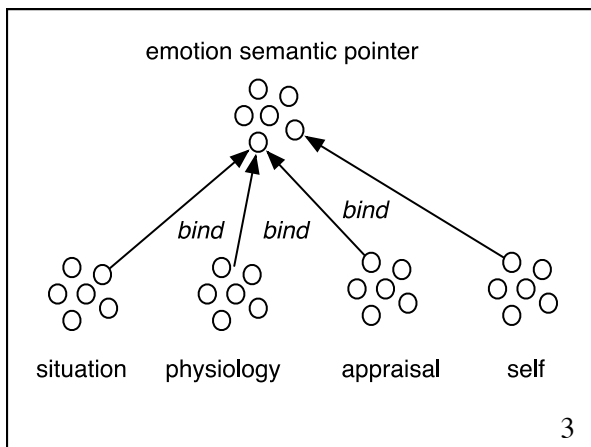
Emotions are Semantic Pointers

Emotion = bind (concept or belief, cognitive appraisal, physiological perception)

Example: being happy to be home = bind (home, appraisal, physiology)

Question: how much of this do non-human animals have?

2



Why Emotions are Biologically Valuable

1. Evaluation: They provide assessments of current and future states of the world.
2. Attention: They focus attention on what is most important and worthy of consciousness.
3. Motivation: They provide reasons to do things and cause actions.
4. Social connections: They motivate people to interact with each other encouraging cooperation, care, and reproduction. ⁴

Emotions Can Be Rational

Physiological changes are not subject to rational evaluation, but beliefs and cognitive appraisals are. Ask:

1. Is the belief supported by evidence?
2. Does the cognitive appraisal accurately take into account all the relevant goals?

5

Moral Judgments are Emotional

Evidence:

1. People feel emotional about right and wrong.
2. People argue vehemently about right and wrong.
3. Moral disagreements are hard to resolve.
4. Caring and empathy are important.

But moral judgments can still be rational, if the beliefs and cognitive appraisals are rational. Emotional coherence.

6

Values are Emotional

Value = bind (concept or goal, emotion)

Example: bind (democracy, love)

In the brain, facts and values are interconnected, just like cognition and emotion.

Emotional coherence: decisions are based on balancing different emotional goals, not calculations of maximizing expected utility.

7

Discussion Questions

1. Would people be better off without emotions?
2. How similar are animal emotions, e.g. dogs, to those in people?

8

What Affective Computing Does

Affect = emotion + mood + motivation

1. Detect emotions in people. Useful for patient care, marketing, etc.
2. Analyze emotional information in social media.
3. Build machines that have emotions.



9

How Does Emotion Recognition Work?

Representations:

Sensory information, e.g. images.

Facial expressions.

Emotion words, e.g. liking.

Procedures:

Infer emotions from facial expressions or social media text.

10

Affective Computing Strengths

1. Use large data bases
2. Inferences not distracted by the computer's own emotions
3. Not culturally biased

11

Affective Computing Limitations

1. No human physiology
2. Robots can fake emotions, but not have them.
3. No empathy
4. No morality: computers are psychopaths.



12

Discussion Question

Could a machine be developed that actually has emotions?

Would this development be a good idea?

13

Affective Computing vs. Humans

1. Advantages of affective computing: large data bases of sentiment words; not distracted by its own emotions.
2. Advantages of humans: full range of emotions that integrate physiology, appraisal, and language; empathy.

14