Affective Emergence

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Moods & emotions are affective states

- “Affective” goodness-badness
- “States” multiple systems reflecting same condition at same time
Emotions emerge when multiple systems represent the same evaluation simultaneously.

**Failures of Affective Book Keeping**

Where the same or similar experiences come from different sources.
Experiment
(Lun & Clore, 2006)

**Anxiety** from mood induction

**Anxiety** from scary story about flying

Estimates of flying risk
Different but highly redundant images are presented by the two eyes.
Impossible to keep track of which image comes from which eye

So, rather than 2 separate images, we combine them into one

But they are slightly different, so that a 3-dimensional image emerges
Visual accounting failure

As a result, we see objects in hologram-like reality.

A single object emerges “out there” when it is computationally simpler than keeping track of two highly redundant sensory streams.
Affect & Evaluation

If we have two (or more) evaluative representations, goodness or badness should also emerge as “out there” in object.

OCC Theory

3 kinds of good:

Utilitarian, Moral, Aesthetic
Political leader

good policies – utilitarian good
admirable actions – moral good
handsome, articulate – aesthetic good
Falling in love
good for me – utilitarian good
admirable – standard-based good
beautiful, graceful – aesthetic good

They seem unaccountably good.

unable to keep track of which parts of our fascination with them are due to which aspect of their goodness

Transcendently good
String quartet

Operatic duet

Intimate conversation
In interpersonal situations, convergence may be experienced as separate entity.

Illusion?

As in vision, failures of accounting allow one to experience multiple facets of same thing at the same time.
Believable agents
My research concerns misattribution of affect.

Multiple sources of similar information can be powerful because we are unable to do the affective accounting.
Music
(Hunter, Schellenberg, & Schimmack, 2006)

Tempo:
Fast vs. slow

Key:
Major vs. minor
Poetry is effective when multiple modes of representing an attribute make it emerge “out there”
In a series of studies, we examined affective metaphors.

**Lightness vs. Darkness**  
Meier, Robinson, & Clore, 2004

Words

Appeared in light or dark font

Categorize as “good” or “bad”
8 experiments

Positive & Negative English words

Printed in light or dark on gray

VICTORY

DANGER
Affect and Brightness

Accuracy

Pos Word | Neg Word
---|---
Light Font | Dark Font

Accuracy values for Pos Word and Neg Word, comparing Light Font and Dark Font.
Affect and Brightness

![Bar chart showing accuracy for positive and negative words with light and dark fonts.](chart.png)
In Greek, Roman, & Christian traditions as well as in Buddhist, Hindu, and Muslim traditions, 

**Darkness** is associated with ignorance, evil, & death,

**Light** is associated with knowledge, goodness, & life
Solidity

Experiencing **physical** solidity mis-attributed to make more compelling the idea of **financial** solidity
Experiencing physical elevation promotes the idea of elevated judgment.
Research

Affect & Verticality

(Meier & Robinson, 2004)

Words

Appeared up or down on screen

Categorize as “good” or “bad”
Interaction: $F(1, 33) = 6.11, p = .019, \eta^2_p = .16$
Affect and Verticality

Interaction: $F(1, 33) = 6.11, p = .019, \eta^2_p = .16$
Up-is-good principle

Is often seen in Art
Renaissance painters (1300-1500)

Perspective

Advance over earlier flat representations. Realism draws viewer into scene allowing religious paintings to elicit affective reactions -- adoration and awe to converge with depictions to make them more compelling.
An application of the good-is-up principle
Leonardo da Vinci’s “Last Supper”
DaVinci: To be compelling, the viewers eye must be the center of projection

But in the “Last Supper,” Leonardo violated his own principle. Why?
By making the center of projection 5 meters above viewers, they unconsciously adopt that elevated perspective.

Viewing the painting is literally, or at least perceptually, uplifting.

Kubovy http://webexhibits.org/arrowintheeye/
Believable agents
Why the Sunny Side is Up:

Automatic Association of Affect and Location

Meier & Robinson
Affective Realization

Gerald L. Clore
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LOVE

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LIAR
The bar chart shows the mean evaluation time (in ms) for words of different valence: positive and negative. The chart compares the evaluation times for words at the top and bottom of a list.

- **Positive Words**: The mean evaluation time for positive words at the top is approximately 830 ms, and at the bottom is approximately 870 ms.
- **Negative Words**: The mean evaluation time for negative words at the top is approximately 900 ms, and at the bottom is approximately 910 ms.

The chart indicates that negative words are evaluated faster at the top than at the bottom, while positive words are evaluated faster at the bottom than at the top.
Experiment 2:
Verbal Evaluations: to eliminate response conflict, participants verbally evaluated the words (in the middle of the screen)

Reaction Time: Next participants indicated whether a “P” or a “Q” appeared on screen (as fast as possible).

Letter appeared randomly Up or Down

Prediction:
If positive words imply up, then immediately afterward, letters at top should be detected faster than at those at bottom
Once more, effects of **congruence** between evaluative cognitions & experienced affective cues

Again, in lab, costs of incongruence easier to see than benefits of congruence

Finally, for real world evidence that congruence can augment affective beliefs…
Suppose a person displays multiple kinds of goodness

Enjoyable          Virtuous          Handsome
                 goal             standard           taste
Emotions are psychological states representing the goodness and badness of things.

The things that can have value include:
- events and their outcomes
- actions and their agency
- objects and their attributes

And the sources of value:
- **Goals:** Outcomes of events appraised as desirable
  → pleased
- **Standards:** Actions of agents appraised as praiseworthy
  → approve
- **Attitudes:** Attributes of objects appraised as appealing
  → Liking
Appraise

Outcomes of Events
  Goals
    as Desirable
      Feel Pleased
    Undesirable
      Feel Displeased

Actions of Agents
  Standards
    as Praiseworthy
      Feel Approval
    Blameworthy
      Feel Disapproval

Attributes of Objects
  Tastes/Attitudes
    as Appealing
      Feel Liking
    Unappealing
      Feel Disliking
EVENTS, AGENTS, OR OBJECTS
appraised in terms of

- goals (for events)
  - desirability
    - joy,
    - distress,
    - hope,
    - fear,
    - relief,
    - disappointment, etc.
  - GOAL-BASED EMOTIONS

- norms/standards (for agents’ actions)
  - praiseworthiness
    - anger,
    - gratitude,
    - gratification,
    - remorse, etc.
  - COMPOUND EMOTIONS

- tastes/attitudes (for objects)
  - appealingness
    - pride,
    - shame,
    - admiration,
    - reproach, etc.
  - NORM-BASED EMOTIONS

- tastes/attitudes (for objects)
  - appealingness
    - love,
    - hate, etc.
  - TASTE-BASED EMOTIONS

Focus
Value Source
Appraisal
Emotions
Focus: Outcome of Events
Appraisal: Desirability of Events
Source of Value: Goals
Affective Reaction: Pleased / Displeased
Emotion: Happy-Sad, Relief-Disappointment, Hope-Fear

Focus: Actions of Agents
Appraisal: Praiseworthy/Blameworthiness of Action
Source of Value: Standards
Affective Reaction: Approve / Disapprove
Emotion: Pride-Shame, Admiration-Reproach

Focus: Attributes of Objects
Appraisal: Appeal / Unappealingness of Attributes
Source of Value: Attitudes, Tastes
Affective Reaction: Like / Dislike
Emotion: Love-Hate, Disgust
Conversely, depictions of perdition have viewers looking down on the damned
In summary, I have suggested that

1. **Affect-as-Evidence:**

   Just as  
   *sensory experience* serves as *evidence for descriptive beliefs,*

   *affective experience* serves as *evidence for evaluative beliefs*
2. Emotional Coherence:

- **performance**: decision speed, memory accuracy, life satisfaction, & life outcomes depend on emotional coherence

- **art**: poetic, dramatic, and artistic works seek to elicit affective experience coherent with their cognitive message, the purpose of which is to provide affect-as-evidence
An interaction was observed for ratings of how sad the excerpts made listeners feel, $F(1,48) = 8.46$, $p < .01$ Sad ratings were higher in response to excerpts in minor rather than major mode, both at fast and at slow tempi, both for sad feelings, $t_s(48) = 5.22$ and $7.61$, respectively $p < .0001$.

The interaction indicates that the mode effect was stronger at slower tempi. In general, then, the joint effect of two consistent cues had a stronger impact on affective ratings than a simple additive combination of the two main effects. (Hunter, Schellenberg, & Schimmack, 2006).
Damasio (1994) two neural streams of information as we run our fingers over a piece of velvet

One for the velvet

One for our skin

experience of our finger on the emerges from the two related streams because they are different but correlated
EMOTIONAL COHERENCE

Agreement between multiple sources of affective information

Epistemic Interpretation

Affective experience validating or invalidating affective beliefs
Evidence for descriptive beliefs depends on sensory information.

But what about affective beliefs? We can’t see, hear, touch goodness or badness.

Evidence is self-generated affective reaction:

*Smiling might validate a positive belief, but frowning would not.*
Unlike propositions, feelings do not need verification

Like sensations of external stimuli, affective feelings can be evidence for affective beliefs

Affect-as-Evidence hypothesis
Clore and Gasper (2000).
Attribution of affect in Poetry

The Eagle

He clasps the crag with crooked hands:
Close to the sun in lonely lands,
Ringed with the azure world, he stands.

The wrinkled sea beneath him crawls;
He watches from his mountain walls,
And like a thunderbolt he falls.

Alfred, Lord Tennyson
(1809-1892)
The poet does not simply describe the eagle, he evokes a specific image of a proud, fierce, powerful, independent eagle, to create a visceral feeling of awe.

He says the eagle “...clasps the crag with crooked hands,” so we feel the eagle’s cold, hard, windy world.

Poetry is effective when multiple ways of representing an attribute make that attribute emerge.

Tasks:

Evaluation: (Pos - Neg) Exp 1ab,2ab,3ab

Instructions:

Respond as accurately as possible (Exp 1ab)

Measures:

Reaction time

Accuracy
Zoroaster wrote of the fight between good & evil as a fight between Light & Darkness.

Plato likened Darkness to imprisonment, ignorance & Light to freedom, knowledge.
Not only in West …

**Buddhist writings:**
Truth is characterized as a light or a lamp

**Hindu Upanishad:**
Light is equated with truth & immortality,
Darkness with delusion & death

**Muslim Koran:**
Allah is equated with light &
his message as a lamp and a star

20 countries evaluative ratings associated
light colors with good, dark with bad
(Adams & Osgood, 1973)