9/25

Emotion Elicitation

Important for 2 reasons

- As an Independent Variable (IV)
  - E.g., how does decision-making change during sadness versus anger?

ex) gender, personality

- As a Dependent Variable (DV)
  - E.g., how does, say, agreeableness predict emotional responses to different stimuli?
    - Facial
    - Self-report
    - Autonomic
    - Neural

Goals of emotion elicitation

- To evoke brief affective responses
- That affect one or more response systems
- Via some stimulus
  - Real or imagined

Two more major film libraries

- Philippot (1993)
  - 12 films
  - N=60
  - Six emotional states
    - Relative success in eliciting amusement, sadness, and neutral
- Gross & Levenson (1995)
  - 16 films
  - N=494
  - Eight emotional states
    - Relative success in eliciting amusement, anger, contentment, disgust, sadness, surprise, neutral, and possibly fear

What films look like

- Emotions develop from background emotions
- They are phasic and changing
- Impossible to disentangle background from foreground; criteria for deciding when one phenomenon ends and another begins is rather arbitrary

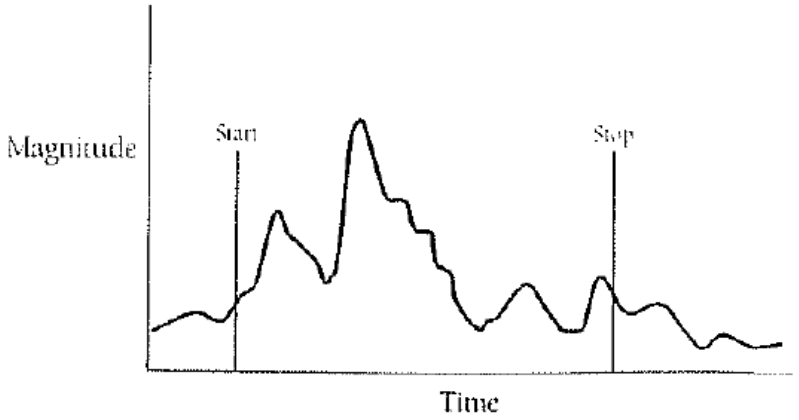


Figure 1.1. Affective responding over the course of a laboratory emotion elicitation procedure.

What films look like

– Figure is simplified, because:
  - Emotion represented as single line, but responses don't have high levels of coherence
  - Individual differences
    – Culture
    – Dispositional mood
    – Emotion reactivity
    – Emotion regulation styles
    – Personality traits
    – Physical health

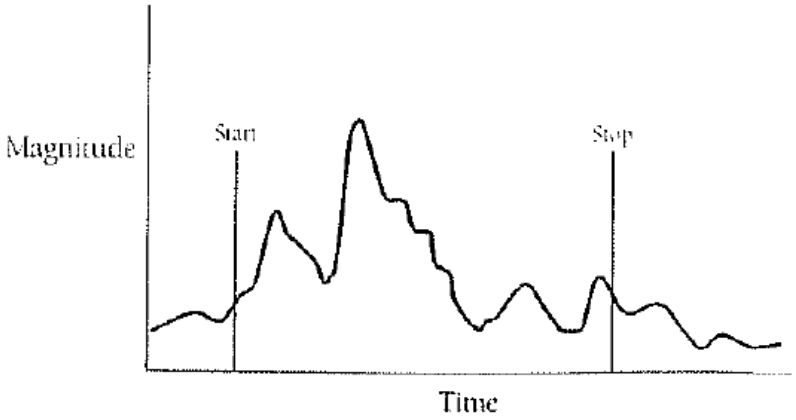


Figure 1.1. Affective responding over the course of a laboratory emotion elicitation procedure.

Films

- Relatively potent compared to other stimuli
  - Images
  - Sounds or music
  - Relived or imagined scenes
  - Odors
  - Facial Movements
- Strong negative affect elicited via hypnosis or confederates may be unethical; difficult to remove via debriefing

Films

- Relatively good at initiating multi-component responses
  - Internal dialogue weaker on behavior & physiology
  - Facial movement weaker on self-reported emotion
  - Music weaker on physiology
- Generally very complex
  - Moving scenes
  - Sound/narrative
  - Require appraisal processes

Films

- High in attentional capture
  - Moving scenes & sound/narrative

- Relatively low demand characteristics
  - People don't necessarily "know" to report a specific emotion, or facially show it
    - Demand characteristics may be greater for films eliciting "politically correct" responses . . .
  - Difficult to mimic autonomic response

Films

- Standardization extremely high
  - Same movie each and every time!

some may be very response

- Poor temporal resolution
  - Compared to slides or the startle reflex, as examples, movies elicit many "epochs" of emotional response for the duration of the stimulus
    - Typically last for a duration of 1-10 minutes

Films

- Ecological validity is high
  - Most films depict "real" situations relevant to well-being and/or survival
    - That's *why* they elicit emotion!
  - Some require some suspension of belief
    - Sci-fi
    - Rare in research

Measurement of emotions

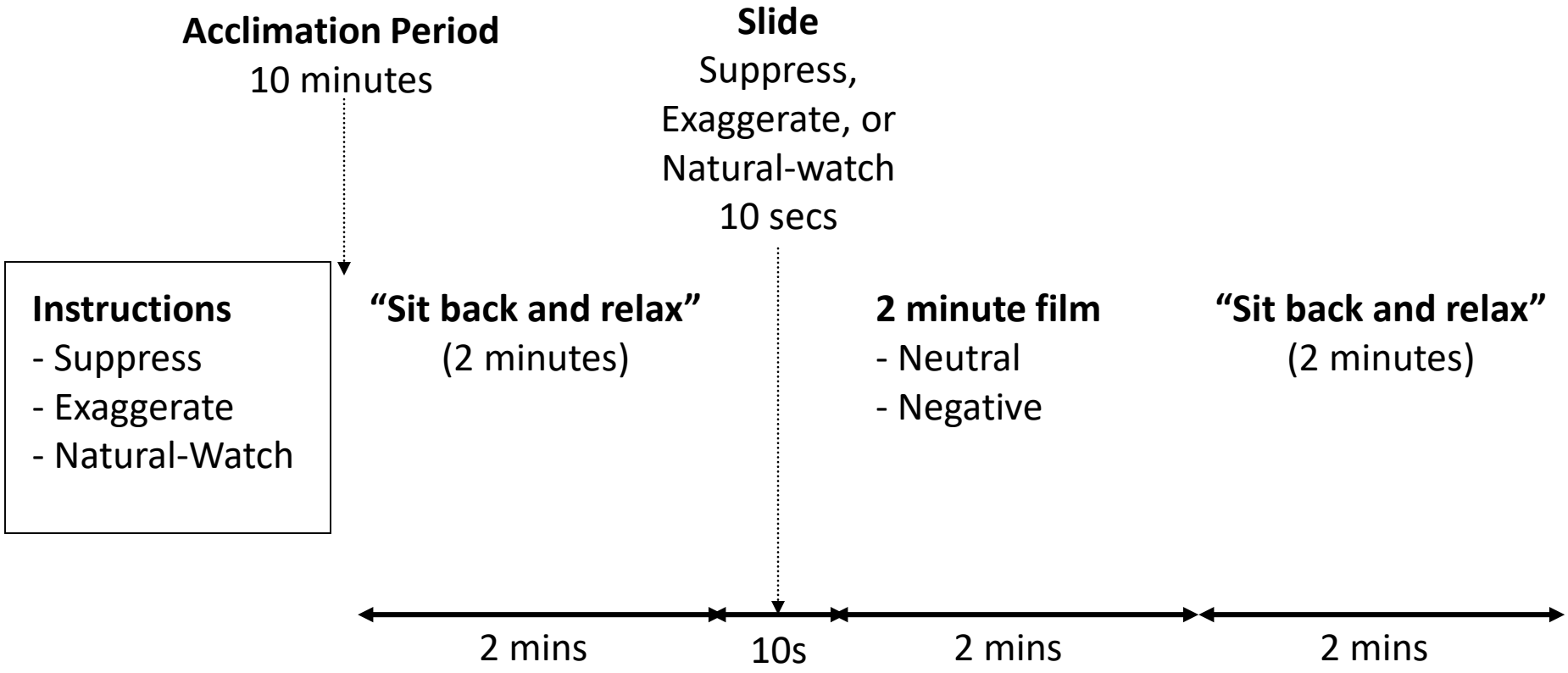
- The greater the delay between emotions felt and emotions measures, the greater the measurement error
  - Emotions are phasic, and memory is imperfect
- Rating dials reduce this error
  - Increases coherence between s-r, physiology, and behavior
- But ratings dials may, in fact, alter emotional experience
  - Distraction, attentional demands, thinking about emotions is known to alter them

physiological responses differ

Measurement of emotions

- The vast majority of researchers reduce data across entire film period
  - Physiology
  - Behavior
  - Self-report
- Imperfect
  - Movies elicit emotional epochs
    - thus averages include reduced or non-affective states
- . . . but practical
  - Again, defining epochs is an arbitrary (and painful!) experience

average emotions out


Acclimation Period
10 minutes
Slide
Suppress,
Exaggerate, or
Natural-watch
10 secs
Instructions
- Suppress
- Exaggerate
- Natural-Watch
"Sit back and relax"
(2 minutes)
2 minute film
- Neutral
- Negative
"Sit back and relax"
(2 minutes)
2 mins
10s
2 mins
2 mins

What kind of baseline to use?

- Rest
  - But individuals differ in their ability to comply
    - Anxiety
    - Sleep!
  - It is not representative of the organism
  - May create a floor, which makes it difficult to see deactivation
    - Orienting reflex
- Neutral film may be better
  - Controls for viewing a dynamic external stimulus
  - Maintains attention; avoids floor effects
  - Multiple baselines (between films) is often desireable

How many films to use?

- As a rule in psychology, the more the better!
  - Averaging across measurement periods increases reliability and decreases error

- But this is difficult with films. Why?
  - Films often evoke slightly different emotional responses
  - Habituation/sensitization/fatigue effects
    - For these reasons, 1 or 2 films are generally used

similar valence

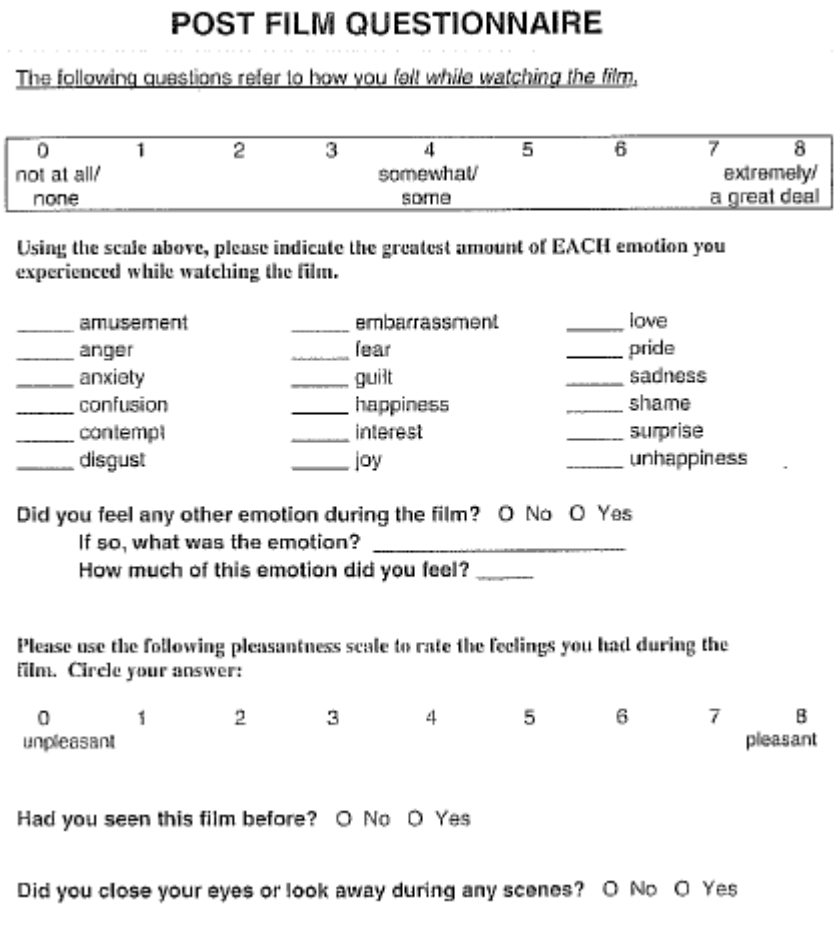
#menow

Things to remember

- When to show films
  - Films at beginning of 2-hour session will likely be viewed differently than at end of session
- Order effects
  - E.g., a sad film may be more evocative following a disgust film, relative to an amusing one
- Prior viewing
  - Past experience with film may ameliorate the effect (habituation) or potentiate it (improved contextual appraisal)

Common post-film questionnaire

Also SAM, PANAS, etc.



POST FILM QUESTIONNAIRE

The following questions refer to how you *felt while watching the film.*

0	1	2	3	4	5	6	7	8
not at all/ none				somewhat/ some				extremely/ a great deal

Using the scale above, please indicate the greatest amount of EACH emotion you experienced while watching the film.

_____ amusement	_____ embarrassment	_____ love
_____ anger	_____ fear	_____ pride
_____ anxiety	_____ guilt	_____ sadness
_____ confusion	_____ happiness	_____ shame
_____ contempt	_____ interest	_____ surprise
_____ disgust	_____ joy	_____ unhappiness

Did you feel any other emotion during the film? O No O Yes

If so, what was the emotion? _____

How much of this emotion did you feel? _____

Please use the following pleasantness scale to rate the feelings you had during the film. Circle your answer:

0	1	2	3	4	5	6	7	8
unpleasant								pleasant

Had you seen this film before? O No O Yes

Did you close your eyes or look away during any scenes? O No O Yes

Table 1.1
Recommended Films for Eliciting Discrete Emotional States

Target Emotion / Film Clip	Sex	Mean (SD) Self-Reported Emotion									
		AMUS	ANGE	CFUS	DISG	EMBA	FEAR	HAPP	INTE	SADN	SURP
Amusement											
Harry	M (*N* = 29)	5.45 (1.23)	0.39 (0.72)	0.55 (0.85)	0.74 (1.32)	2.55 (2.01)	0.23 (0.82)	3.39 (1.71)	4.45 (1.43)	0.13 (0.43)	1.90 (2.33)
	F (*N* = 41)	5.61 (1.28)	0.24 (0.62)	0.22 (0.53)	0.22 (0.73)	2.10 (2.07)	0.35 (0.98)	3.32 (1.82)	3.63 (1.93)	0.17 (0.67)	1.27 (1.72)
Robin	M (*N* = 28)	5.89 (1.17)	0.32 (0.67)	0.71 (1.18)	0.50 (0.92)	0.82 (1.44)	0.07 (0.26)	4.68 (1.96)	4.79 (1.34)	0.14 (0.45)	2.07 (2.12)
	F (*N* = 34)	5.82 (1.99)	0.21 (0.49)	0.70 (1.67)	0.91 (1.71)	0.53 (1.02)	0.06 (0.24)	4.59 (2.00)	4.50 (2.29)	0.18 (0.46)	1.94 (2.23)
Cosby	M (*N* = 14)	5.21 (2.36)	0.07 (0.27)	0.21 (0.58)	0.57 (1.40)	0.79 (1.53)	0.07(0.27)	3.71 (2.43)	3.64 (1.87)	0.07 (0.27)	1.14 (2.41)
	F (*N* = 24)	5.20 (1.76)	0.08 (0.27)	0.31 (0.68)	0.38 (0.90)	0.35 (0.89)	0.04(0.20)	4.23 (1.66)	4.62 (1.88)	0.04 (0.20)	1.77 (2.09)
Whose Line	M (*N* = 13)	7.23 (1.01)	0.62 (1.12)	0.54 (1.13)	1.85 (2.79)	0.92 (1.44)	0.31 (0.85)	5.92 (1.93)	6.08 (1.89)	0.08 (0.28)	3.38 (2.27)
	F (*N* = 15)	6.87 (1.19)	0.07 (0.26)	0.87 (1.46)	2.07 (2.58)	1.80 (2.91)	0.20 (0.56)	5.27 (2.60)	5.47 (2.64)	0.47 (1.81)	3.47 (2.47)
Anger											
Bodyguard	M (*N* = 27)	1.30 (1.61)	5.03 (1.82)	1.21 (1.11)	4.89 (1.61)	1.10 (1.76)	1.62 (1.57)	0.76 (1.33)	3.66 (2.02)	3.07 (2.12)	1.66 (1.97)
	F (*N* = 33)	0.61 (1.12)	5.36 (1.30)	1.82 (2.21)	4.94 (1.80)	0.61 (1.25)	2.15 (2.00)	0.42 (0.90)	3.15 (1.62)	4.21 (2.13)	1.21 (1.76)
Cry Freedom	M (*N* = 21)	0.78 (1.62)	5.87 (1.96)	3.09 (2.73)	5.74 (1.76)	1.78 (2.58)	3.00 (2.92)	0.83 (1.64)	4.09 (2.11)	5.22 (2.17)	2.86 (2.75)
	F (*N* = 36)	0.14 (0.42)	6.17 (1.68)	2.28 (2.25)	5.33 (2.48)	0.72 (1.65)	3.69 (2.41)	0.22 (0.72)	3.22 (2.26)	5.56 (1.93)	2.42 (2.56)
Disgust											
Pink Flamingos	M (*N* = 20)	2.40 (2.39)	0.95 (1.50)	1.85 (2.13)	6.60 (1.39)	0.85 (1.76)	0.45 (1.05)	0.55 (1.61)	1.20 (2.12)	0.90 (1.77)	3.05 (2.56)
	F (*N* = 31)	2.47 (2.56)	0.47 (1.22)	1.87 (2.17)	6.34 (1.54)	1.12 (2.08)	0.38 (1.13)	0.34 (0.83)	1.88 (1.86)	0.29 (1.10)	3.72 (2.43)
Amputation	M (*N* = 74)	1.23 (1.72)	0.68 (1.17)	2.22 (1.94)	5.00 (2.22)	0.51 (1.15)	1.74 (1.84)	0.27 (0.63)	2.65 (2.12)	0.93 (1.46)	2.12 (2.27)
	F (*N* = 71)	0.42 (1.20)	0.66 (1.50)	2.30 (2.43)	6.19 (1.92)	0.32 (0.88)	2.15 (2.36)	0.15 (0.73)	2.68 (2.37)	0.76 (1.56)	2.00 (2.34)
Foot Surgery	M (*N* = 11)	0.45 (0.82)	0.18 (0.41)	1.82 (2.27)	4.91 (2.30)	0.36 (0.81)	0.45 (1.04)	0.09 (0.32)	3.00 (2.57)	0.27 (0.91)	0.82 (1.94)
	F (*N* = 18)	0.56 (1.15)	0.39 (0.78)	2.00 (1.94)	4.44 (2.62)	0.39 (1.20)	1.78 (2.44)	0.17 (0.51)	2.44 (2.28)	0.28 (0.75)	1.50 (2.04)
Fear											
Shining	M (*N* = 23)	1.39 (1.37)	0.65 (1.27)	2.91 (2.26)	0.39 (0.78)	0.22 (0.42)	3.26 (2.03)	0.96 (1.22)	4.61 (1.27)	0.70 (1.26)	1.74 (2.05)
	F (*N* = 36)	0.83 (1.23)	0.17 (0.38)	1.92 (2.25)	0.00 (0.00)	0.00 (0.00)	4.61 (2.07)	0.19 (0.75)	5.89 (1.72)	0.17 (0.45)	1.08 (1.65)
Lambs	M (*N* = 31)	2.65 (2.36)	1.74 (1.53)	1.61 (1.54)	2.39 (1.96)	0.48 (0.81)	3.87 (2.46)	1.70 (1.97)	4.81 (1.52)	0.74 (1.13)	2.19 (2.04)
	F (*N* = 40)	1.07 (1.39)	0.80 (1.14)	0.88 (1.52)	1.80 (2.08)	0.28 (0.68)	4.45 (2.23)	0.60 (1.01)	4.32 (1.95)	0.53 (1.38)	1.88 (2.14)
Neutral											
Sticks	M (*N* = 19)	1.05 (1.65)	1.37 (1.71)	3.58 (2.52)	0.84 (1.26)	0.21 (0.42)	0.16 (0.38)	0.79 (1.62)	1.11 (1.56)	0.53 (1.26)	1.16 (1.68)
	F (*N* = 36)	0.83 (1.21)	0.92 (1.46)	1.92 (2.31)	0.39 (0.80)	0.14 (0.49)	0.33 (1.37)	0.75 (1.16)	0.92 (1.32)	0.11 (0.52)	0.61 (1.02)
Death	M (*N* = 12)	2.33 (2.06)	0.00 (0.00)	0.58 (1.08)	0.00 (0.00)	0.08 (0.29)	0.25 (0.45)	3.75 (1.91)	4.54 (1.50)	0.67 (1.50)	0.42 (1.16)
	F (*N* = 12)	2.25 (2.09)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.08 (0.29)	0.00 (0.00)	3.00 (1.91)	3.58 (2.47)	0.67 (1.23)	0.63 (1.72)

Table 1.1
(continued)

Target Emotion / Film Clip	Sex	Mean (SD) Self-Reported Emotion									
		AMUS	ANGE	CFUS	DISG	EMBA	FEAR	HAPP	INTE	SADN	SURP
Sadness											
The Champ	M (N = 28)	0.82 (1.19)	1.75 (1.78)	1.50 (1.71)	1.07 (1.49)	0.57 (1.07)	1.14 (1.58)	0.36 (0.68)	2.86 (1.69)	5.18 (1.47)	1.18 (1.39)
	F (N = 24)	0.38 (0.71)	1.21 (1.35)	1.42 (1.72)	0.54 (0.78)	0.29 (0.86)	1.63 (2.23)	0.17 (0.48)	3.46 (2.21)	6.33 (1.31)	1.08 (1.59)
Lion King	M (N = 14)	1.79 (1.89)	2.14 (2.48)	0.64 (1.50)	0.79 (1.48)	0.29 (1.07)	1.50 (2.14)	0.29 (0.61)	4.14 (2.71)	6.79 (1.12)	0.64 (1.39)
	F (N = 15)	1.40 (2.20)	2.53 (2.29)	0.07 (0.26)	1.00 (1.93)	0.60 (1.24)	1.80 (2.68)	0.67 (1.11)	4.67 (2.23)	6.93 (1.53)	0.27 (0.59)
Return to Me	M (N = 15)	2.00 (2.04)	1.73 (2.19)	4.20 (2.70)	0.80 (1.32)	0.33 (1.05)	2.40 (2.26)	2.27 (2.79)	4.73 (2.58)	7.00 (1.20)	4.33 (2.79)
	F (N = 15)	1.40 (2.53)	2.20 (2.54)	3.07 (2.96)	0.67 (1.18)	1.27 (2.19)	2.27 (2.55)	2.47 (2.56)	6.00 (1.96)	6.93 (1.58)	3.40 (3.11)
Surprise											
Capricorn	M (N = 25)	1.12 (1.72)	0.40 (1.00)	3.64 (2.23)	0.63 (1.21)	0.20 (0.50)	2.36 (2.52)	0.56 (1.04)	3.04 (2.46)	0.52 (0.96)	5.04 (1.74)
	F (N = 37)	0.59 (1.01)	0.32 (0.82)	3.97 (2.31)	0.23 (0.53)	0.00 (0.00)	2.76 (2.36)	0.08 (0.28)	2.81 (2.03)	0.32 (0.82)	5.05 (2.24)
Sea of Love	M (N = 20)	1.60 (1.64)	0.20 (0.52)	2.15 (1.87)	0.20 (0.52)	0.15 (0.49)	2.90 (2.40)	0.70 (1.59)	2.85 (1.76)	0.20 (0.52)	3.80 (1.85)
	F (N = 34)	1.35 (1.65)	0.24 (0.89)	1.29 (1.73)	0.26 (0.90)	0.44 (1.46)	2.97 (1.96)	0.62 (1.33)	2.68 (1.82)	0.15 (0.56)	4.47 (1.97)

What are your observations?

- Generally?
- How about the order that I presented them?

context cues 중요함

Some Demaree Films

- All 2 minutes in length
  - Avoids time-dependent nature of physiological assessment
- Multiple films elicit the same discrete emotion
  - good for assessing, say, impact of different ER strategies on relevant DVs
    - Behavior
    - Physiology
    - Self-report

Bradley & Lang

- Very similar pictures can evoke widely different responses
  - Snake
  - Garden hose
- The identical picture can evoke disparate reactions between people. Steak to
  - A carnivore
  - A vegetarian
- Need to provide “normative” data, available to all researchers
  - Normed by Center for the Study of Emotion and Attention (UFl)
  - Free to all researchers
    - Fosters replication and extension of research

International Affective Picture System (IAPS)

- Over 1,000 pictures
  - People, objects, and events that represent human experience
- Static cues (slides), which are particularly desirable in early studies of emotion:
- Other stimuli are more dynamic
  - may complicate the interpretation of the measured response

International Affective Picture System (IAPS)

- Relatively easy to control physical parameters
  - Image size
  - Brightness
  - Color
  - Duration, etc.

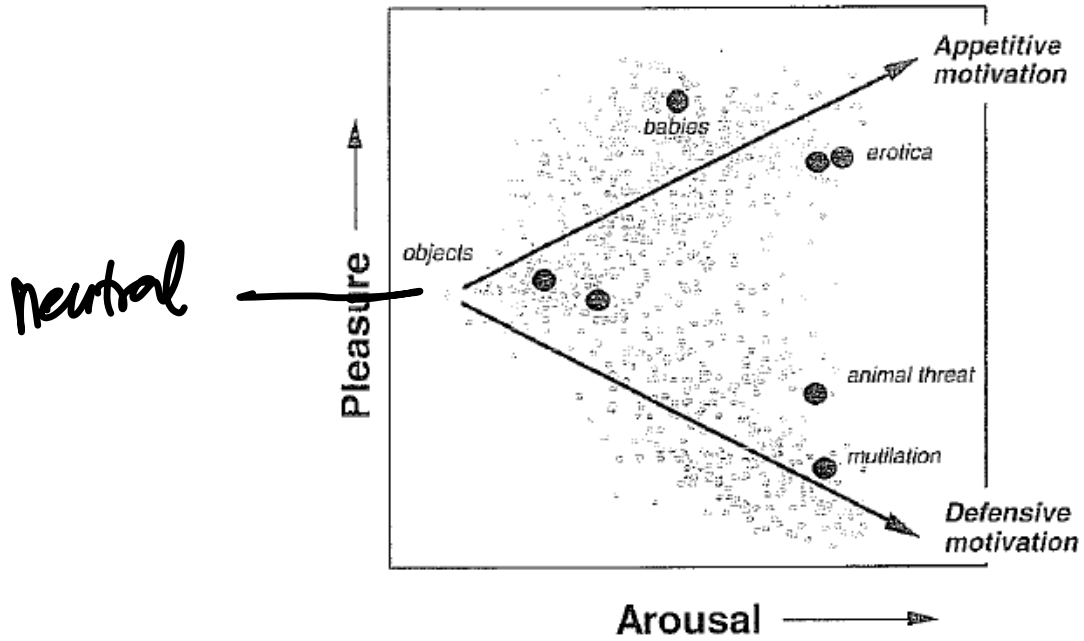
Complexity

Norms

- Based on large numbers of men and women
- Two parameters, generally
  - Valence (negative to positive)
  - Arousal (low to high)
- Sometimes . . .
  - Dominance (low to high)

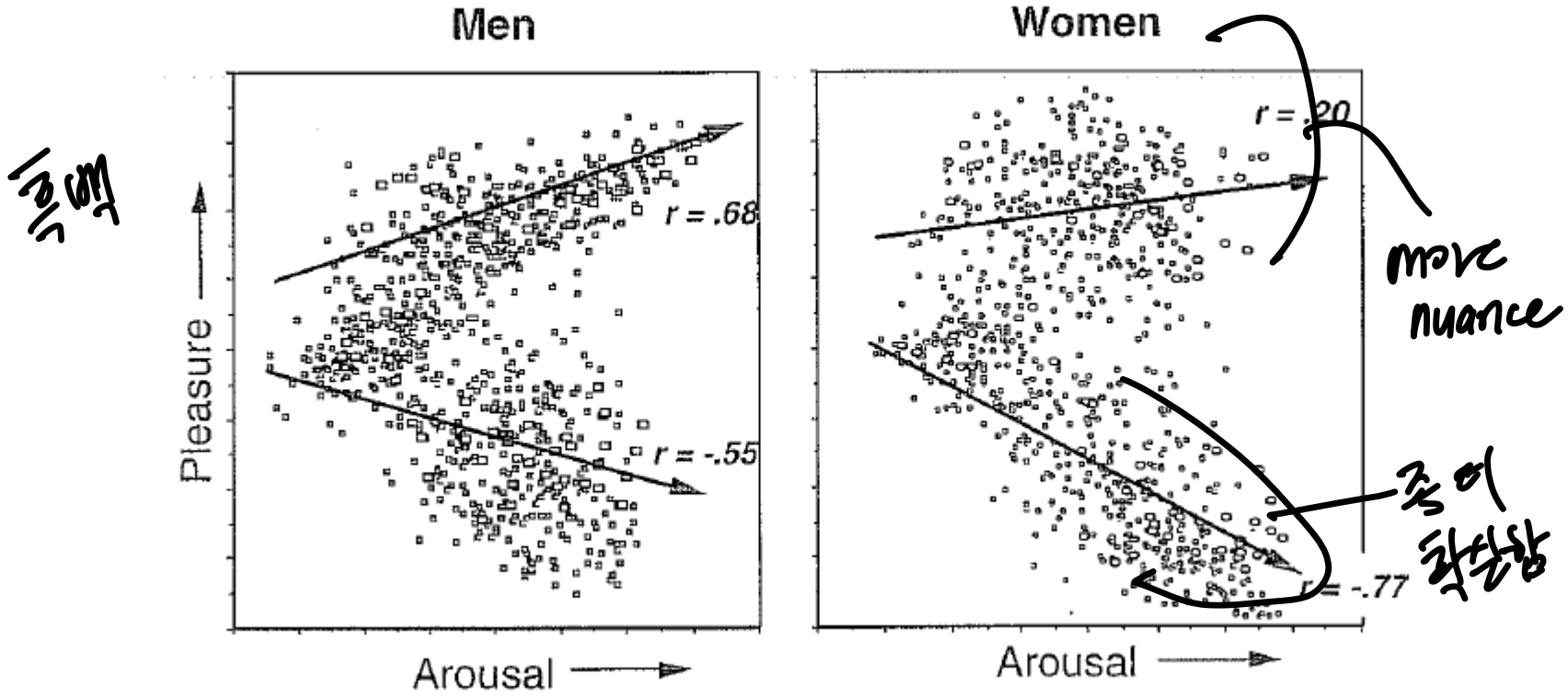
Overall Norms

- Arousal increases with PA and NA, generally speaking
- Can begin to look at discrete categories along the pleasure-arousal affective space



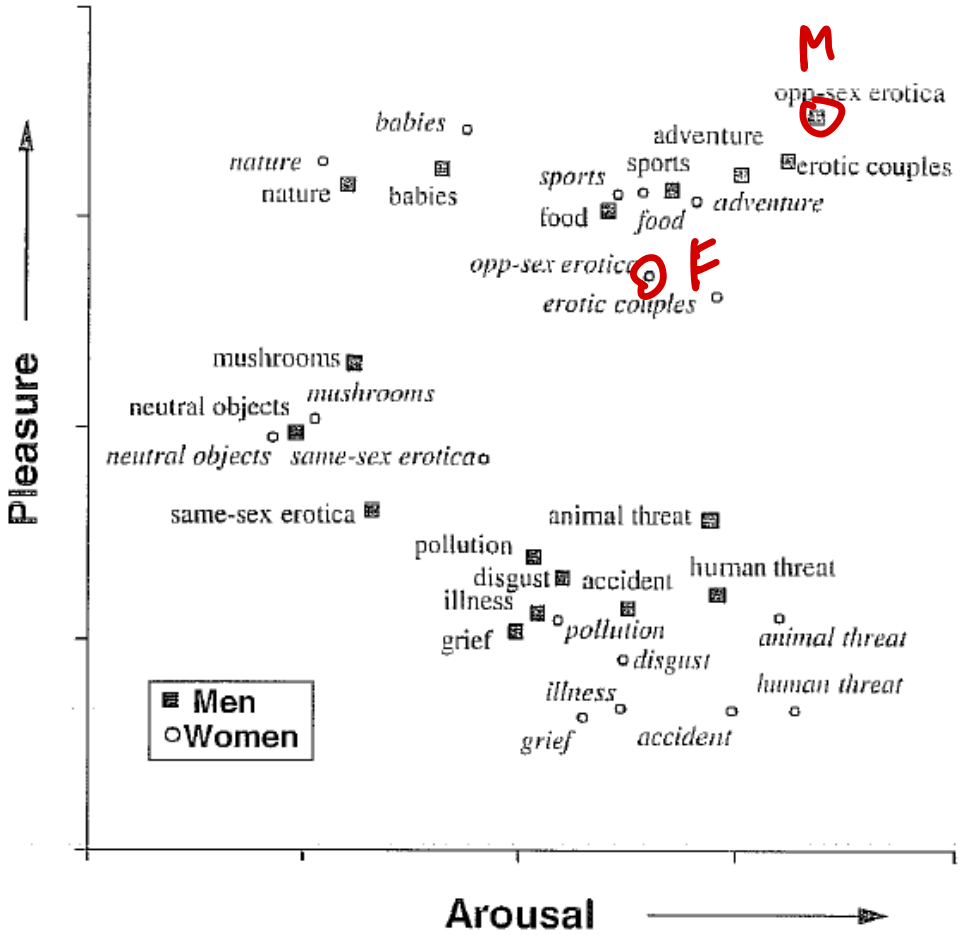
Gender Norms

- There is “tighter coupling” among men to PA slides and women to NA slides



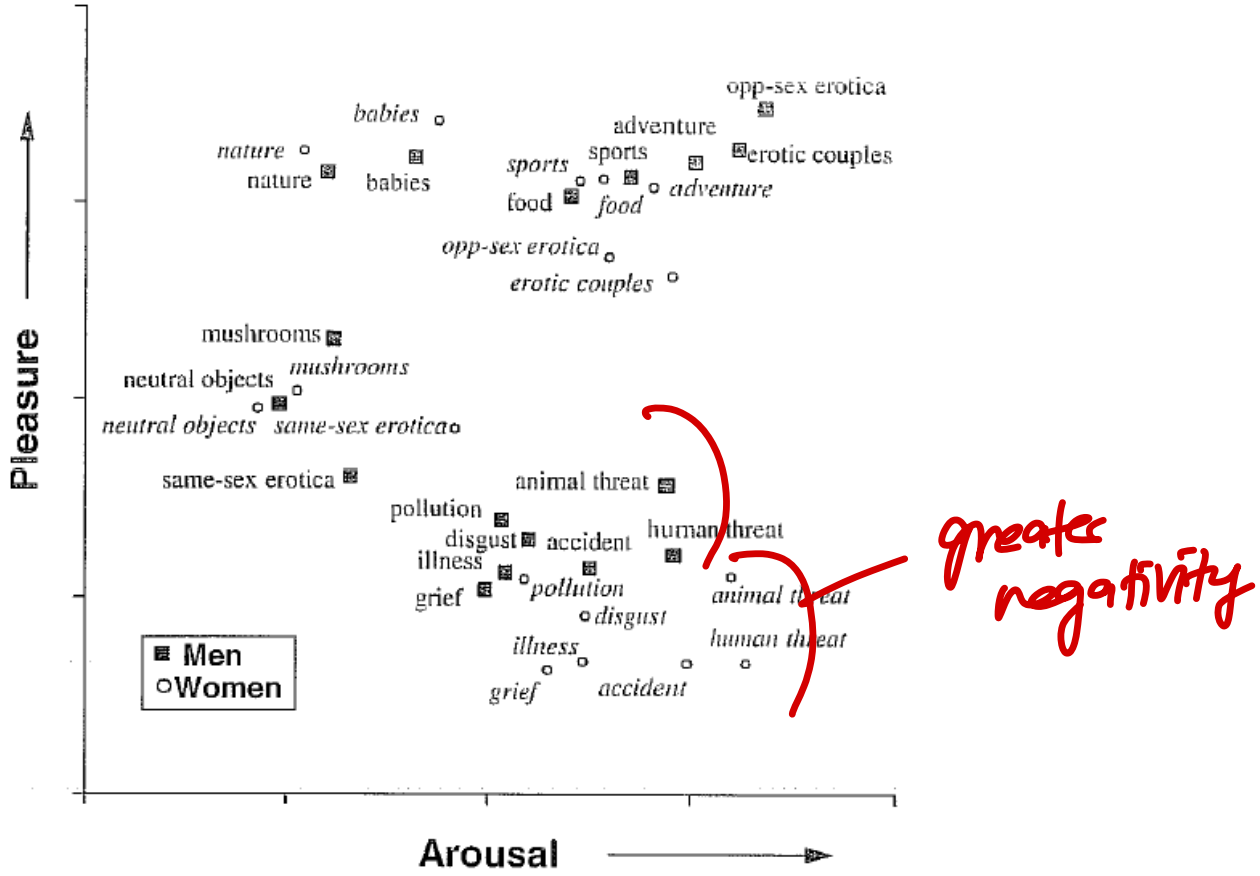
Why?

- For the PA side, it's largely because of erotica



Why?

- For the NA side, it's because women show greater valence and intensity

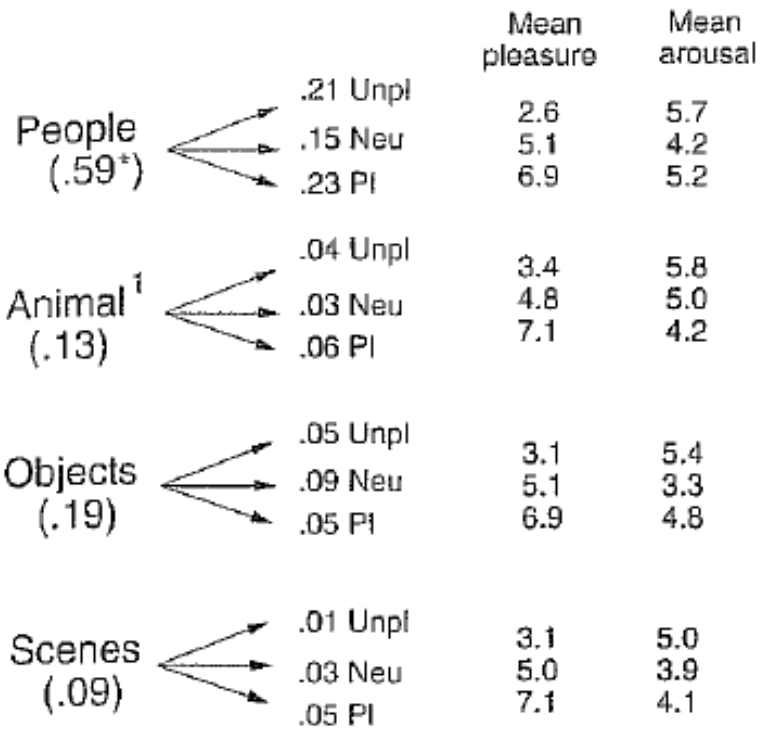


Cultural Differences

- Similar valence ratings across cultures
- But differences emerge on arousal ratings
  - US = Germans, Spanish, Flems (from Belgium)
  - Swedes significantly lower arousal ratings
  - Italians significantly higher arousal ratings
- Generally consistent with stereotypes
- More cross-cultural studies necessary

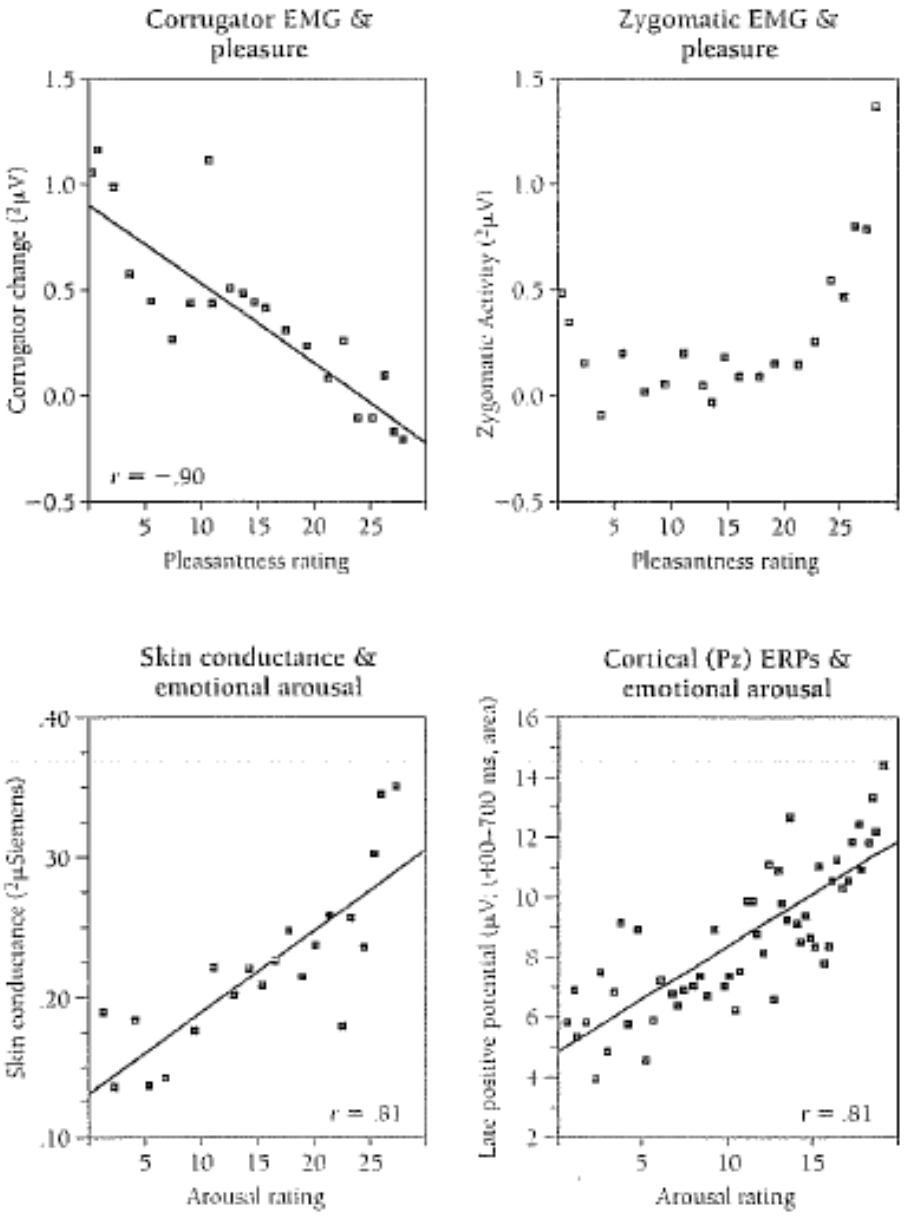
A nice thing . . .

- Negative, neutral, and positive ratings are found for all types of stimuli

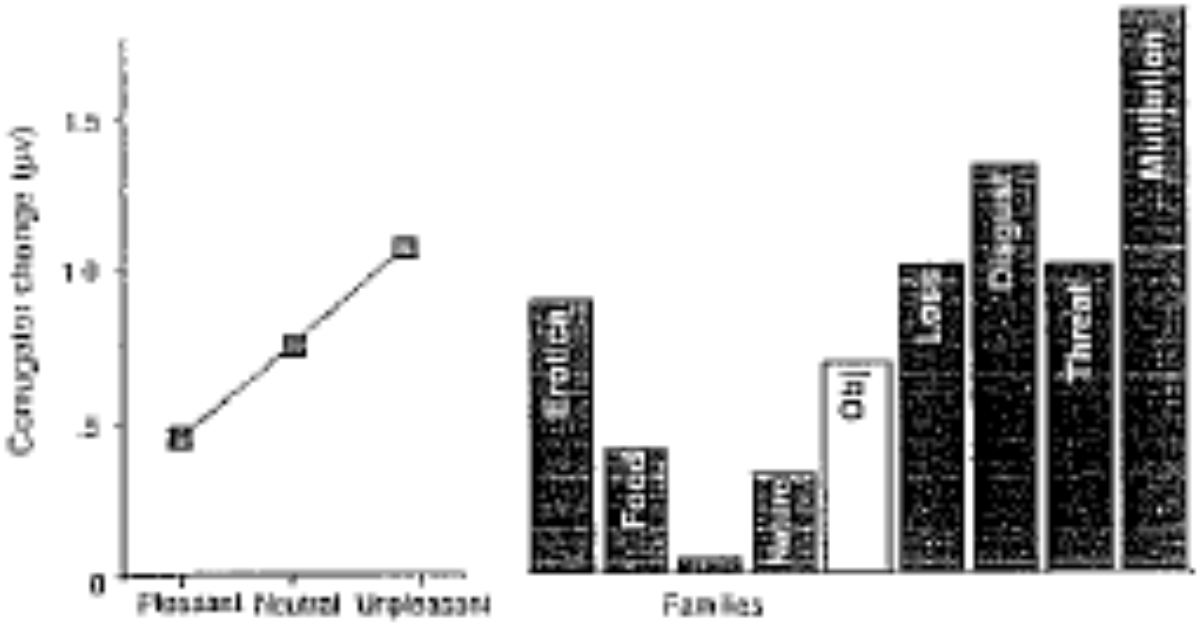


Physiological Findings

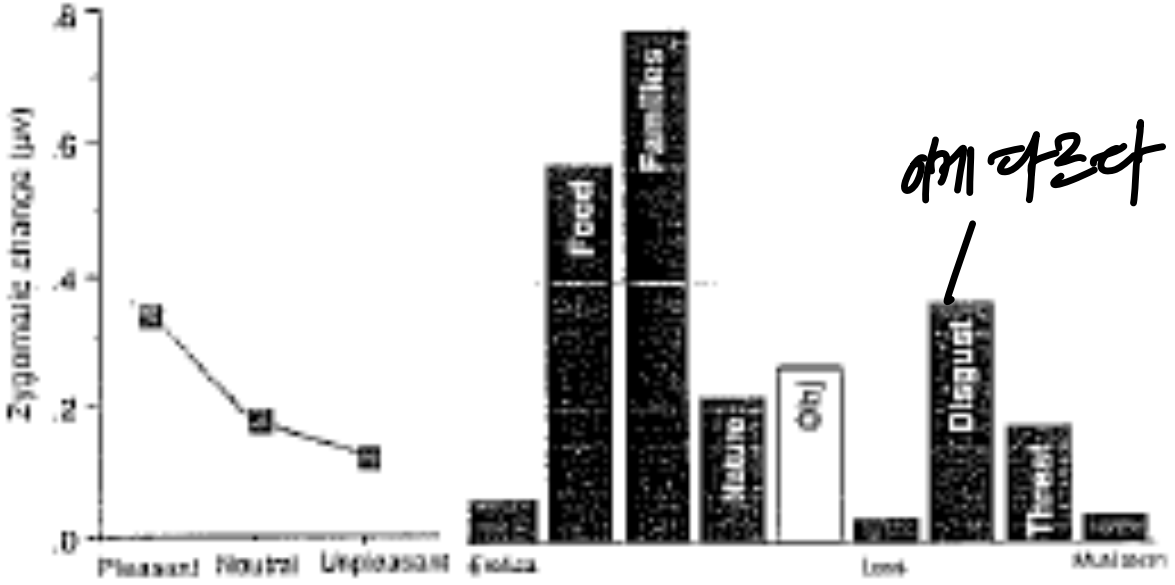
- Interesting findings with regard to individual differences in PA and NA
  - That is, some people may find fuzzy bunnies most positive; other people, erotica.
  - Some people may find spiders most negative; others, contaminated toilets


Corrugator EMG & pleasure
Corrugator change (²μV)
r = −.90
Pleasantness rating
Zygomatic EMG & pleasure
Zygomatic Activity (²μV)
Pleasantness rating
Skin conductance & emotional arousal
Skin conductance (²μSiemens)
r = .81
Arousal rating
Cortical (Pz) ERPs & emotional arousal
Late positive potential (μV, (400–700 ms, area)
r = .81
Arousal rating

Corrugator EMG



Zygomatic EMG



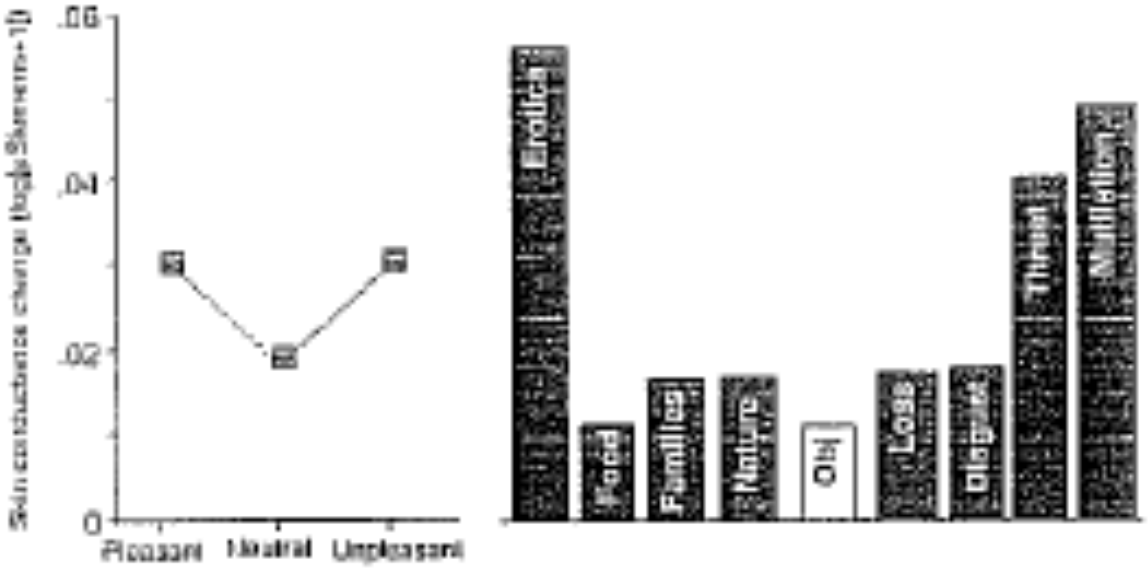


Figure 2.7. Skin conductance activity for sets of IAPS pictures selected on the basis of normative ratings of pleasure (left panel) and for specific picture contents (Bradley, Codispoti, Cuthbert, & Lang, 2001).

arousal level

Social Psychological Procedures

- Random assignment to conditions
- Cover story to mask deception
- Designed to create realistic, emotion-inducing situations
- Often highly emotional

Constructing a Cover Story

- Provide rationale for experiment that distracts participant from its true purpose
  - Smoothly incorporate manipulation of IV
  - And measurement of DV
- Must be sensible and tells a logical story
- Pre-testing is necessary to make sure that cover story is effective as intended

Experimenter behavior

- Important!
  - Must be convincing
  - Must be consistent across months of testing
  - Should dress in reasonably similar manner
  - Must try to remain relatively neutral manner towards participants
    - Remember, it's the manipulation which alters emotional experience!

large sample!

Constructing the IV

- Manipulation induces emotion
- Logically selected to induce desired emotion
- Fear
  - Threat of electric sock
- Anger
  - Goal blocking; verbal harassment
- Sadness
  - Negative feedback

Experimenter bias

- Experimenter can be blind to condition
  - Difficult for obvious reasons 예시 아주 중요함
- Experimenter can be made unaware of research hypotheses
  - Difficult due to debriefing procedures
- Two researchers 예시 제일 흔다
  - One for IV manipulation
  - One for DV collection

Selection of DV

- Behavioral and physiological measures are preferred

- Why? Self-report variables:
  - May tip-off participant as to the true manipulation
  - May alter emotional experience and/or subsequent cognitive functioning, etc.
  - May have demand characteristics

A very good way

- To say that they are partaking in multiple studies
- Done in my lab
- Roll dice to “to determine order,” etc.

Post-experiment interview

- Checking for clarity of instructions
  - Can study be improved?
- Assess for suspicion
  - Can study be improved; is subject's data reliable?
  - Ask open-ended questions at first
    - "Based on what has happened thus far, can you think of something we might be interested in other than what I told you to begin with?"
  - Withhold deception for several minutes
- Educate participant about study's purpose; debrief
- Make sure they leave in good mood!

This is tough! Why do it?

- It's realistic
- It avoids demand characteristics
- It's potent
- It targets discrete emotions that are difficult to elicit via, say, movies
  - Fear
  - Anger
- It is social, for social animals (humans)

Harmon-Jones examples

- Pages 96-101 provide wonderful examples of researchers inducing anger, joy, sadness, sympathy, and guilt
- Notice that these are socially-relevant emotions
- Difficult to evoke anger, sympathy, and guilt without someone else!