

## CORE STUDY #3: SCHACTER & SINGER 1962 (TWO-FACTOR THEORY OF EMOTION)

### Aim

- To examine the Two Factor Theory of Emotion
- Investigate whether individuals resort to cognitive factors to explain their feelings when presented with physiological arousal devoid of context.

### Background

Cognition refers to the mental processes involved in acquiring and processing information, while emotion represents the body's adaptive response to specific situations. Additionally, metacognition entails reflecting on one's thinking processes.

Cognition plays a crucial role in interpreting our physiological state, enabling us to label our emotional reactions. During instances of physiological arousal, key physiological indicators such as increased heart rate, respiration rate, dilated pupils, and the release of adrenaline come into play.

The Two-Factor Theory of Emotion, developed by Schachter and Singer, posits that emotional experiences are a product of both physical arousal and cognitive interpretation, forming the most coherent understanding of an individual's circumstances.

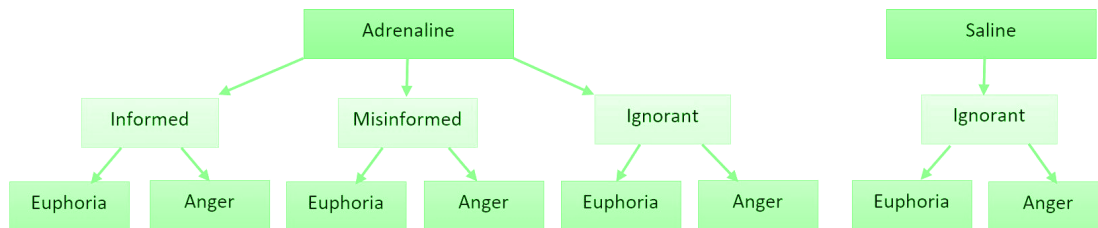
### Method

#### *Participants*

- 185 male college students enrolled in an introductory psychology course at the University of Minnesota participated.
- Participants received course credit in exchange for their involvement.
- Health records were reviewed in advance to confirm the safety of the injection.
- Self-selecting sampling was the method used for participant recruitment.

#### *Design*

- Standardized laboratory experiment
- All participants were exposed to the same controlled environment and provided scripted responses by the same confederate
- Independent measures design
- Independent Variables:
  - └ Level of knowledge regarding injection symptoms (informed, misinformed, or ignorant).
  - └ The emotional state induced after the injection (euphoria or anger). Notably, a control group received a saline solution injection instead of epinephrine.
- Dependent Variables:
  - └ Observational data was collected by two observers discreetly observing participants through a one-way mirror during the period of emotional arousal. The observers assessed the extent to which participants exhibited euphoric or angry behaviours.
  - └ Self-reports were administered to participants after the emotional arousal, providing further insights into their emotional experiences.



#### *Procedure*

- Participants were informed about a vision test involving the 'Suproxin' vitamin supplement.
- Informed consent was obtained.
- Participants were actually injected with adrenaline or a placebo.
- Side effects occurred 3-5 minutes after injection and lasted an hour.
- Experimental Conditions:
  - └ Informed: Correct side effect information - "Your hand will start to shake."
  - └ Misinformed (Control): Incorrect side effect information - "Your feet will feel numb."
  - └ Ignorant: Told no side effects information.
- Introduction of Stooge:
  - └ After the injection, the doctor left and a stooge was introduced as another participant.
  - └ Both claimed to have taken Suproxin and would wait for absorption.
  - └ Emotional states: Euphoria (positive) or Anger (negative).
  - └ Stooge is unaware of which condition the participant is in.
- Euphoria Condition:
  - └ Access to a stationary, playful interaction.

- L Criteria for 'initiates new activity' specified as activity outside the stooge's set behaviour and one the participant had never seen before.
- L Examples of initiated activities: opening the window, paper basketball, and hula hooping.
- o Anger Condition:
  - L Participants were told to wait 20 minutes and complete a questionnaire that involved very personal questions about the participant (e.g. "How often do you have intercourse").
  - L Stooge instructed to create anger in the room by saying things like "this really irritates me" when responding to the questionnaire
  - L Comments intensified with personal questions. The stooge crumpled up the questionnaire at the end and left.

## Results

- ★ Participants:
  - o 1 refused injection, 11 were excluded due to suspicion, and 5 were excluded for no arousal.
  - o Total: 169 participants.
- Adrenaline participants are more sympathetically aroused (pulse rate, self-rating) than those in the placebo condition.
- The misinformed group only participated in the euphoria condition.
- Adrenaline raised pulse rate, while placebo decreased it.
- The euphoric misinformed group reported the highest happiness.
- The informed group reported the lowest happiness.
- Anger-ignorant participants reported the highest anger.
- The placebo group reported the second-highest anger.

## Conclusion

- Arousal with no explanation leads to labelling based on available cognition.
- Arousal with an explanation reduces reliance on available cognition.
- Past emotional triggers impact current emotions.

## *Ethics:*

- o All participants gave consent and the injection was carried out by a trained doctor
- o Deception was necessary to prevent demand characteristics and improve study validity.

## Evaluation

**A strength of this study is that it is highly replicable.** This is because it was conducted in a controlled laboratory environment with standardized procedures such as using the same stooge for each participant and using the same scripted responses for the stooge for each participant. This means another researcher can simply get another group of participants and repeat the procedure exactly and compare and test the results for accuracy. This allows the findings of the study to be tested, therefore increasing the validity of the study.

**Another strength of this study is that it is highly reliable.** This is because the study collected quantitative, objective data through questionnaires. The test was also standardised, with the same stooge being used for each participant. This means that the results were not subject to interpretation and thus free from researcher bias. The participants were also not told the conditions they were in so they could not change their behaviours, and so the results were free from social desirability and demand characteristics. This increases the validity of the results of the study.

**A weakness of this study is that it used a limited sample size.** This is because it used a small sample size of only male university students, so the results cannot be generalised to the wider population of females or non-university individuals. The results may also have been influenced by individual differences because different people react differently to adrenaline (as can be seen when 5 displayed no arousal at all). This reduces the validity of the study.

**Another weakness of this study is that it lacks ecological validity and mundane realism.** This is because it was done in a controlled laboratory environment with standardised procedures and the participants had to report their arousal to researchers and complete a questionnaire under unnatural conditions (where a stooge behaved in a certain way), which are not normal circumstances for people to feel emotion. Because of this, the results cannot be applied to reality which reduces their validity.

## Issues and Debates

- **Nature vs. Nurture:** Emotional responses were influenced by both nature (hormone levels) and nurture (experiences).
- **Individual vs. Situational:** there are situational factors that impact emotional expression and labelling (the stooge and the euphoria or anger condition), but individual factors like the extent to which participants were influenced by the stooge also play a role.