

COGNITION

Cognition

A general term including all mental processes by which people become aware of and understand the world.

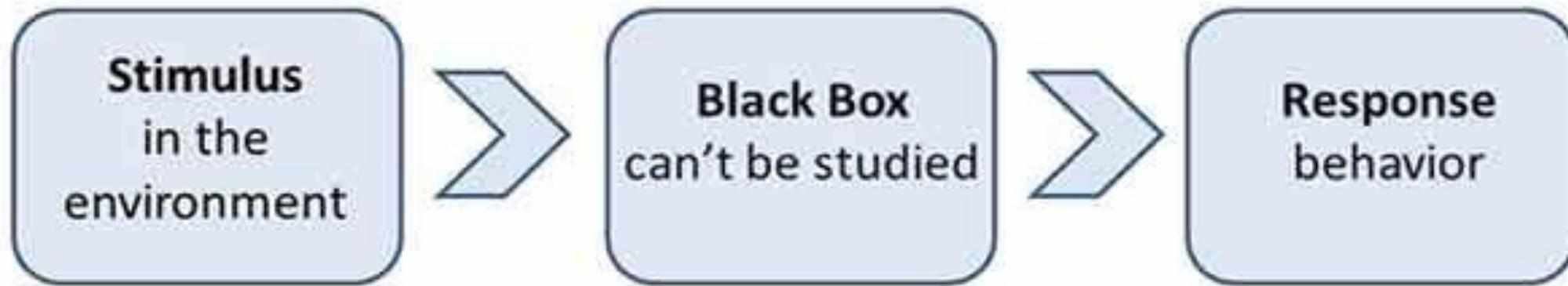
Cognition literally means “knowing”

If we want to know what makes people think then we need to understand the internal processes of their mind



Reductionist approach: Behaviour, no matter how complex can be reduced to simple cognitive processes, like memory or perception.

Behaviourist Model (only study observable / external behaviour)

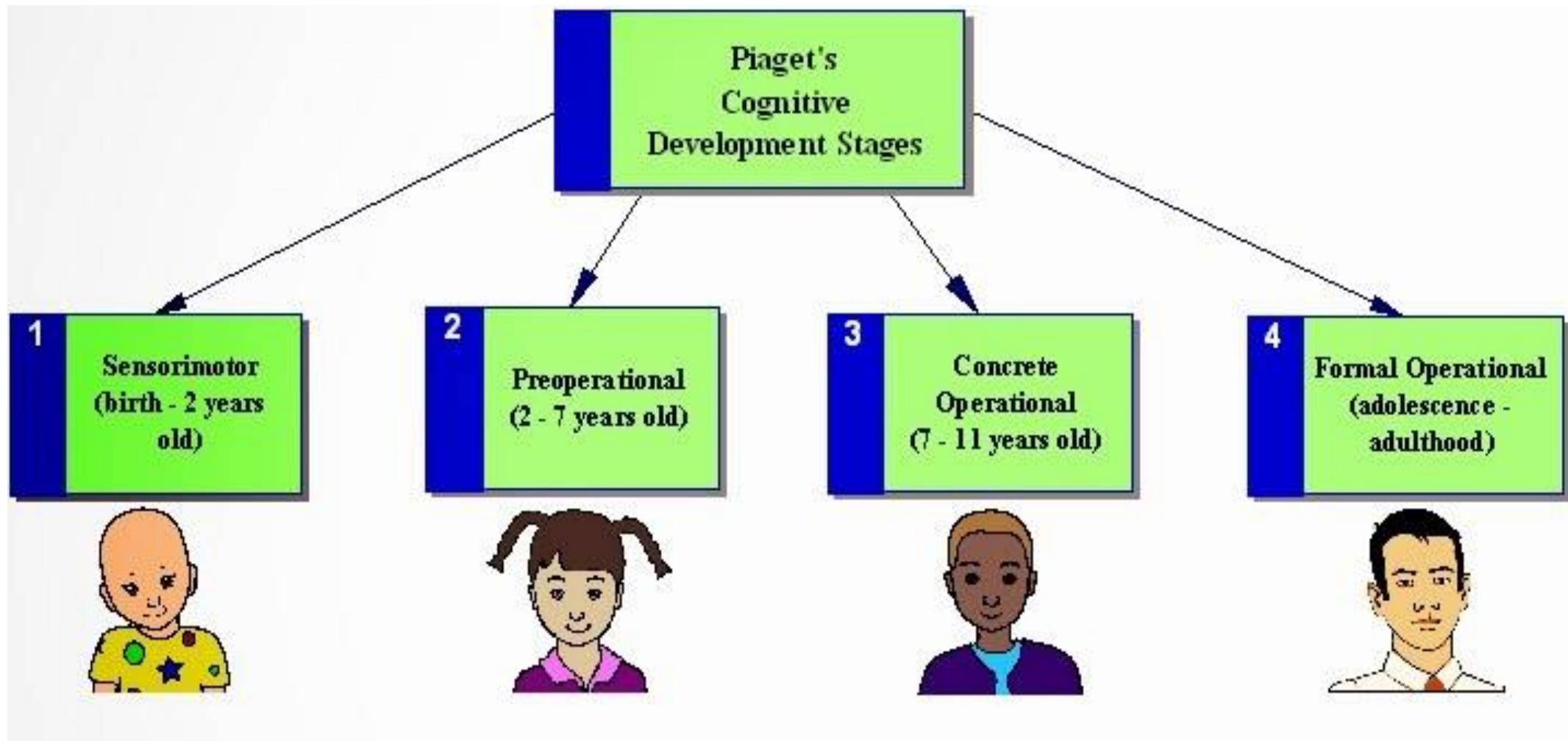


Cognitive Model (can scientifically study internal behavior)



- Cognition Involves Reducing Sensory Information
 - Bottom Up vs. Top Down Approach
- Cognition Involves Elaborating Information
- Cognition Involves Storing and Recovering Information
- Cognition Involves Using Information
- COGNITIVE ABILITIES ARE NOT FIXED — WE CAN IMPROVE THEM VIA LIFESTYLE AND TARGETED PRACTICE

Piaget's Stages of Cognitive Development



Piaget's Theory

Stage	Age Range	Description
Sensorimotor	0-2 years	Coordination of senses with motor response, sensory curiosity about the world. Language used for demands and cataloguing. Object permanence developed
Preoperational	2-7 years	Symbolic thinking, use of proper syntax and grammar to express full concepts. Imagination and intuition are strong, but complex abstract thought still difficult. Conservation developed.
Concrete Operational	7-11 years	Concepts attached to concrete situations. Time, space, and quantity are understood and can be applied, but not as independent concepts
Formal Operations	11+	Theoretical, hypothetical, and counterfactual thinking. Abstract logic and reasoning. Strategy and planning become possible. Concepts learned in one context can be applied to another.

Knowing the Knowledge: Schema

- Humans are active and motivated learners.
- Through their action, they construct **schemas**.
 - Concepts or mental frameworks that people use to organize and interpret information
 - A person’s “picture of the world”

Assimilation

- Interpreting a new experience within the context of one's existing schemas
 - When a learner encounters a new idea, and must “fit” that idea into what they already know.
 - Think of this as filling existing containers.
- The new experience is similar to other previous experiences

Accommodation

- Accommodation of knowledge is more substantial, requiring the learner to reshape those containers.
- Interpreting a new experience by adapting or changing one's existing schemas
- The new experience is so novel the person's schemata must be changed to accommodate it

Assimilation/Accommodation

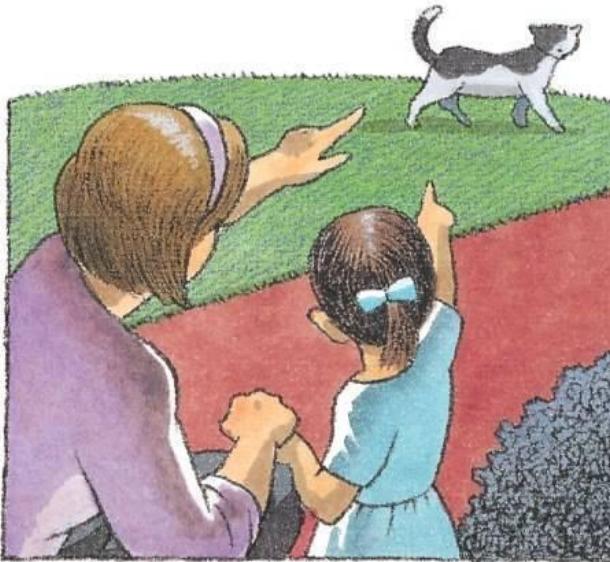


**Two-year-old Jocelyn
has learned the schema
for "dog" from her
picture books.**

Assimilation/Accommodation



Two-year-old Jocelyn has learned the schema for "dog" from her picture books.



Jocelyn sees a cat and calls it a "dog." She is trying to assimilate this new animal into an existing schema. Her mother tells her, "No, it's a cat."

Assimilation/Accommodation

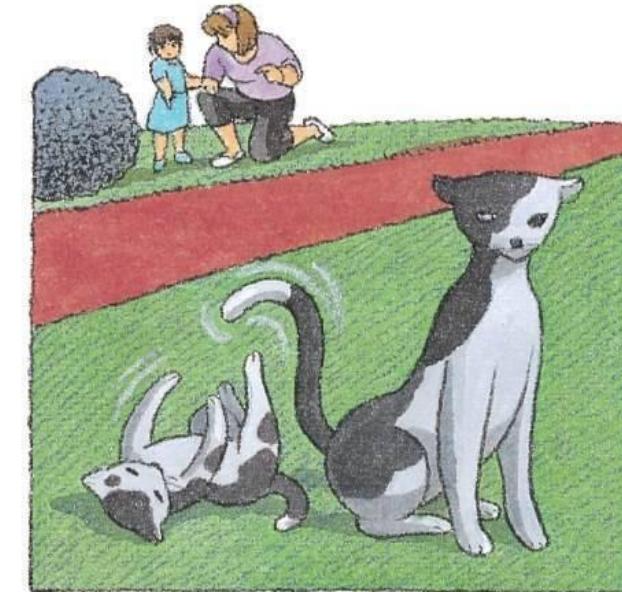
As children assimilate new information and experiences, they eventually change their way of thinking to accommodate new knowledge



Two-year-old Jocelyn has learned the schema for "dog" from her picture books.

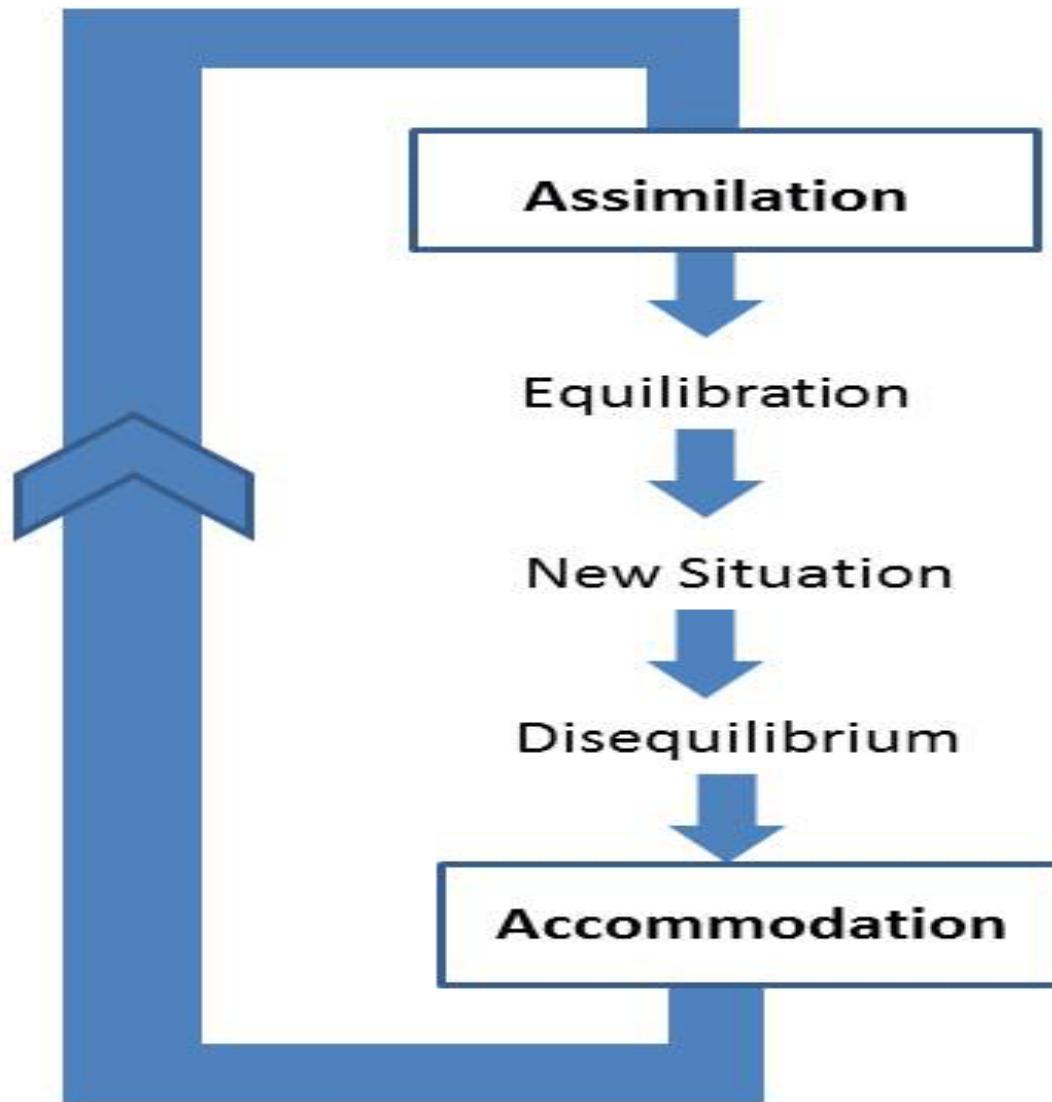


Jocelyn sees a cat and calls it a "dog." She is trying to assimilate this new animal into an existing schema. Her mother tells her, "No, it's a cat."



Jocelyn accommodates her schema for 4-legged animals and continues to modify that schema to include different kinds of dogs and cats in the neighborhood.

Knowing the Knowledge: Schema



Some facts about cognition:

- Cognitive skills are different from academic skills
- Cognitive skills are the mental capabilities or underlying skills you need to process and learn information, to think, remember, read, understand and solve problems.
- Cognitive skills develop and change over time.
- We are born with certain cognitive capabilities - we may be better at some skills than others, but we can improve the weaker skills.

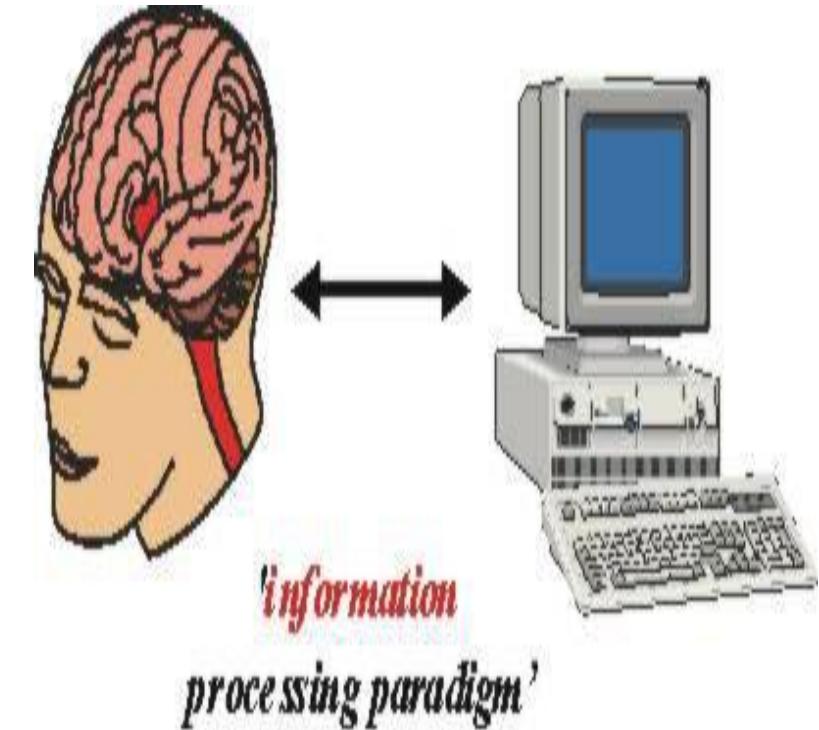
- Cognitive skills can be measured.
- Cognitive skills can be strengthened and improved.
- When cognitive skills are strong, learning becomes easier and vice versa

Activity

Describe the process of assimilation and accommodation with example/s?

Computer Analogy

- The use of the computer as a tool for thinking how the human mind handles information is known as the computer analogy
- Essentially, a computer codes (i.e. changes) information, stores information, uses information, and produces an output (retrieves info)



Information Processing Approach

Assumptions:

- Information made available from the environment is processed by a series of processing systems (e.g. attention, perception, short-term memory);
- These processing systems transform, or alter the information in systematic ways;
- Information processing in humans resembles that in computers.

“EVERY MAN” is in certain respects:

- a. like all other men,
- b. like some other men,
- c. like no other man.

Henry A. Murray and Clyde Kluckhohn, Personality in Nature, Society, and Culture (1953)

What does the word COGNITION mean?

Cognition refers to thinking skills, the intellectual skills that allow you to perceive, acquire, understand and respond to information. This includes the abilities to pay attention, remember, process

information, solve problems, organize and reorganize information, communicate and act upon information. All these abilities work in a close, interdependent fashion to allow you to function in your environment. Cognitive skills are different from academic skills. Academic skills include knowledge about different subjects like literature, math and history. Cognitive skills refer to the mental capabilities you need to learn academic subject matter, and more generally to function in daily life. Cognitive

skills are the underlying skills that must be in place for you to think, read, understand, remember, plan and organize.

Let's take an example. If you are given a doctor's appointment, you need to pay attention to the secretary, understand what has been said or written, think about other appointments you have made so as to avoid a schedule conflict, remember to write down the appointment, and then remember to look at the calendar on the designated day. You also have to be able to plan how you will get to the appointment and then organize yourself to make sure you are there on time. You may even want to make notes about the things you will need to discuss at the appointment. So, to get to the doctor's appointment you need many cognitive skills: attention, language comprehension, memory, organization and planning. It can be hard to get to the appointment if these skills are not working well. Even if you are emotionally ready and willing to have the appointment, if you do not remember it you will miss it.

Some facts about cognition:

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- ◆ Cognitive skills develop and change over time.
- ◆ We are born with certain cognitive capabilities - we may be better at some skills than others, but we can improve the weaker skills.
- ◆ Cognitive skills can be measured.
- ◆ Cognitive skills can be strengthened and improved.
- ◆ When cognitive skills are strong, learning becomes easier.

Social Cognition



“Pakoda” Controversy

[P. Chidambaram](#) Verified account @PChidambaram_IN

#BJP should not distort and deflect the debate on jobs. BJP should tell us how many regular jobs were created in the last three years.

#Even selling pakodas is a 'job' said PM. By that logic, even begging is a job. Let's count poor or disabled persons who are forced to beg for a living as 'employed' people.

#Ask the young men who staged a protest in Bengaluru the difference between self-employment and jobs. Those young men want regular jobs.

#A young man who sells pakodas is honourably self-employed, but poor and aspirational. Ask him and he will tell you that he aspires for a regular and secure job. I empathise with him.

Campus Placement



NDTV @ndtv

WATCH | "Farmers are my top priority, and by TOP, I mean: Tomato, Onion, Potato," says PM [@narendramodi](#) in Bengaluru

[India Today](#) Verified account [@IndiaToday](#) Feb 7

Is the pakoda a symbol of New India? Are pakodas good for the economy? On this India Today special, we dissect pakoda politics for you.

“प्रधानमंत्री के लेपनों करने वाले मुवांडों का लिए प्रधानमंत्री द्वारा घलाया जाता है “अबकी लार मोटी बाबू” सरकार द्वारा ! सरकार रोजगार के मामले में चुरी तरह किया जाता है ! अबकी लार मोटी बाबू पर जाने की जात करनेवाला देश पकोड़ा लोपने की बात करने वाला है !

१. “प्रधानमंत्री पकोड़ा पोषना” की क्रांति आते किस देश में हुआ है ?
 (a) अमेरिका (b) फ्रांस (c) जापान (d) भारत
२. “प्रधानमंत्री पकोड़ा पोषना” की क्रांति आते किस वर्ष हुई है ?
 (a) 2014 (b) 2015 (c) 2016 (d) 2018
३. “पकोड़ा पोषना” के जनक कौन है ?
 (a) द्वाप (b) प्रतिना (c) राहुल (d) मोदी
४. भारत में लेपनगारी द्वारा करने के लिए स्वातंत्र्य मुवांडों के लिए किस रोजगार की आवश्यकता है ?
 (a) होमोड़ा पोषना (b) पिण्डोड़ा पोषना
 (c) मोटु पोषना (d) पुलोड़ा पोषना
५. प्रधानमंत्री पकोड़ा पोषना के तहत कितने स्वातंत्र्य मुवांडों को प्रतिवर्ष रोजगार हेतु की दोषणा की गई है ?
 (a) होस्टे (b) दोहस्तार (c) होलारच (d) होकरोड़
६. पकोड़ा लेपना किस शैली के अन्तर्गत होता है ?
 (a) द्वितीय शैली (b) तेवर शैली (c) मध्यराशीली
 (d) मोदी शैली
७. पी० फी० वाई (PPV) का मूर्छा रूप क्या है ?
 (a) प्रधानमंत्री पानी-पुरी पोषना (b) “फुटहा पोषना”
 (c) प्रधानमंत्री चाल-कड़ी पोषना (d) प्रधानमंत्री पकोड़ा पोषना
८. “पकोड़ा का देश” किसे कहा जाता है ?
 (a) अमेरिका (b) जापान (c) चीन (d) भारत
९. पकोड़ा लगाने में क्या मिलाया जाता है ?
 (a) दोनों लाला सोडा (b) चीनों लाला सोडा
 (c) मुदानों लाला सोडा (d) जाने लाला सोडा
१०. “पकोड़ा कानिं” के पिता किसे कहा जाता है ?
 (a) सुशील मोदी (b) रोनिया गोदी
 (c) राहुल गोदी (d) नरेन्द्र मोदी
११. भारत की राष्ट्रीय आगरे सर्वाधिक सोचाएँ है -
 (a) लिपि छोड़ का (b) लैकिंग लैन का
 (c) विजिर्सन लैन का (d) पकोड़ा लैन का
१२. लोटीओं का स्वातंत्र्य के किसका उपयोग होता है ?
 (a) पुल-जाना (b) लिप्ती-पोता
 (c) पान-जसाना (d) कपोड़ा-पकोड़ा
१३. प्रधान प्रधानमंत्री पकोड़ा पोषन का कार्यकाल है ?
 (a) 2014-18 (b) 2018-2023
 (c) 2014-19 (d) 2019-23
१४. भारत में इंजीनियर का कार्य क्या है ?
 (a) डोहरे लगाना (b) कृष्णर लगाना
 (c) पुल लगाना (d) पकोड़े लगाना
१५. पकोड़े का आकार कैसा होता है ?
 (a) तृतीकार (b) छोटे बड़े कार
 (c) दाढ़ीलाकार (d) हड़त धड़ीलाकार
१६. जनगणना-2021 के अनुमान के अनुसार सबसे आधिक किस रोजगार में उपयोग होता होगा ?
 (a) डिजीटन रोजगार (b) सरकारी औकरीज
 (c) विहार के शेत में (d) पकोड़ा लेपन में
१७. सबसे अच्छा पकोड़ा किस तेज में लगता ?
 (a) चांद (b) चांदें (c) छुट्टर (d) चित्तजली



Narendra Modi

@narendramodi

Follow

Does the nation want to know what I frankly shared with Mr. Arnab Goswami? Find out 6



Omar Abdullah

@abdullah_omar

Follow

No wonder your movies are such block buster hits all the time :-)

Ram Gopal Varma @RGVzoomin

I am sooooo happyyy India lost because I hate cricket..nd if there's anything I hate more than cricket then it's people who love cricket



Sushma Swaraj

@SushmaSwaraj

Follow

Brother I cannot help you in matters of a Refrigerator. I am very busy with human beings in distress.

Congress was insulting the “poor and aspirational Indians”. “Comparing livelihood means of millions of hard-working Indians from humble background to begging betrays Congress party’s perpetual disdain for the poor,” the BJP tweeted.

#Congress party has still not accepted the mandate given by india in favor of “Chaiwala”

Give one Word





बच्चों में जो फैकर हा है





Social Cognition

Thinking About the Social World
Understanding the Social world

Social Cognition—how people interpret, analyze, remember, and use information about the social world

JAMMU & KASHMIR LOSES SPECIAL STATUS, STATE TO BE UNION TERRITORY

History, in one stroke



Prime Minister Narendra Modi greets Union Home Minister Amit Shah after Rajya Sabha clears the Bill to bifurcate J&K and does away with the statutory provision granting special status. Rajya Sabha TV

J&K UNION TERRITORY TO HAVE LEGISLATURE, LADAKH TO BE SEPARATE UT MINUS ASSEMBLY

J&K will truly be integral part of India... I want to tell Valley nothing negative will happen: Shah

Two-thirds of those present in Rajya Sabha pass Bill to bury Article 370 and redraw map of J&K

SHUBHAJIT ROY
& MANOJ CBI
NEW DELHI, AUG 5/19

Union Territories — Jammu and Kashmir with a legislative assembly to Padam Harry, and Ladakh without one like Chandigarh.

The Bill was passed with a two-thirds majority of the members present in Rajya Sabha. In Lok Sabha, the legislature's action scrapping the special status was passed by voice vote in the evening. The bifurcation Bill will be taken up in Lok Sabha Tuesday. With special provisions gone, Indian laws will now apply to the newly created Union Territories.

Union Home Minister Amit Shah, who tabled the Jammu and Kashmir Reorganisation Bill, 2019 and the statutory resolutions in Rajya Sabha around 11 am after the Union Cabinet met at Prime Minister Narendra Modi's residence at 9.30 am to give the go-ahead said: "Article 370 was a temporary proviso... how long can a temporary provision be allowed to continue... After abrogation of Article 370, Jammu and Kashmir will truly become an integral part of India." Saying Article 370 was at the

BUREAU
BY LUVNISH

root of terrorism, Shah told the House that full statehood will not be given to Jammu and Kashmir at an appropriate time when normalcy returns.

In a bid to assuage fears of violence, Shah told the House: "Kashmiri nation hoped nothing will happen" and the region will not be allowed to turn into another Kosovo. "It was heaven on earth and will remain so... Given five years, and we will make Jammu and Kashmir the most developed state in the country. I want to tell them," he said.

Reactions of Narendra Modi government. Nothing negative will happen. All these [Opposition] people are telling you lies for their own politics. Don't listen to them," he said.

The decision of the government to do away with the special status to J&K and bifurcate the state into two Union territories by surprise, and come after the tableau placed under a lock-down with security forces imposed in Jammu and Kashmir has been welcomed as a long-overdue measure.

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down with security forces imposed in Jammu and Kashmir has been welcomed as a long-overdue measure.

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INDP MPs Naeem Ahmad Laway and Mir Mohammad Sayed protest outside Parliament on Monday. ANT SHARON

Betrayal, say NC and PDP; powder keg lit, warns Opp... will have

The Patriot

The secular India of Nehru and Gandhi is dead. I foresee further repression; abrogation of Article 370 will lead to more bloodbath in IoK.

Foreign Minister, Shahid Khaqan Abbasi

TUESDAY | ISLAMABAD | AUGUST 6, 2019 | 25A (Page 4), 34B (P. 35) | Price Rs. 30/- | editorial@thepatriot.pk | www.thepatriot.pk

India abolishes IoK special status with rushed decree



MURSHID KHAN/WHITE STAR: People protest in solidarity with people of occupied Kashmir against principles of Indian rule.

THE PIONEER: India's decision to revoke Article 370 provided the spiritual death of occupied Kashmir as well as political, administrative, and economic autonomy from the rest of the country. Below: A woman supporting a protest against Indian rule.

THE PIONEER: India's decision to revoke Article 370 provided the spiritual death of occupied Kashmir as well as political, administrative, and economic autonomy from the rest of the country. Below: A woman supporting a protest against Indian rule.

IN BRIEF

The two had also discussed other governance issues like education, health, and welfare policies, as well as ways to bring the two states closer to the principles of democracy.

Following the revocation of Article 370, the Indian Home and Law Ministers have been in touch with their Pakistani counterparts to discuss the implications of the move. The Indian government has also issued a statement assuring that the people of Jammu and Kashmir will continue to enjoy their fundamental rights under the Indian Constitution.

Secretary General (SG) of the Indian Council of Relations (ICR) said that the move will now be acceptable to the people of Jammu and Kashmir and India. "It is a great time for the international community to support India's move to restore the dignity of the Indian Army," he declared.

"India's actions in Jammu and Kashmir are aimed at ensuring the safety and well-being of its citizens. Through a series of measures, India has demonstrated its commitment to the principles of democracy and human rights."

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SAFETY GUARDED

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"India's actions in Jammu and Kashmir are aimed at ensuring the safety and well-being of its citizens. Through a series of measures, India has demonstrated its commitment to the principles of democracy and human rights."

- Pakistan rejects India's decision to abolish IoK special status
- PM Imran phones Erdogan, Mahathir, says India's move in IoK will destroy regional peace
- Ex-CMs Mehbooba Mufti, Omar Abdullah arrested after Article 370 scrapped
- Pakistan summons Indian envoy over India's illegal actions in IoK

Revoking the Article 370: What does this actually mean?

Analysis

Khalid Mahmood

The Indian government's decision to revoke Article 370 has been widely welcomed across the world. The move has been seen as a major step forward in the fight against terrorism and extremism. The move will also help to strengthen the relationship between India and Pakistan.

The government's decision to pass the Bill on Jammu and Kashmir's autonomy was a bold step towards consolidating India's position as a global leader in democracy and human rights.

"India's actions in Jammu and Kashmir are aimed at ensuring the safety and well-being of its citizens. Through a series of measures, India has demonstrated its commitment to the principles of democracy and human rights."

Social Inference

- Often the information available to us is incomplete, ambiguous, or contradictory.
- *Social cognition* focuses on the way we use this information to arrive at coherent judgments.
- People's inferences are often marked by systematic biases.

Schemas, Prototypes and Heuristics: Mental framework for Holding and Using information

- Schema: Mental framework containing information relevant to specific situations or events, which one established help us interpret these situations and what's happening in them
- Cognitive Misers
- Prototypes: Best Exemplar of a category
- Heuristics: Mental shortcuts

Schemas and Memory

- Schemas influence three basic processes:
 - Attention (They affect what is noticed.)
 - Encoding (They affect what is stored in memory.)
 - Retrieval (They affect what is recovered from memory.)
- Once the Schema is formed , Information consistent with them is easier to remember
- When schemas are first being formed information inconsistent is easily noticed and thus encoded
- Schemas also influence what information is retrieved from memory

Question

- Does politicians and celebrities worry about social cognition? Critically analyse the statement with two examples.

Types of Schema

- **Person**- schemas about people
 - “athlete”, “librarian”
- **Role**- schemas relating to specific roles
 - “professor”, “student”, “physician”
- **Event (script)**- indicates typical sequence of events
 - “restaurant”, “exam”, “first date”

Schema Persistence

- Why Even Discredited Schemas Can Sometimes Influence Our Thought and Behavior ?
- **Perseverance Effect** – The tendency for beliefs and schemas to remain unchanged even in the face of contradictory information.
- Schemas can be self-fulfilling
- **Self-fulfilling Prophecy** – is a prediction that directly or indirectly causes itself to become true, by the very terms of the prophecy itself, due to positive feedback between belief and behavior.
- They influence our responses to the social world in ways that make it consistent with the schema.

- Schemas:
 - Play a very important role in many forms of social interactions: Attitude, Stereotypes (Prejudice & discrimination) etc.

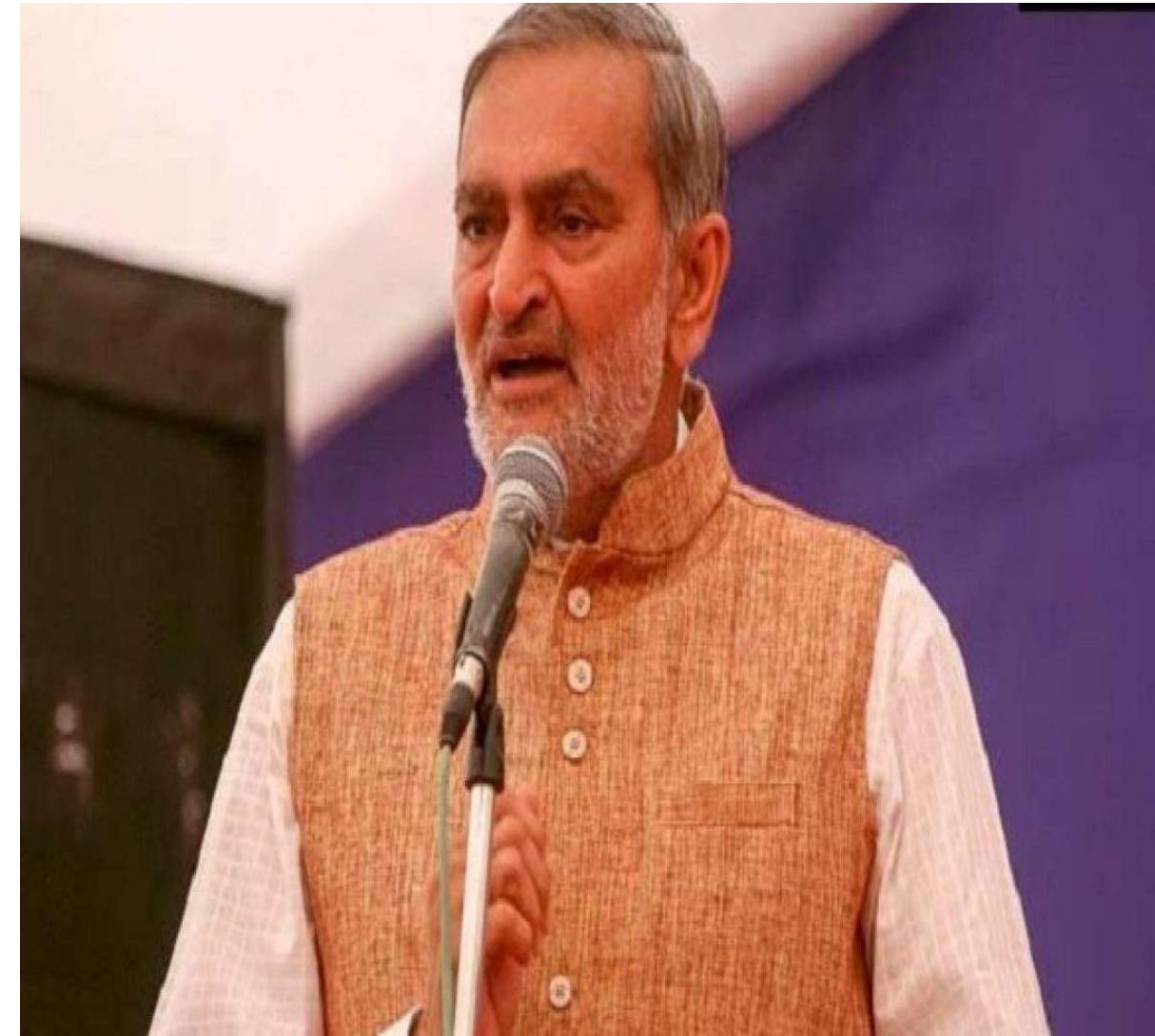
Heuristics

- Simple rules for making complex decisions or drawing inferences in a rapid manner and seemingly effortless manner.
 - Mental Short-cuts
 - Social thoughts occurs to be automatic is due to heuristics.
-
- Need of Heuristics
 - 1. Information overload
 - 2. Saving on resources

Types of Heuristics

- Prototype - summary of the common attributes possessed by members of a category.

1. Representativeness Heuristics
 - A strategy for making judgments based on the extent to which current stimuli or events resemble other stimuli or categories.

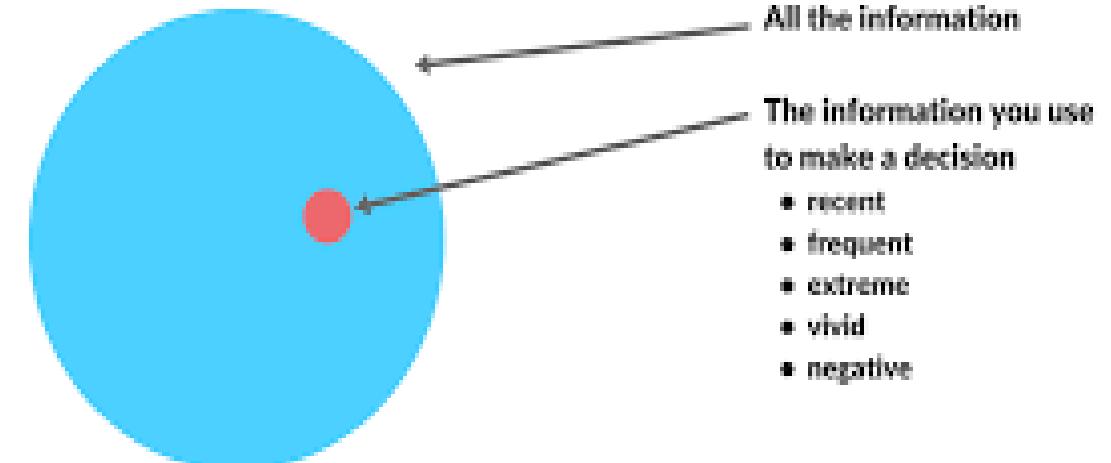


2. Availability: “If I Can Retrieve Instances, Must Be Frequent”

if I can think of it, it must be important.

A strategy for making judgments on the basis of how easily specific kinds of information can be brought to mind.

The availability heuristic



3. Anchoring and Adjustment: Where You Begin Makes a Difference

- A heuristic that involves the tendency to use a number of value as a starting point to which we then make adjustments.



Guarding Against Biases

- Be aware of cognitive biases
- Adopt multiple perspectives
- Act as Devil's Advocate

Question assumptions, check inferences

- Consider the improbable or the unpopular
- Make incremental decisions

Collect feedback, use real options approach

- Use probability and statistics
- Use frameworks and models

Derived from theory or developed by experts

- Sample questions

Section A

- Describe those features which give psychology a status of science. (1)

Section B

- Discuss proactive interference and retroactive interference using appropriate examples. (1+1)

Section C

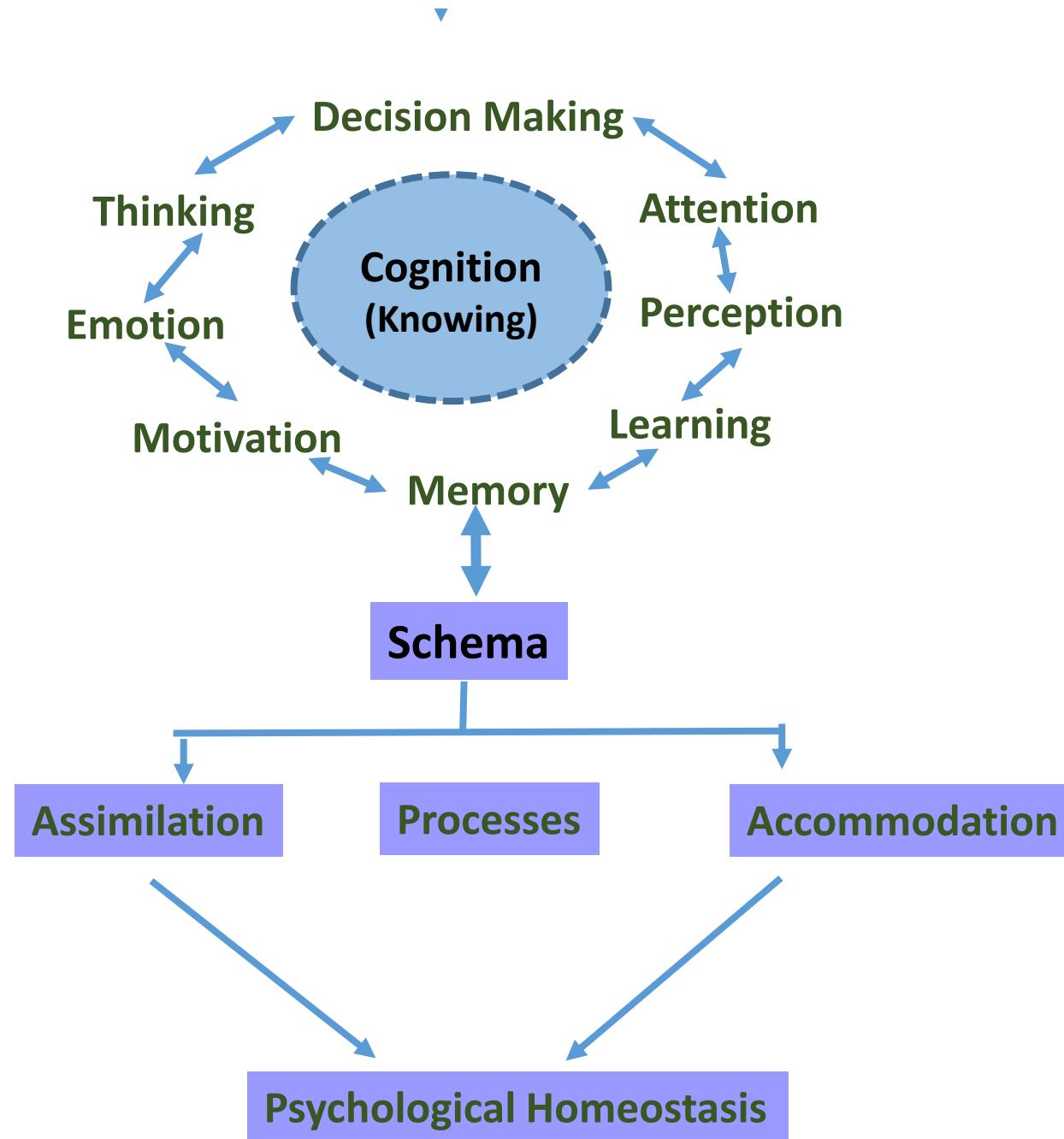
- Differentiate among three types of memory stores. (1+1+1)

Section D

- Critically analyze formation of schemas. Discuss the role of schemas in the context of memory distortions. (2+3)

- Objects and options that are more easily retrieved from memory may be judged in a heuristic fashion as “good,” as better than objects and options that are new, rarely encountered, or represent a change from the status quo.

*Sensation, Attention
&
Perception*





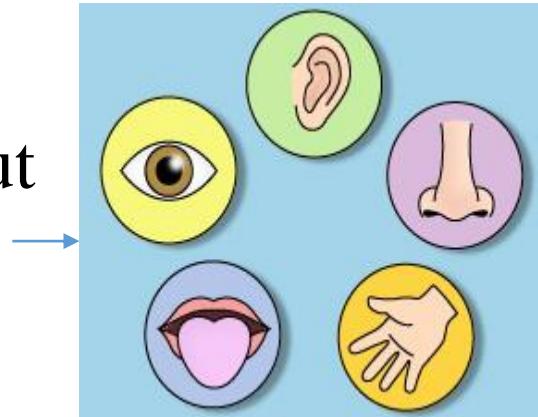
Optometric Extension Program
Duncan, Oklahoma 73533



Optometric Extension Program
Duncan, Oklahoma 73533

❖ Sensation

- The process through which the senses pick up visual, auditory, and other sensory stimuli and transmit them to the brain; sensory information that has registered in the brain but has not been interpreted
 - **Sensation is gathering info from the environment via your senses.**



❖ Perception

- The process by which sensory information is actively organized and interpreted by the brain
 - **Perception is understanding what is being sensed!**



Perception

- ❖ From Physical to mental
- ❖ Perception:
 - ❖ Incoming sensory information is insufficient to explain perception
 - ❖ Considerations of context and of the perceiver's expectations and prior learning must also be made

Bottom-Up/Top-Down processing

- Stage 1 - **Bottom-up processing** — *Sensory data*
Automatic
data-driven processing

- Stage 2 - **Top-down processing** — *Cognitive processes*
Active/Constructive
conceptually-driven processing ↗ *Rumors* → lens of truth
data is adored

- ❖ The process of Perception help us in-
 - ✓ Organizing Information ✓
 - ✓ Interpreting Information ✓
 - ✓ Helping us to recognize meaningful objects and events

“ WE DON’T SEE THINGS AS THEY ARE,
WE SEE THINGS AS WE ARE”



Factors Influencing The Perception

□ Factors in the perceiver

Attitudes
Motives
Interests
Experience
Expectations

□ Factors in the situation

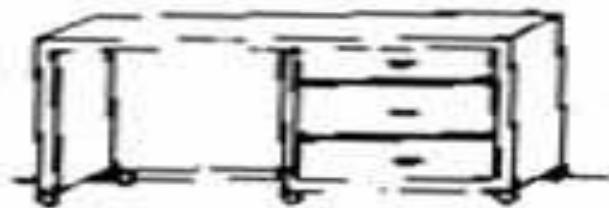
Time
Work setting
Social setting

□ Factors in the target

Novelty
Motion
Sounds
Size
Background
Proximity
Similarity

Perceptual Process

- **Sensation**
 - An individual's ability to detect stimuli in the immediate environment.
- **Selection**
 - The process a person uses to eliminate some of the stimuli that have been sensed and to retain others for further processing.
- **Organization**
 - The process of placing selected perceptual stimuli into a framework for “storage.”
- **Translation**
 - The stage of the perceptual process at which stimuli are interpreted and given meaning.



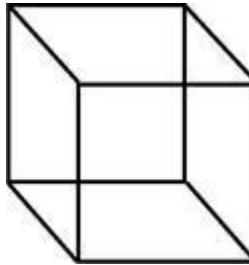


❖ What do we call it when there is a mismatch between sensation and perception – when we misinterpret the info?

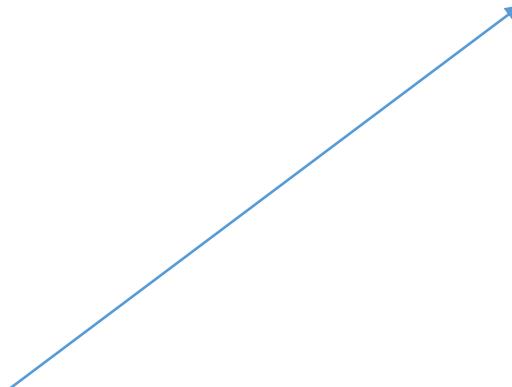


Ambiguous Figure

❖ When an object can be seen in more than one way.

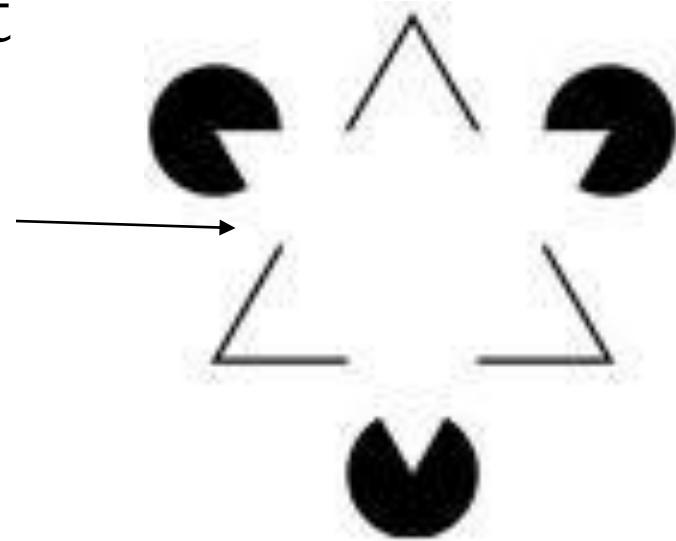


❖ Do you see a man playing the saxophone or a woman's face?



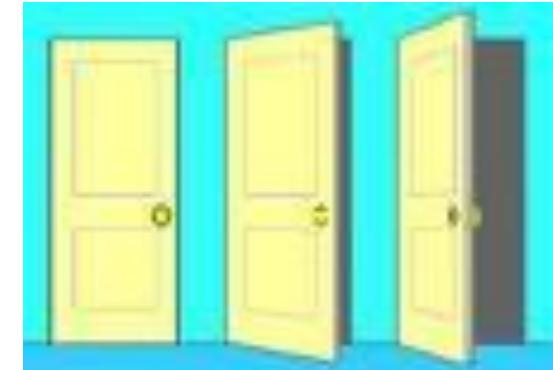
What are fictions?

- When you see something that is not there. E.g. the white triangle



Perceptual Process: A Complex Phenomenon

- *Attention*
 - Which part of the sensory environment to attend to, and
 - Which information is to further processed or discarded?
- *Localization:*
 - To determine where objects of interest are?
- *Recognition*
 - Which objects are out there?
- *Abstraction*
 - Abstract the critical features of a recognized object
- *Constancy*
 - Perceptual constancy



Attention

- ❖ The ability to focus mental resources on something
- ❖ Attention is limited
 - ❖ Think of attention as a pool of resources
- ❖ To attend to something: To pay attention to it
 - ❖ “Attended ear” - Paying attention to words in that ear

Selective Attention

- The act of focusing on one information while simultaneously ignoring irrelevant information that is also occurring.
- Dichotic Listening Task



Focusing on just one thing

- ❖ Cocktail party metaphor: You are talking to someone at a party with a lot of other people making noise.
 - ❖ Spotlight Metaphor
 - ❖ Zoom Lens Metaphor

Divided Attention

- *Divided attention* occurs when mental focus is on multiple tasks or ideas at once. Also known as multitasking, individuals do this all the time.
- Divided attention does decrease the amount of attention being placed on any one task or idea if there are multiple focuses going on at once.
- *Divided attention outside the laboratory – cell phone usage while driving*

Look at the chart and say the COLOUR not the Word

YELLOW

BLACK

YELLOW

ORANGE

ORANGE

GREEN

PURPLE

GREEN

BLUE

RED

RED

BLACK

Possible Explanation of “Stroop Effect”

- Speed of Processing Theory: The interference occurs because words are read faster than colors are named.
- Selective Attention Theory: The interference occurs because naming colors requires more attention than reading words.

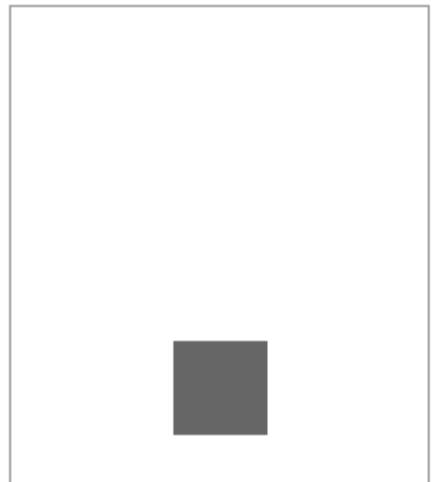
Automatic Versus Controlled Processing

- *Automatic Processing* – occurs without intention, occur without involving conscious awareness and it must not interfere with other mental activity.
- *Controlled Processing* – used for difficult task and ones that involve unfamiliar processes. It usually operates serially, require attention, is limited capacity and under conscious control.

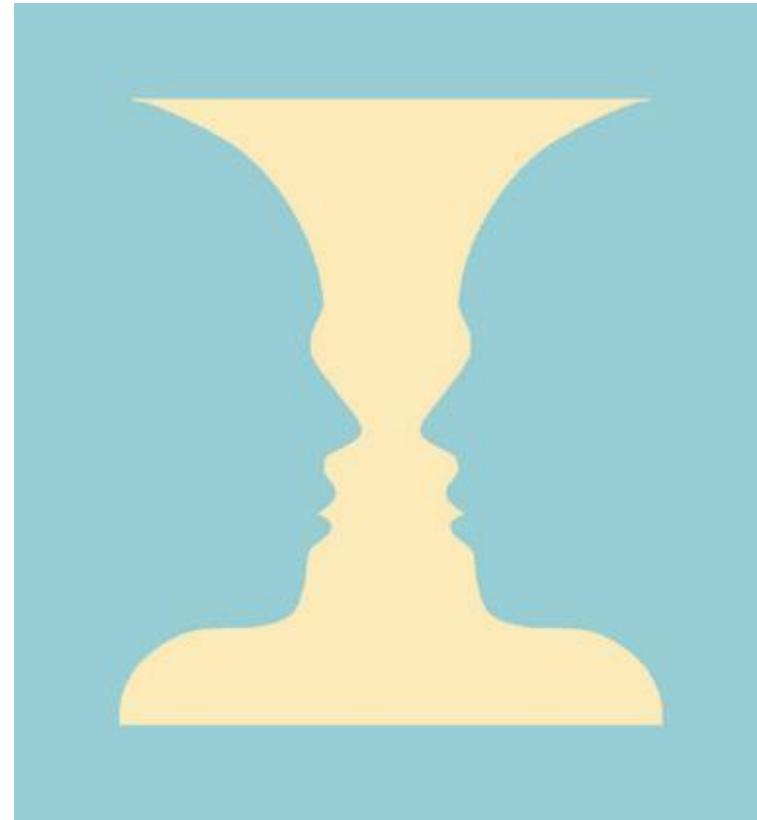
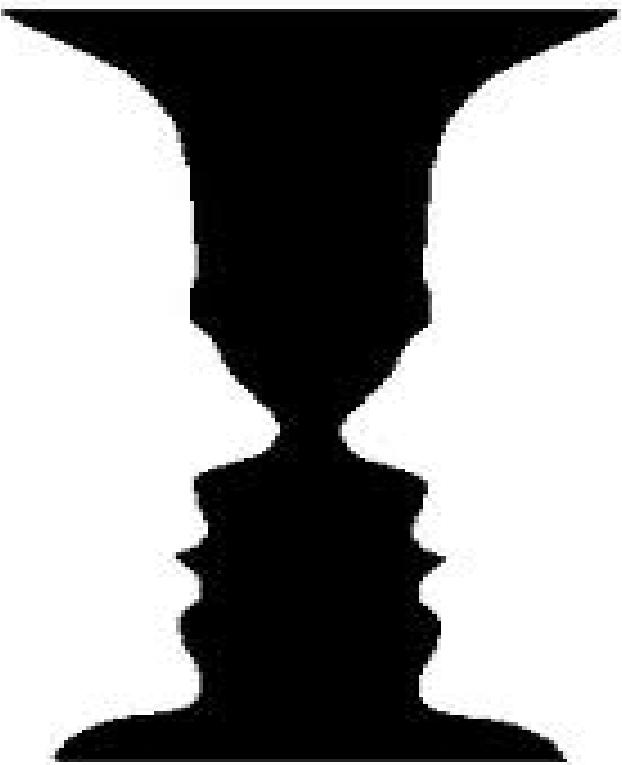
Localization

- Localization
 - To determine '*Where*' objects of interest are?
- Separation of Object
 - The image projected on retina is a mosaic of varying brightness and colors
 - Perceptual system organizes that mosaic into a set of discrete objects projected against a background
- Figure and Background
 - **Figure:** Object of interest
 - Appear more solid than the background
 - Appear in front of the background
 - **Background:** region that appears behind the figure

Figure and Background



The picture on the left shows a gray object (figure) resting on a white field (ground). The picture on the right shows a gray object (figure) with a hole in it (all placed on the white background).



General Rule: Smaller an area or shape, the more likely it is to be seen as figure

Gestalt Laws of Grouping

- We tend to group collections of shapes, sizes, colors, and other features into perceptual wholes
- It explains how people transform raw visual input—lights, shadows, lines, points, shapes, and colors—into meaningful displays
- Grouping is not arbitrary but follows simple rules
- Implications
 - Organizational implications
 - Logo designing
 - Website designing
 - Marketing of product: grouping of objects in a store
 - Social Implications

“The sum of the Whole is something else than the some of its Parts”

or

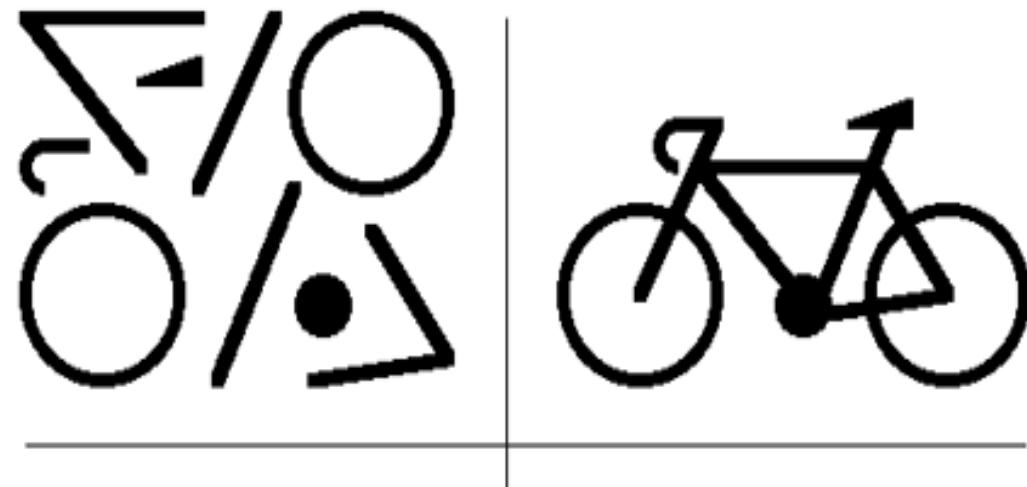
“The Whole is greater than its parts”

“When the perceptual system forms a percept or gestalt, the whole thing has a reality of its own, independent of the parts”

Example: There are 893 bits to making up a bicycle. As well constructed each Maybe they have no functionality until they are assembled properly. Until then they are just parts . once they are put together they become a powerful mode of transportation being economical, easy to store and simple to operate.



The unified whole is different from the sum of the parts.



Law of Proximity

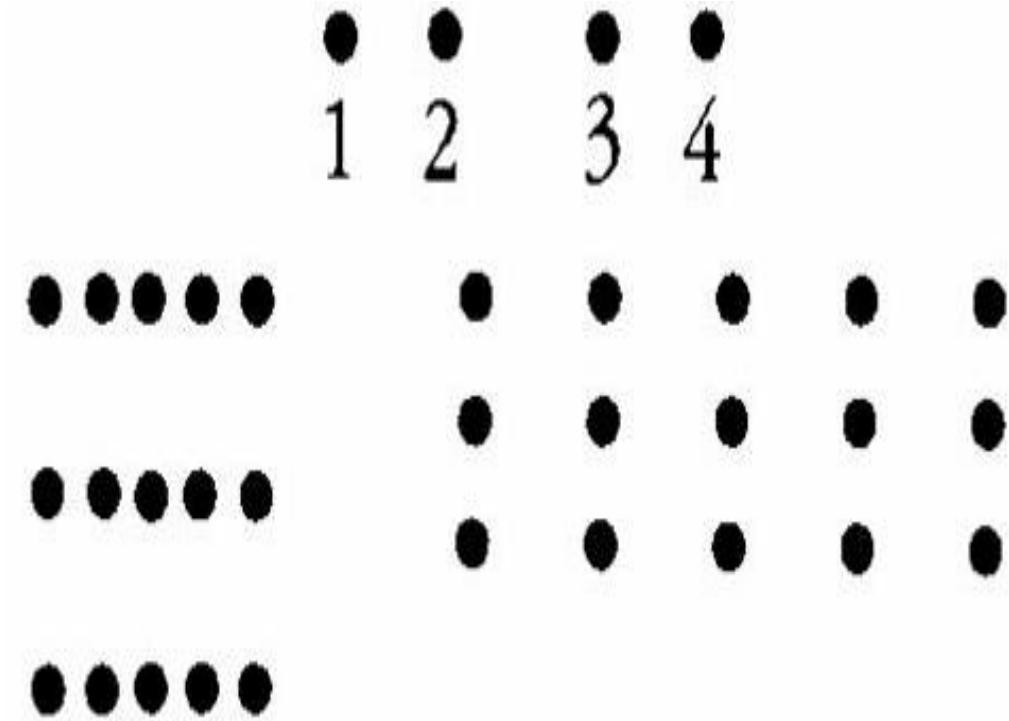
- The groups we see are

$1 + 2 =$ as one group

$3 + 4 =$ as another group

- Similarly, on the left, three groups of dots in three lines. What happens with the evenly spaced dots?

- The principle of proximity or contiguity states that things which are closer together will be seen as belonging together



Proximity: Element which are close are perceived as a shape

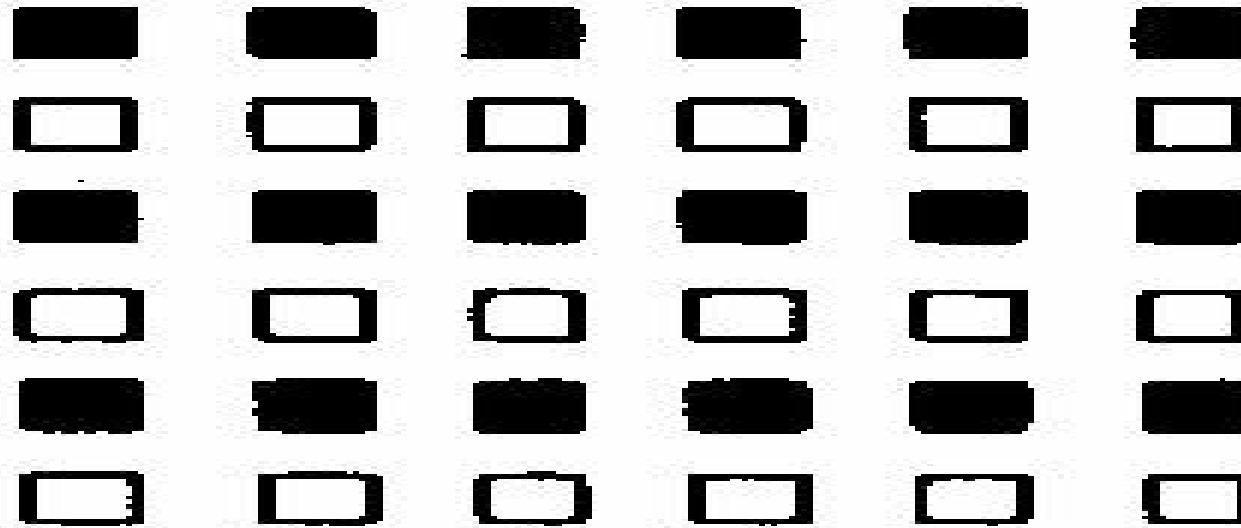


In an easy and brilliant way the designer used the proximity law to create a shape of an island and its reflection on the sea. This is the perfect combination of the brand name and the customer activity, dance music producer. The lines creating the island are clearly recognizable as equalizer lines.



A group of single objects, representing foods (bread, fish, vegetables are clearly recognizable) which grouped for proximity create a car shape.

Law of Similarity



Similarity means there is a tendency to see groups which have the same characteristics so in this example, there are three groups of black squares and three groups of white squares arranged in lines.

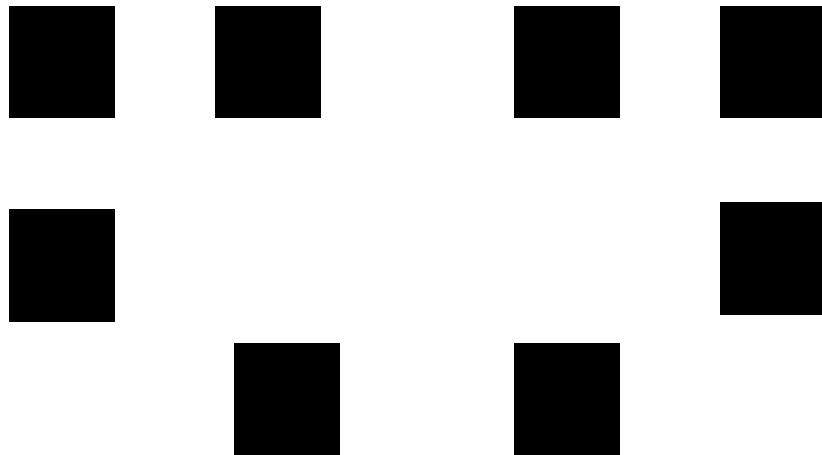
The principle of similarity states that things which share visual characteristics such as shape, size, color, texture, value or orientation will be seen as belonging together.



Unilever

The Unilever Logo makes clever use of the principle of similarity. We group blue objects that are similar in color (and maybe size) to form a larger “U”, initial of Unilever.

Law of Common Fate



- Suppose both principles of proximity and similarity are in place - then a movement takes place - the dots begin to move down the page.
- They appear to change grouping.
- Example: Flock of birds. When several birds fly in the same direction, we normally assume that they belong to a single group.

Law of Common Fate

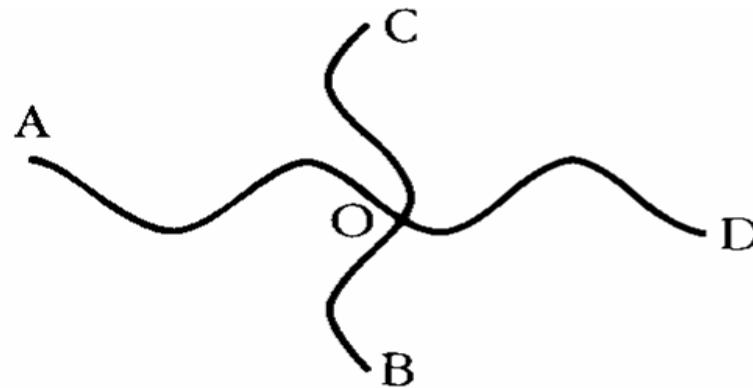


The Melbourne 2010 Cycling Championship logo makes clever use of the law of common fate to make the circles appear as a single group “moving” in the same direction and at the same speed, just like cyclists would on a track.

Law of Continuity

Continuation occurs when the eye is compelled to **move through** one object and **continue** to another object.

A to O and O to D are two lines. Similarly, C to O and O to B are two lines.





HOTEL ASSOCIATION OF CANADA
ASSOCIATION DES HÔTELS DU CANADA



In the logo above, our mind will naturally follow the smooth curve between the H until the tip lead to the maple leaf. You won't notice that there is actually NO specific line or contour except just a tip at the right and a missing space between the H.

Law of Closure

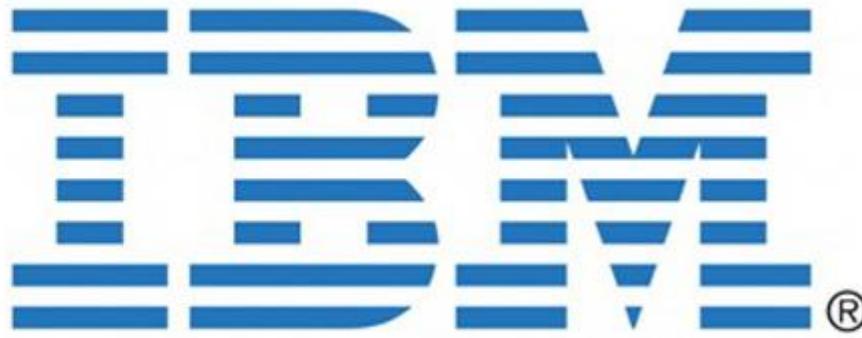
Brain tends to perceive forms and figures in their complete appearance despite the absence of one or more of their parts, either hidden or totally absent



This example likely requires too much effort to allow closure to occur and the message may be lost.



This example makes it easy for closure to occur. Therefore the message is clear.



WWF, IBM and Apple Logo

- “Everything that irritates us about others can lead us to an understanding of ourselves.” Jung
- Humans see what they want to see.”
 - Rick Riordan, The Lightning Thief

Perceiving Distance: Depth Perception

- Retina provides two dimensional surface on which three dimensional world is projected
- Depth Perception
 - ability to see objects in three dimensions
 - allows us to judge distance

Overview



Depth perception is the ability to see things in a 3-Dimensional way and to judge distance.



We use depth cues to gather information on the images we see.

These cues can be monocular or binocular.

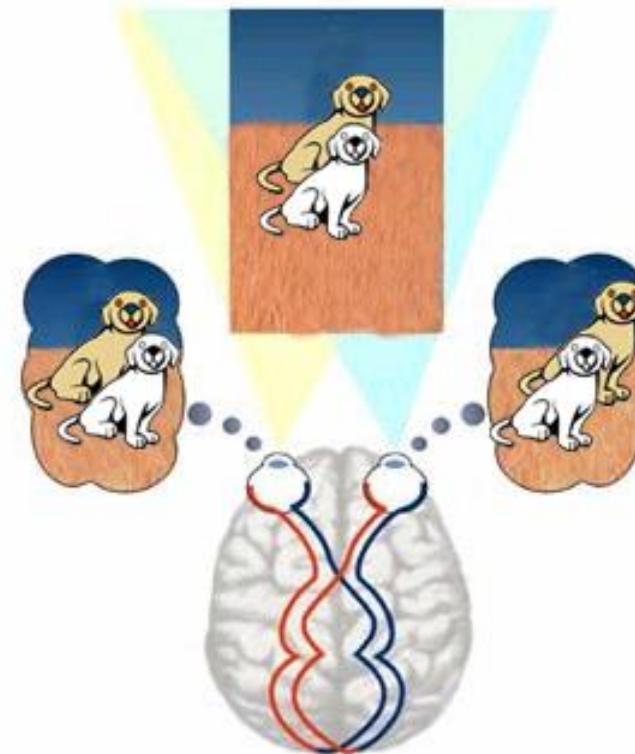
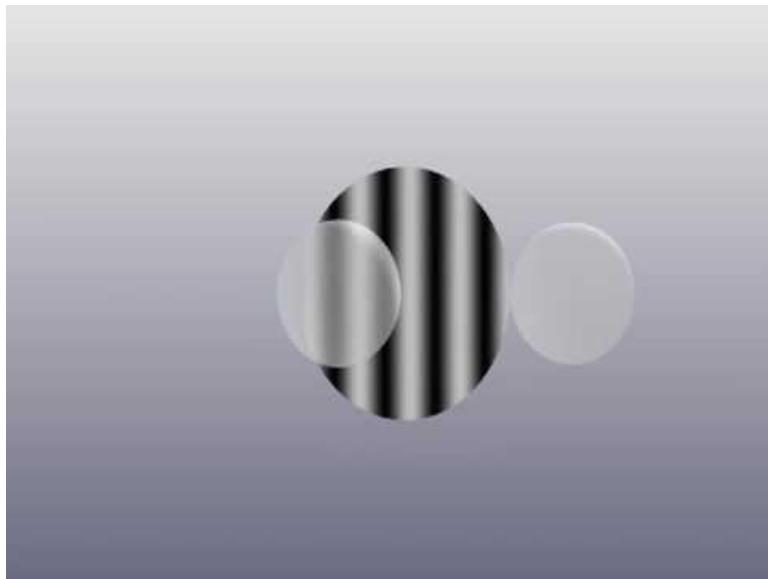
Binocular Cues

- ❖ Binocular depth cues use both eyes to perceive information on the 3-dimensional form of an object and its place in space.
- ❖ Images seen through both eyes are examples of ***steroptic vision*** because the two eyes see two different pictures that combine as one.
- ❖ Binocular cues:
 - Retinal Disparity
 - Convergence.



Binocular Cues

The image your right eye sees is different than your left eye because they are a small distance apart. The image you see using both eyes is the two images merged.



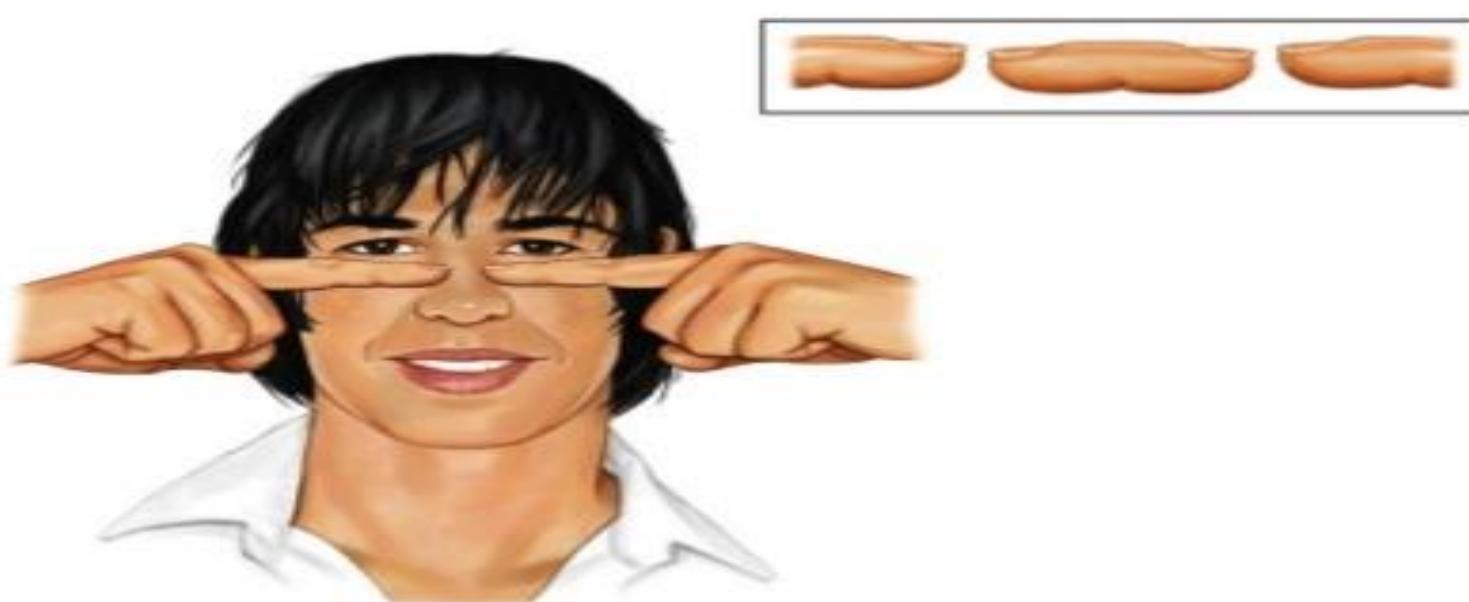
Binocular Cues: Convergence



- When focusing on images less than 4-6 meters away, the eyes turn inward to focus on the same object rather than moving together.
- The angle the eyeballs turn towards each other is smaller when the object in focus is farther away.

Binocular Cues

Retinal disparity: Images from the two eyes differ. Try looking at your two index fingers when pointing them towards each other half an inch apart and about 5 inches directly in front of your eyes. You will see a "finger sausage" as shown in the inset.



Binocular Cue: Fun Fact

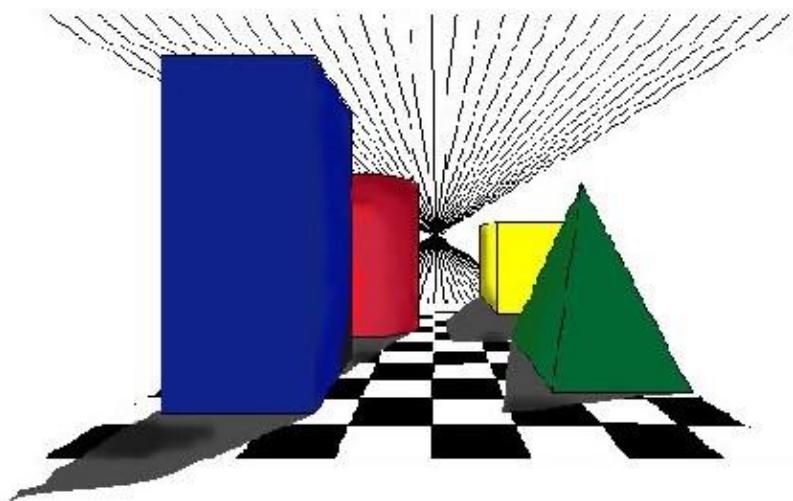


3-D movies use the idea of retinal disparity by using two close cameras and merging the image together.

Monocular Cues

Monocular cues judge the distance of an object using only one eye.

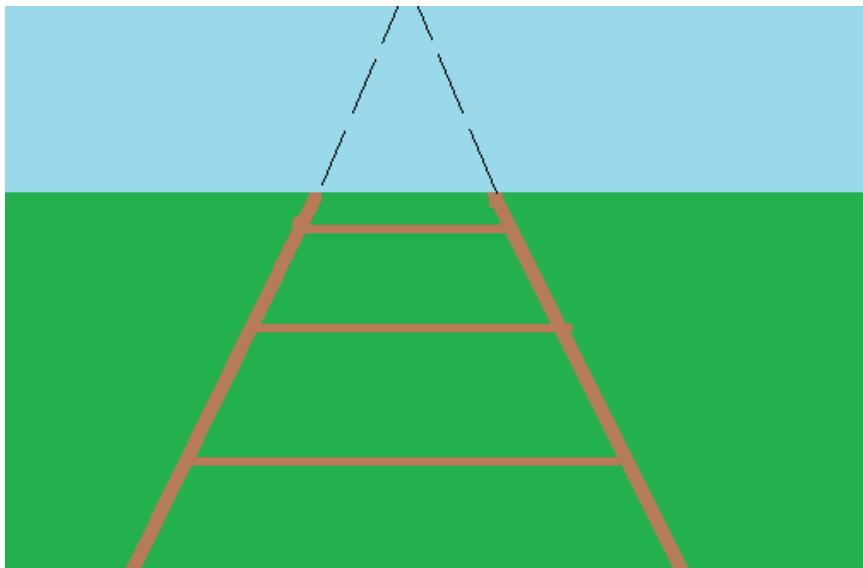
Also Known as Pictorial Cues



These cues are often used in making 2-D images appear to be 3-D, in this case they are called ***pictorial depth cues***.

Monocular Cues: Linear Perspective

As parallel lines extend into the distance, they appear to meet together.



Monocular Cues: Relative Size

When viewing two congruent objects, the farther away object will appear smaller even though the objects are still the same size.



Monocular Cues: Height in the Picture Plane



Objects that are farther away appear higher up in an image, closer to the horizon line.

Monocular Cues: Lights and Shadows



2-Dimensional images can appear 3-D when shaded with the appropriate patterns of light and shadow found in "real objects."

Monocular Cues: Overlap



When multiple objects are in the same visual field, the closest object appears in front of those farther away.



Monocular Cues: Texture Gradient

The texture in an image appear less detailed as objects become more distant.



Monocular Cues: Aerial Perspective

Far away objects often appear less clear in color and detail due to haze.



A person typically only notices the haze when it is not present. On a clear day, far away objects may seem very close.

Monocular Cues: Relative Motion

Objects closer in the visual field appear to move by faster than those at a greater distance. The far away objects may not seem like they are moving at all.



Learning

What is Learning?

- ❖ “a persisting *change* in human performance or performance potential . . . (brought) about as a result of the learner’s interaction with the environment” (Driscoll, 1994, pp. 8-9).
- ❖ “the relatively permanent *change* in a person’s knowledge or behavior due to experience” (Mayer, 1982, p. 1040).
- ❖ “an enduring *change* in behavior, or in the capacity to behave in a given fashion, which results from practice or other forms of experience” (Shuell, 1986, p. 412).

What 'Is' and 'Isn't' learning?

- IS: A relatively permanent change in an organism's behavior due to experience.
- ISN'T: reflex or effects of drug (temporary)
natural maturation (not experience)

Some examples:

- Doping in Sport
 - Athletes taking illegal substances to improve their performances
 - Rio Olympics 2016 suffered a huge setback when wrestler Narsingh Yadav and shot-putter Inderjeet Singh were tested positive for banned substances by the National Anti-Doping Agency (NADA).
 - In 2000, discus thrower Seema was stripped of her gold at the World Junior Championships.
 - On August 23, 2012, Lance Armstrong was stripped of all his Tour de France titles due to doping.
 - In 2005, discus throwers Anil and Neelam were handed two-year ban for testing positive .
 - In 2010, shot putter Saurabh got a two-year ban for testing positive for banned stimulant.

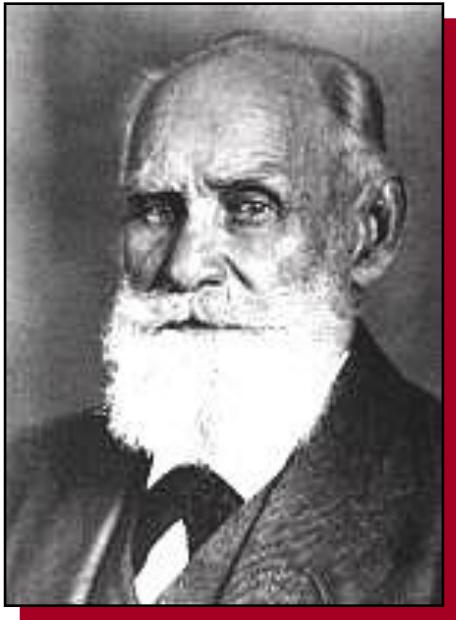
Some Examples

- Cheating in Exams In 1997, IIT JEE was cancelled for the first time. The story is that a private coaching institute in Lucknow called its students 12 hours before the Physics and Chemistry exams for 'last-minute tips'.
 - UPSSSC exam at one center cancelled over 'paper leak'... Jul 18, 2016
 - Rajasthan University paper leaked on WhatsApp, exam cancelled
 - Bluetooth devices used in 'leaking' AIIMS paper too
- Cyber Curfew/ Internet Curfew

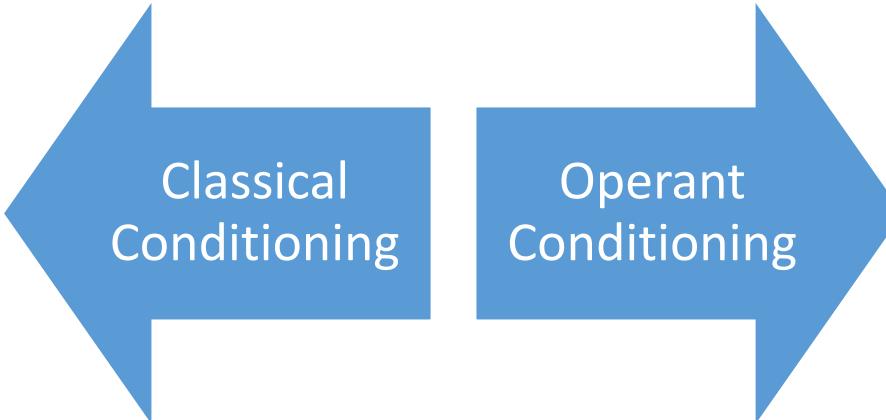
Learning

- Learning by Association
Classical Conditioning
- Learning by Consequences
Instrumental/ Operant Conditioning
- Learning by Observation
Social Learning Theory

Types of Learning



Ivan Pavlov



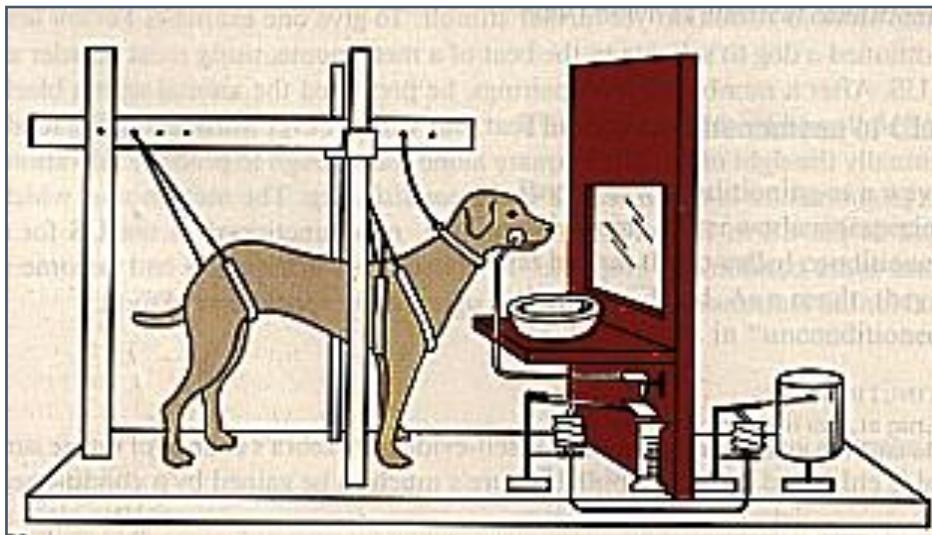
John B. Watson
Behaviorism

“Forget the mind...”
Psychology should
based on
observable behavior

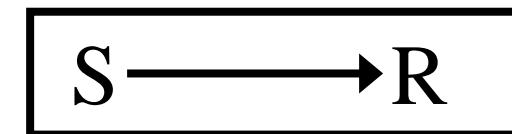
Classical Conditioning - Ivan Pavlov

❖Short Biography

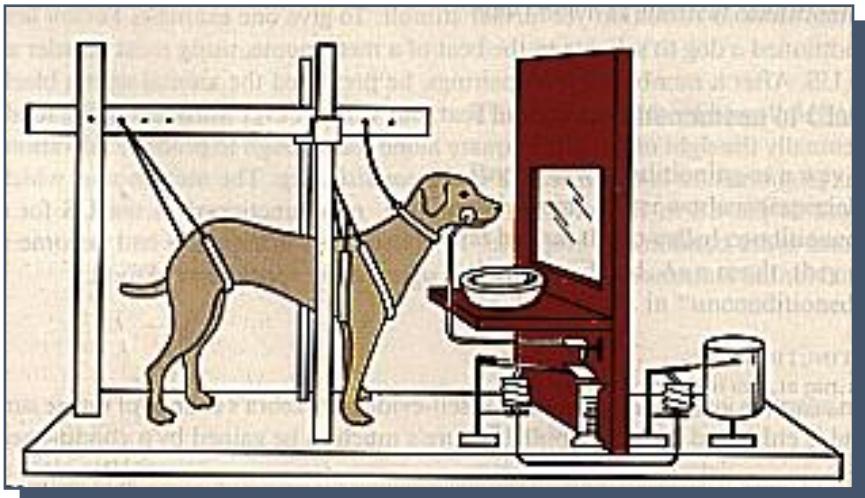
- 20 years studying digestive system
- 30 years studying learning
- 1904 Nobel Prize in Medicine



A stimulus is presented
in order to get a response



Classical Conditioning



Terms

Unconditioned Response
Unconditioned Stimulus
Conditioned Response
Conditioned Stimulus

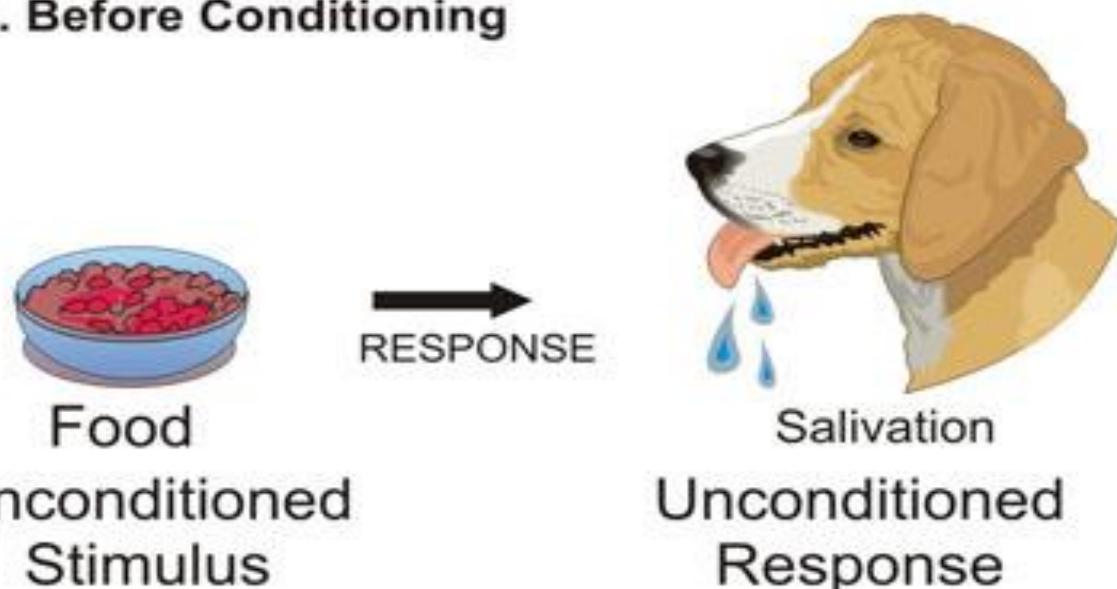
UCS - food (triggers drool reflex)

UCR - drool in response to food (not learned)

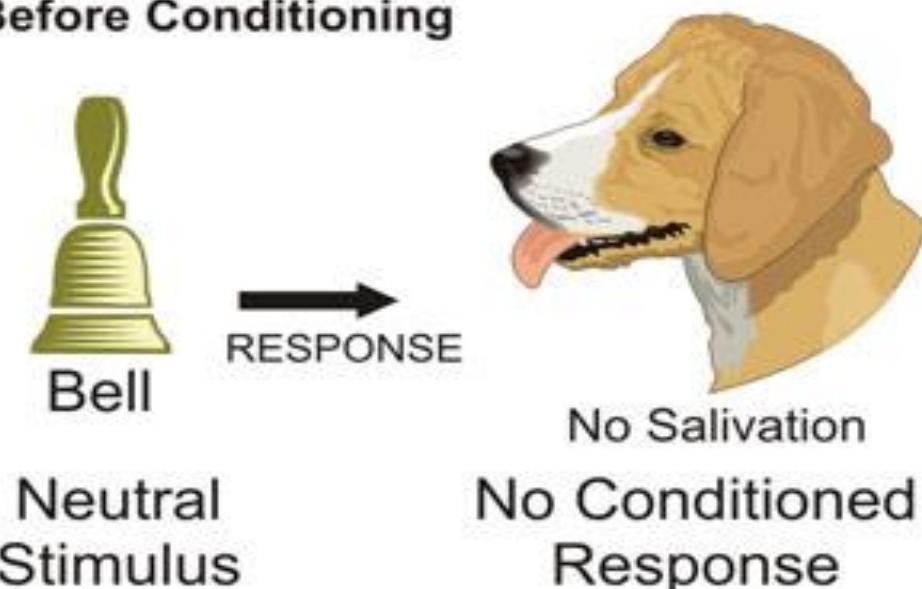
CS - sound of bell (triggers drool reflex)

CR - drool in response to sound of bell (learned)

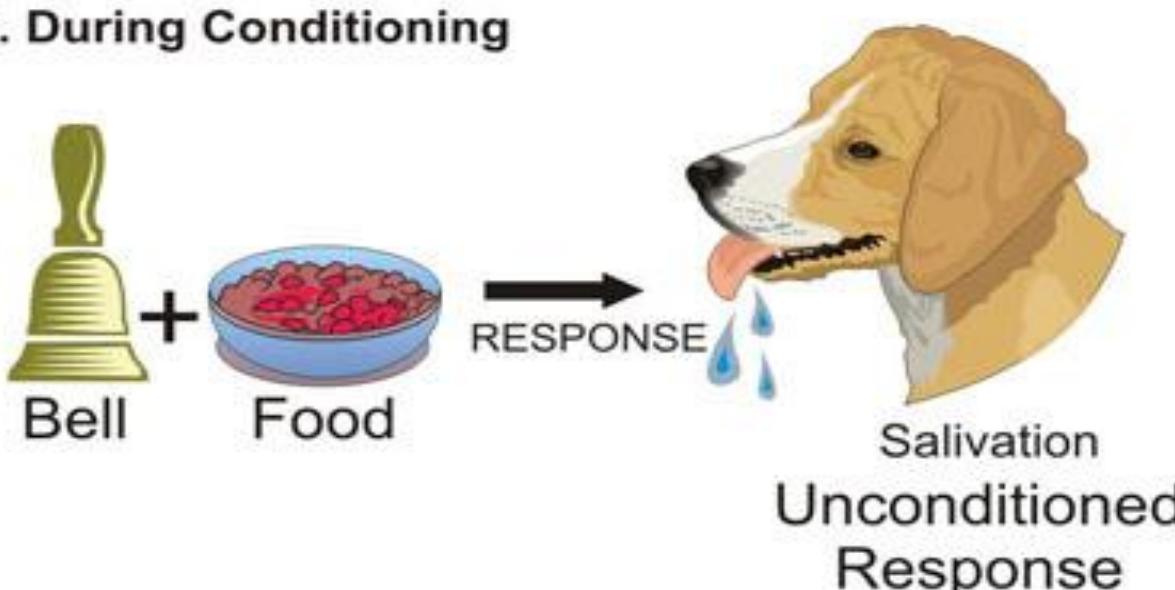
1. Before Conditioning



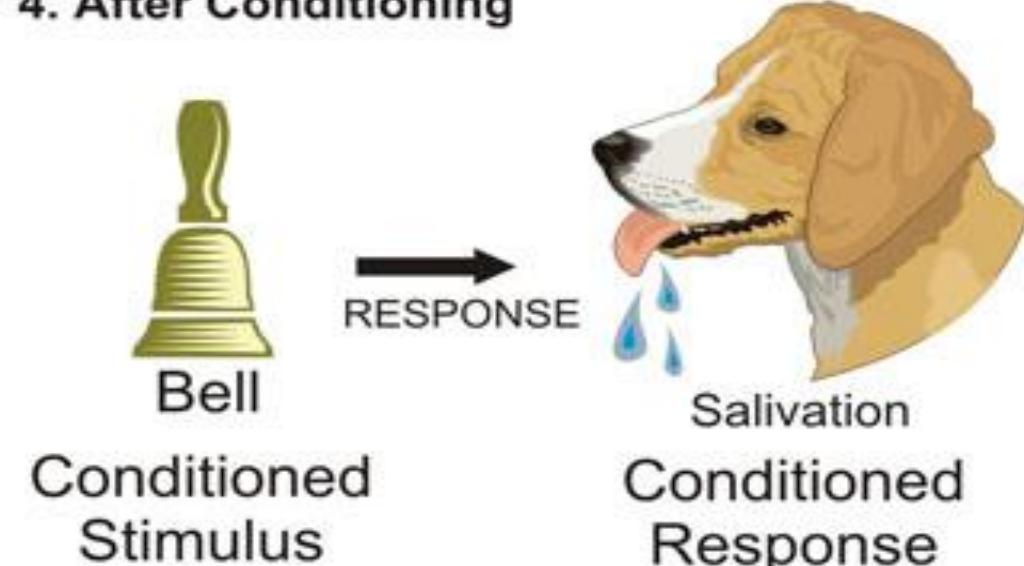
2. Before Conditioning



3. During Conditioning



4. After Conditioning



Classical Conditioning

BEFORE Conditioning



Unconditioned Stimulus

Christmas



Unconditioned Response

*Emotions: Excitement,
Happiness, Family*

BEFORE Conditioning



Neutral Stimulus

Coca-Cola



No Conditioned Response

Emotions: None

DURING Conditioning



Christmas + Coca-Cola



Unconditioned Response

*Emotions: Excitement,
Happiness, Family*

AFTER Conditioning



Conditioned Stimulus

Coca-Cola



Conditioned Response

*Emotions: Excitement,
Happiness, Family*

Classical conditioning in Humans

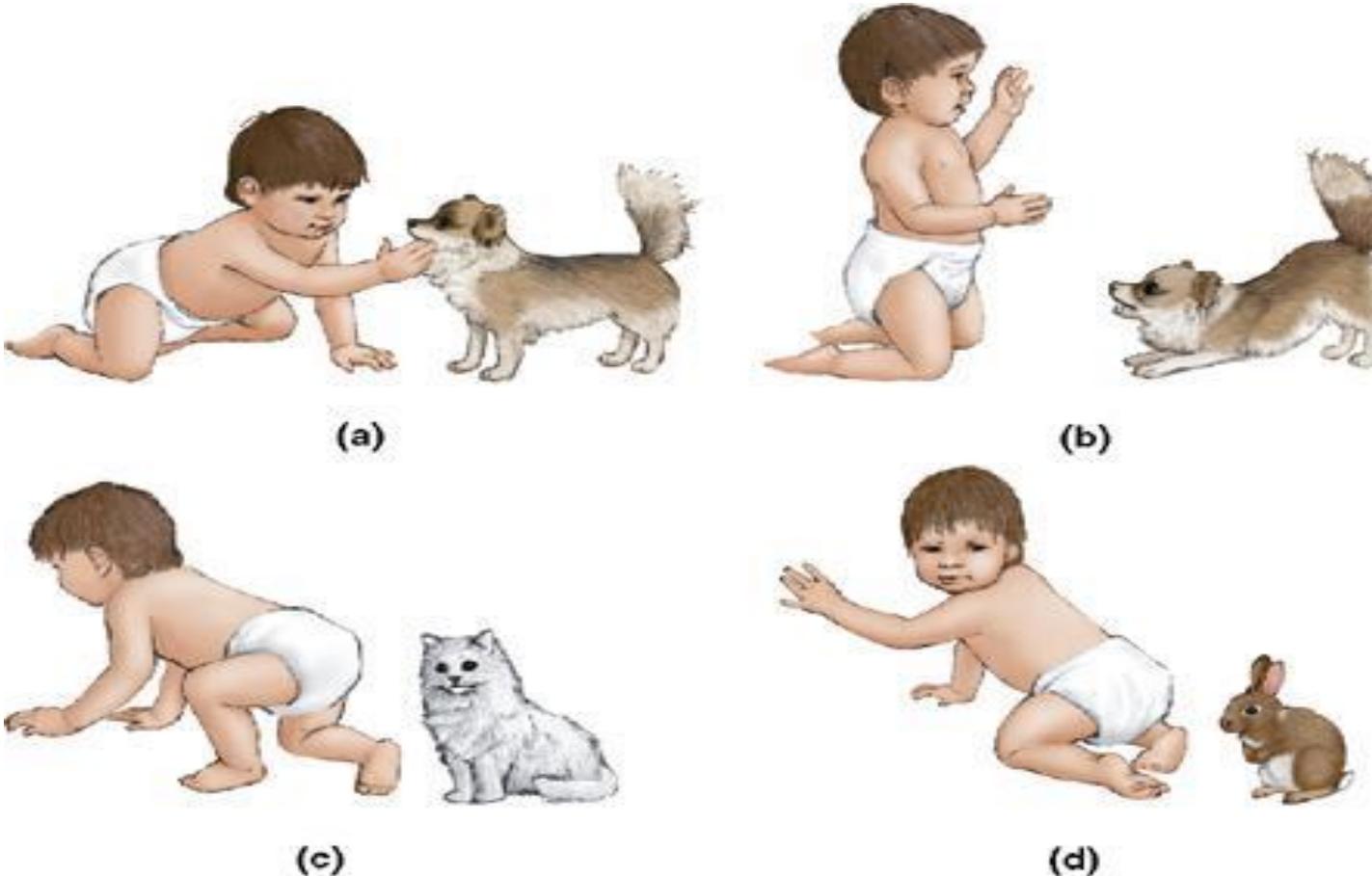


Fig. 8.7 Hypothetical example of a CR becoming a phobia. Child approaches dog (a) and is frightened by it (b). Fear generalizes to other household pets (c) and later to virtually all furry animals (d).

Five Major Conditioning Processes

Acquisition - Training period when a response is strengthened initial learning of the response

Extinction – Learning that CS no longer predicts the UCS

Spontaneous Recovery - Reappearance of the CR after some time period

Generalization - Tendency to respond to similar CS (e.g., a similar sounding bell)

Discrimination - Learned ability to distinguish between the CS and other stimuli

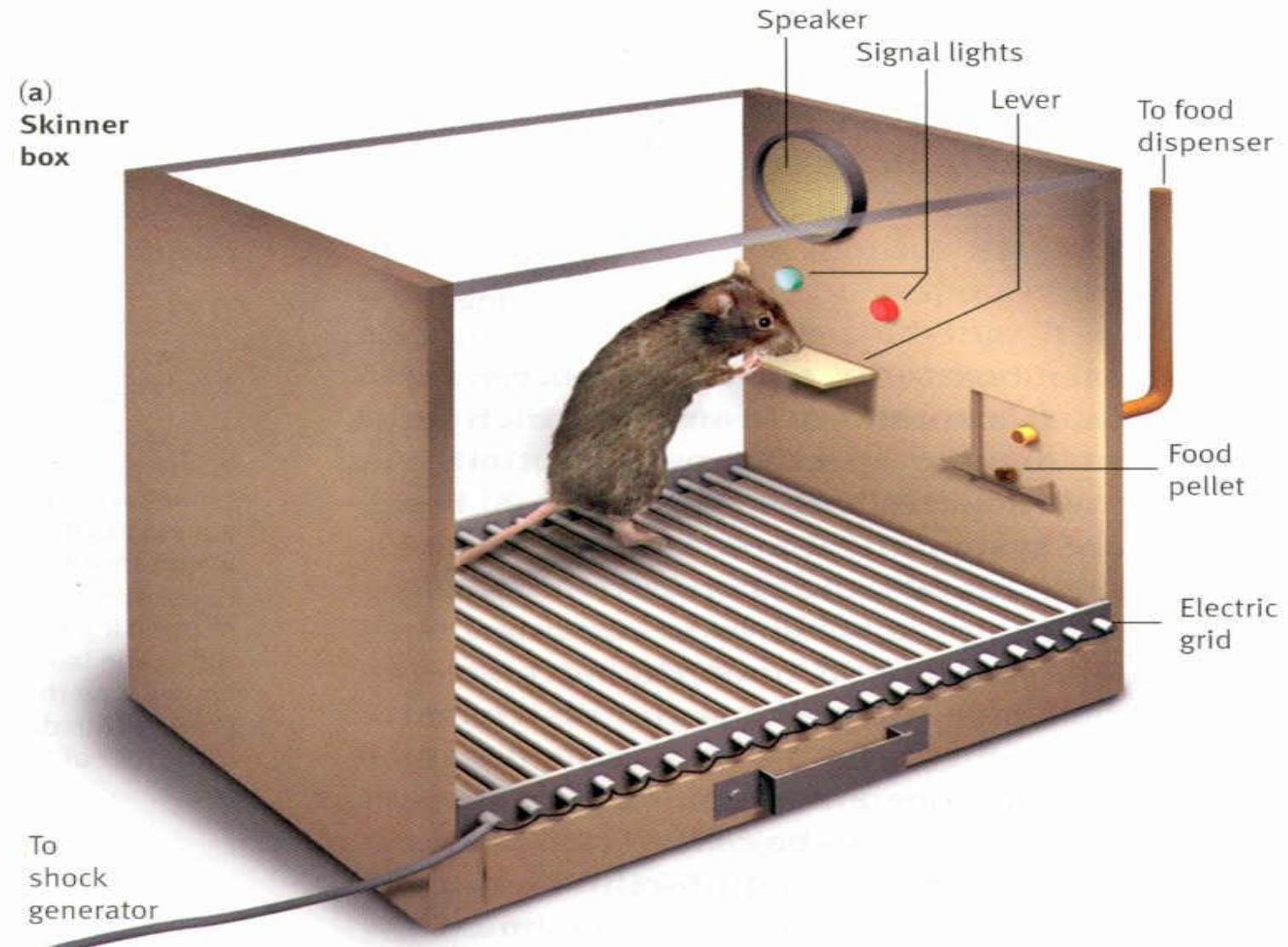
Behaviorism: Operant/ Instrumental Conditioning

- ❖ Limitations of Classical Conditioning
 - ❖ CR often resembles the normal response to UCS
 - ❖ Learning a novel behaviour?
- ❖ Operant or Instrumental conditioning
 - ❖ Certain Responses are learned because they operate on, or affect, the environment

Behaviorism: Operant Conditioning

- Skinner
 - A type of learning in which behavior is ‘strengthened’ if followed by reinforcement or ‘diminished’ if followed by punishment
 - The frequency will increase if the consequence is reinforcing to the subject.
 - The frequency will decrease if the consequence is not reinforcing or punishing to the subject

Skinner Box



Reinforcement/Punishment

- Reinforcement - Any consequence that *increases* the likelihood of the behavior it follows
 - IS ALWAYS GOOD ???
- Punishment - Any consequence that *decreases* the likelihood of the behavior it follows
- The subject determines if a consequence is reinforcing or punishing

Types of Reinforcement

Principles of Reinforcement

	Reinforcing/Desirable Stimulus	Aversive/Undesirable Stimulus
Stimulus is presented or added	Positive (+) Reinforcement Add something you DO LIKE. Behavior Increases	Positive (+) Punishment Add something you DO NOT LIKE. Behavior Decreases
Stimulus is removed or taken away from	Negative (-) Punishment TAKES AWAY something you DO LIKE. Behavior Decreases	Negative (-) Reinforcement TAKES AWAY something you DO NOT LIKE. Behavior Increases

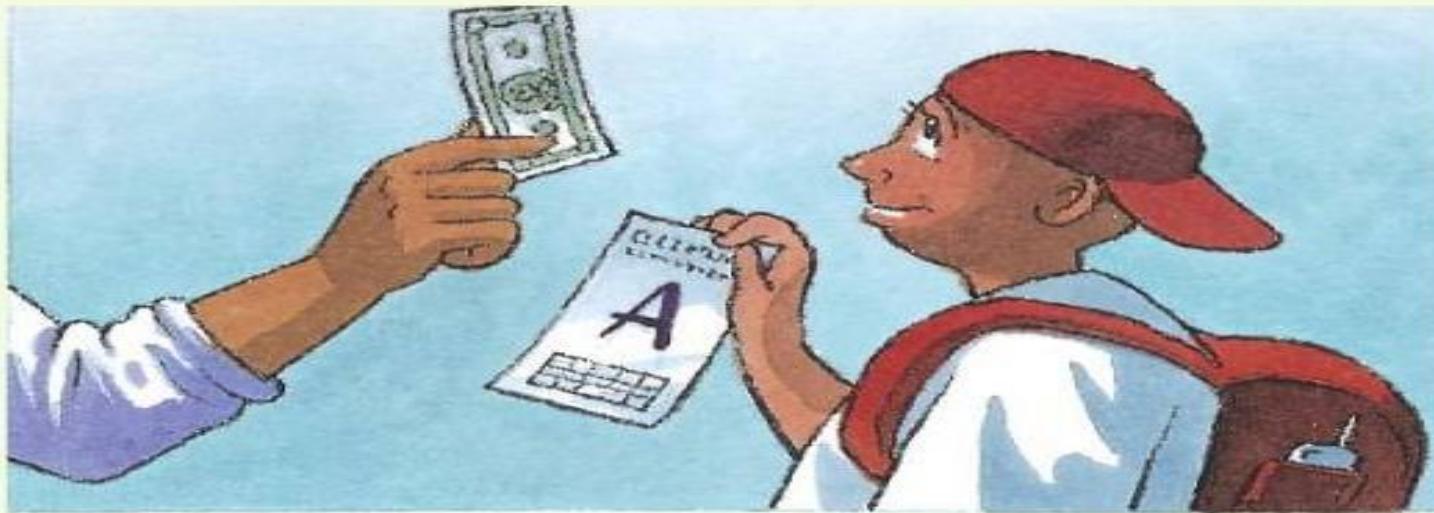
Positive Reinforcement

- Strengthens a response by presenting a stimulus that you like after a response
- Anything that increases the likelihood of a behavior by following it with a desirable event or state
- The subject receives something they want (added)
- Will **strengthen** the behavior

Positive Reinforcement

POSITIVE REINFORCEMENT

Behavior is followed by a desirable event or state.



\$10 for an A makes it more likely a student will earn more As.

Negative Reinforcement

- Strengthens a response by *reducing or removing* an aversive (disliked) stimulus
- Anything that increases the likelihood of a behavior by following it with the *removal of an undesirable event* or state
- Will **strengthen** the behavior
- Neg. Rein. Allows you to either:
 - *Escape* something you don't like that is *already present* (Neg. Rein. By Escape)
 - *Avoid* something *before* it occurs (Neg. Rein. By Avoidance)

How is this different from Punishment?

- Negative Reinforcement will always ***increase*** a behavior (desirable)
- Punishment will always ***decrease*** a behavior (undesirable)
- Negative Reinforcement is something YOU DO to take away something bad.
- Punishment is something DONE TO YOU that is bad and makes you stop doing a behavior.

Negative Reinforcement

NEGATIVE REINFORCEMENT

Behavior ends an undesirable event or state.



Taking aspirin relieves headaches and makes it more likely that aspirin will be taken in the future.

Punishment: The Process of Punishment

Types of Punishment

- An undesirable event following a behavior
- Behavior ends a desirable event or state
- Its effect is opposite that of reinforcement – it *decreases* the frequency of behavior

Positive Punishment (Punishment by Application)

- Something is added to the environment you do NOT like.
- A verbal reprimand or something painful like a spanking

Negative Punishment (Punishment by Removal)

- Something is taken away that you DO LIKE.
- Lose a privilege.

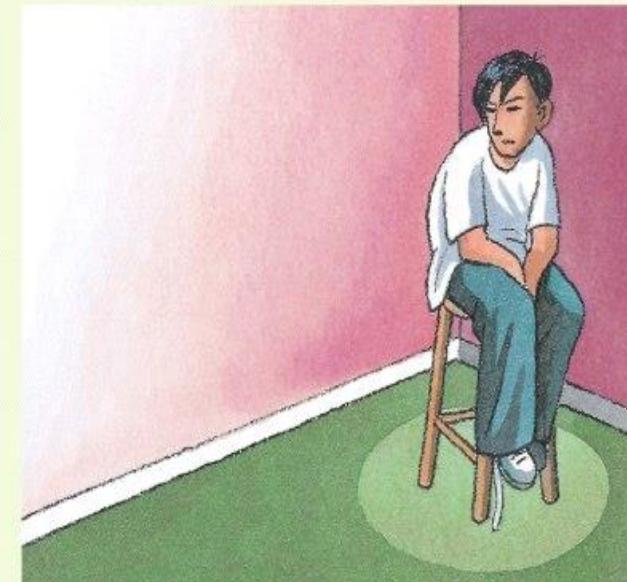
TWO FORMS OF PUNISHMENT

Behavior is followed by an undesirable event.



A toddler burned by a hot stove will be less likely to touch the stove again.

Behavior ends a desirable event or state.



A boy who loses his TV privileges for pulling his sister's hair will be less likely to pull her hair again.

The Good Effects of Punishment

- Punishment can effectively control certain behaviors if...
 - It comes immediately after the undesired behavior
 - It is consistent and not occasional
- Especially useful if teaching a focuses on not to do a dangerous behavior
- Most still suggest reinforcing an incompatible behavior rather than using punishment

Bad Effects of Punishment

- Does not teach or promote alternative, acceptable behavior.
- Only tells what NOT to do while reinforcement tells what to do.
- Doesn't prevent the undesirable behavior when away from the punisher in a “safe setting”
- Can lead to fear of the punisher, anxiety, and lower self-esteem
- Children who are punished physically may learn to use aggression as a means to solve problems.

Quiz

Identify types of learning and its component in the following examples:

1. It is springtime and the pollen from the flowers causes you to sneeze. Soon you are sneezing at the mere sight of a flower...real or fake.
2. Students or children follow rules strictly to avoid being nagged by the teachers or parents.
3. After hitting a classmate, a student is made to sit alone in the class, and no one is allowed to talk to him or sit with him.
4. While Mohit was having a cavity filled by his dentist, the drill hit a nerve (a couple of times) that had not been dulled by anesthetic. Each time Mohit screamed in pain. Mohit now gets anxious each time he sees the dentist.

Schedules of Reinforcement

Continuous Reinforcement

- A schedule of reinforcement in which a reward follows *every* correct response
- Learning occurs rapidly
- But the behavior will extinguish quickly once the reinforcement stops.
 - Once that reliable candy machine eats your money twice in a row, you stop putting money into it.

Partial Reinforcement

- A schedule of reinforcement in which a reward follows only *some* correct responses
- Learning of behavior will take longer
- But will be more resistant to extinction
- Includes the following types:
 - Fixed-interval and variable interval
 - Fixed-ratio and variable-ratio

Schedule of Reinforcement

	Fixed	Variable
Ratio	Completion of a constant <u>number</u> of responses	Completion of a changing <u>number</u> of responses
Interval	Reinforces the first response after a constant amount of time	Reinforces the first response after a changing amount of time

Fixed-Ratio Schedule

- A partial reinforcement schedule that rewards a response only after some set number of correct responses
- The faster the subject responds, the more reinforcements they will receive.
- i.e. piece work: You get \$5 for every 10 widgets you make.

Variable-Ratio Schedule

- A partial reinforcement schedule that rewards an unpredictable average number of correct responses
- High rates of responding with little pause in order to increase chances of getting reinforcement
- This schedule is very resistant to extinction.
- Sometimes called the “gambler’s schedule”; similar to a slot machine or fishing

Fixed-Interval Schedule

- A partial reinforcement schedule that rewards only the first correct response after some set period of time
- Produces gradual responses at first and increases as you get closer to the time of reinforcement
- “Procrastinator Schedule”
- Example: a known weekly quiz in a class, checking cookies after the 10 minute baking period.

Variable-Interval Schedule

- A partial reinforcement that rewards the first correct response after an unpredictable amount of time
- Produces slow and steady responses
- Example: “pop” quiz in a class

Memory

Memory

Persistence of learning over
time via the storage and
retrieval of information

**MEMORY...
IS THE
DIARY THAT
WE ALL CARRY
ABOUT WITH US.**

► -OSCAR WILDE

List of Movies

- ▶ The eternal sunshine of a spotless mind
- ▶ Memento
- ▶ 50 first dates
- ▶ Unknown
- ▶ Before I go to sleep
- ▶ Total Recall....



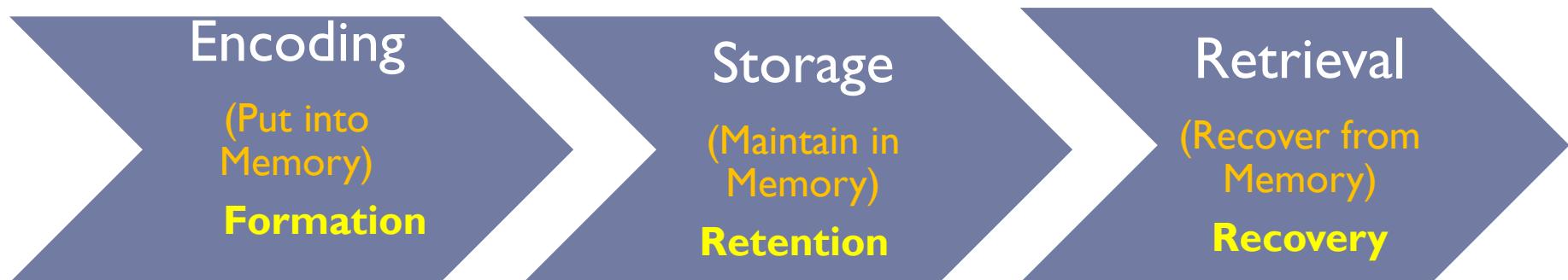
Functions of Memory

- ▶ Gives us sense of self
 - ▶ Brings organization in life
 - ▶ Memory and adjustment
 - ▶ Memory and emotions
 - ▶ Memory and interpersonal relationship
 - ▶ Memory of trauma
 - ▶ Memory and decision making
 - ▶ Data sheet containing every detail of life
 - ▶ However, what stored in the brain is far more than facts
-

Human Memory vs. Computer Memory

- ▶ Brains are analogue; computers are digital
- ▶ Content-addressable memory vs. byte-addressable memory
- ▶ The brain as a parallel machine vs. computers as a modular and serial
- ▶ Processing speed is not fixed in the brain; there is no system clock
- ▶ Short-term memory is not like RAM
- ▶ No hardware/software distinction can be made with respect to the brain or mind
- ▶ Synapses are far more complex than electrical logic gates
- ▶ Unlike computers, processing and memory are performed by the same components in the brain
- ▶ The brain is a self-organizing system

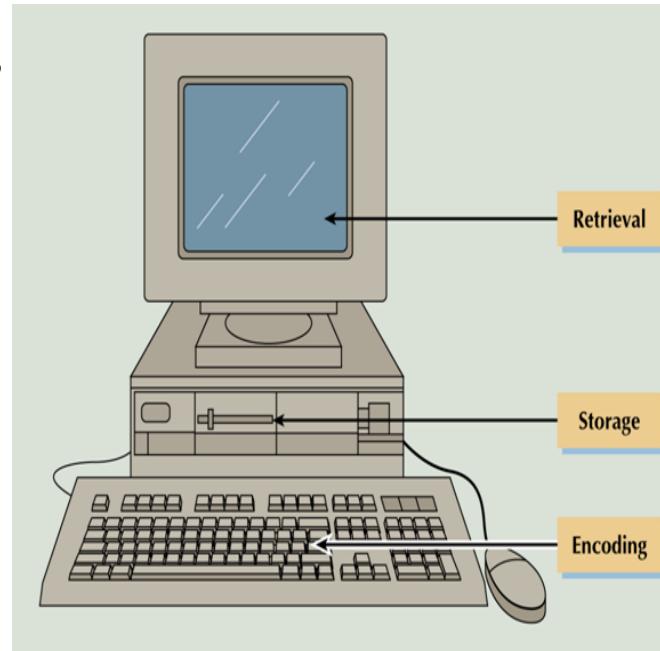
Three stages of Memory



Encoding - the set of mental operations used to convert sensory information into a form that is usable in the brain's storage systems.

Storage - holding onto information for some period of time.

Retrieval - getting information that is in storage into a form that can be used



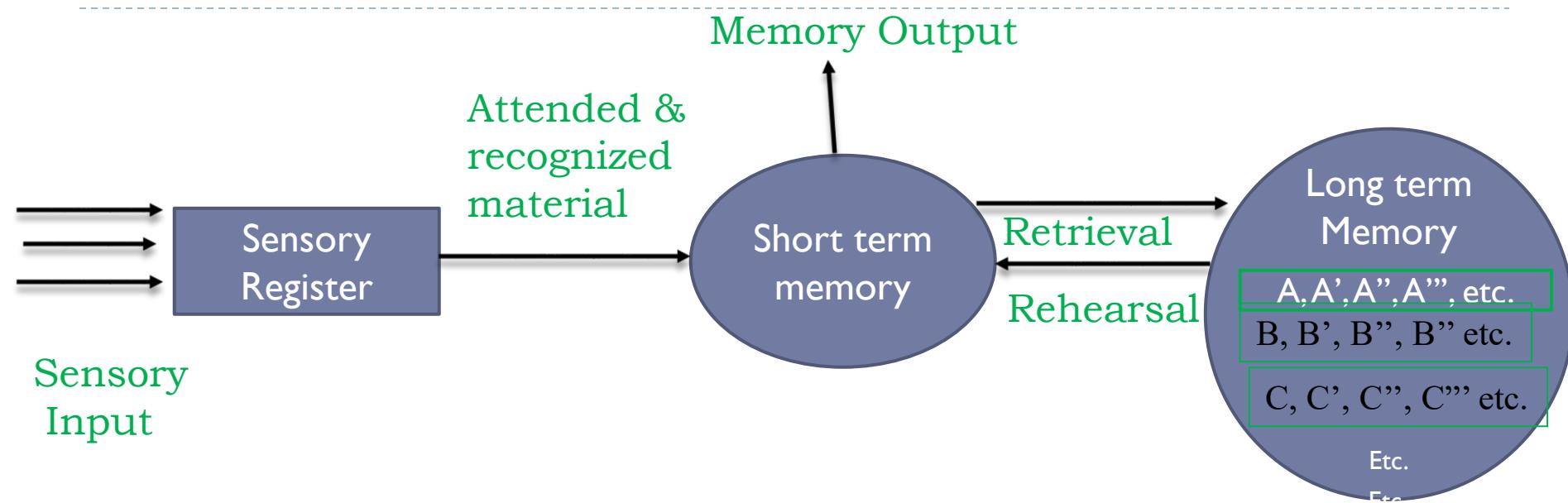
- ❖ Memory can fail at any of these three stages
- ❖ Structures in the brain and different stages of memory
 - ❖ PET (Positron emission tomography)
 - ❖ fMRI (Functional magnetic resonance imaging)
- ❖ Encoding: Left hemisphere
- ❖ Retrieval: Right hemisphere



Encoding

- ▶ **Visual (picture)**
 - ▶ Process of encoding images and visual sensory information.
- ▶ **Acoustic/ Phonological (sound)**
 - ▶ Processing and encoding of sound, words and other auditory inputs.
- ▶ **Semantic (meaning)**
 - ▶ Process of encoding sensory input that has particular meaning or can be applied to a particular context,
 - ▶ rather than deriving from a particular sense.

Storage: Three Memory Stores

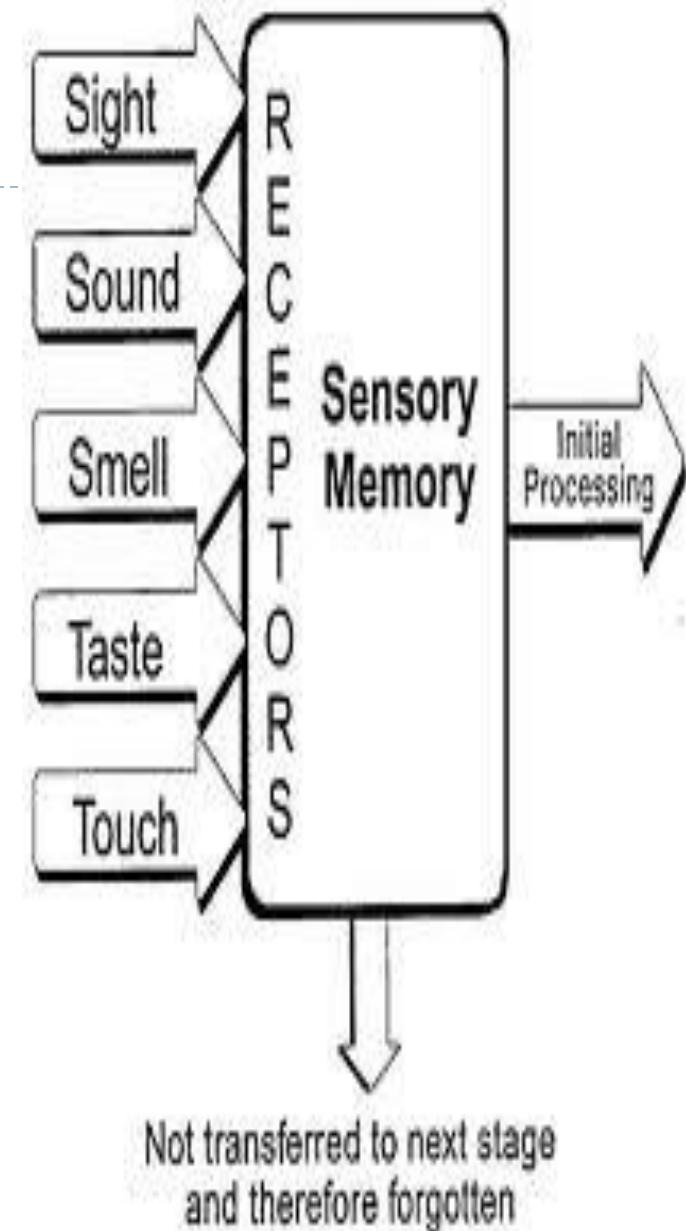


An Information processing Model of Memory (Atkinson & Shiffrin, 1968)

- ▶ Three memory stores differ in...
 - *Capacity – How much information can be stored*
 - *Duration – How long the information can be stored*
 - *Function – What is done with the stored information capacity and duration.*

Sensory Memory

- The very first stage of memory
- The point at which information enters the nervous system through the sensory systems
- The capacity of sensory memory is very large, but the information in it is unprocessed.



Sensory Memory: Types

- ▶ Iconic memory - Visual sensory memory, lasting only a fraction of a second.
- ▶ Capacity – Everything that can be seen at one time.
- ▶ Duration - Information that has just entered iconic memory will be pushed out very quickly by new information, a process called masking.
- ▶ Eidetic imagery - the rare ability to access a visual memory for 30 seconds or more.
 - ▶ People with photographic memories are called *eidetikers* (eye-DET-ik-ers)

► Echoic memory –

The brief memory of something a person has just heard.

► Capacity - Limited to what can be heard at any one moment

► Duration – Lasts longer than iconic — about 2 to 4 seconds

Sensory Memory

Iconic Memory

Duration: < 1 second
Capacity: ≈20 items
Levels of Awareness:
Preconscious
Unconscious

Echoic Memory

Duration: ≤ 3 seconds
Capacity: 1-2 items
Levels of Awareness:
Preconscious
Unconscious

Other Senses

Not Well Studied



Short-Term Memory



Forgetting

Decay Theory: The disappearance of a biological memory trace (engram)

Short-Term Memory

- ▶ Level of Awareness:
 - ▶ Attention as the mental process that transfers information into the short-term store.
 - ▶ STM is at the conscious level of awareness.
- ▶ Maintenance rehearsal - Practice of saying some information to be remembered over and over in one's head in order to maintain it in short-term memory
- ▶ Encoding: Visual vs. phonological vs. Semantic?



- ▶ Phonological Buffer vs. Visual-Spatial Sketchpad
- ▶ Left-Right hemispheric division
- ▶ STM is susceptible to interference (e.g., if counting is interrupted, have to start over).
- ▶ Storage: Seven pieces of information, plus or minus two items, or from five to nine bits of information.
 - “magical number” = $7+_- 2$



Test

Vase

Teapot

Camera

Tiger

Book

Ice Cream

Cushion

Spade

Cloud

Piano

House

Orange

Hat

Table

Book

Tree

Shirt

Cat



- ▶ Retrieval
 - ▶ Serial Processing vs. Parallel Processing
-

Mnemonics

- ▶ Chunking: Recoding a new material into larger, more meaningful units and storing those units in working memory.
 - ▶ SRUOYYLERECNIS
 - ▶ Forgetting:
 - ▶ Information decay
 - ▶ Displacement of information by new items
-

Mnemonics

- ▶ A group of memory techniques, or mental ‘slights of hand’ that together facilitate the quick and easy assimilation of information of all kinds.
- ▶ ACRONYMS: by using each first letter from a group of words to form a new word
- ▶ SENTENCES/ACROSTICS. Instead of making a new word, use the letters to make a sentence.
 - ▶ My Dear Aunt Sally (mathematical order of operations: Multiply and Divide before you Add and Subtract)
- ▶ RHYMES & SONGS
- ▶ METHOD OF LOCI
- ▶ CHUNKING
- ▶ Practice



Functions of STM

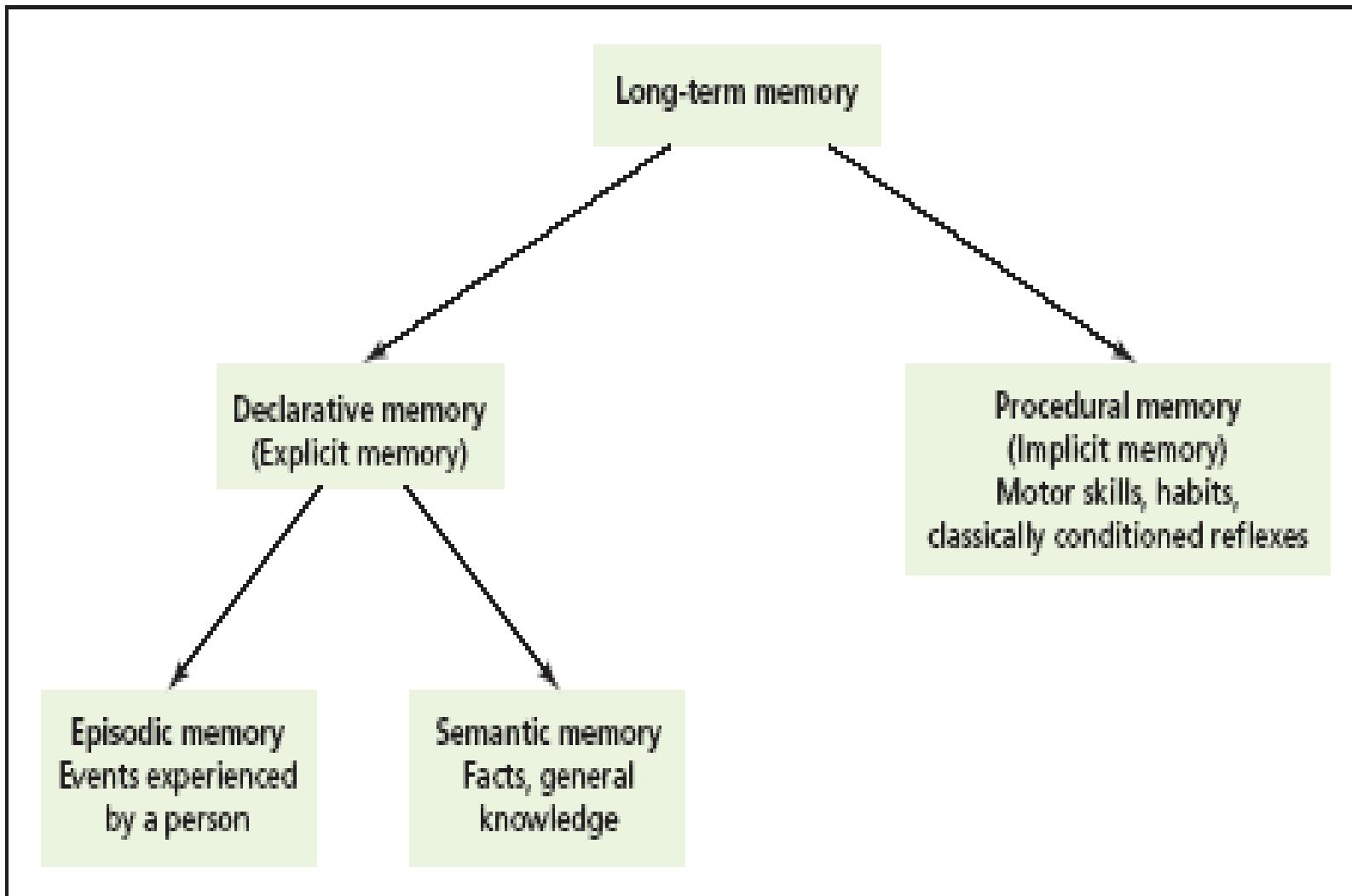
- ▶ Stores material needed for short term
- ▶ Work space for mental computation
- ▶ Serve as a way station to long term memory
- ▶ Neurons in prefrontal lobed hold information for short term memory



Long-Term Memory

- ▶ Long-term memory (LTM) - the system of memory into which all the information is placed to be kept more or less permanently.
- ▶ Elaborative rehearsal - a method of transferring information from STM into LTM by making that information meaningful in some way.
- ▶ Encoding: Acoustic vs Visual vs Semantic
- ▶ Storage: Unlimited
- ▶ Retrieval:
 - ▶ Recall vs. Recognition? Which one is better?
 - ▶ Serial search vs. parallel search

LTM



Types of LTM

- ▶ Declarative memory – type of long-term memory containing information that is conscious and known (memory for facts).
- ▶ Procedural (non-declarative) memory - type of long-term memory including memory for skills, procedures, habits, and conditioned responses. These memories are not conscious but are implied to exist because they affect conscious behavior.



Procedural (Nondeclarative) LTM

- ▶ Skills that people know how to do.
- ▶ Also include emotional associations, habits, and simple conditioned reflexes that may or may not be in conscious awareness.
- ▶ Procedural memory often called implicit memory - memory that is not easily brought into conscious awareness.



Declarative LTM

- ▶ All the things that people know.
- ▶ Semantic memory - type of declarative memory containing general knowledge, such as knowledge of language and information learned in formal education.
- ▶ Episodic memory - type of declarative memory containing personal information not readily available to others, such as daily activities and events.
- ▶ Semantic and episodic memories are forms of explicit memory - memory that is consciously known.

Say the following list of words once to yourself, and then, immediately thereafter, try to recall all the words, in any order, without looking back at them

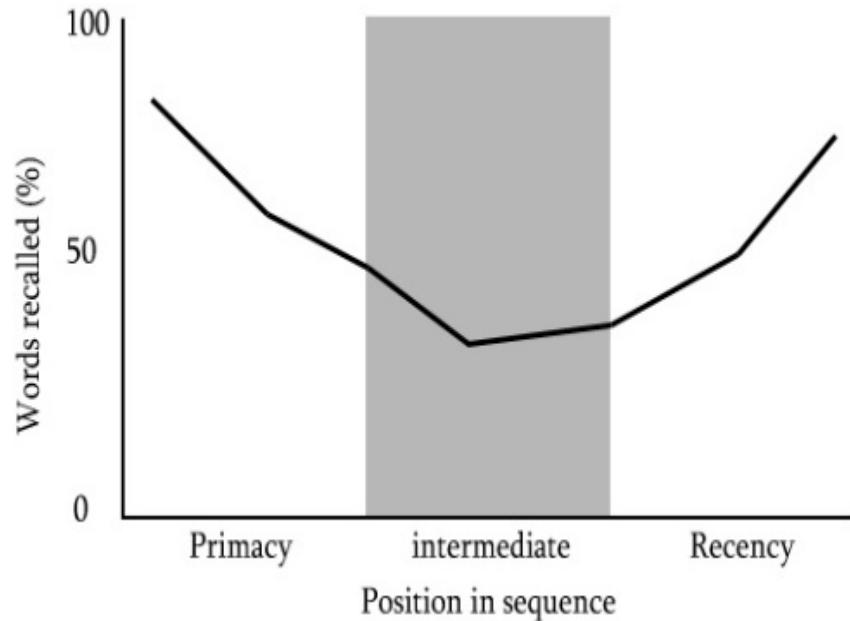
- ▶ Table,
 - ▶ cloud,
 - ▶ book,
 - ▶ tree,
 - ▶ shirt,
 - ▶ cat,
 - ▶ light,
 - ▶ bench,
 - ▶ chalk,
 - ▶ flower,
 - ▶ watch,
 - ▶ bat,
 - ▶ rug,
 - ▶ soap,
 - ▶ pillow
 - ▶ mosquito
 - ▶ magzine
 - ▶ toffee
-

Evidence of STM and LTM

- ▶ Serial Position Curve
 - ▶ The position of an item in the list will affect memory for that item

Primacy effect. This is the tendency to remember well the first items in a list.

Recency effect. This is the tendency to remember well the last items in a list.



Forgetting and Memory Distortion in LTM

1. *Decay of Information*
2. *Interference theory*
3. *Distortion*

Two kinds of interference

- ▶ Proactive interference
 - ▶ Old information hinders recall of new information
 - ▶ Ex: Individuals who pick up bad habit have hard time in getting rid of it
- ▶ Retroactive interference
 - ▶ New information hinders the recall of old information
 - ▶ Ex: New password hinders the recall of old password

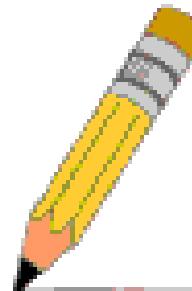
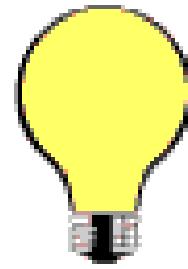
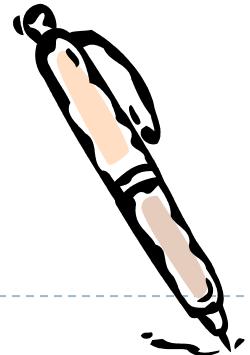
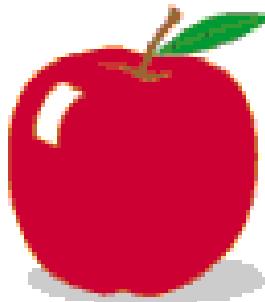
The Constructive Nature of Memory

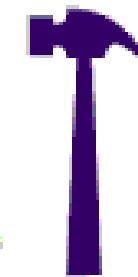
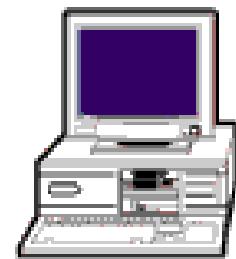
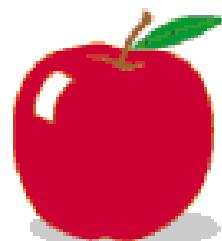
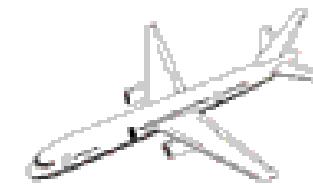
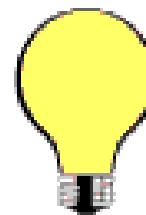
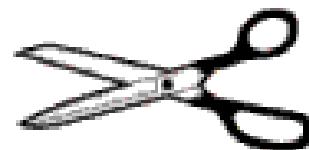
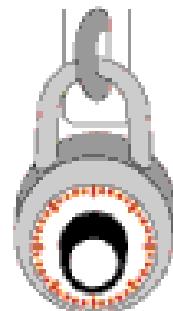
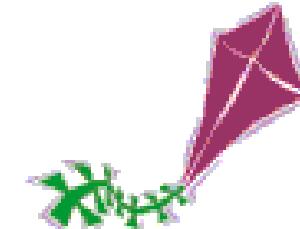
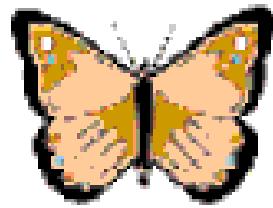
Eyewitness Testimony

- ▶ Experiments have shown people's great susceptibility to distortion in eyewitness accounts
- ▶ Problems with wrongful conviction when using eyewitness testimony
- ▶ Lineups can lead to faulty conclusions
- ▶ It is clearly suspect in children because they are highly susceptible to suggestive questioning

Memory Test

- ▶ Let's do another memory test...
- ▶ You will have 30 seconds to view the next slide
- ▶ Try to memorize all 20 items you see
- ▶ You are not allowed to write anything down until after the screen has been shown
- ▶ GOOD LUCK!!





Finished!

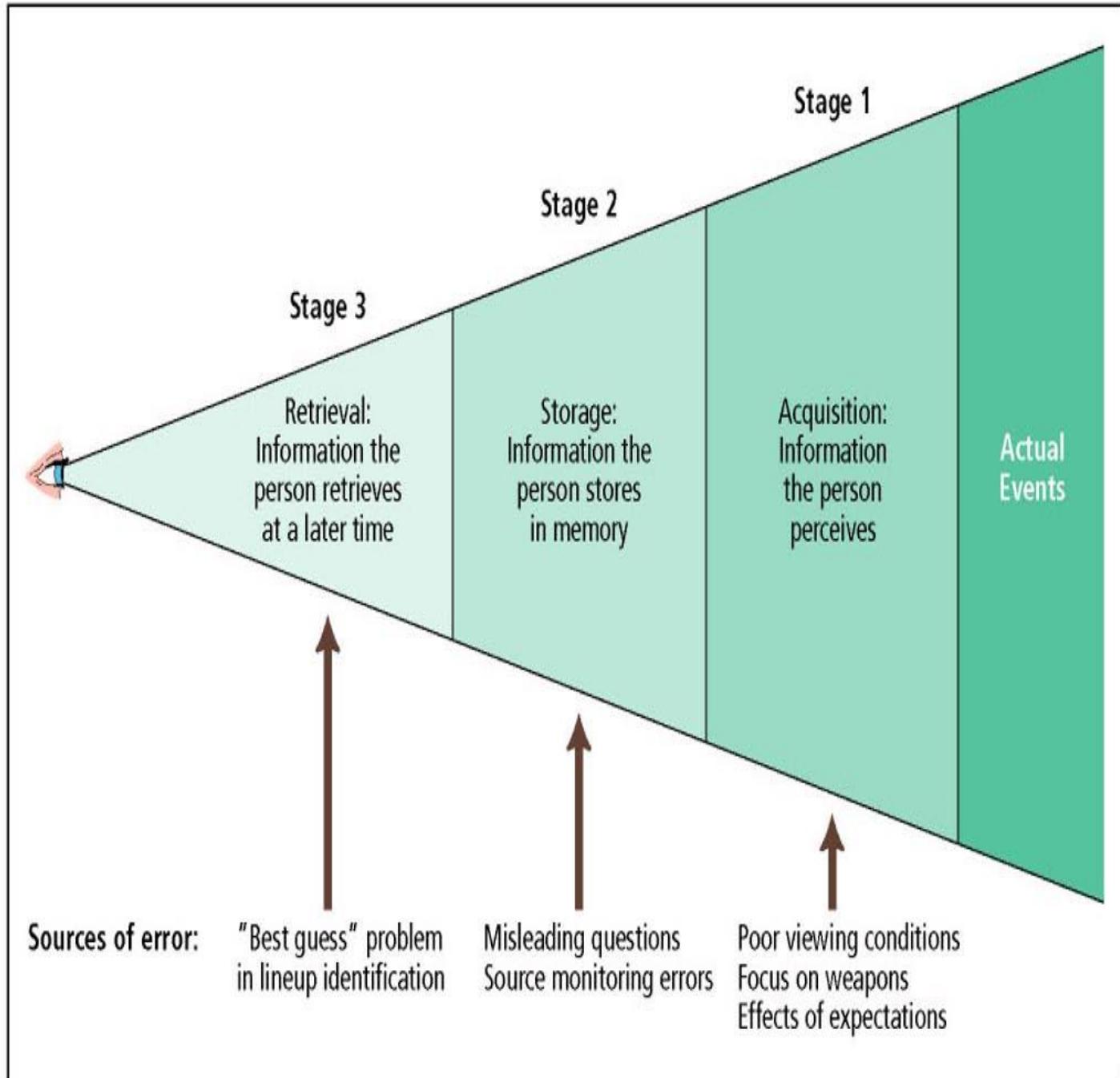
Write down all the items
you can remember



► Figure SPA3.2

ACQUISITION, STORAGE, AND RETRIEVAL.

To be an accurate eyewitness, people must complete these three stages of memory processing. There are sources of error at each of the three stages.



Olny srmat poelpe can raed tihs.

I cdnuolt blveiee taht I cluod aulacly uesdnatnrd waht I was rdanieg. The phaonmneal pweor of the hmuanc mnid, aoccdrnig to rscheearch at Cmabrigde Uinervtisy.

It deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it wouthit a porbelm.

Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. Amzanig huh? yaeh and I awlyas tghuhot slpeling was ipmorant! if you can raed tihs psas it on!!



“Remembering is not a completely independent function, entirely distinct from perceiving, imaging, or even from constructive thinking, but it has intimate relations with them all... One’s memory of an event reflects a blend of information contained in specific traces encoded at the time it occurred, plus inferences based on knowledge, expectations, beliefs, and attitudes derived from other sources.”



▶ Bartlett: Chinese Whisper



► **Repressed Memories**

- ▶ No compelling evidence points to the existence of such memories
-

► **Context Effects on Encoding and Retrieval**

- ▶ Flashbulb memory
 - ▶ Memory of an event so powerful that the person remembers the event as vividly as if it were preserved on film
 - ▶ We remember better event with significant emotional intensity
 - ▶ When information is encoded in various contexts, the information also seems to be retrieved more readily in various contexts
-

<http://allpsych.com/psychology101/index.html>

What is Psychology?

Psychology is the study of cognitions, emotions, and behavior. Psychologists are involved in a variety of tasks. Many spend their careers designing and performing research to better understand how people behave in specific situations, how and why we think the way we do, and how emotions develop and what impact they have on our interactions with others. These are the research psychologists who often work in research organizations or universities. Industrial-organizational psychologists work with businesses and organizations to help them become more productive, effective, and efficient, and to assist them in working with their employees and their customers. Practitioners, typically counseling and clinical psychologists, work with individuals, couples, families, and small groups to help them feel less depressed, less anxious, become more productive or motivated, and overcome issues which prevent them from living up to their potential.

The study of psychology has five basic goals:

- 1. Describe** – The first goal is to observe behavior and describe, often in minute detail, what was observed as objectively as possible
- 2. Explain** – While descriptions come from observable data, psychologists must go beyond what is obvious and explain their observations. In other words, why did the subject do what he or she did?
- 3. Predict** – Once we know what happens, and why it happens, we can begin to speculate what will happen in the future. There's an old saying, which very often holds true: "the best predictor of future behavior is past behavior."
- 4. Control** – Once we know what happens, why it happens and what is likely to happen in the future, we can exert control over it. In other words, if we know you choose abusive partners because your father was abusive, we can assume you will choose another abusive partner, and can therefore intervene to change this negative behavior.
- 5. Improve** – Not only do psychologists attempt to control behavior, they want to do so in a positive manner, they want to improve a person's life, not make it worse. This is not always the case, but it should always be the intention.

Experimental Methods

Starting from the general and moving to the more specific, the first concept we need to discuss is **Theory**. A theory can be defined as a "general principle proposed to explain how a number of separate facts are related." In other words, a theory is an "idea about a relationship." In order to test whether a theory is correct or not, we need to do research. Theories are stated in general terms, so we need to define more accurately what we will be doing in our experiment.

To do this, we need to define the **variables** in our theory so that they are testable, and every experiment has two types of variables:

- **Independent Variable (IV)** – the variable that is manipulated by the experimenter (input variable)
- **Dependent Variable (DV)** – the outcome variable (results of the experiment)

By defining our variables that we will use to test our theory we derive at our **Hypothesis**, which is a testable form of a theory.

As an example of this, let's say that we have a theory that people who drive sports cars are more aggressive in their interactions with others. Our independent variable would be the type of car you drive (sports, sedan, SUV, etc.). Our dependent variables, the outcome of our research, would be aggression. We would need to further define aggression so that it is something we can test such as speeding or cutting other people off in traffic. We now have the basics of our very simple experiment and can write our Hypothesis: People who drive sports cars drive over the speed limit more frequently than people who drive other types of cars.

Research Biases

Now we've got a hypothesis which is the first step in doing an experiment. Before we can continue, however, we need to be aware of some aspects of research that can contaminate our results. In other words, what could get in the way of our results in this study being accurate.

These aspects are called research biases, and there are basically three main biases we need to be concerned with.

- **Selection Bias** – occurs when differences between groups are present at the beginning of the experiment.
- **Placebo Effect** – involves the influencing of performance due to the subject's belief about the results. In other words, if I believe the new medication will help me feel better, I may feel better even if the new medication is only a sugar pill. This demonstrates the power of the mind to change a person's perceptions of reality.
- **Experimenter Bias** – The same way a person's beliefs can influence his or her perception, so can the belief of the experimenter. If I'm doing an experiment, and really believe my treatment works, or I really want the treatment to work because it will mean big bucks for me, I might behave in a manner that will influence the subject.

Controlling for Biases

After carefully reviewing our study and determining what might effect our results that are not part of the experiment, we need to control for these biases. To control for selection bias, most experiments use what's called **Random Assignment**, which means assigning the subjects to

each group based on chance rather than human decision. To control for the placebo effect, subjects are often not informed of the purpose of the experiment. This is called a **Blind** study, because the subjects are blind to the expected results. To control for experimenter biases, we can utilize a **Double-Blind** study, which means that both the experimenter and the subjects are blind to the purpose and anticipated results of the study.

Standardization

We have our hypothesis, and we know what our subject pool is, the next thing we have to do is **standardize** the experiment. Standardization refers to a specific set of instructions. The reason we want the experiment to be standardized is twofold.

First, we want to make sure all subjects are given the same instructions, presented with the experiment in the same manner, and that all of the data is collected exactly the same or all subjects. Second, single experiments cannot typically stand on their own. To really show that are results are valid, experiments need to be replicated by other experimenters with different subjects. To do this, the experimenters need to know exactly what we did so they can replicate it.

What is Adjustment?

Adjustment refers to the psychological processes through which people manage or cope with the demands and challenges of everyday life (Witen & Lloyd, 2005)

- The concept of adjustment is borrowed from biology.
- Adjustment is different from adaptation. Adaptation refers to an individual's physiological structure or function or habit that allows it to survive in new surrounding
- Adjustment is a psychological concept.
- In daily life an individual make variety of adjustment to people, circumstance, and events
- Adjusted vs. Maladjusted: An individual is supposed to be well adjusted if he/ she has constructive and positive approach towards life, maintains satisfactory relationship with others, adhere to prescribed social norms etc.
 - Adjustment refers to successful changes in any activity or environment.
- Maladjustment refers: vice versa of adjustment

THE CONCEPT OF ADJUSTMENT

Reference: Lazarus, R.S. (1961): Adjustment and Personality. Richard S. McGraw-Hill.

The concept of adjustment was originally a biological one and was a cornerstone in Darwin's theory of evolution (1859). In biology the term usually employed was adaptation. Darwin maintained that only those organisms most fitted to adapt to the hazards of the physical world survive. Biologists have continued to be concerned with the problem of physical adaptation, and many human illnesses are thought to be based on the processes of adaptation to the stress of life (cf. Selye, 1956). Such illnesses include diseases of the circulatory system that produce coronary attacks and cerebral hemorrhages as well as disturbances of the digestive tract such as ulcers and intestinal colitis.

Man's behavior can be described as reactions to a variety of demands or pressures that are brought to bear upon him. The clothing he wears varies with the climate in which he lives and represents, at least partly,

an adaptation to weather. Architectural forms also depend upon climatological and topographical factors, and man has shown great ingenuity in adapting the raw materials of his environment to his need for shelter and warmth. This is dramatically illustrated by the remarkable feat of the Eskimos, who build houses out of ice and snow (in adapting to the rigors of life in the Arctic). We can understand a great deal of human behavior by conceiving human actions as adaptations to various kinds of physical demands.

Just as a person adapts to physical demands, he also adjusts to social pressures, that is, demands that arise from living interdependently with other persons. When he is an infant, his parents make demands upon him to acquire the proper values and behavior patterns. When he is adult, they continue to have expectations of his marriage, his career, or where and how he lives. Wives have certain expectations about their husbands, husbands about their wives, employers about their employees, and children about their parents. These expectations function as powerful pressures upon the individual.

The biological concept of adaptation has been borrowed by the psychologist and renamed adjustment. The psychologist is more concerned with what might be called "psychological survival" than physical survival. As in the case of the biological concept of adaptation, human behavior is interpreted as adjustments to demands or pressures. These demands are primarily social or interpersonal, and they influence the psychological structure and functioning of the person.

It was said that adjustment involves a reaction of the person to demands imposed upon him. The psychological demands made upon the person can be classified into external and internal.

ADJUSTMENT TO EXTERNAL AND INTERNAL DEMANDS

There are a large number of external demands that arise from the physical conditions of existence. From the psychological viewpoint, however, those pressures arising out of our existence as social beings are of greater importance. From early childhood we are confronted with the demands of other persons to do some things and not others. At first, these demands deal with relatively primitive actions. For example, we are required to feed ourselves, not to hit other children, and not to damage property. Between two and three years of age we must learn to control the sphincter muscles of the bladder and bowel according to social custom. As we mature, the demands of others become more subtle and include conceptions, values, and more complex patterns of social behavior. Our failure to comply with these demands results in disapproval and negative consequences, and our conformity to them leads to approval and positive consequences. When we incur the disfavor of our parents and other persons who are significant to our welfare, strong anxieties are aroused. We learn that certain forms of behavior lead to approval, and hence the reduction or elimination of anxiety, and that other forms of behavior have the opposite effects.

This process of socialization in response to anxiety and social pressures has been very effectively discussed by Allison Davis, who has been concerned with the influence of social-class factors in the development of personality. He writes (1944, pp. 203-204): The intensive study of normal personalities leads inevitably to the recognition of the tremendously vital role of this type of socialized anxiety in the integration and direction of the personality, notably in the development of individuals of middle status. One of the certain gains for social science, in the recent studies of normal individuals living in their social contexts, has been the discovery that many concepts of personality economy developed by psychopathology do not hold for individuals in our own culture who are not mentally ill. The tendency of the psychopathologist to extend the concept of

the neurotic, maladaptive, irrational type of anxiety, for example, to all anxiety has been a dangerous generalization. In the same way many other concepts of maladaptive functions, based upon clinical study of the delinquent, the criminal, or the mentally ill have been applied wholesale to the analysis of the personality dynamics of normal people by mental hygienists, psychiatric case-workers, and by other students of personality development. These supposedly symptomatic traits include, among others, such motivations as hostility, guilt feelings, intimidation, inferiority feelings, chronic frustrations, as well as anxiety.

The fact is, however, that all of these motivations not only appear in the normal range of human personalities in American society, but these instigations may be all culturally useful and may be integrated in some form into the adaptive behavior of the well-adjusted and socialized child or adolescent. For example, most young children of middle-status families are trained in the basic cultural forms with regard to property, exploration of the adult world, and aggression largely through those feelings of shame, of age inferiority, of guilt, and of anxiety which are instilled by the parents and other adults in accord with the necessary modes of child training in a society like that of American middle class. Even aggression and hostility must be taught to the child through culturally approved forms. With regard to overt aggression, the middle-class boy must learn, for example, (1) to fight when attacked by another boy, (2) not to attack a boy unless he has been struck, (3) not to attack girls or supervisory adults under any circumstances, but also (4) not to withdraw when in a normal, approved competitive situation. A child without the culturally approved, adaptive type of aggression in a competitive and status-structured society like ours is himself abnormal.

We are born, as human beings, with a great many internal needs, the frustration of which leads to discomfort and sometimes death. Many of these are physiological. If we don't eat, we become hungry and uncomfortable. If we don't drink, we experience the unpleasant reaction of thirst. Other such physiological, internal needs are sleep, defecation, and temperature regulation. In childhood we soon discover that there are

certain ways of gratifying these needs, and we behave accordingly when ever an unpleasant state of tension associated with some need exists. In the course of development, additional internal needs emerge, which are primarily social rather than physiological such as, need for human company, social approval, a sense of self- and social esteem etc.

Observation

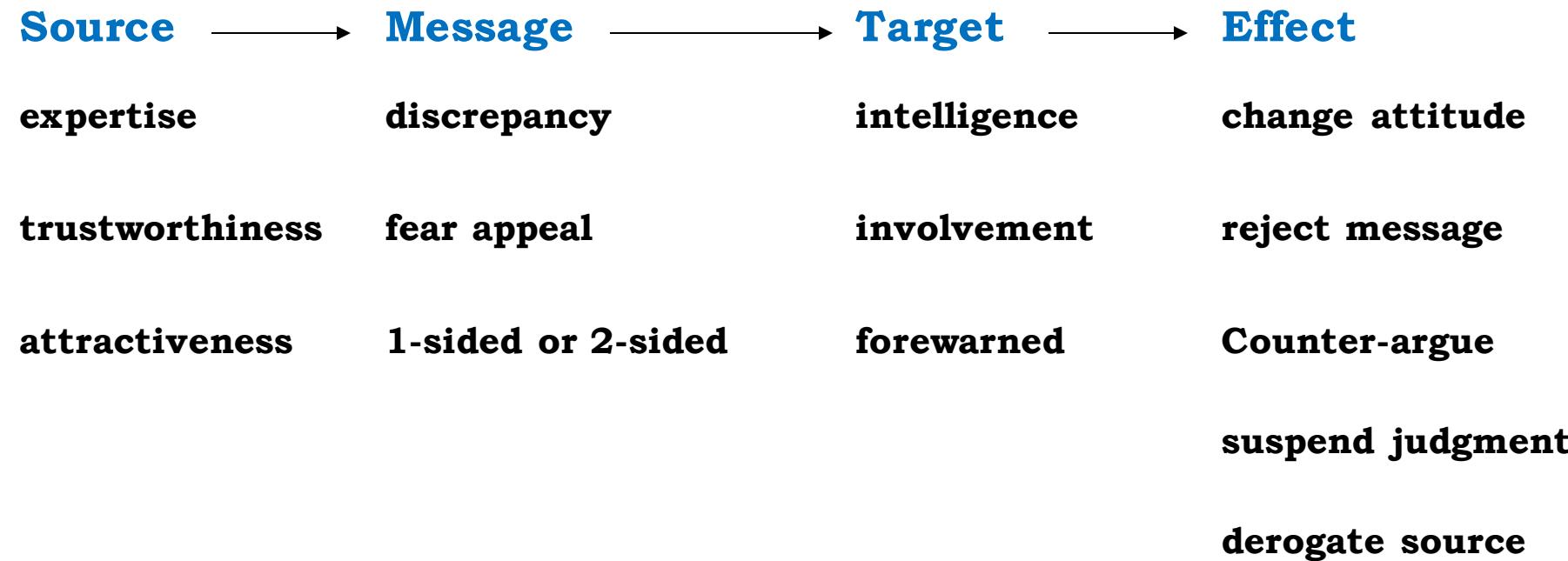
Have you ever:

- Asked a friend what was appropriate to wear to a dinner, party, or wedding?
- Agreed to buy something you didn't want?
- Agreed to attend a social event because someone else asked you to?
- Changed your behavior in response to a direct order from a parent, teacher, or school/ institute official?

Discussion Question

- You read a report about health drinks and health.
- Would you react differently to the message if the report was written by a Nobel prize winning bio-medical scientist than you would if it was written by a acclaimed food critic?
 - If so, why?
 - If not, why not?

The Communication-Persuasion Paradigm



Social Influence

Efforts by one or more individuals to change the attitudes, beliefs, perceptions, or behaviors of one or more others

Social Influence

- Social influence occurs when:
 1. one person (the source) engages in some behavior (persuading, threatening, promising, or issuing orders)
 2. that causes another person (the target) to behave differently from how he or she would otherwise behave.

- Influence attempts can be either open or covertly manipulative.
 - In open influence, the attempt is readily apparent to the target.
 - In manipulative influence, the attempt is hidden from the target.

Goals of Social Influence

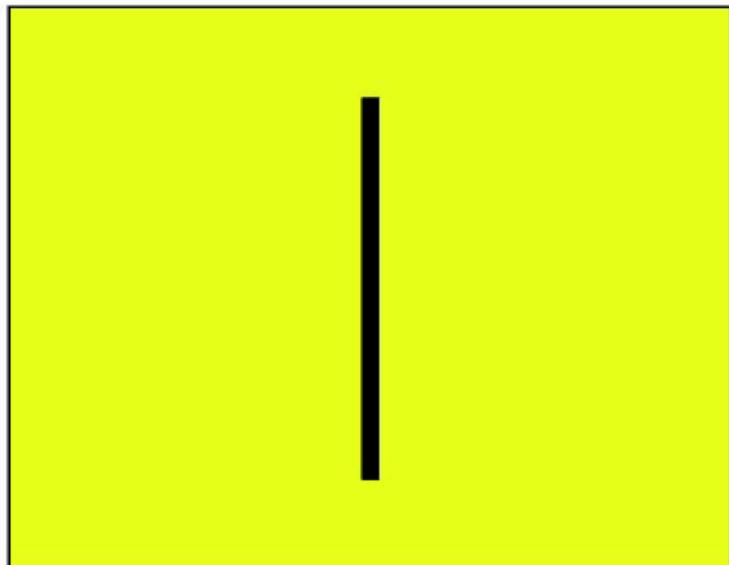
- Choosing Correctly
- Gaining Social Approval
- Being Consistent with Commitments

Conformity

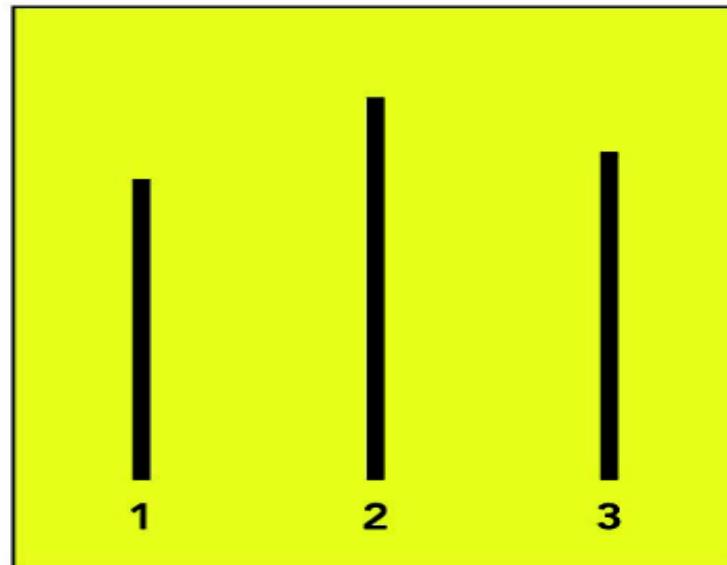
- **Conformity**—*a type of social influence in which individuals change their attitudes or behavior in order to adhere to social norms:*
 - Rules regarding how people are expected to behave in specific situations

Conformity

- Asch's (1950s) Research on Conformity
 - Participants were asked to indicate which of three lines matched a standard line in length.



Standard Line



Comparison Lines

Conformity

- During the critical trials, participants had to give their answers after a unanimous group gave the wrong answer.
 - 76% conformed at least once to the group's false judgment
 - Overall, they agreed with the errors 37% of the time
- Later research found that an ally (someone who disagreed with the group) and the ability to make responses privately both reduced conformity.

Factors that Affect Conformity

- **Cohesiveness**—*the degree of attraction felt by an individual toward an influencing group*
 - As cohesiveness increases, conformity increases
- Group size
 - As group size increases, conformity increases to an extent
- **Descriptive Norms** (*what most people do in a given situation*) and **Injunctive Norms** (*specify what ought to be done*)

- Why People Conform

- *Normative Social Influence*—based on the desire to be liked or accepted by others
- *Informational Social Influence*—based on the desire to possess accurate social perceptions
 - This is an especially strong source of conformity when the task is important and difficulty and uncertainty are high.

Why People Do Not Conform

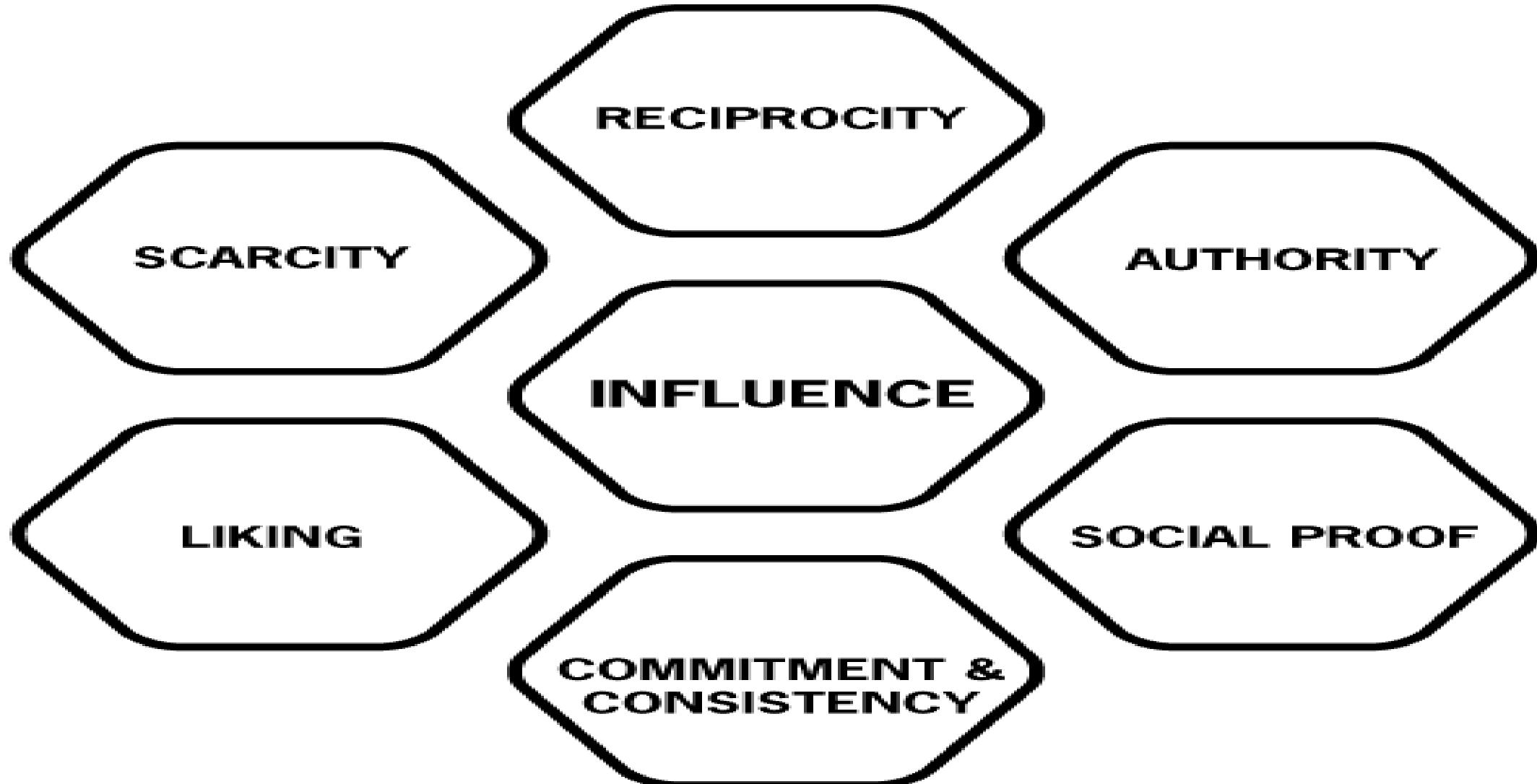
- *Individuation—people's need to be distinguishable from others in some respects*
- People's need to maintain control over their lives
- Some people cannot conform
 - Due to physical, legal, or psychological reasons

Minority Influence

- Minorities can influence majorities when:
 - They are consistent, flexible, and congruent with social trends
- Minorities can provoke majorities to engage in systematic processing of the issues.
- Minorities often must form strong arguments to defend their positions and may overestimate the support for their views.
 - Can increase their perseverance and result in large-scale social change

Compliance

Six Principles of Compliance: (Cialdini, 1990s)



Compliance

- Tactics based on **friendship or liking**
 - ***Ingratiation—requesters first induce target to like them***
 - Use flattery, improve one's appearance, emit positive nonverbal cues, do small favors for target person
- Tactics based on **commitment or consistency**
 - ***Foot-in-the-door Technique—requesters begin with a small request and then, when it is granted, escalate to a larger one***
 - ***Lowball Procedure—an offer or deal is changed to make it less attractive to the target person after this person has accepted it***

Compliance

- **Tactics based on reciprocity**

- **Door-in-the-face Technique**—requesters begin with a large request and then, when this is refused, retreat to a smaller one
- **That's Not All Technique**—requesters offer additional benefits to target persons before they have decided whether to comply with or reject specific requests

- **Tactics based on scarcity**

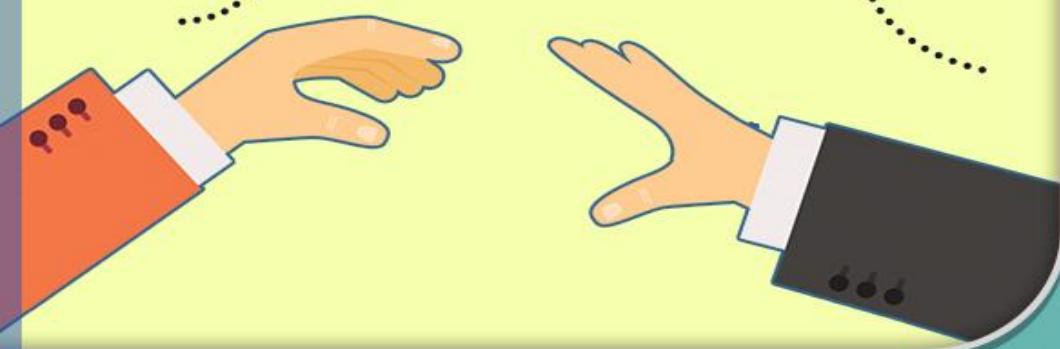
- **Playing Hard to Get**—suggesting that a person or object is scarce and hard to obtain
- **Deadline Technique**—target persons are told that they have only limited time to take advantage of some offer or to obtain some item



Foot-in-the-door Technique:

**Following up a smaller request
with an even bigger one such
that the subject complies on the
grounds of the bond created.**

Can I borrow
\$100? I don't have
that much.



Can I borrow \$10?
Yeah, sure.



Door-in-the-face Technique:

Following up an extravagant request with a reasonable one such that the (guilty) subject complies.

Obedience to Authority

- ***Obedience—form of social influence in which one person simply orders one or more others to perform some action(s)***
 - Obedience in the laboratory: Milgram's Obedience Studies (1963, 1965a, 1974)
 - Participants told to deliver increasing levels of shock to a “learner” each time he made an error on a learning task
 - 65% obeyed to the fullest extent (proceeded to the end of the series, to the final 450-volt level)
 - Similar findings were found in many cultures and with adults and children.

Group Assignments

Case Study

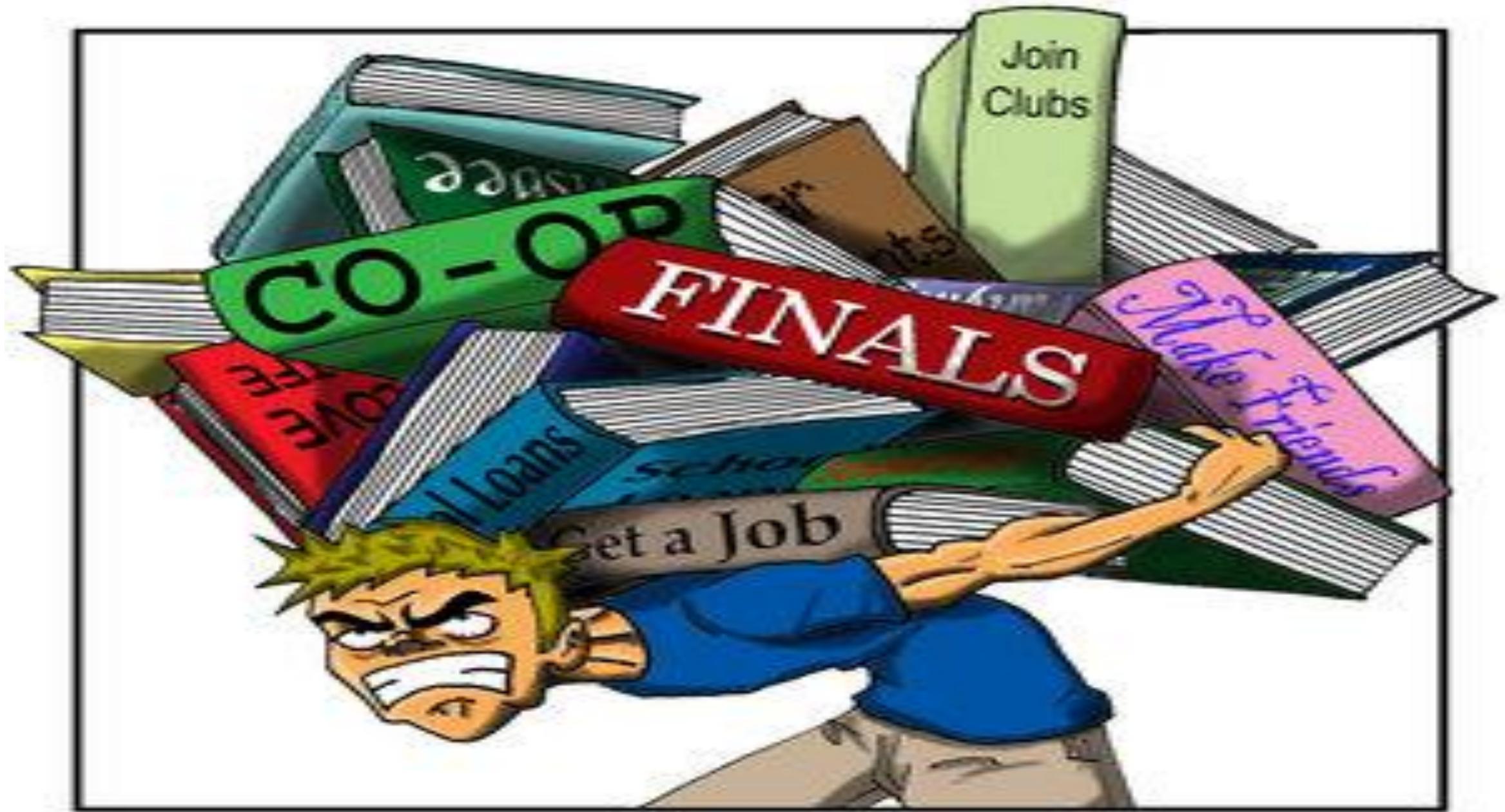
Rohan and Sameer are two newly joined teachers. Their colleagues decided to go on a one day strike due to pay and conditions. When Rohan was asked why he went on strike, he said “after sitting in the staff room and hearing the arguments from my colleagues, I realized they were right and conditions are really getting worse for teachers. When Sameer was asked he said “I just fancied a day off and did not want one to be sitting in the office alone. So I deicide to join everyone else.

Q. Identify the type of social influence. Provide explanation for Sameer and Rohan’s behavior with reference to social influence identified.

Stress







STRESSED STUDENT

CONSTANTLY ANXIOUS
ABOUT NEXT
ASSIGNMENT.

GRINDS TEETH.

HEART IS VIBRATING FROM
CAFFEINE OVERDOSES.

PORTFOLIO IS FULL OF 124
SKETCHES OF THE SAME THING
OVER AND OVER, AT
DIFFERENT ANGLES,
DIFFERING VIEWS,
BUT NO FINISHES!



HAIR?! WHO HAS TIME
TO DO THEIR HAIR!?
PULLS HAIR OUT.

BITES FINGER NAILS.

WEARS SHIRT 3
DAYS IN A ROW.

SWEAT.

BAG?! BAG IS
FULL OF ENERGY
DRINKS AND
SUPPLIES - WHAT'S
IT TO YOU!?

FEET HURT FROM
RUNNING AROUND
LIKE AN IDIOT.

Adjustment

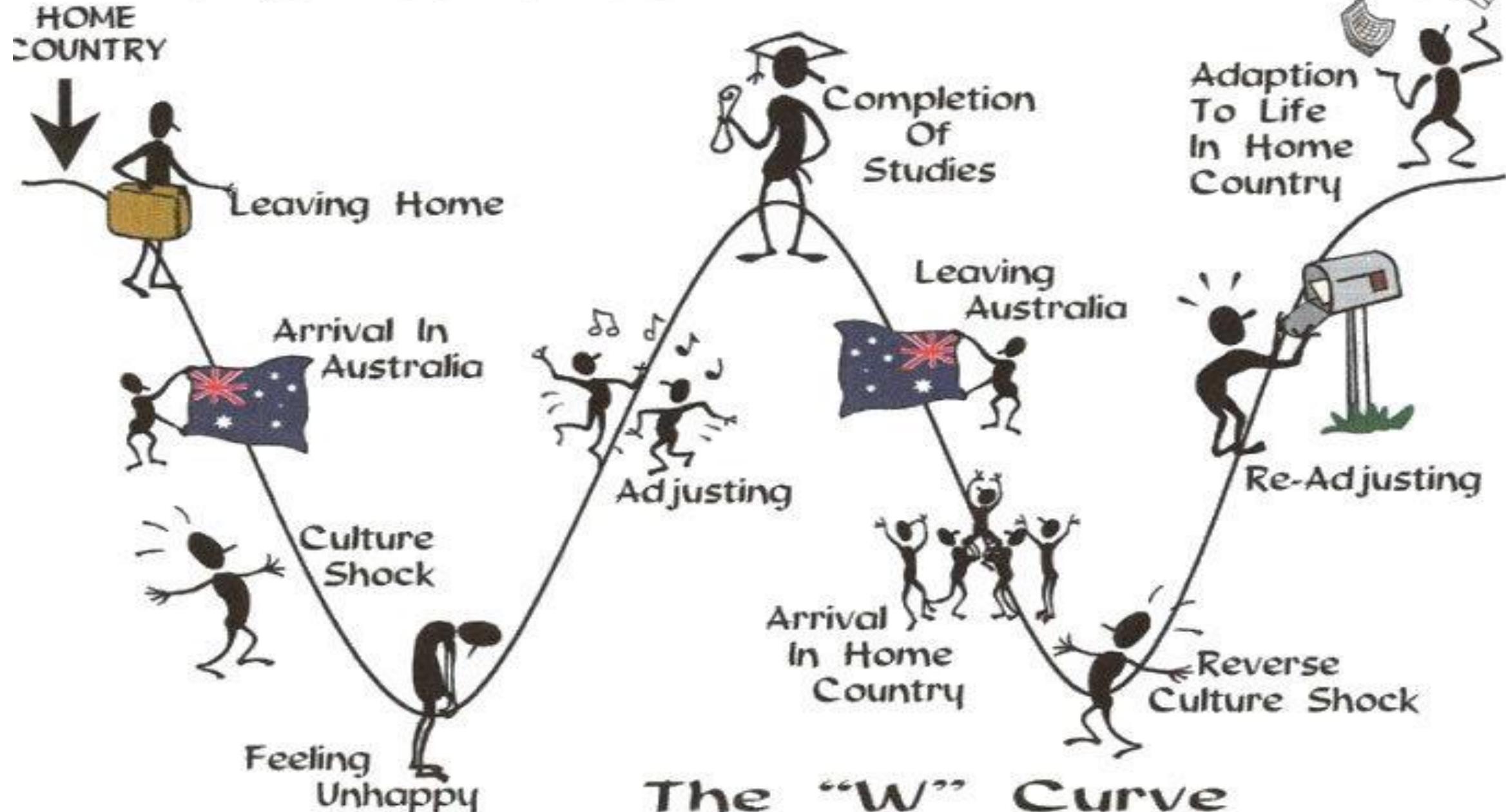
Adjustment

Refers to the psychological processes through which people manage or cope with the demands and challenges of everyday life

Witen & Lloyd, 2005

- Adjustment and Adaptation
- Adjustment: Internal and External Demands

THE PROCESS OF ADJUSTMENT



Stress could be

- ✓ an individual's response to any challenging, frightening, or difficult situation
- ✓ an individual's response or reaction to a real or imagined threat, event or change
- ✓ a stimulus , response or an interaction between an organism and its environment
- ✓ be embedded in the environment
- ✓ be self created or self imposed

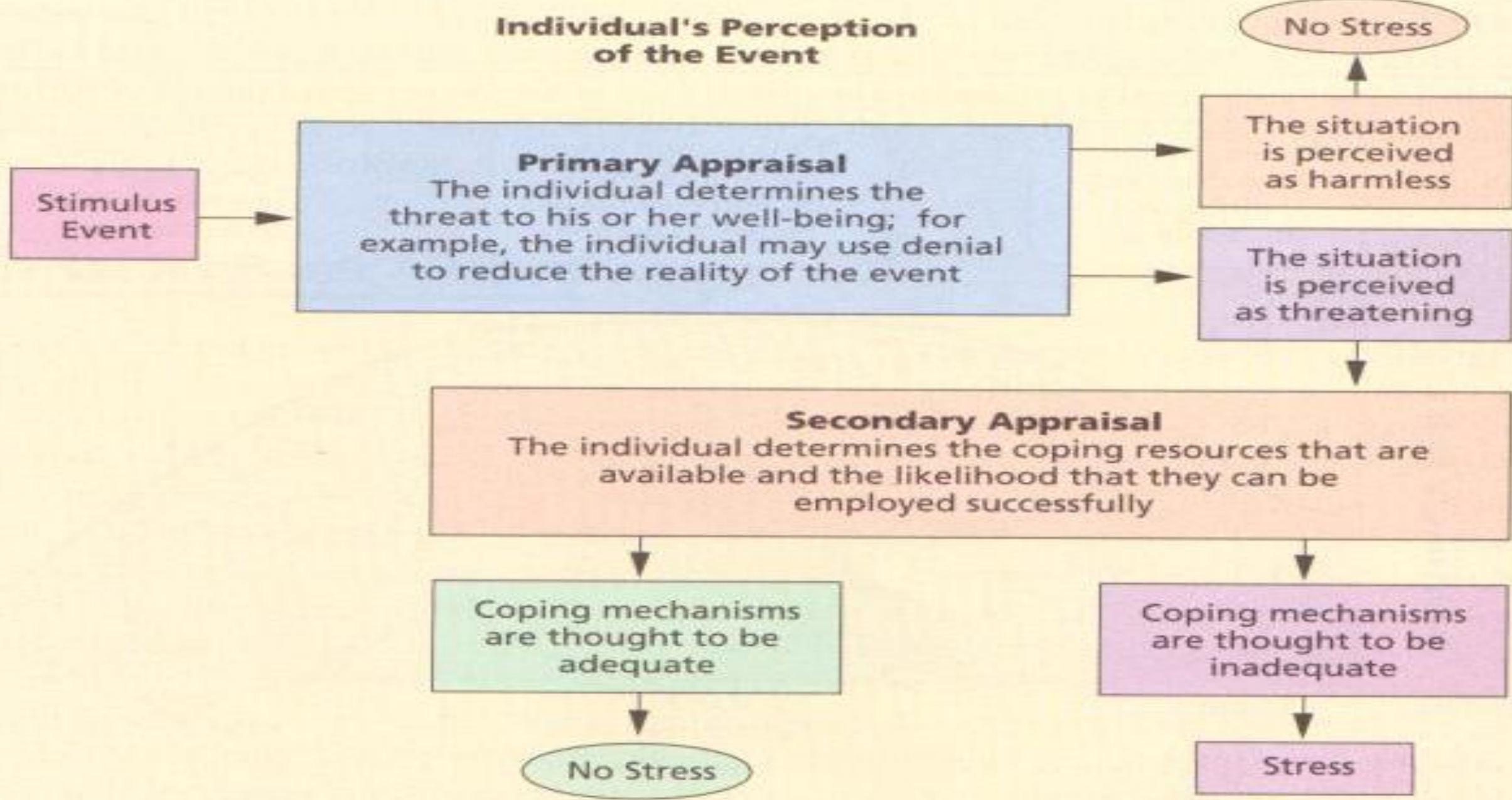
Stress

It is a condition or feeling experienced when a person perceives that “demands exceed the personal and social resources the individual is able to mobilize.”

✓ Subjective Perception: Stress Lies in the eyes of beholder

❑ Lazarus and Folkman (1984: Appraisal of Stress)

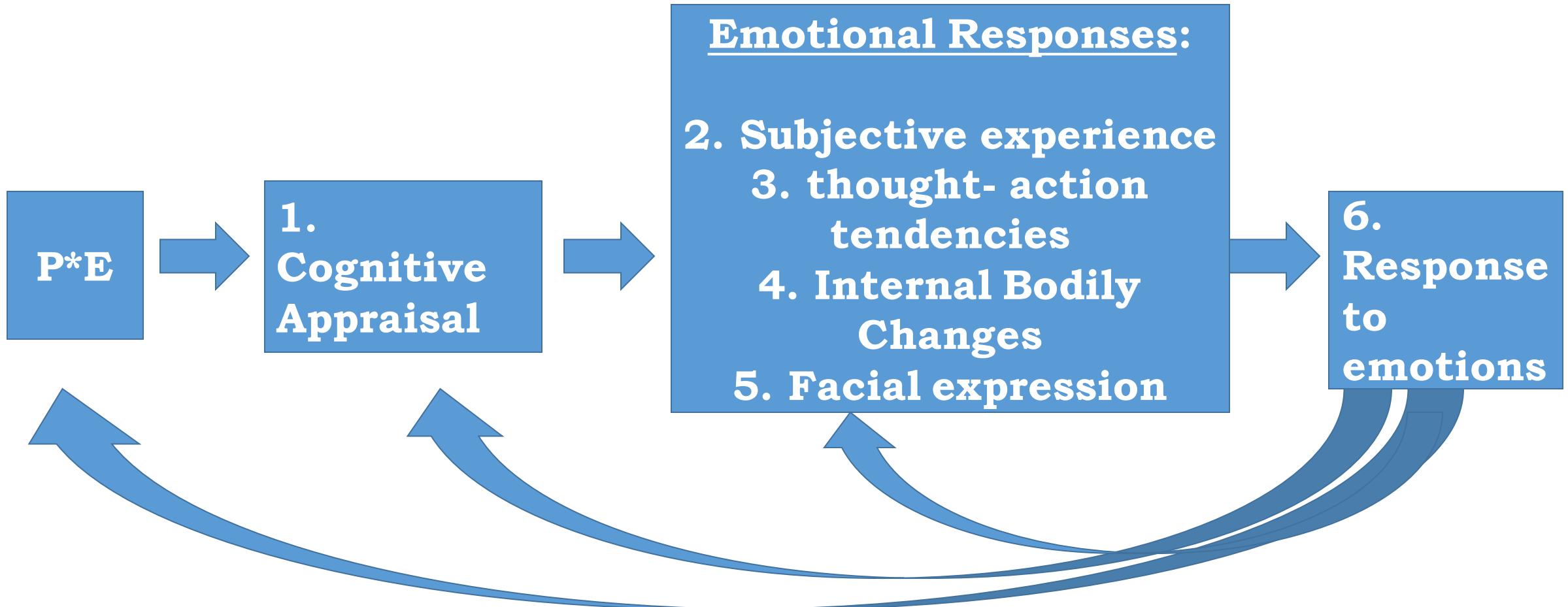
- Primary Appraisal: Refers to evaluation whether an event is irrelevant, relevant but not stressful or stressful
- Secondary Appraisal: When an event is perceived as stressful it forces an individual to evaluate his/ her available coping resources to deal with the stress



- Secondary appraisals (SA) involve those feelings related to dealing with the stressor.
- Examples of Positive SA:
 - “*I can do it if I do my best*”,
 - “*I will try whether my chances of success are high or not*”
 - “*If this way fails, I can always try another method*”
- Examples of Negative SA:
 - “*I can't do it; I know I will fail*”
 - “*I will not do it because no one believes I can*”
 - “*I won't try because my chances are low*”

- "In the stage of primary appraisal, an individual tends to ask questions: "*What does this stressor and/ or situation mean?*", and, "*How can it influence me?*" The three typical answers to these questions are:
 - "*this is not important*"
 - "*this is good*"
 - "*this is stressful*"
- At this stage one tends to classify whether the stressor or the situation is a **threat**, a **challenge** or a **harm-loss..**

Process of Emotions



If people could be induced to be in a general state of autonomic arousal, the quality of their Emotion would be determined solely by their appraisal of the situation

- ✓ Stressors: Any threat, event or change
 - ❑ Stressors can be internal (thoughts, beliefs, attitudes or external (loss, tragedy, change)

- ✓ Hans Selye (1956)
 - ✓ “Stress is not necessarily something bad – it all depends on how you take it.”

Stress: Two Aspects

➤ Positive Aspect: Eustress

- Outcome of Eustress
 - Enables concentration
 - Increases performance
 - Energizes you into motion

➤ Negative Aspect: Distress

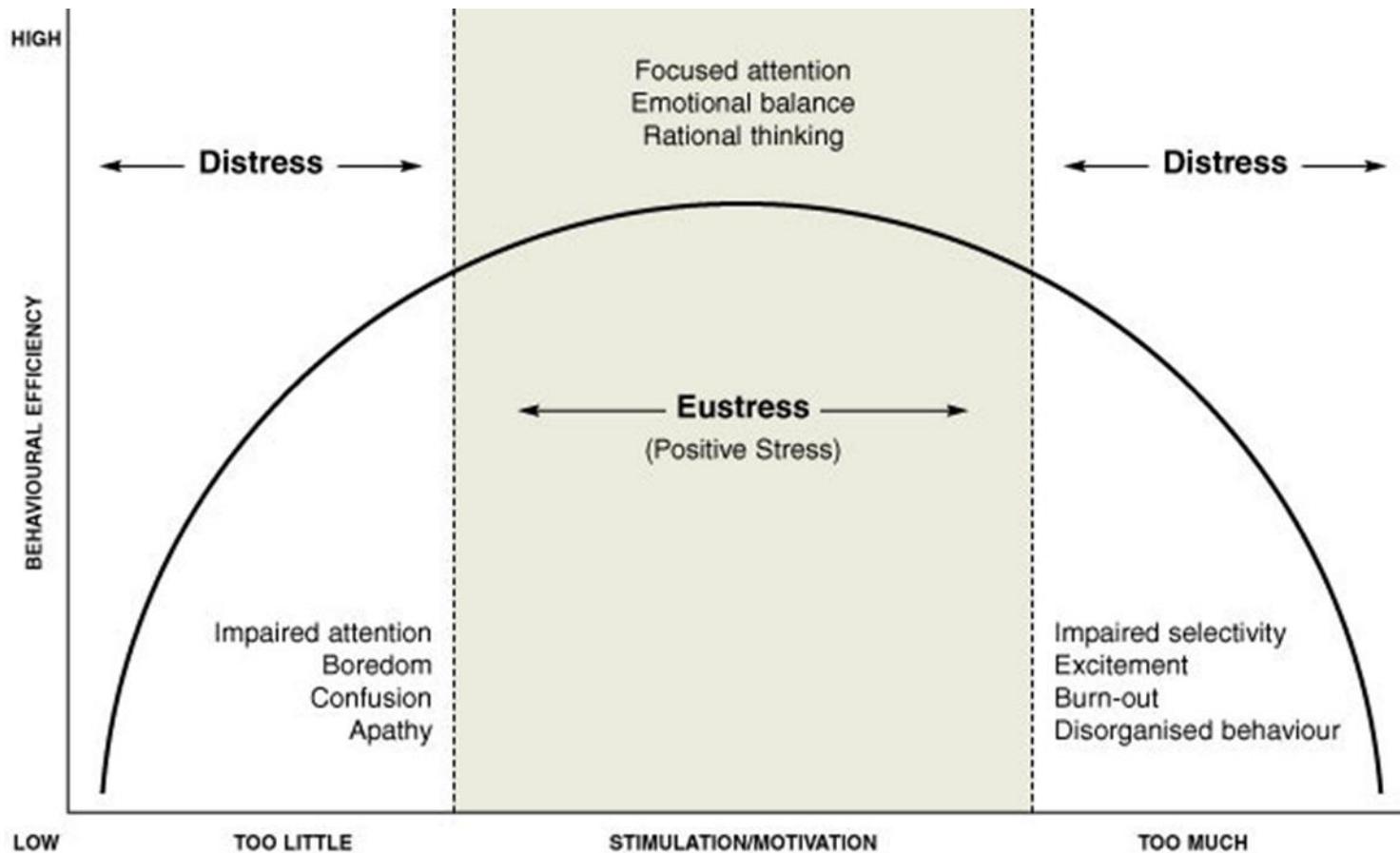
- Outcome of distress
 - Causes anxiety or concern
 - Loss of motivation
 - Reduces effectiveness
 - Physical, mental, and behavioral problems
 - Can lead to mental and physical problems



Top stressors among college students

- Relationships
- Time Management
- Finals and Midterms
- Roommates
- Finances
- Addictions
- Family Needs
- Lack of Resources
- Difficulty Prioritizing
- Illness
- Social pressures and expectations
- Environmental and cultural changes
- Loss: Literal loss & Loss of comfort

Stress and Performance



Culture and Stress

Culture:

“the set of ideas, beliefs, expectations and behaviours that are shared by a particular group of people.”

An individual’s culture could affect the experience of stress in a number of ways including:

- The types of stressor to which they are likely to be exposed
- The way these stressors are perceived and understood
- The extent of the physiological stress response produced
- The coping mechanisms available to deal with the stressor

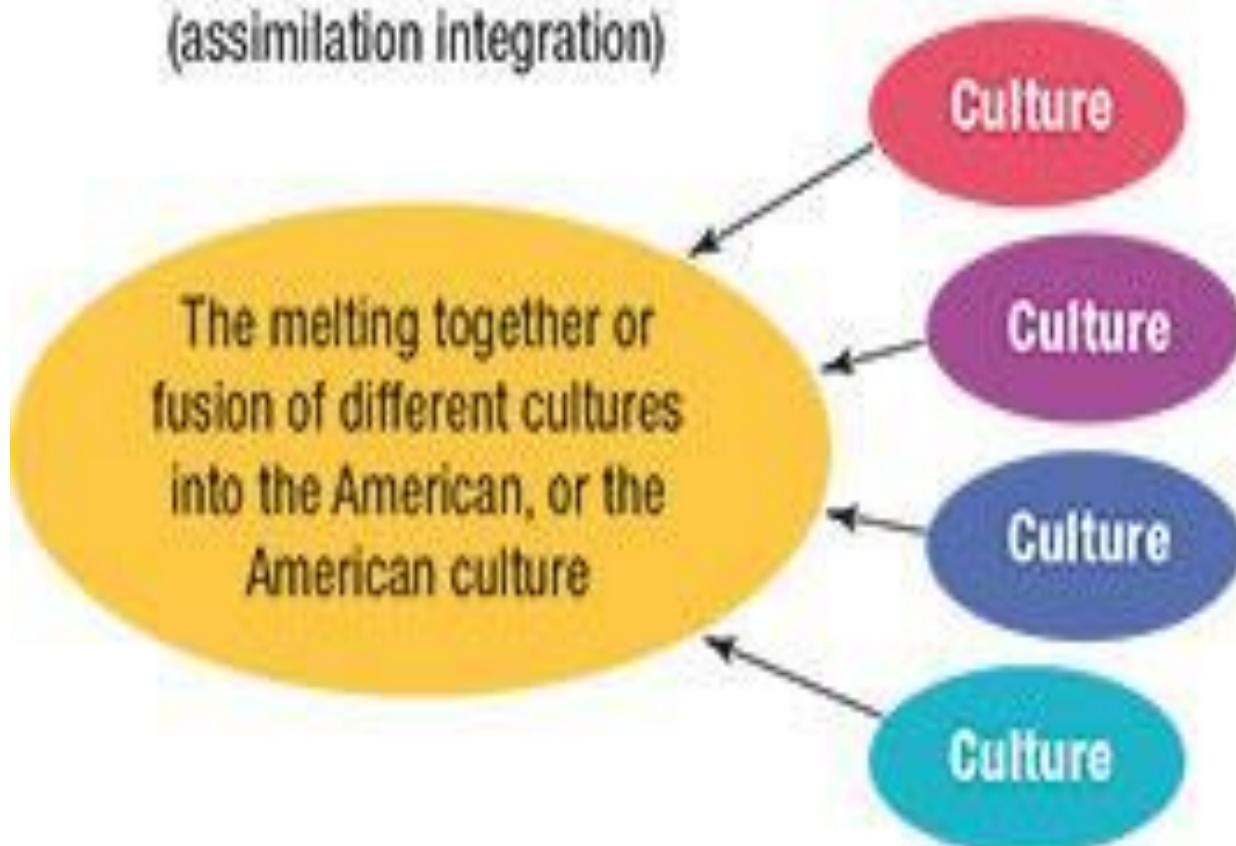
- Different cultural groups inhabit different geographical, economic and political areas. For this reason, they are likely to be exposed to different types of stressful event.
 - UK defines stress in terms of the workplace (e.g. job overload), the social environment (e.g. family relationships) and economic factors (e.g. debt).
 - In some parts of the world natural disasters such as earthquakes, floods and tornadoes are more common, making exposure to extreme stressors. Other parts of the world may be affected by war or famine that make daily survival very difficult and render the types of concerns that
- Different sources of stress are experienced by members of a minority culture living within a majority culture

Adjustment to a New Culture



Salad Bowl vs. Melting Pot

Melting Pot (assimilation integration)



Salad Bowl (pluralistic integration)



❑ **Assimilation:** The process of two different things coming together to blend and, in some cases, create a new thing all together.

- Assimilation is a process whereby people of a culture learn to adapt to the ways of the majority culture.
- Threat to loss of one's own culture

❑ **Acculturation:** The process of becoming communicatively competent in a culture we have not been raised in.

- A process in which an individual absorbs the culture of the host country, while retaining the traditions of their original heritage.

Both models of multicultural societies have contradictory aspects:

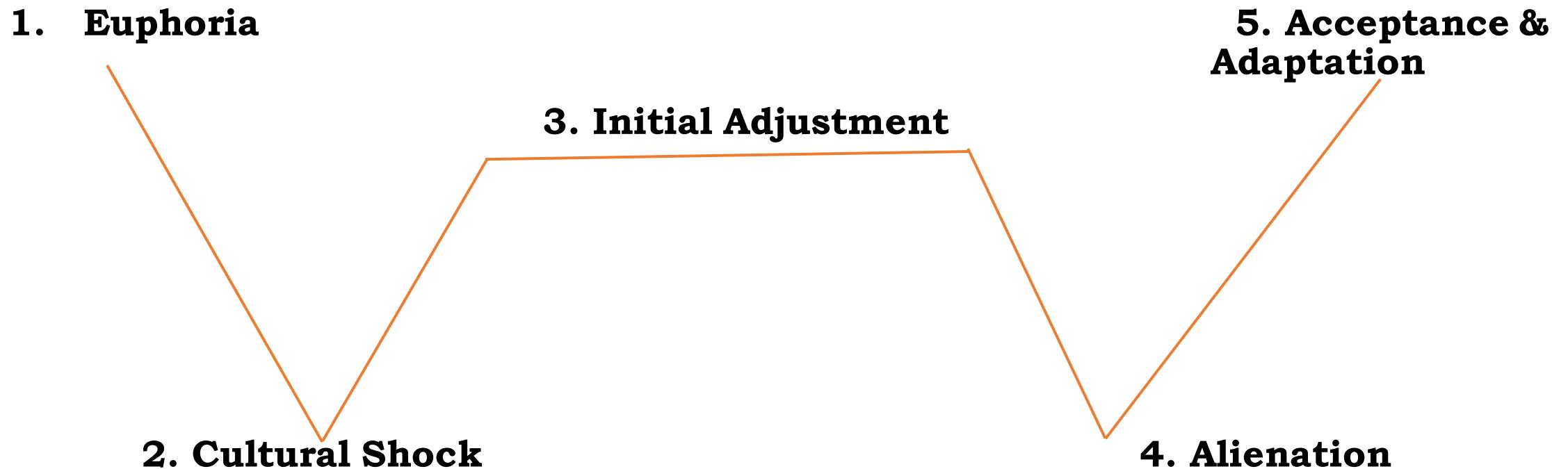
- in a melting pot there is no cultural diversity and sometimes differences are not respected;
- in a salad bowl cultures do not mix at all.

So which model is better?

The ideal situation would be a society where all citizens have equal rights and opportunities, but can also maintain their own individuality.

It is not easy to put this ideal into practice, but multiracial society is now a reality and we must learn to live together in the best possible way.

Acculturation process



Major Types of Stress

- **Frustration: Blocked Goals**
- **Conflict: Incompatible motivations**
- **Pressure: Perform/ Conform**
- **Change: Having to adapt**

- Conflict occurs when two or more incompatible motivations or behavioral impulses compete for expression.
- Approach-approach conflict occurs when a choice must be made between two attractive choices.
- Avoidance-avoidance conflict occurs when a choice must be made between two unattractive goals.
- Approach-avoidance occurs when a choice must be made about whether to pursue a single goal that has both attractive and unattractive aspects.

Impact of Stress

- Health
- Burnout
- PTSD

STRESS OR BURN OUT?

Stress

- Over-engagement
- Emotions are over-reactive
- Urgency and hyperactivity
- Loss of energy
- Leads to anxiety disorders
- Primary damage is physical
- May kill you prematurely

Burnout

- Disengagement
- Emotions are blunted
- Helplessness and hopelessness
- Loss of motivation, ideals, and hope
- Leads to detachment and depression
- Primary damage is emotional
- May make life seem not worth living

Factors Influencing Stress Tolerance

- **Predictability:** being able to predict the occurrence of a stressful event-even if the individual cannot control it usually reduces the severity of stress.
- **Control over Duration:** Having control over the duration of a stressful event reduces the severity of the stress.
- **Cognitive Evaluation:** The severity of any stressful event also depends on how person perceives and appraise it.
- **Social Support:** The emotional support and concern of other people can make stress more bearable.



Hey, are you feeling stressed?

Faced with many challenges in life? You can learn to tackle them.

I can't finish my revision. I'm so stressed!



I just can't face my problems.



I'm really angry!



I need a break!



Tackling Exam Stress

- Start revision early.
- Stick to a revision timetable.
- Set realistic targets.
- Seek help when in doubt.
- Be prepared.

Staying Positive

- Believe that you can face any challenge.
- See the positive side of any situation.
- Mistakes are not failures. Learn from them.
- Be strong.

Managing Anger

- Do not use hurtful words. Walk away.
- Take a few deep breaths.
- Think through the problem and resolve it calmly.
- Stay cool.

De-stressing and Relaxing

- Talk to your family, teacher or friend.
- Exercise or play a sport with your friends.
- Go for a movie or read your favourite novel.
- Be happy.

HAVE YOU TRIED ANY OF THESE TIPS?

Share these tips with your friends and help them cope with their challenges too!

To find out more about managing your mental wellness, visit www.hpb.gov.sg or call HealthLine at 1800 2231313.

Suggestions for reducing stress levels and enhancing your college Experience

- Keep your space and consequently your mind organized.
- Go to class
- Keep up with course work (the rule of thumb is two hours of study per one hour in class).
- Get involved with campus activities.
- Maintain communication with your family.
- Take advantage of campus resources and choose a career path.
- Form healthy relationships.
- Talk to someone about your problems (family member, friend, college counselor or any trusted person).
- Get to know your professors.

Answer the following questions by using following scale:

1= Rarely, 2= Occasionally, 3= Frequently, 4= Often, 5 = Always

1. ___How often do you find that you stay online longer than you intended?

2. ___How often do you neglect household chores to spend more time online?

3. ___How often do you prefer the excitement of the Internet to intimacy with your partner?

4. ___How often do you form new relationships with fellow online users?

5. ___How often do others in your life complain to you about the amount of time you spend online?

6. How often do your grades or school work suffer because of the amount of time you spend online?
7. How often do you check your e-mail before something else that you need to do?
8. How often does your job performance or productivity suffer because of the Internet?
9. How often do you become defensive or secretive when anyone asks you what you do online?
10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?
11. How often do you find yourself anticipating when you will go online again?

12. How often do you fear that life without the Internet would be boring, empty, and joyless?
13. How often do you snap, yell, or act annoyed if someone bothers you while you are online?
14. How often do you lose sleep due to late-night log-ins?
15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being online?
16. How often do you find yourself saying “just a few more minutes” when online?
17. How often do you try to cut down the amount of time you spend online and fail?

18. How often do you try to hide how long you've been online?
19. How often do you choose to spend more time online over going out with others?
20. How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?

Scoring: Internet Addiction

- **NONE 0 – 30 points**
- **MILD 20- 39 points:** You are an average online user. You may surf the Web a bit too long at times, but you have control over your usage.
- **MODERATE 40 -69 points:** You are experiencing occasional or frequent problems because of the Internet. You should consider their full impact on your life.
- **SEVERE 70 – 100 points:** Your Internet usage is causing significant problems in your life. You should evaluate the impact of the Internet on your life and address the problems directly caused by your Internet usage.

Coping

Cope

- (Of a person) deal effectively with something difficult

Coping

- “Efforts to master, reduce, or tolerate the demands created by stress”
- General points for consideration:
 1. People cope with stress in many ways.
 2. It is most adaptive to use a variety of coping strategies.
 3. Coping strategies vary in their adaptive value.

Common Coping Patterns

Giving up

- People may develop ***learned helplessness*** – “passive behavior produced by exposure to unavoidable aversive events”.
- Sometimes, could then be transferred to situations in which the person is *not* really helpless.
- This then creates a passive reaction to stressful events, rather than active problem-solving.

A Small Story

- “*The very thought “Nothing I do matters” prevents us from acting.*”
- Two fish were put into the same tank. One was big, and one small. The species of the small fish was one of the favorite foods of the big fish. The big fish took off after the little fish, but a pane of glass separated them, so the big fish smashed his face...over and over again. Finally, big fish gave up. Then the experimenters removed the pane of glass, but the big fish never again tried to eat the little fish. Sometimes the two fish would swim right past each other, sometimes they would even brush up against each other, but the big fish never made another attempt.
- Apparently, big fish was convinced he/ she couldn't do it, no matter how hard he tried.

- Morale of the story:
- we can assume our helplessness is permanent, even when it isn't. If we make that assumption, we just give up. We feel hopeless and have no energy, because we believe all our efforts are in vain

Giving up, continued

- **Cognitive interpretation** of aversive events may determine whether we feel helpless or not.
 - People with a **pessimistic explanatory style** view aversive events as “out of their control”, feel helpless, and give up.
- In general, it has been found that optimists (people who have general expectancies of good outcomes) seem to be much more stress resistant than pessimists (people who have general expectancies for poor outcome).
- Hardiness is another characteristic that save an individual from harmful effect of stress. Hardy persons show three characteristics
 - Exhibit higher levels of commitment
 - They tend to perceive change as a challenge
 - They have high sense of personal control over events.

2. Acting aggressively

- Frustration caused by stressful events may elicit **aggression**, “behavior intended to hurt someone, either physically or verbally”.
- People often act out toward others who had nothing to do with their frustration.
- Using a substitute target in this manner was called **displacement** by Freud.

- Freud believed aggressive acts could release pent-up emotional tension and called the process **catharsis**.
- However, research finds that acting aggressively produces *more*, not less, anger and aggression.

3. Indulging yourself

- When stressed by events that are going poorly, some people seek out alternative sources of satisfaction:
 - Excessive eating, drinking, and smoking;
 - gambling & drug use; **and**
 - ***Internet addiction*** – “spending an inordinate amount of time on the Internet and inability to control online use”

4. Blaming yourself

- People often become highly critical of themselves when stressed.
- Albert Ellis called this ***catastrophic thinking***, which involves
 - Attributing failures to personal shortcomings;
 - Focusing on negative feedback; **and**
 - Being overly pessimistic about the future.
- This pattern perpetuates negative emotional reactions to stress.

5. Using defensive coping

- ***Defense mechanisms*** are “largely unconscious reactions that protect a person from unpleasant emotions such as anxiety and guilt”.
- Defense mechanisms shield us from emotional discomfort caused by stress.
- However, most involve a degree of ***self-deception***, a distortion of reality.

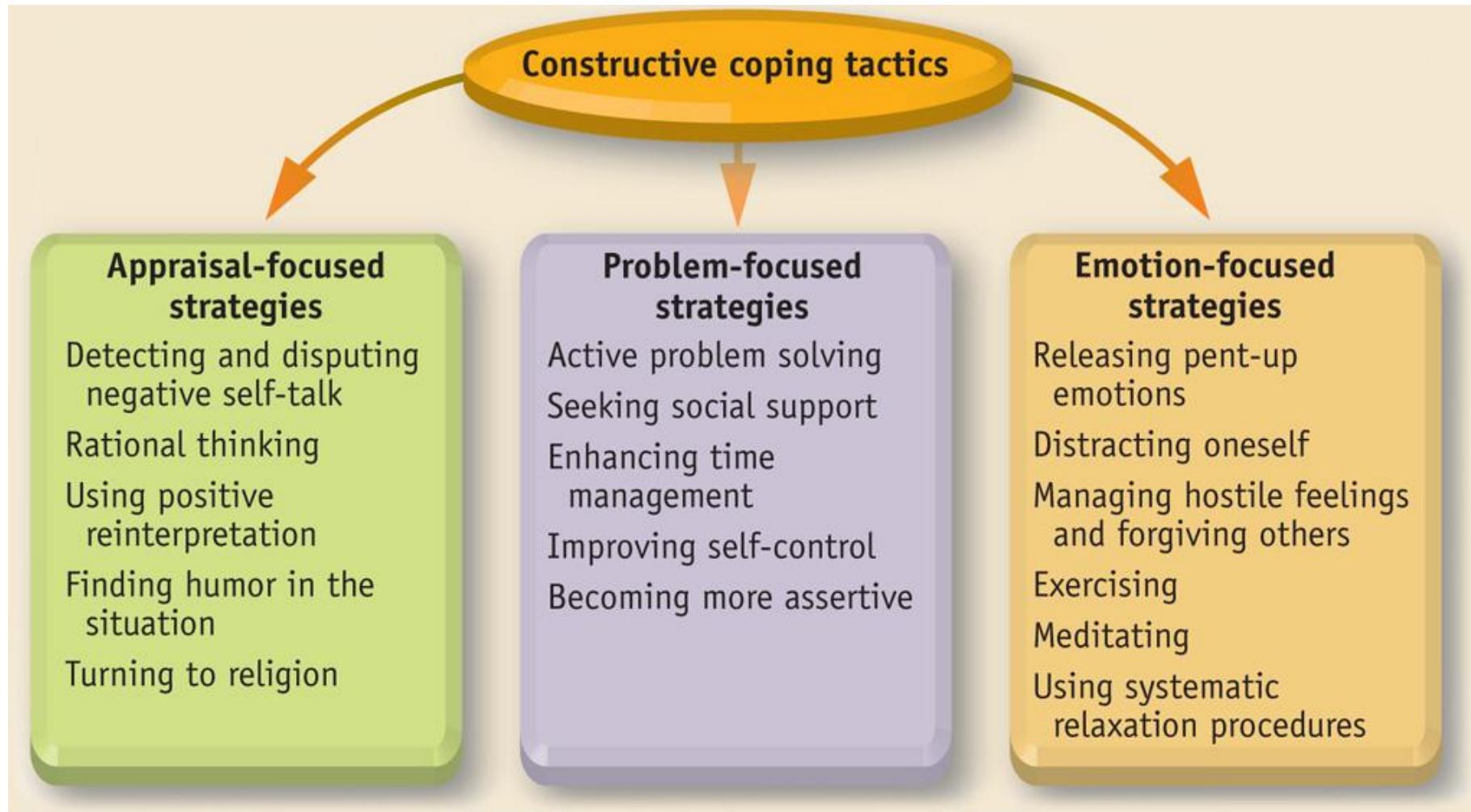
- Defense mechanisms are considered normal, and can operate at various levels of consciousness.
- Can they ever be healthy?
 - Generally, they are not, because
 - They are avoidance strategies;
 - They often involve “wishful thinking”; **and**
 - Some have been linked to poor health.

Are they healthy?, continued

- Sometimes, however, they are useful for *severe* stress because they buffer us from extremely negative emotions.
 - (e.g., unrealistic optimism may benefit a terminally ill patient.)

There are three main categories of **constructive** coping strategies:

1. Appraisal-focused
2. Problem-focused
3. Emotion-focused



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Figure 4.6. Overview of constructive coping tactics. Coping tactics can be organized in several ways, but we will use the classification scheme shown here, which consists of three categories: appraisal-focused, problem-focused, and emotion-focused strategies. The list of coping tactics in each category is not exhaustive. We will discuss most, but not all, of the listed strategies in our coverage of constructive coping.

Appraisal-Focused Coping

- Our *appraisal* (or beliefs about stressful events) is critical to the coping process.
 - Negative appraisals (or beliefs) are often associated with catastrophic thinking, which exaggerates the magnitude of our problems.
 - Positive (realistic and/or optimistic) appraisals allow constructive coping.

- Positive reinterpretation can also buffer stress in the following ways:
 - We can recognize that “things could be worse”.
 - We can utilize “benefit finding” in a bad situation (searching for something good in a bad experience).

Problem-Focused Coping

- **Using systematic problem-solving**
- Evidence shows that problem-solving skills can be increased through training (Heppner & Lee, 2002, 2005) and by using these steps:
 1. Clarify the problem.
 2. Generate alternative courses of action.
 3. Evaluation alternatives and select a course of action.
 4. Take action while maintaining flexibility.

- **Seeking help**
 - It is often helpful to seek aid from friends, family, coworkers, and neighbors.
 - Cultural factors in seeking help:
 - Asians, Asian Americans, and individuals from collectivistic cultures are less likely to seek help from others.
 - This is based in a cultural tendency to avoid “burdening” others with one’s problems.

- **Using time more effectively: Time Management**
 - A common source of stress is feeling there is not enough time to accomplish tasks.
 - Often, this can be improved by using the time we have more effectively.

Using time more effectively, continued

- **The causes of wasted time**
 1. Inability to set or stick to priorities.
 2. Inability to say “no” to others’ demands on our time.
 3. Inability to delegate responsibility.
 4. Inability to throw things away.
 5. Inability to accept anything less than perfection.

Using time more effectively, continued

- **The problem of procrastination**
 - About 70-90% of college students put off academic assignments (Knaus, 2000).
 - Many claim to benefit from this tactic (e.g., saying they “work well under pressure”).

- **Why do students procrastinate?**
 - Desire to minimize time on a task.
 - Desire to optimize efficiency.
 - Close proximity to reward.
 - Students often get rewarded for it.
 - However, procrastinators also tend to experience more anxiety and health problems.

- **Time management techniques**
 1. Monitor your use of time – keep a record to see where it all goes (see Figure 4.11).
 2. Clarify your goals – decide what you want to accomplish with your time.
 3. Plan your activities using a schedule – planning saves time in the long run.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7 a.m.	Wake-up, jogging, shower, breakfast with family					Sleep in	Sleep in
8							
9	Bus to campus	Molly to daycare	Bus to campus	Molly to daycare	Bus to campus	Walk at beach with Vic	Waffles for family. Read Sunday paper
10	Medical Anthropology	Prepare lecture	Medical Anthropology	Prepare lecture	Medical Anthropology		
11	↓ Teach class		↓ Teach class			Clean house	
12 noon	lunch	lunch	lunch	lunch and shopping with Barbara	lunch		Hiking and picnic with family and Tom
1 p.m.	Biology seminar	pick up Molly at daycare	writing at home		pick up Molly at daycare	Work in garden	
2		writing at home		Lab work	writing at home		
3		Drive Florrie to piano lesson					
4					Molly to dentist		
5			Grocery shopping			Practice guitar	
6	Dinner at home	Dinner at home	Dinner at home	Dinner at home	Dinner out with Vic	Pick up babysitter	
7	Spend time with Vic and kids			Spend time with Vic and kids		Party at Reid's	Call mother
8	Guitar lesson		Women's meeting	Band rehearsal			
9		Practice guitar	Practice guitar				Watch TV
10	Reading and journal						
11	Sleep						
12							
1 a.m.							

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Figure 4.11. Example of a time log. Experts recommend keeping a detailed record of how you use your time if you are to improve your time management. This example shows the kind of record keeping that should be done.

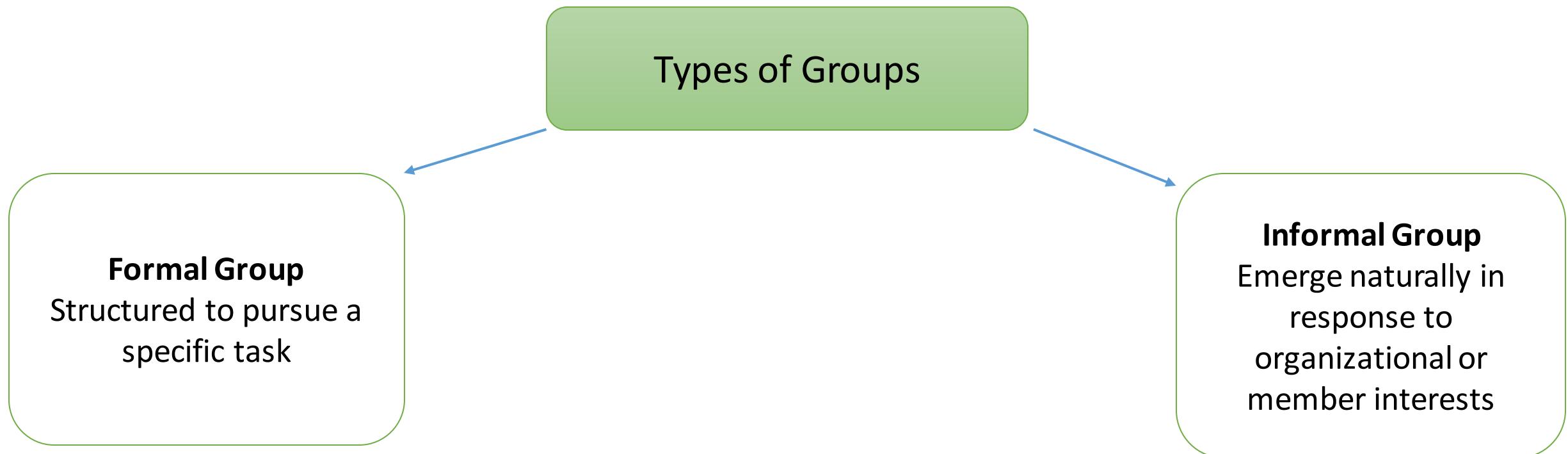
4. Protect your prime time – announce to others when you’re blocking off certain times to work so you won’t be interrupted.

5. Increase your efficiency. Try these tips:

- Handle paper once.
- Tackle one task at a time.
- Group similar tasks together.
- Make use of your “downtime”.

Group Dynamics

- The social process by which people interact and behave in a group environment is called group dynamics.
- Group dynamics involves the influence of personality, power, and behavior on the group process.



Group Development/Formations

Tuckman's Theory

Forming	The major goals of the group have not been established. The nature of the task or leadership of the group has not been determined
Storming	In this stage, the group is likely to see the highest level of disagreement and conflict. Members often challenge group goals and struggle for power. Individuals often vie for the leadership position during this stage of development.
Norming	This stage is characterized by the recognition of individual differences and shared expectations. Hopefully, at this stage the group members will begin to develop a feeling of group cohesion and identity.
Performing	Performing, occurs when the group has matured and attains a feeling of cohesiveness. During this stage of development, individuals accept one another and conflict is resolved through group discussion.
Adjourning	Not all groups experience this stage of development because it is characterized by the disbandment of the group.

Group Structure

- Effective group performance depends to a large extent, on the size and composition of the group. A group may consist of as few as two people
- Individual skills and performance must be a consideration in forming a group
- Diversification is a factor in both group development and skill requirement.

Group Structure

- Four Major Components of a Group

Group Size

Group Role

Group Norms

Group Cohesiveness

Group Size

- Group Size differ with respect to the type of group.
- Large groups are good for gaining divers perspective but they effect the individual performance.

Group Role

- Various parts played by the members of the group
- Two elements that define the identity of a group member

Role
Perception

Role
Expectation



- An individual is expected to behave according to their own perception in a group

- How others believe that one should behave in a group

Group Norms

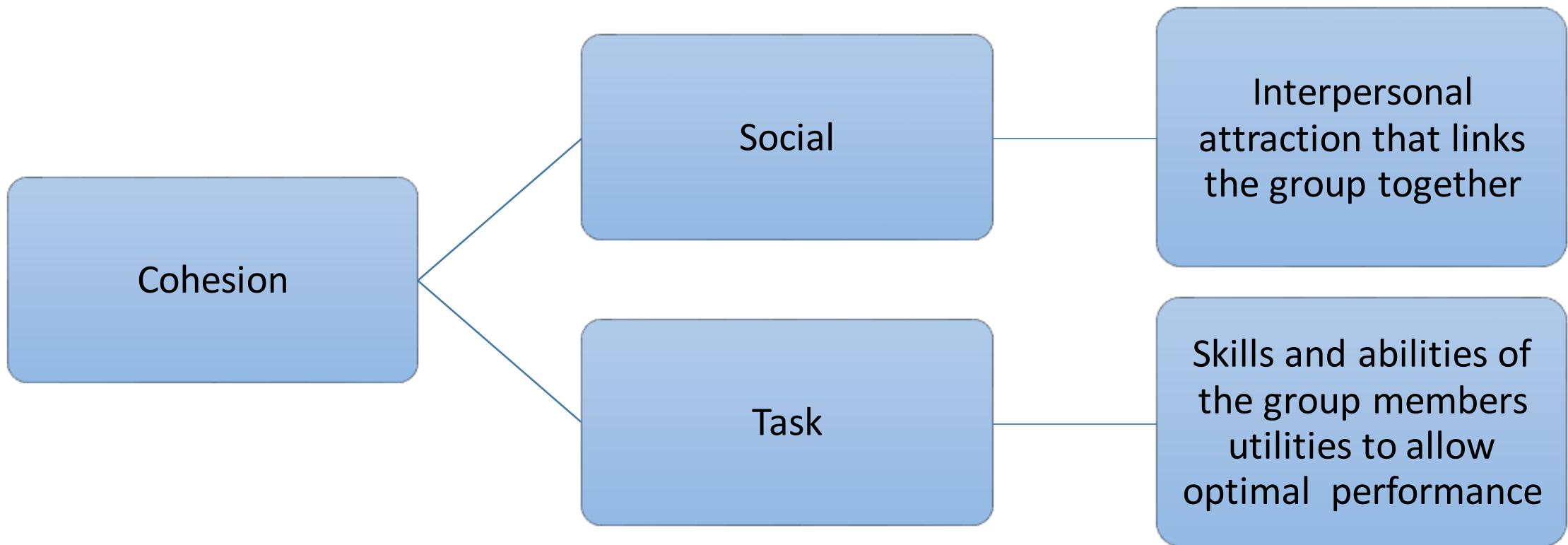
- Acceptable standards of behavior within a group that are shared by the group's member.
- Group Norms mainly serve three functions

Predictive – basis for understanding others behavior

Relational – define relationships

Control – regulate the behavior of others

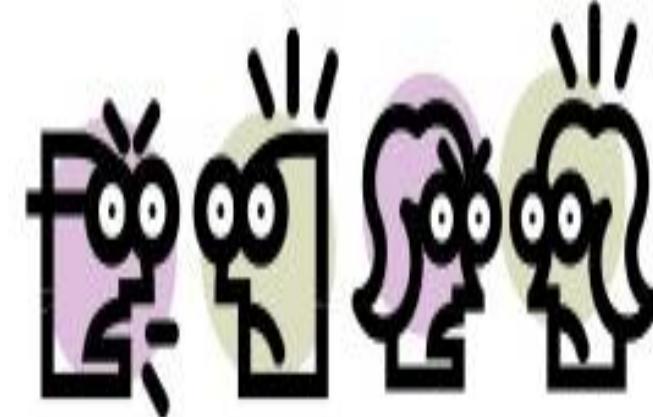
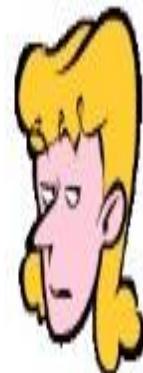
Group Cohesiveness



Who won, and why?

Did your group act like this....

... Or like this?



High Cohesiveness

- Unity
- Interactive
- Positive Feelings
- Ability to Cope with Problems
- More Productive

Low

Cohesiveness

- Negative Feelings
- More Problems
- Less Productive

Groups with High Cohesiveness Get Better Results!

Group Phenomenon

Brain Storming	Groups can energize thought but can also be inefficient in sharing and compiling ideas
Social Loafing	The reduction of individual effort when people work in groups compared to when they work alone
Group Polarization	The tendency to respond in a more extreme way when making a choice or expressing an opinion as part of a group, as opposed to when responding individually
Group Think	Occurs when a group with a particular agenda makes irrational or problematic decisions because its members value harmony and coherence over accurate analysis and critical evaluation.



Technology, Society and Environment



Rajbala Singh

What is Technology?

- ▶ **Origin:** *techne* + *logos*
 - ▶ Techne: art, skill, craft, or the way, manner, or means by which a thing is gained
 - ▶ Logos: word or the utterance by which inward thought is expressed e.g., a saying, or an expression.
 - ▶ Technology: Words or discourse about the way things are gained.
- ▶ Technology can be defined as “purposeful intervention-by-design”
 - ▶ It is a human activity, known as ‘technological practice’, that results in technological outcomes that have impact in the world
 - ▶ Technology uses and produces technological knowledge

Technology: Contemporary Usage

- ▶ **Technology as a Process:**
 - ▶ Begins with a need and ends with a solution
- ▶ **Technology as an Objects:**
 - ▶ Set of means created by technological process such as, tools, machines, instruments, weapons, appliances etc.
- ▶ **Technology as Knowledge:**
 - ▶ The know-how behind technological innovation
- ▶ **Technology as Activities:**
 - ▶ What people do - their skills, methods, procedures, routines
- ▶ **Technology as a Socio-technical System:**
 - ▶ The manufacture and use of objects involving people and other objects in combination
 - ▶ Examples: internet (and its problems of security, privacy, and design), urban, regional and global transportation systems, regional and national power grids, telecommunication networks, the global financial system, environmental systems, national healthcare systems, cities and other large-scale projects with significant societal impact.



-
- ▶ Technology draws on science and contributes to it
 - ▶ Technology as eyes, ears of science and some muscles too...
 - ▶ Technology provide motivation and direction for theory and research
 - ▶ It involves design
 - ▶ It involves making
 - ▶ It is multidimensional
 - ▶ It is concerned with values
-

-
- ▶ Technology extends our abilities to change the world
 - ▶ All technologies involve control
 - ▶ All technological system can fail
 - ▶ Technologies always have side effects
 - ▶ It is Socially Shaped/Shaping?
-

ISSUES IN TECHNOLOGY

- ▶ Human presence
- ▶ Technological and social systems interact strongly
- ▶ The social system imposes some restrictions on openness in technology
- ▶ Decisions about the use of technology are complex



Society?

- ▶ A **society** is a group of people with common territory, interaction, and culture
- ▶ **Territory:** Most countries have formal boundaries and territory that the world recognizes as theirs. However, a society's boundaries don't have to be geopolitical borders, such as the one between two countries. Instead, members of a society, as well as non-members, must recognize particular land as belonging to that society.
 - ▶ No Mans Land
- ▶ **Interaction:** Members of a society must come in contact with one another. If a group of people within a country has no regular contact with another group, those groups cannot be considered part of the same society. Geographic distance and language barriers can separate societies within a country.
- ▶ **Culture:** People of the same society share aspects of their culture, such as language or beliefs. **Culture** refers to the language, values, beliefs, behavior, and material objects that constitute a people's way of life. It is a defining element of society.



Technology and Human Evolution

- ▶ Where does our capacity for developing technology come from?
 - ▶ The periodization of human history
 - ▶ ‘Paleolithic’ ('ancient stone,' the period of chipped stone artifacts)
 - ▶ ‘Mesolithic’ ('middle stone')
 - ▶ ‘Neolithic’ ('new stone,' the period of polished stone artifacts)
 - ▶ ‘Bronze Age’ (when copper and bronze artifacts appear)
 - ▶ ‘Iron Age’ was inspired by human tool production and tool use

It reflects that all species of humans that have ever existed probably used and modified tools



- ▶ Humans: On the top of the food chain to dominate all other life forms on planet earth
- ▶ Man the tool maker
 - ▶ Paleolithic Technology ([Kenneth Page Oakley](#))
- ▶ *As long as there have been people, there has been technology. Indeed, the techniques of shaping tools are taken as the chief evidence of the beginning of human culture. On the whole, technology has been a powerful force in the development of civilization*
- ▶ *In the broadest sense, technology extends our abilities to change the world: to cut, shape, or put together materials; to move things from one place to another; to reach farther with our hands, voices, and senses.*

-
- ▶ Are humans the only tool-using species on earth?
 - ▶ Otters using stones to crack crab shells, birds that use stones to crack snail shells, and chimpanzees that use twigs to catch termites, ants, or honey from a honey comb
 - ▶ Artifacts are being used to manipulate nature
 - ▶ So, how special are Humans in use of technology?
 - ▶ Does Human tool use differ qualitatively from those of other species?



Technological object vs social object



Sherry Turkle: Alone together

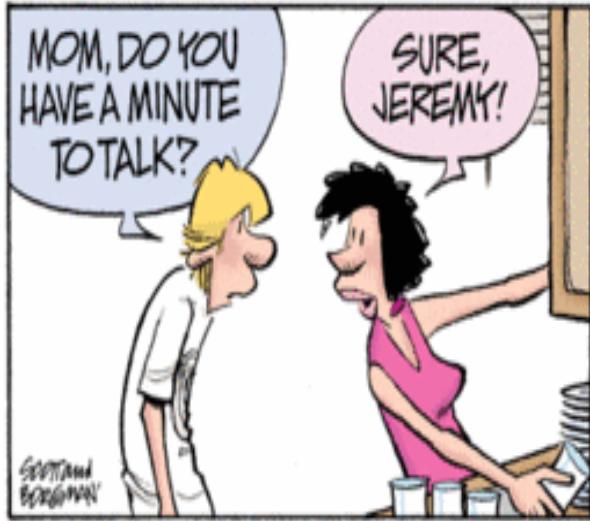


Ted Talk: Connected yet disconnected by Sherry Turkle



ZITS

BY JERRY SCOTT AND JIM BORGMAN



Technology and Society

“We have embraced technologies because of the wonders we have accomplished with them and the promise that they will continue to unlock new possibilities. Technologies have helped us to eradicate diseases, communicate with friends around the world, and even eliminate bad breath. New technologies are often equated with progress itself in large part because they can help us to do things that were not previously possible and solve problems that have plagued humanity for centuries.”

- ▶ Does technology has some negative social and environmental side effects?

Connected, Yet Disconnected

(Dr. Hirnmay Ghosh,

IEE Senior Member)

Dear Editor:

The sociological impact of modern technology is indeed a concern. I happened to witness a small event – but with a deep implication. I thought of sharing it with IEEE SSIT members.

“It was a Saturday evening. My spouse and I went to a nearby coffee-shop to have a dessert and some quiet time together ... There they came ... a young couple. They walked in and occupied a cozy corner. A chocolate clad pastry and a cup of coffee appeared on their table in due time. The man took a sip and the woman took a bite ... and then a cell phone rang. Was it an urgent business call? The man got engrossed ... The woman finished the pastry in silence.... some more time ... and she pulled out her cell phone from her purse. She fiddled with the buttons and somebody was there at the other end ... She got quite frivolous as she talked on. Time ticked by....

The man finished his coffee with a frown on his forehead. After a while, the check was presented ... the man quickly paid and they walked out ... Cell phones were still glued to their ears ... hands were not held and glances were not stolen. We thanked our stars that we did not belong to that generation. Cell phones have the great power of “Connecting people” ... do they have the power to disconnect too?”



-
- ▶ Technological Singularity (Ray Kurzweil) and Cyborgs
 - ▶ Bridging the gap
 - ▶ Natural born cyborgs vs. Empowered Cyborgs
 - ▶ Embodying values in Technology



I'm a Cyborg, But That's OK

- ▶ Humans have a lot of emotional baggage. Perhaps one of the reasons Young-goon decided she was a cyborg was because she stopped feeling things — or she felt too much and inadvertently turned it all off. We get glimpses of her past, which include a grandmother who was convinced her offspring were all mice and a mother who avoided her child's existential questions by turning to radish. Later, when she finds the secret cyborg manifesto while staying at the hospital, it stipulates that the seven deadly sins for cyborgs are sympathy, thankfulness, hesitation, daydreaming, being sad, restlessness, and feeling guilty

►

Seeking comfort in machinery:

Since Young-goon can't relate to other humans, she seeks solace in her conversations with the vending machine and the pay phone, and she takes orders from the mysterious voice coming out of her radio. The nurses can't get her to eat, so at one point in the film, they decide to give her shock therapy. Lying there with hundreds of wires sticking out of the treatment cell they put her in, Young-goon feels right at home. She reveals that she was raised by electrical wires in an incubator. "I feel like I've been born again," she says as the session ends and her toes light up. She walks off her wheelchair, goes upstairs, loads up her ammo, and goes on a full-scale massacre of the evil white coats, storing cartridges in her mouth and dispatching bullets machine gun-style from her dainty fingers.

Positive and Negative Appraisal of Technology

- ▶ Esther Dyson, one of the early enthusiasts for the Internet, states in her book *Release 2.0* .:
- ▶ 'The Net offers us a chance to take charge of our own lives and to redefine our role as citizens of local communities and of a global society. It also hands us the responsibility to govern ourselves, to think for ourselves, to educate our children, to do business honestly, and to work with fellow citizens to design rules we want to live by.' (Dyson, 1997).
- ▶ Dyson argues that the Internet offers us the chance to build exciting communities of likeminded individuals, enables people to redefine their work as they see fit, fosters truth-telling and information disclosure, helps build trust between people, and can function for people as a second home.



For a negative appraisal, consider the opinion of the Council of Torah Sages, a group of leading orthodox rabbis in Israel

- ▶ in 2000 issued a ruling banning the Internet from Jewish homes. The Council claimed that the Internet is "1,000 times more dangerous than television" (which they banned thirty years earlier). The Council described the Internet as "the world's leading cause of temptation" and "a deadly poison which burns souls" that "incites and encourages sin and abomination of the worst kind." The Council explained that it recognized benefits in the Internet, but saw no way of balancing these with the potential cost, which they defined as exposure to "moral pollution" and possible addiction to Internet use that could quash the motivation to learn Torah, especially among children.



The Future of Artificial Intelligence and Humans

- ▶ Whether AI will be more powerful than Human cognition?
- ▶ What should be the role of Humans in overly developed technological world?
- ▶ Technology being slave of humans vs. humans being the slave of technology?



Technology: Issue of Acculturation and Assimilation

- ▶ **To assimilate or acculturate**



Perceived Benefits

- ▶ Access to information
- ▶ Information Dissemination
- ▶ Communication
- ▶ Developing and maintain social relationships
- ▶ Community formation and social organization
- ▶ Production and commerce
- ▶ Leisure and entertainment
- ▶ Identity formation and Psychological development
- ▶ Learning and cognitive development
- ▶ Cultural Understanding

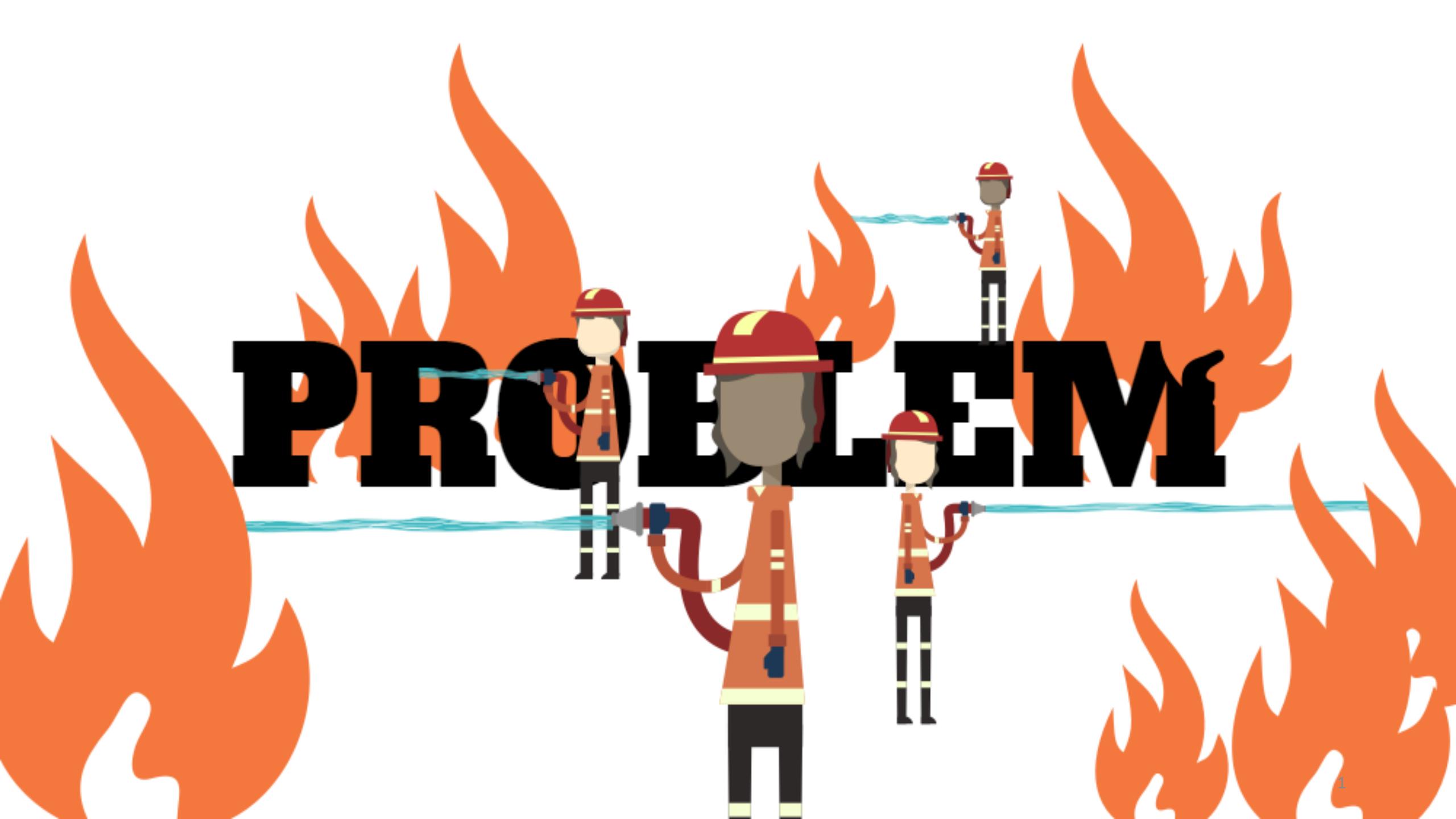


Perceived Harms

- ▶ Information Overload
- ▶ False Information
- ▶ Harmful Information
- ▶ Harmful communications
- ▶ Harmful effect on social relationship
- ▶ Harmfull effects on community and social organisations
- ▶ Harmful effects on identity formation and psychological development.
- ▶ Harmful effects on learning and cognitive development.
- ▶ Cultural fragmentation.
- ▶ Loss of the sense of reality.
- ▶ Loss of privacy and private-public boundaries.

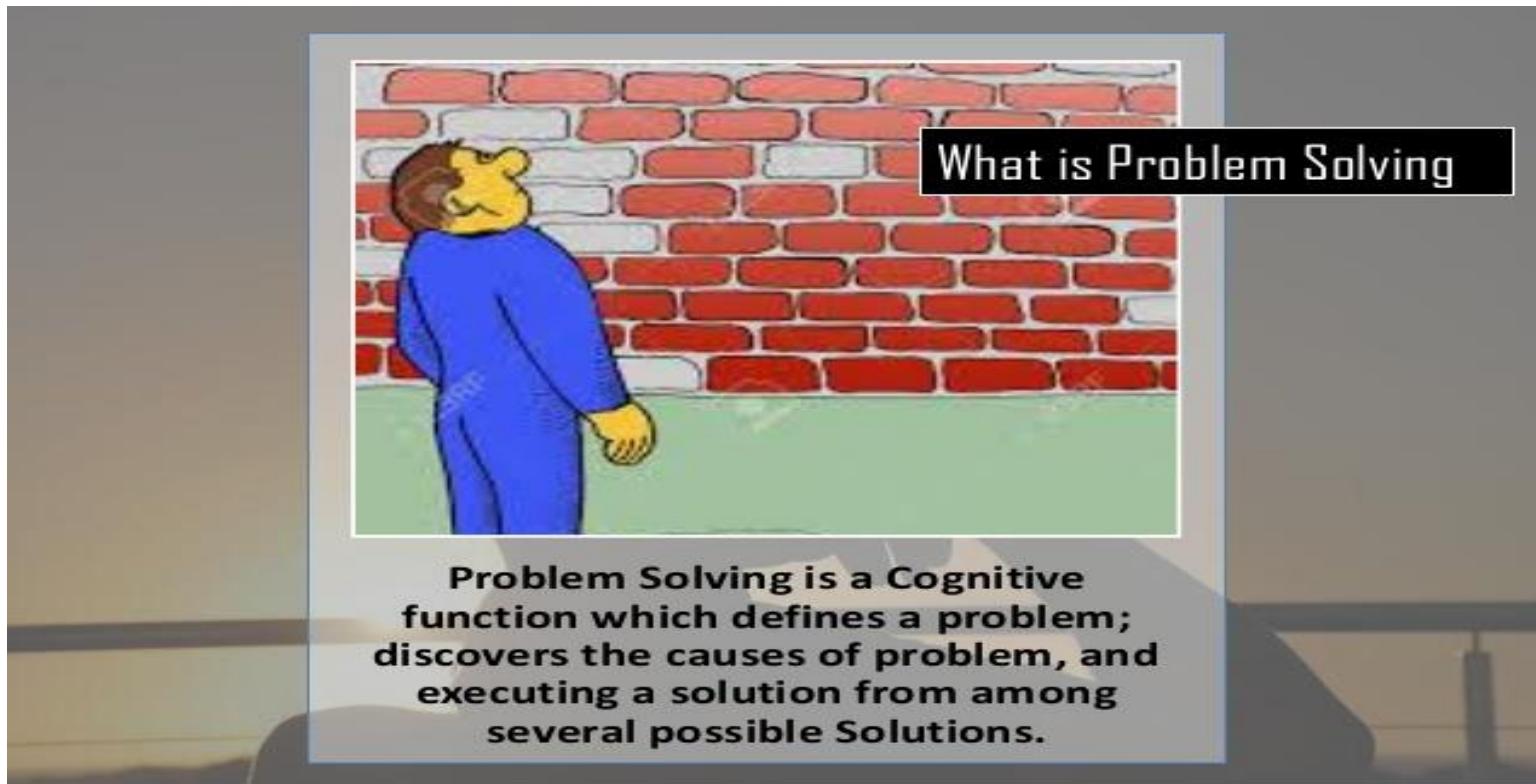


PROBLEM



Problem Solving

- A problem occurs when there is an obstacle between a present state and a goal, and it is not immediately obvious how to get around the obstacle.



- $(9 + 43 - 4) \div 24 - 4$
 - $(8 + 3) + (8 + 16 \div 4)$
 - X in an algebraic equation, and
 - calculating the trajectory of a rocket's flight
-

- Determining what really happened during the 'Demolition of the Babri Masjid'
- Suggesting measures to address the current environmental issues.
- Predicting how to dispose of nuclear waste safely.

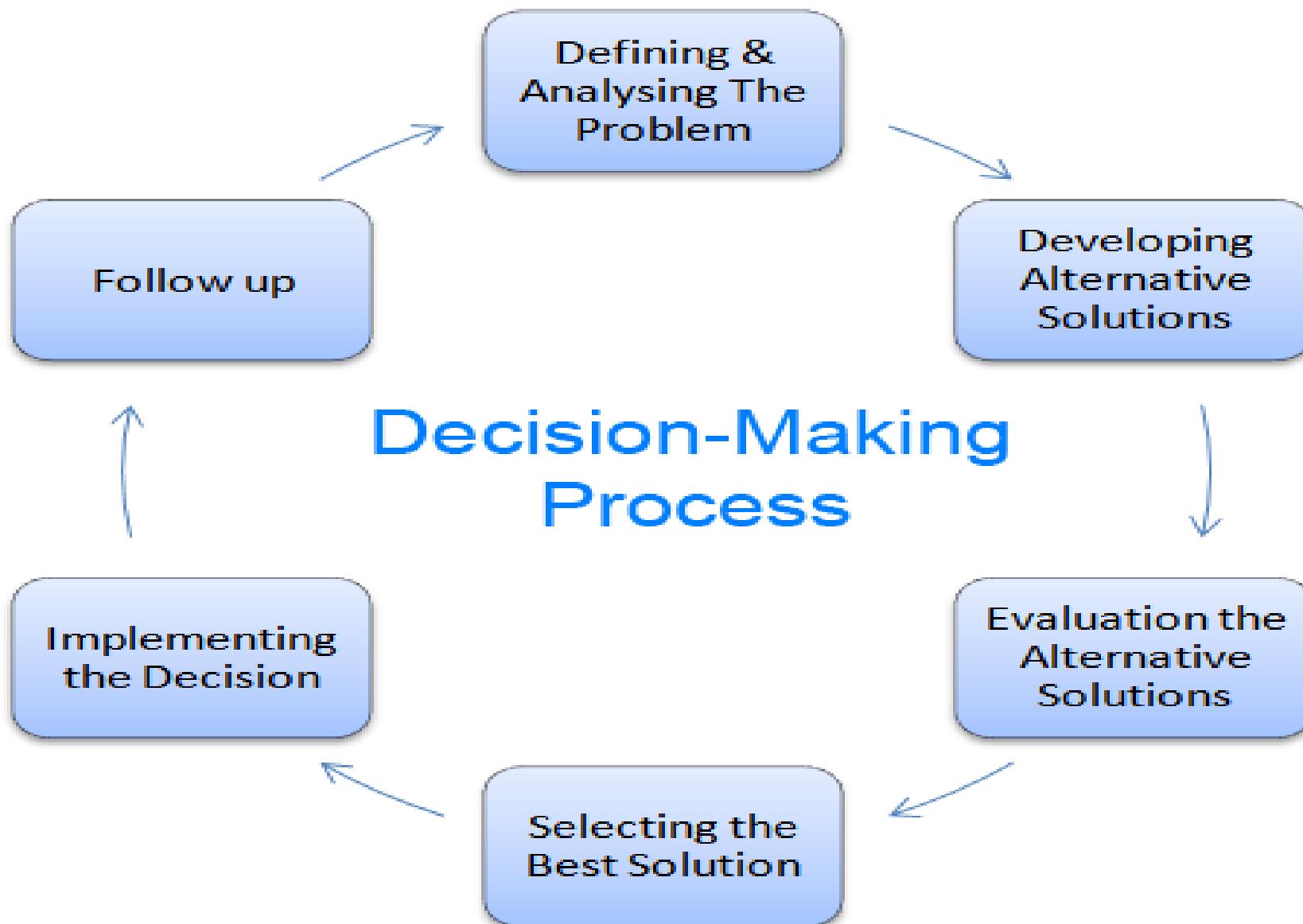
- Well-defined problems usually have a correct answer; certain procedures, when applied correctly, will lead to a solution.
- Ill-defined problems, which occur frequently in everyday life, do not necessarily have one “correct” answer, and the path to their solution is often unclear.

III-Defined	Well-Defined
<p>Given state is not clearly specified , unclear goal state, unclear set of allowable procedures and multiple solutions</p>	<p>Given state is clearly specified, there are clearly specified goals, clearly specified set of allowable procedures and one clear solution</p>
<p>For example: How should we resolve global warming?</p>	<p>For example: $5x=10$</p>
<p>Argumentation, attitudes and "metacognition highly predicted problem-solving score^[1]</p>	<p>Domain knowledge and justification skills highly predicted problem-solving scores</p>

Decision Making

- Decision making occurs as a reaction to a perceived problem
- Making sound decisions is a skill set that needs to be developed like any other
- Nothing will test your leadership mettle more than your ability to make decisions.
- Gut instincts can only take you so far in life.
- Operating outside of a sound decision making framework will eventually fall prey to an act of oversight,
misinformation, misunderstanding, manipulation, impulsivity or some other negative influencing factor.

Rational Decision Making Process



Assumptions of the Model

- Complete knowledge of the situation
- All relevant options are known in an unbiased manner
- The decision-maker seeks the highest utility
- No time constrain

- Problem solving is a “higher –order cognitive process that requires the modulation and control of more routine or fundamental skills”(Goldstein & Levin,1987)
- Everyday we solve a number of problems ranging from simple to complex. Some problems take little time whereas some take much time to solve. We look for alternative solutions if do not get the right kind of resources to solve the problem in hand.

1. **Problem identification:** Do we actually have a problem?
2. **Problem definition and representation:** What exactly is our problem?
3. **Strategy formulation:** How can we solve the problem?

The strategy may involve **analysis**—breaking down the whole of a complex problem into manageable elements. Instead, or perhaps in addition, it may involve the complementary process of **synthesis**—putting together various elements to arrange them into something useful.

Another pair of complementary strategies involves divergent and convergent thinking. In **divergent thinking**, you try to generate a diverse assortment of possible alternative solutions to a problem. Once you have considered a variety of possibilities, however, you must engage in **convergent thinking** to narrow down the multiple possibilities to converge on a single best answer.

4. **Organization of information:** How do the various pieces of information in the problem fit together?
5. **Resource allocation:** How much time, effort, money, etc., should I put into this problem?
6. **Monitoring:** Am I on track as I proceed to solve the problem?
7. **Evaluation:** Did I solve the problem correctly?

Classic Problems and General Methods to Solution

- **GENERATE AND-TEST TECHNIQUE** – generating possible solutions and then testing them.
- It fails when there are many possibilities and no particular guidance for generation process.
- It can be useful, however, when there aren't a lot of possibilities.

- **WORKING BACKWARDS** - Analyzes the goal to determine the last step needed to achieve it, then the next-to-the last step and so on.

When to use the work backward strategy

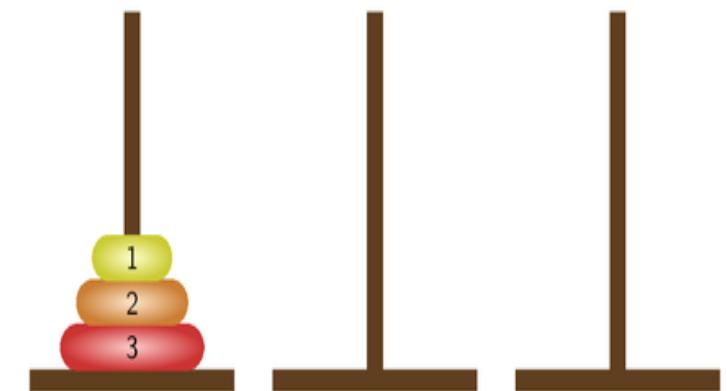
- The final result is clear and the initial portion of a problem is obscure.
- A problem proceeds from being complex initially to being simple at the end.
- A direct approach involves a complicated equation.
- A problem involves a sequence of reversible actions.

- MEANS-ENDS ANALYSIS - *goal-based* problem solving, a framework in which the solution of a problem can be described by finding a sequence of *actions* that lead to a desirable goal.
- Create a sub-goal.
- Allows both backward and forward searching
- The MEA technique is a strategy to control search in problem-solving.

Tower of Hanoi Problem

- **Tower of Hanoi problem** as three discs stacked on the left peg, and the goal state as these discs stacked on the right peg. Try solving this problem by following the instructions in the demonstration.
- 1. Discs are moved one at a time from one peg to another.
- 2. A disc can be moved only when there are no discs on top of it.
- 3. A larger disc can never be placed on top of a smaller disc.
- <https://www.youtube.com/watch?v=rVPuzFYlfYE>

Tower of Hanoi – 3 Discs



BLOCKS TO PROBLEM SOLVING

- **Functional Fixedness** - refers to people's tendency to see objects as serving conventional problem-solving functions and thus failing to see possible novel functions.

Figure 7.2. The String Problem

How do you tie the two strings together if you cannot reach them both at the same time?



- **Mental set** is the tendency to adopt a certain framework, strategy, or procedure or, more generally, to see things in a certain way instead of in other, equally plausible ways.

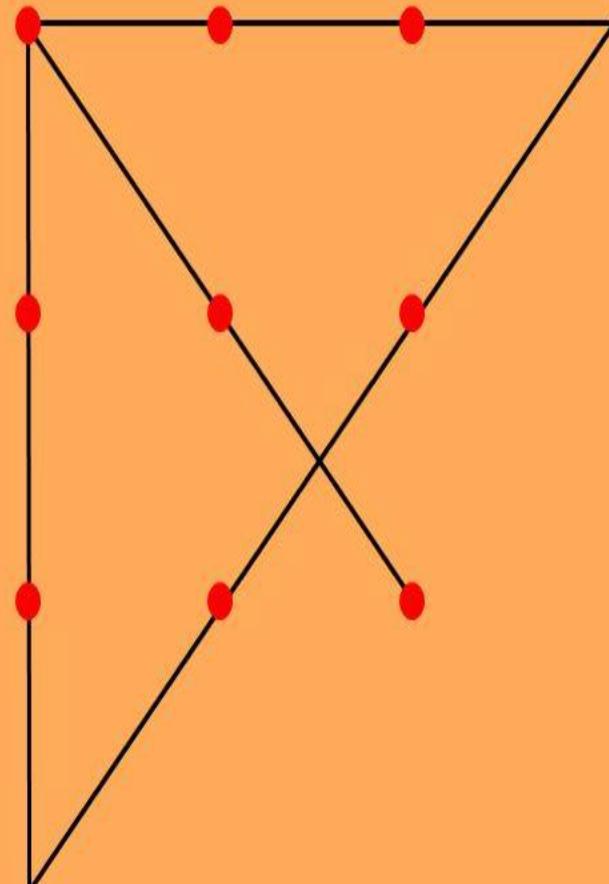
Draw four straight lines that pass through each of the nine dots without removing your pencil from the paper.

Arrange six matches so that they form four triangles with all sides equal to the length of one match.

Nine dots mental set

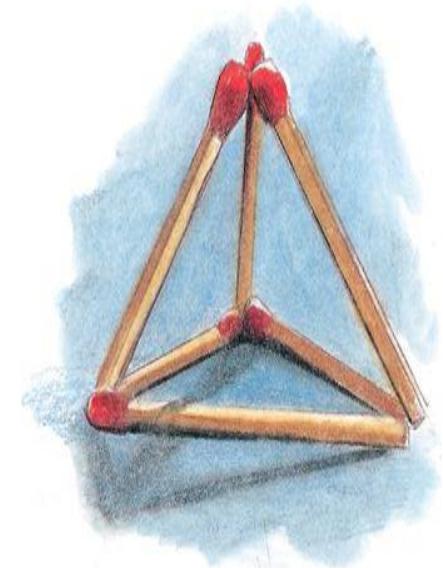
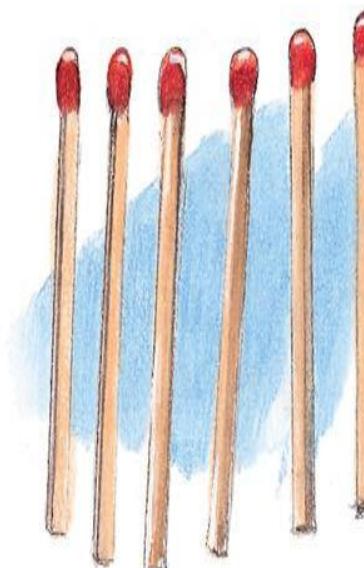
Most people will not draw lines that extend from the square formed by the nine dots

To solve the problem, you have to break your mental set



The Matchstick Problem

Our mental set from our past experiences with matchsticks predisposes our arranging them in two dimensions.



To arrange six matches to form four equilateral triangles, you must view the problem from a new perspective.¹⁸

- **Incubation Effects** - People often report that after trying to solve a problem and getting nowhere, they can put it aside for hours, days, or weeks and then, upon returning to it, can see the solution quickly.