Objective 10/18/16

- Provided notes and an activity SWBAT contrast the process of sensation & perception & distinguish between absolute thresholds

1. Do Now-HW quiz
2. Notes
3. Activity

Do Now

- Go to my teacher page, click on AP Psychology Do Now's and copy and paste the link into the URL.

Introductory Psychology: *Sensation & Perception*

AP PSYCHOLOGY: UNIT 3

Is the world in your head or the head in your world?

How do we construct representations of the external world?

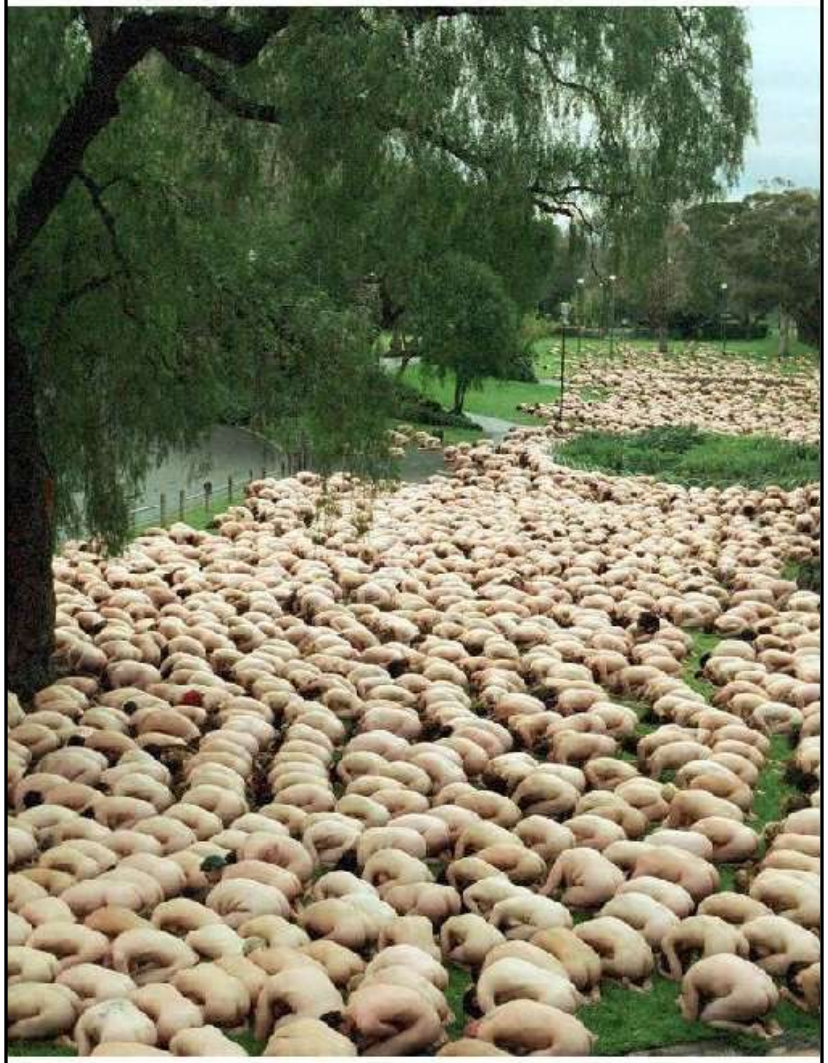
Sensation & Perception: *The Basics*

PART ONE

Sensation & Perception: *Basics*

- **Sensation**
  - **The process by which our sensory receptors and nervous system receive & represent stimulus energies from our environment**
    - **Stimulation of the sense organs**
      - **To represent the world, physical energies must be converted into neural signals, a process known as *transduction***
    - **BOTTOM-UP PROCESSING**

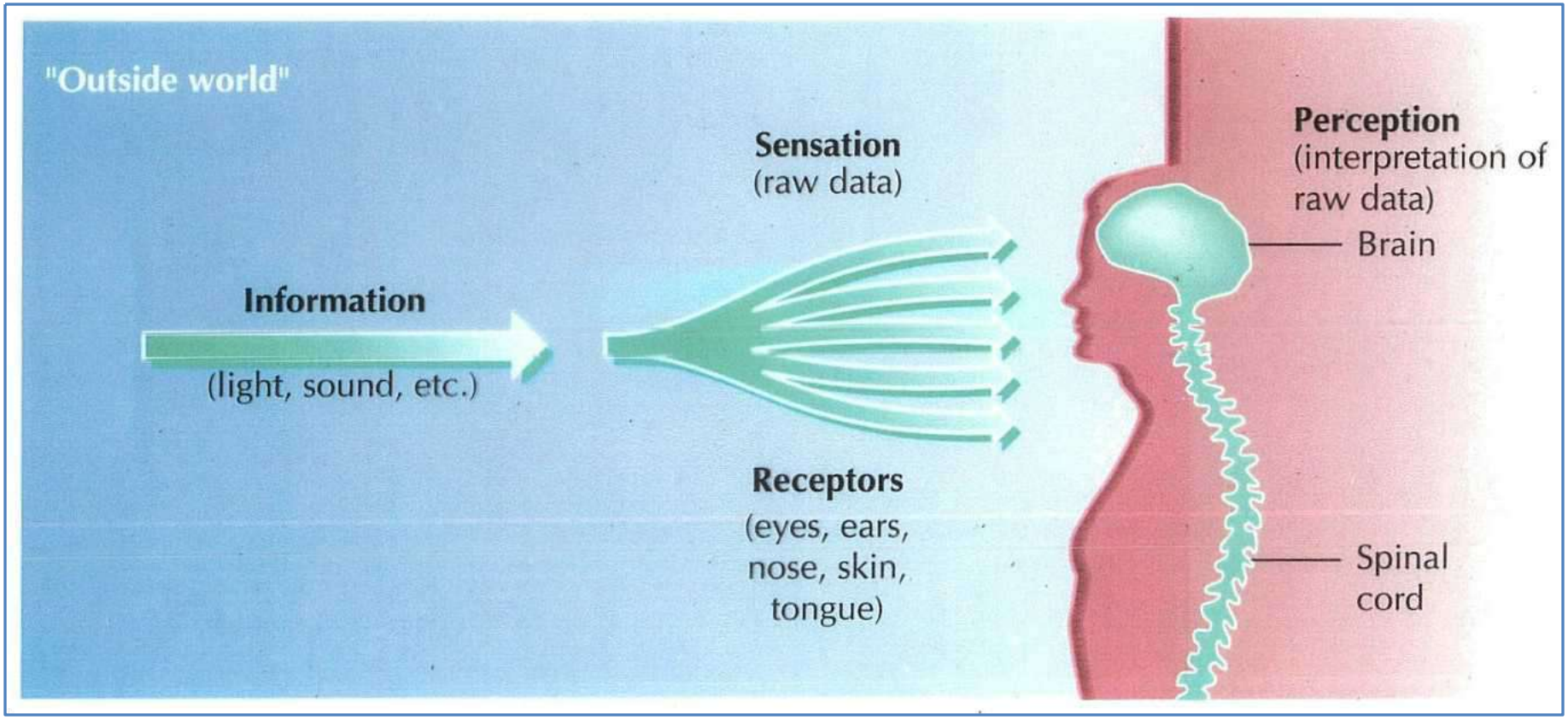
If you see sheep . . .



. . . you need glasses!

Sensation & Perception: *Basics*

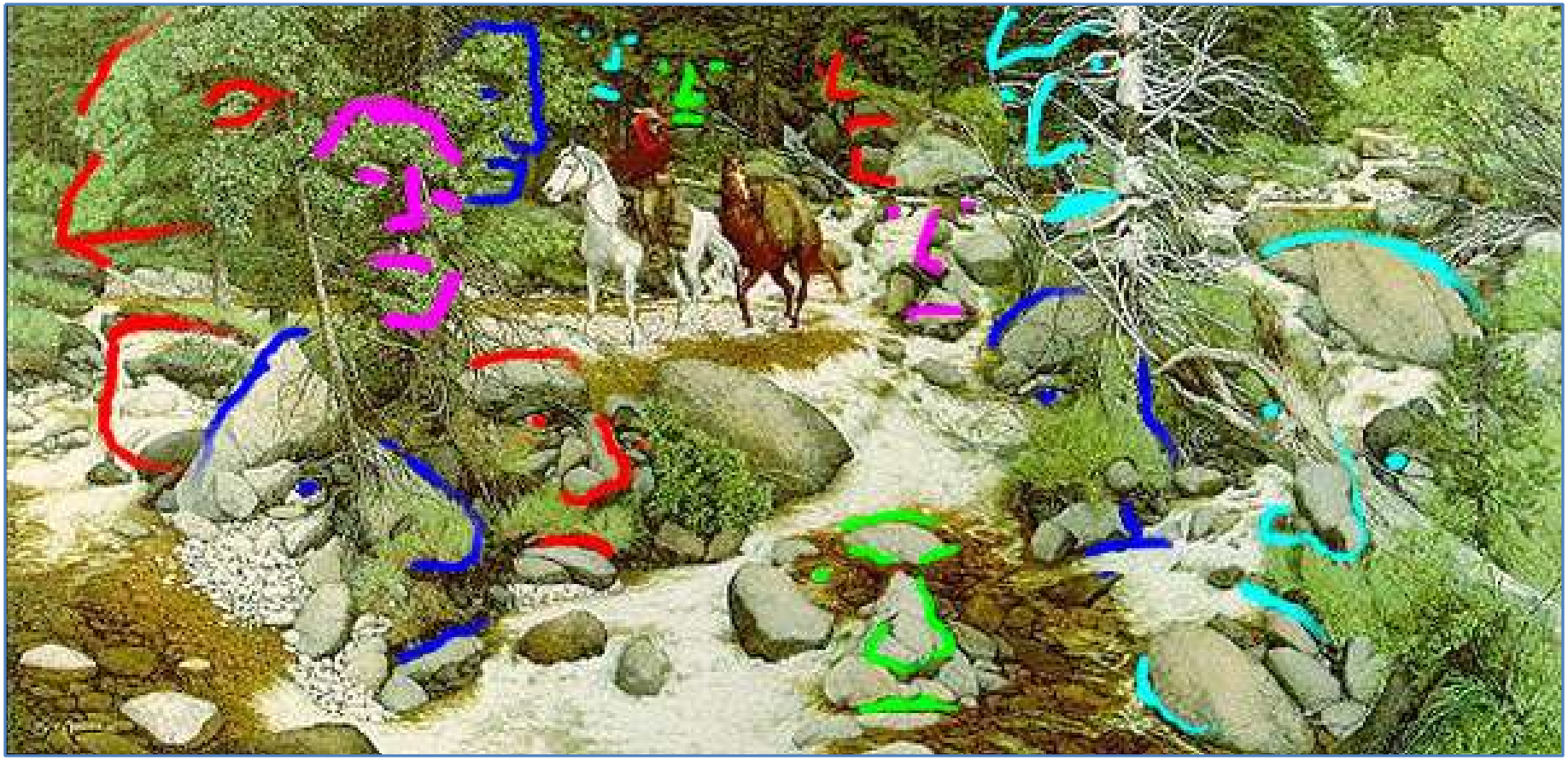
- **Perception**
  - **The process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events**



One continuous process…

“*The Forest Has Eyes*”

(Bev Doolittle)

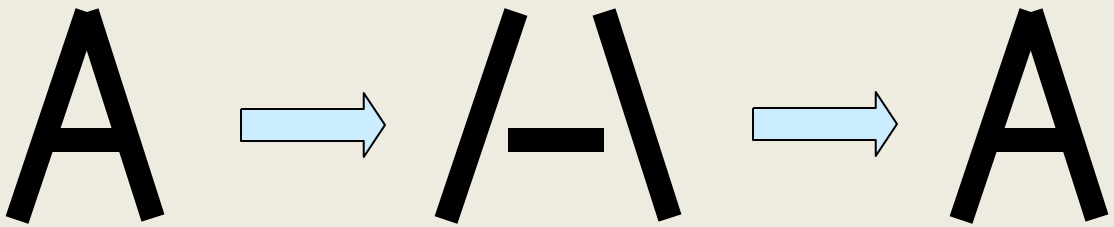


“*The Forest Has Eyes*”

(Bev Doolittle)

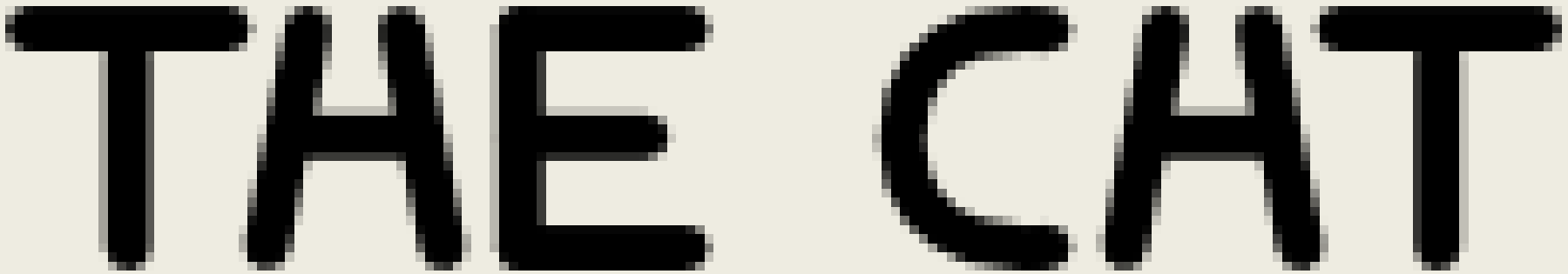
Sensation & Perception: *Basics*

- **Bottom-Up Processing**
  - **Analysis that begins with sensory receptors and works up to the brain's integration of sensory information**
    - **Focuses on the raw material entering through our eyes, ears and other senses**



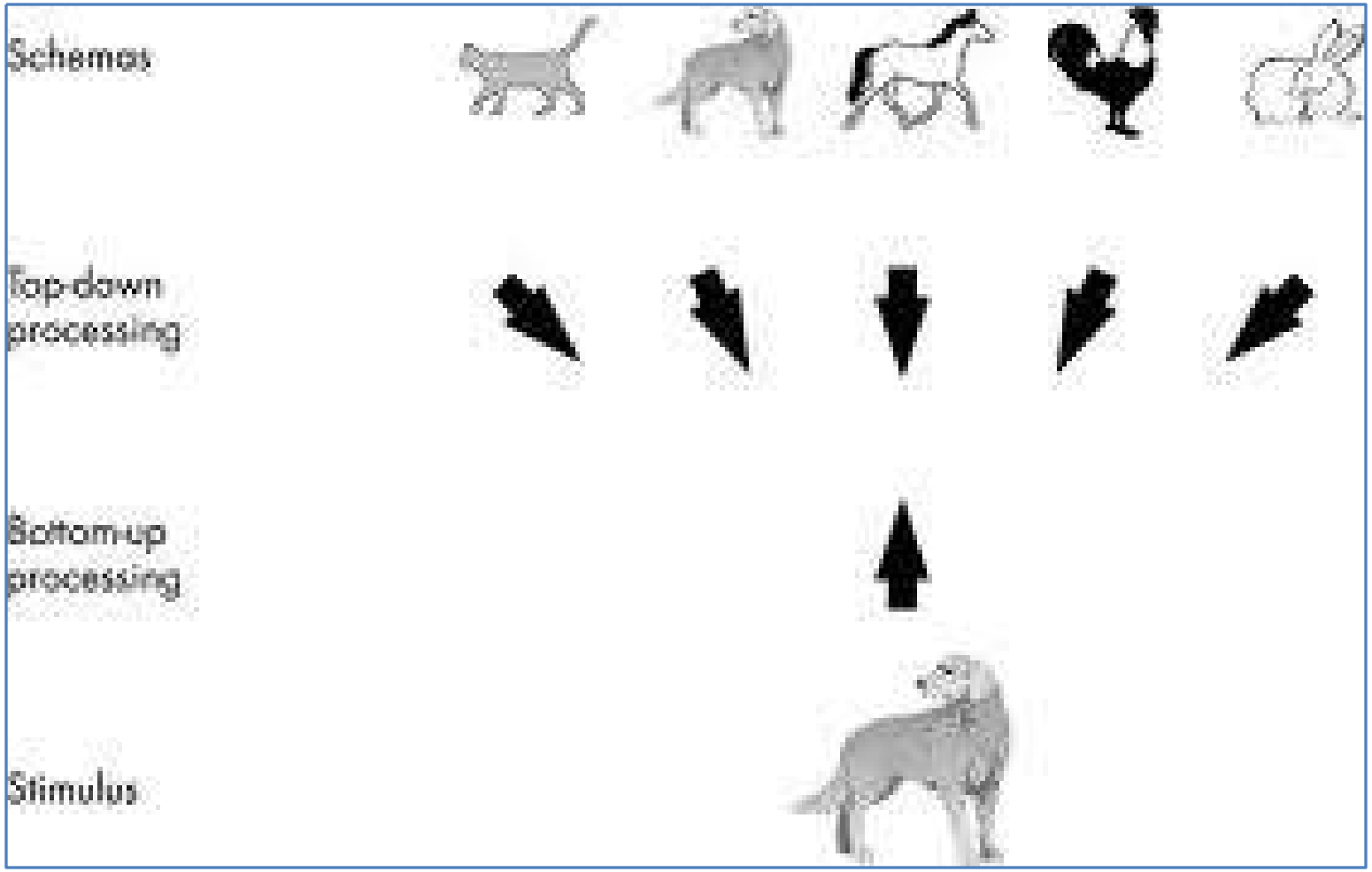
Sensation & Perception: *Basics*

- **Top-Down Processing**
  - **Information-processing guided by higher-level mental processes; when we construct perceptions by drawing on our experience and expectations**



Sensation & Perception: *Basics*

- **Aoccdrnig to rscheearch at Cmabrigde Uinervtisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae. The rset can be a total 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.**


Schemas
Top-down processing
Bottom-up processing
Stimulus

Sensation & Perception: *Thresholds*

PART TWO

What stimuli cross our threshold for conscious awareness?

Could you be influenced by stimuli too weak to be perceived?

Why are we unaware of unchanging stimuli, like a band-aid on our skin?

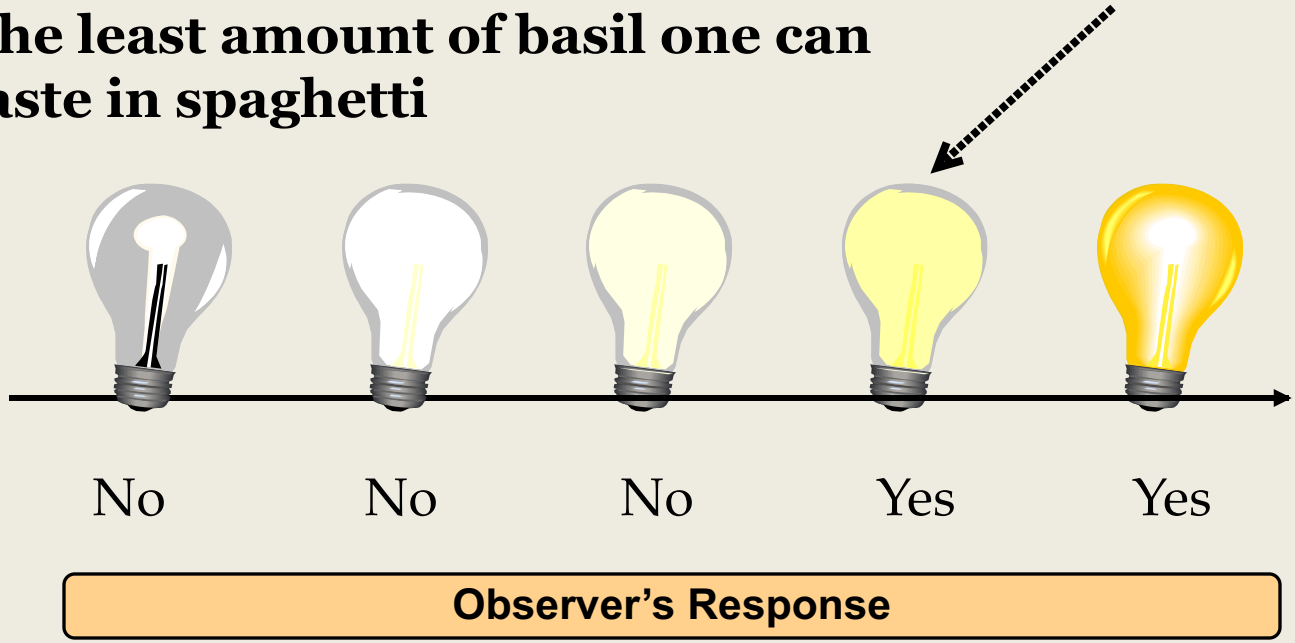
Sensation & Perception: *Thresholds*

- **Psychophysics**
  - **A study of the relationship between the physical characteristics of stimuli & our psychological experience with them**
    - **In other words, how are physical stimuli translated into a psychological experience?**

Physical World	Psychological World
Light	Brightness
Sound	Volume
Pressure	Weight
Sugar	Sweet

Sensation & Perception: *Thresholds*

- **Absolute Threshold**
  - **The minimum stimulation needed to detect a particular stimulus 50 percent of the time**
    - **The dimmest visible star**
    - **The least amount of basil one can taste in spaghetti**



Sensation & Perception: *Thresholds*

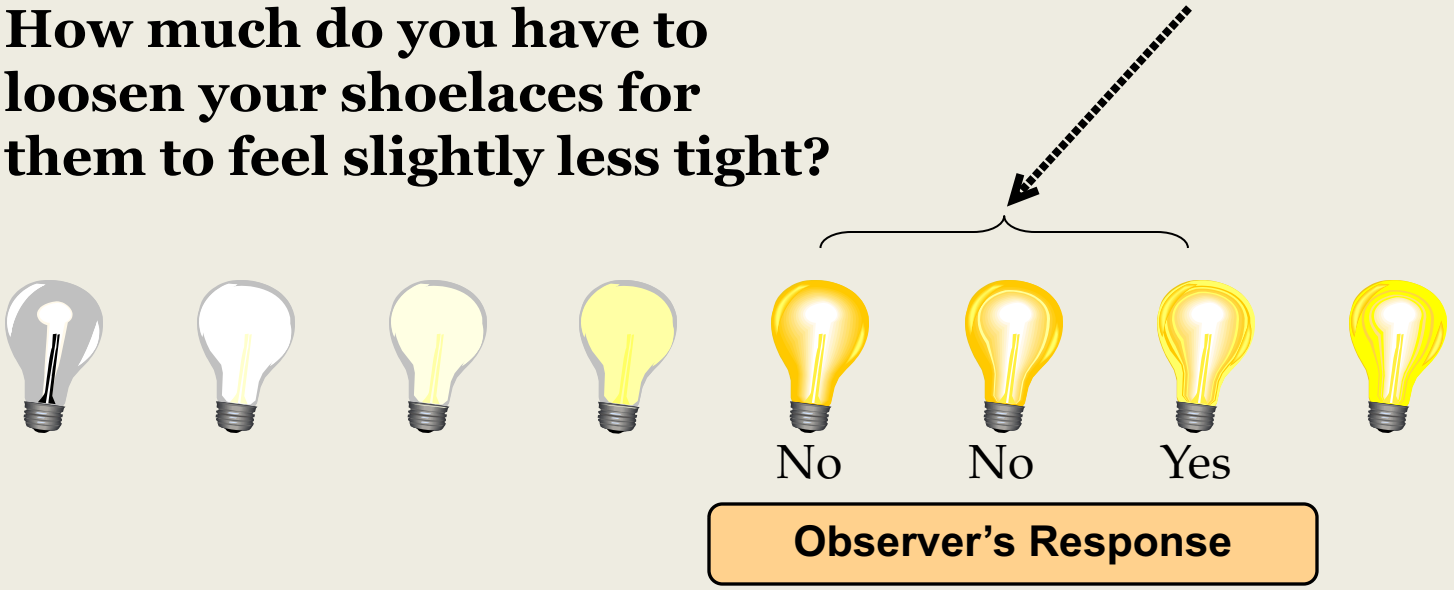
Sense	Absolute Threshold
Vision	A candle flame seen from 30 miles away on a clear, dark night
Hearing	The tick of a watch at 20 feet in very quiet conditions
Taste	One teaspoon of sugar in two gallons of water
Smell	One drop of perfume throughout a three-room apartment
Touch	A bee's wing falling on your cheek from a height of about 1 cm

Sensation & Perception: *Thresholds*

- **Signal Detection Theory**
  - **Predicts how and when we detect the presence of a faint stimulus ("*signal*") amid background stimulation**
    - **Assumes that there is NO single absolute threshold and that detection depends on several factors…**
      - **Person's experience**
      - **Expectations**
      - **Motivations**
      - **Level of fatigue**

Sensation & Perception: *Thresholds*

- **Just Noticeable Difference**
  - **The minimum difference between two stimuli required for detection 50 percent of the time**
    - **How much does the volume have to increase before you can tell that your music has gotten louder?**
    - **How much do you have to loosen your shoelaces for them to feel slightly less tight?**

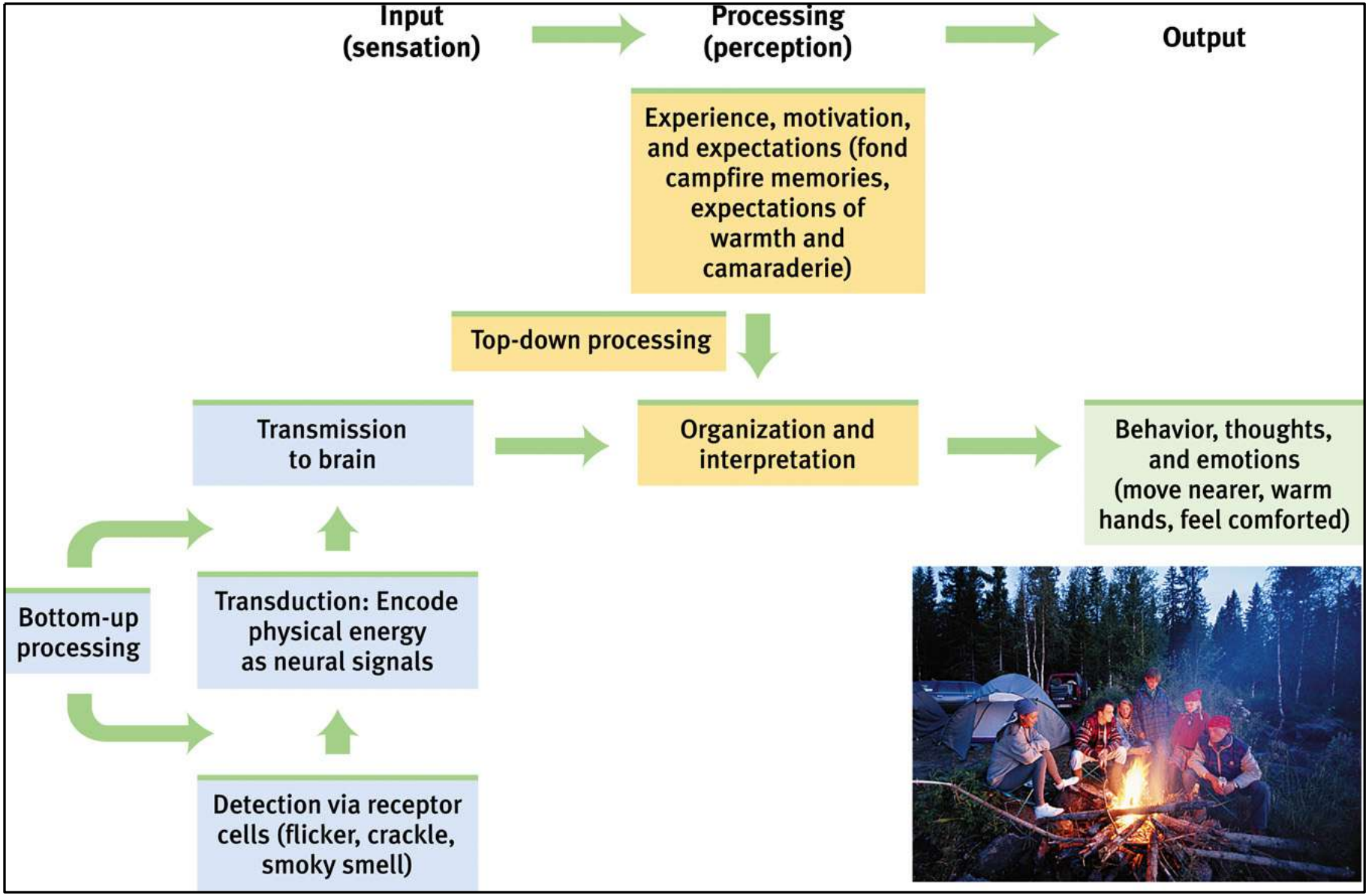


Sensation & Perception: *Thresholds*

- **Weber's Law (Ernest Weber)**
  - **The principle that, to perceive their difference two stimuli must differ by a constant minimum percentage; a ratio based on the original stimulus, rather than a constant amount**
    - **Example**
    - **If you go from 1 to 2 (JND), then you must for from 2 to 4 and then 3 to 6 to notice the same difference; a FIXED RATIO!**
      - **How much sweetener does it take to notice a difference in the sweetness of sweet tea?**
      - **DEPENDS ON THE INITIAL SWEETNESS..!**

Sensation & Perception: *Thresholds*

- **Fechner's Law (Gustav Fechner)**
  - **Continuous increases in physical energy will result in smaller increases in perceived magnitude; not a true ratio!**
    - **Slight adjustment to Weber's Law**
    - **Eventually we reach a place where physical energy starts to level off and we no longer notice a difference**
    - **Lower and upper thresholds**
      - **Examples?**


Input (sensation)
Processing (perception)
Output
Experience, motivation, and expectations (fond campfire memories, expectations of warmth and camaraderie)
Top-down processing
Transmission to brain
Organization and interpretation
Behavior, thoughts, and emotions (move nearer, warm hands, feel comforted)
Bottom-up processing
Transduction: Encode physical energy as neural signals
Detection via receptor cells (flicker, crackle, smoky smell)