

## Pattern Recognition

Our senses provide the information that enables us to detect the presence of objects and then to distinguish different objects from each other. Each sense organ has the job of detecting the presence of a particular kind of energy (light, chemical, sound) and differentiating among different levels of that type of energy. We call the minimum amount of energy that the sense organ can detect the *detection threshold* or *absolute threshold*. The *difference threshold* or *just noticeable difference (jnd)* is the smallest change in energy that the sense organs can perceive; the amount of change needed to tell that two things are different. We use these abilities constantly as we perform our everyday tasks. There is also debate about how much we rely on information that is below our ability to detect. Energy that cannot be detected by a sense organ is called *subliminal* or *subthreshold*.

For each of the situations below, identify which of the following concepts is necessary to complete the task successfully: absolute threshold, difference threshold, or subthreshold. Then, think up your own examples from daily life to illustrate each concept.

1. A woman preparing for a trip to Mexico tries to learn Spanish using a "Learn While You Sleep" tape.
2. A guard on duty notices a very soft noise and calls out for the thief to "Halt!"
3. A father takes his children to the playground. During the visit, a child starts to cry. Without looking, the father can tell that it is not his child's cry.
4. There is a sale on 5-pound prepackaged bags of potatoes. In order to make sure you get the most for your money, you pick up several bags to see which is the heaviest.
5. You help your friend look for her contact lens on her white kitchen floor.
6. A music group records the phrase "Buy our CD" backwards in one of their songs.
7. It is late at night and you are trying to go to bed without waking your roommate. You want to find your favorite pajamas without turning on the light. After carefully and quietly opening your dresser drawer, you reach in and try to pick it out from all the items in the drawer.
8. You are one of the judges in a chili-tasting contest and are trying to select the winner of the "Hottest Chili" award.
9. In that same chili-tasting contest, you are asked to try to identify which of ten chili samples contains cinnamon.

### Your Examples:

Absolute Threshold:

Difference Threshold:

Subthreshold:

Directions: Answer the following question(s).

- 1 8.. Sensation is to \_\_\_\_\_ as perception is to \_\_\_\_\_.
- threshold; transduction
  - encoding; detection
  - detection; interpretation
  - interpretation; organization
  - organization; accomodation
- 2 7. You have just walked into a very smelly house. After a while you do not notice the as bad or at all. What process makes this possible?
- Sensory deafness
  - Sensory overload
  - Sensory adaptation
  - Motor fixing
- 3 4. Dr. Richardson says, "There is no such thing as an absolute threshold because stimulus detection depends on a number of factors beside the physical intensity of a stimulus and the sensory abilities of the observer." Dr. Richardson is most likely an advocate of which theory?
- subliminal perception theory
  - signal detection theory
  - adaptation theory
  - opponent-process theory
- 4 3. A painter who is able to tell the difference bewteen two similar shades of paint is demonstrating
- the absolute threshold
  - the difference threshold
  - Weber's law
  - sensory adaptation
- 5 2.. Although Manuel was sitting next to his parents, he smelled a skunk minutes before they did. Apparently, Manny has a lower \_\_\_\_\_ for skunk odor than his parents have.
- adaptation level
  - absolute threshold
  - accomodation level
  - tolerance law
- 6 1. The process of detecting and encoding stimuli is \_\_\_\_\_.
- sensation
  - perception
  - Gestalt psychology
  - accomodation
- 7 5. If I am testing your sound absolute threshold what percentage of the time must you hear the minimum stimulus in order for the absolute threshold to have been found?
- 30%
  - 100%
  - 25%
  - 50%
- 8 6. A subliminal message is one that is presented
- below one's absolute threshold for awareness
  - with soft background music
  - while an individual is under hypnosis
  - repetitiously
  - in a manner that is unconsciously persuasive
- 9 Julio's backpack is twice as heavy as Marco's. If it takes 2 extra books to make Marco's bag feel heavier, it will take 4 extra books to make Julio's backpack feel heavier. This best illustrates
- accomodation
  - the McGurk effect
  - Weber's law
  - the opponent-process theory
  - sensory adaptation