

Answers to Pause and Reflect Boxes for Chapter 15 Neurolinguistics

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Pause and Reflect 15.1

The left side is mainly responsible for language, however, as we will see throughout the chapter, different language processes involve brain areas across both sides.

Pause and Reflect 15.2

Of course everyone uses both hemispheres of their brain. It is really difficult to predict which side of the brain might be more dominant, but people often characterize themselves one way or another.

Pause and Reflect 15.3

You read about the occipital lobe being responsible for visual processing. When there is a bang to the head, the impact can disrupt blood flow in that area. This is what causes us to *see stars* because the occipital lobe is where the visual cortex is located.

Pause and Reflect 15.4

The four lobes of the brain and some of their main functions are: 1) Frontal lobe: Planning, prediction, speech, body movements; 2) Parietal lobe: Reading and senses; 3) Occipital lobe: Visual processing; and 4) Temporal lobe: Hearing and memory.

Pause and Reflect 15.5

We may take for granted things like electricity and technology in our busy lives. Just the simple lack of electricity should not surprise us as to why brain researchers around a hundred years ago relied mostly on autopsies from deceased patients. So the main participants who informed neurologists about language in the brain were corpses.

Pause and Reflect 15.6

If you picked up the phone instinctively to your right ear, you have shown a right-ear advantage. If you held it to your left ear, you have shown a left-ear advantage.

Pause and Reflect 15.7

He will be able to name the grapefruit in his right hand. Information from the right side of the body is processed in the left hemisphere. The orange in the left hand will be received by the right hemisphere where the information is confined and unable to be shared with the left hemisphere.

Pause and Reflect 15.8

If you have ever known someone who has had an X-ray, the doctors may have been checking for a broken bone. A CT scan of the head may mean that doctors are looking for a tumor.

Pause and Reflect 15.9

An example could be *The food was too hot to {eat, drink, sing}*. At 400 ms or so after processing the word *eat*, we should expect an increase in negative voltage. However, this would be higher for *drink* and probably highest for *sing*.

Pause and Reflect 15.10

The fluency of speech and whether it makes sense should be indicators of whether the patient has Broca's or Wernicke's aphasia. It will sound telegraphic while mostly making sense for Broca's; fluid yet nonsensical for Wernicke's.

Pause and Reflect 15.11

The tip-of-the-tongue state is an unnatural and uncomfortable feeling even for patients with anomia who constantly are faced with it. A caregiver of a patient with anomia might help the patient come out of the tip-of-the-tongue state by describing or visualizing the word they are trying to remember or by encouraging them to think about the word's first letter of another word with which it might rhyme.

Pause and Reflect 15.12

Acquired dyslexia occurs in children and adults as a result of brain trauma or injury whereas developmental dyslexia is a learning disability most often associated with childhood development.

Pause and Reflect 15.13

Pitre's law better explains MB's recovery patterns because the most frequently used language prior to disturbance was the one that was least harmed.

Pause and Reflect 15.14

Yes, a reaction time study would reveal that responses to correct sounds would be faster than incorrect sounds. The brain needs additional time to fully process incorrect sounds and then reject them.

Pause and Reflect 15.15

Since Wernicke's area is where the temporal and parietal lobes meet, patients may have difficulties with irregular morphemes. They may also have more trouble with derivational morphology rather than inflectional morphology.