

TABLE 107-2 PRINCIPAL TYPES OF APHASIA

TYPE	LESION SITE	FLUENCY	COMPREHENSION	REPETITION	NAMING	OTHER SIGNS
Broca's (expressive)	Inferior frontal lobe	↓	Good	↓	↓	Contralateral weakness
Wernicke's (receptive)	Posterior superior temporal lobe	Good	↓	↓	↓	Homonymous hemianopia
Transcortical motor	Inferior frontal gyrus	↓	Good	Good	May be normal	May be contralateral weakness
Transcortical sensory	Middle temporal gyrus, thalamus	Good	↓	Good	Usually normal	May be normal
Conduction	Supramarginal gyrus	Good	Good	↓	↓	None
Global	Frontal lobe (large)	↓	↓	↓	↓	Hemiplegia

↓, Reduced.



Keys

Camera

pen

bag

watch

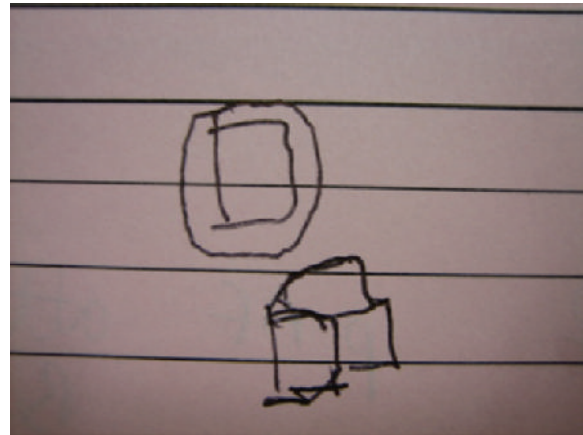
boots

boots

**FIGURE 107-3** Neologisms written by a patient with aphasia who was attempting to name cell phone, keys, camera, watch, pen, bag, and boots.

*Broca's aphasia* is characterized by a severe disruption in the fluency of speech, with profound impairments of expression in both speech and writing. Comprehension may be mildly affected. The language disturbance is almost invariably accompanied by contralateral face and arm weakness as a result of the proximity of the motor homunculus to Broca's speech area.

*Wernicke's aphasia* is characterized by an inability to comprehend spoken or written language. Affected patients speak fluently, but the content is meaningless; they may use words that are close in meaning to the intended word (semantic paraphasias) or words that sound like the intended word (literal paraphasias). Patients may be misdiagnosed as having a psychiatric disorder because they lack an associated hemiparesis.



**FIGURE 107-4** Attempts to draw a cube by a patient with a neurodegenerative disorder demonstrate constructional apraxia.

*Conduction aphasia* is characterized by normal comprehension and fluent speech but an inability to repeat. The responsible lesion lies in the arcuate fasciculus connecting Broca's and Wernicke's areas. *Global aphasia* results from large lesions of the frontal lobe; all aspects of language are affected. Lesions of the language areas of the nondominant hemisphere result in *dysprosody*. For instance, patients with lesions in the inferior frontal lobe of the nondominant hemisphere, analogous to Broca's area, speak with a monotonous voice, losing the natural cadence of speech.

In *dysarthria*, the language function is intact (which can be confirmed by having the patient write a sentence), but patients have difficulty articulating. Dysarthria can result from a lesion anywhere along the path from the cerebral cortex to the bulbar muscles.

### Agnosia and Apraxia

*Agnosia* is the inability to recognize a specific sensory stimulus despite preserved sensory function. For instance, visual agnosia is the inability to recognize a visual stimulus despite normal visual acuity. Other agnosia syndromes include the inability to recognize sounds (auditory agnosia), color (color agnosia), or familiar faces (prosopagnosia). Usually, the responsible lesions are located in the occipitotemporal region.

*Apraxia* refers to an inability to perform learned motor tasks despite sufficient sensorimotor function to physically execute the movement; it is a disorder of motor planning (Fig. 107-4). The responsible lesions are usually in the dominant inferior parietal lobe. A simple test of apraxia is to ask the patient to perform a pantomime (e.g., combing his or her hair, blowing out a candle).