



*Lower drawing is first response to instruction to draw a hand with crossed fingers; upper drawings were done after being asked to show which finger is on top — by a person totally blinded since early in life.*



*Stationary wheel at bottom; spinning wheel at top — by person totally blinded late in life.*

uncovered ... some very capable drawings." Among the more complex tasks, the representation of motion was "startlingly good — devices that have only become common in visual art in the last few generations were invented by the blind artists." The subjects showed a person in movement by employing methods such as showing bent, asymmetrical limbs, adding small circles to suggest movement, changing from front to side view and including a "line of movement" drawn at the feet of a running figure. Wheels in motion were depicted by curving the spokes, adding overlapping circles, placing the wheel on a hill and drawing several wheels along the path of movement. The artists were somewhat less successful with cubic objects in a tilted view. "The solutions were imaginative but tended to leave the realm of depiction as we understand it, becoming idiosyncratic and symbolic," Kennedy says. He also reports finding "drawing abilities in most of the children, creditable abilities in some."

The blind subjects were tested individually and "have little or no previous

pictorial experience," Kennedy stresses. "They have not been taught how to solve the mysteries of pictorial depiction. They figure out solutions on their own."

"Time and again, they come to identical realizations — individually, separately, each one facing the problems of two-dimensional portrayal on their own, they arrive at the same solutions," he says. "The inevitable conclusion is that the principles that underlie line representation belong to a perceptual system that is not restricted to vision. It is a system of principles that is in common to haptics [sense of touch] and to vision."

According to Kennedy, three aspects of the research results strongly indicate that perspective is in the perceptual system of the blind:

- "When given a [braille] picture they commented freely and continuously, without prompting, on the location from which a portrayed object was depicted.

- "In drawing an object, they would inform us that it was being shown from a particular point of view.

- "They understood occlusion [overlap] by objects with sharp occluding edges and round occluding bounds. The ability to understand how to depict a rounded object is geometrically quite different from the ability to understand corners and edges, where surfaces change slant abruptly. One cannot understand occlusion by a rounded object without a clear sense of a point of view."

"This work may bring about three things," Kennedy concludes. "We may find haptics and the sense of touch being reconsidered. We may be entering the current debate on the nature of depiction with fresh ideas and demonstrations. And most importantly, a pictorial avenue of communication with the blind may become a day-to-day reality." □

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