Scientists discover exactly how bats fly

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University of Maryland scientists using infrared cameras and ultrasonic microphones have found exactly how a bat moves in response to sound.

The researchers found a strong and predictable connection between where a bat "looks" with its sonar beam -- its acoustic gaze -- and how it flies.

Scientists have known bats "see" by emitting sounds and listening for the echoes that are returned.

What hasn't been known is if bats convert what they hear into what they do in the same way humans convert vision into action.

Now, University of Maryland Psychology Professor Cynthia Moss and doctoral student Kaushik Ghose have discovered a bat directs its beams of sound ahead of its flight, like a flashlight. If it directs its beam to the left, about a tenth of a second later it turns to the left. By adjusting how sharply it follows its beam, the bat is able to adapt between "looking" in a search mode and "homing" in attack mode.

Moss said the discovery is remarkable. "Such an adjustable linkage between vision and locomotion hasn't been found yet in sighted animals," she said.

The study appears in the Journal of Neuroscience.