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**Why do boomerangs come back?**

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Summary: After touching on the three most common misconceptions regarding boomerangs, the author goes on to explain why boomerangs are crescent shaped. The author explains, using the principle of precessional motion, why boomerangs turn leftwards and why they fall sideways. He performs a comprehensive analysis through the "right-hand rule," using the example of a gyro top. The author also explains how to make and fly the boomerang he invented – one that can be flown inside a room and returns correctly.

*Classification:* M50
*Keywords:* moment of inertia; lift force; left turn and sideways fall; torque; couple; precessional motion; gyroscopic effect; right-hand rule
http://www.ijpam.eu/contents/2012-78-3/5/index.html