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**Csaba Biro\***, Department of Mathematics, University of Louisville, and **Aaron Hill**. *Random walk with varying step size*. Preliminary report.

A well-known classical theorem of Polya states that one- and two-dimensional symmetric random walks are recurrent, while in larger dimension, they are transient. We study a different type of random walk, in which the step size may change with certain probability determined by a sequence. Our main result shows that the recurrence of the walk exhibits a phase transition type behavior. (Received February 06, 2017)