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Valentin Ferenczi and **Christian Rosendal*** (rosendal.math@gmail.com), Mathematics,
Statistics and Computer Science, University of Illinois at Chicago, 851 S. Morgan St., Chicago, IL
60607. *Maximal symmetry in Banach spaces.*

Mazur's rotation problem, though not appearing in the Scottish book but instead in Banach's monograph, remains one of the central unsolved problems of functional analysis dating back to this period of Polish mathematics.

The problem asks whether every separable Banach space whose isometry group acts transitively on the unit sphere must be euclidean, i.e., Hilbert space. This problem points to several aspects of the isometric theory of Banach spaces that are far from being well understood even in the case of Hilbert space, the common concept being that of maximal symmetry. We shall discuss various open problems and results in this direction. (Received September 11, 2014)