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**J. Peter May\*** ([may@math.uchicago.edu](mailto:may@math.uchicago.edu)), Department of Mathematics, The University of Chicago, Chicago, IL 600637. *Permutative and bipermutative categories revisited.*

It has been understood since 1972 that grouplike permutative categories are equivalent to connective spectra and grouplike bipermutative categories are equivalent to connective E infinity ring spectra. I'll give some modern variants on the theme of connecting categories with spectra, including some open questions that have recently arisen. One in particular concerns the analogue for spectra of the relationship between homotopy n-types and weak n-categories. A starting point, more or less understood in 1984 and recently rediscovered by algebraic geometers, relates Poincare groupoids to spectra with two non-vanishing homotopy groups. (Received September 03, 2008)