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Noncommutative probability provides new features: For example there is more than one notion of independence and the recent notion of free probability has provided many new insights in operator algebra theory. In contrast to the commutative situation we may find sequences of random variables which are indiscernable, but not exchangeable. In terms of norms this provides us with subsymmetric subspaces of certain noncommutative  $L_p$  spaces which are not symmetric. Moreover, by a result of Nhany noncommutative  $L_p$  spaces fail (in general) to be stable. We will review some of the standard applications and construction of ultraproducts in the theory of von Neumann algebras and show that how to derive symmetry results for noncommutative  $L_p$  spaces which hold “up to a constant”. We will also formulate a number of open questions about von Neumann algebras and ultraproducts. (Received September 24, 2005)