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Ben-Tal and Nemirovski introduce the matrix cube problem and connect it to semidefinite programming with interval uncertainty and quadratic Lyapunov stability analysis and synthesis. A principal result of theirs is the identification of a computable, but not explicit, error estimate for a natural relaxation of the problem. We show their relaxation has a natural interpretation - one that readily generalizes to the problem of free spectrahedral inclusion - in the theory of completely positive maps and operator systems. Further, the Ben-Tal Nemirovski estimate is sharp; the estimate itself arises naturally as a consequence of a dilation theorem; and, in the process of identifying an analytic expression for the bound, we establish probabilistic results related to Simmon's theorem for the binomial (beta) distribution. The work is joint with Bill Helton, Igor Klep and Markus Schweighofer. (Received September 08, 2014)