R Modules for Accurate and Reliable Statistical Computing, Perturb package

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Most empirical social scientists are surprised to find that low-level numerical issues in the software they use can have deleterious effects on the estimation process. In fact, statistical software that appears to be performing in a perfectly adequate fashion can be heneously wrong with revealing such problems. This article is intended to further raise awareness of such issues and to provide tools for detecting and correcting such problems. We develop a set of set of `R` modules that provide two general tools for improving accuracy: a way to measure the *sensitivity* of the results of one's statistical analyses to measurement error and numerical problems; and a method of detecting errors in data that occur in the translation of statistical data from another format. These modules also provide specific methods for checking the integrity of standard estimation techniques in a general way.