Near-consistent robust estimations of moments for unimodal distributions

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A. Congruent distribution. In the realm of nonparametric statistics, the relative differences, or orders, of robust estimators are of primary importance. Deducting from this principle, it is natural to assume that when there is a shift in the parameters of the underlying distribution, all nonparametric estimates should asymptotically change in the same direction, if they are estimating the same attribute of the distribution. Otherwise if the result of a statistical test based on the mean is completely different from that based on the median, a contradiction arises.

Data Availability. Data for Table **??** are given in SI Dataset S1. All codes are attached.

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