The estimation of a magnitude subject to a larger or smaller error can be compared not inappropriately to a game of chance in which one can only lose and never win and in which each possible error corresponds to a loss ... However, what specific loss we should ascribe to any specific error is by no means clear of itself. In fact, the determination of this loss depends at least in part on our judgement ... Among the infinite variety of possible functions the one that is the simplest seems to have the advantage and this is unquestionably the square ... Laplace treated the problem in a similar fashion, but he chose the size of the error as the measure of loss. However, unless we are mistaken this choice is surely not less arbitrary than ours.

C. F. Gauss, 1777-1855