

# THE RELATIONS BETWEEN STABILITY AND HOMOGENEITY\*

*By*

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The idea of investigating the stability of statistical frequencies from the standpoint of the theory of probability goes back to the French mathematician Bienaymé. From various examples taken from social and moral statistics, he was the first to establish the fact that, almost without exception, the stability in question was essentially less than the "classical norm," that is, less than the expectation which is associated with the classical scheme of independent trials with a constant underlying probability. In order to explain this discrepancy between theory and observation, Bienaymé used a modification of the traditional procedure which was characterized by the assumption that between neighboring trials in a time ordered sequence a sort of dependence existed. Though interesting in itself and among other things adopted by Cournot as his own, we shall replace this method in what follows by another, originating from Lexis, which has the advantage of a wider usefulness, in that it can be applied not only

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