0918 Assignment

Extract from:
Bradley Efron and Trevor Hastie
Computer Age Statistical Inference: Algorithms, Evidence, and Data Science
Cambridge University Press, 2016
https://web.stanford.edu/~hastie/CASI_files/PDF/casi

Modern Bayesian practice uses various strategies to construct an appropriate "prior" $g(\mu)$in the absence of prior experience, leaving many statisticians unconvinced by the resulting Bayesian inferences. Our second example illustrates the difficulty.

Table 3.1*Scores from two tests taken by 22 students, **mechanics**and **vectors**.

	1	2	3	4	5	6	7	8	9	10	11
mechanics	7	44	49	59	34	46	0	32	49	52	44
vectors	51	69	41	70	42	40	40	45	57	64	61

	12	13	14	15	16	17	18	19	20	21	22
mechanics	36	42	5	22	18	41	48	31	42	46	63
vectors	59	60	30	58	51	63	38	42	69	49	63

Table 3.1 shows the scores on two tests,**mechanics** and **vectors**, achieved by $n= $22 students. The sample correlation coefficient between the two scores is $\theta = 0.498$,

$$\hat{\Theta} = \sum_{i=1}^{22}(m_i - \bar{m})(v_i - \bar{v})/[\sum_{i=1}^{22}(m_i - \bar{m})^2 \sum_{i=1}^{22}(v_i - \bar{v})^2]^{1/2}$$

with m and v short for **mechanics**and **vectors**, $\bar{m}$ and $\bar{v}$ their averages.