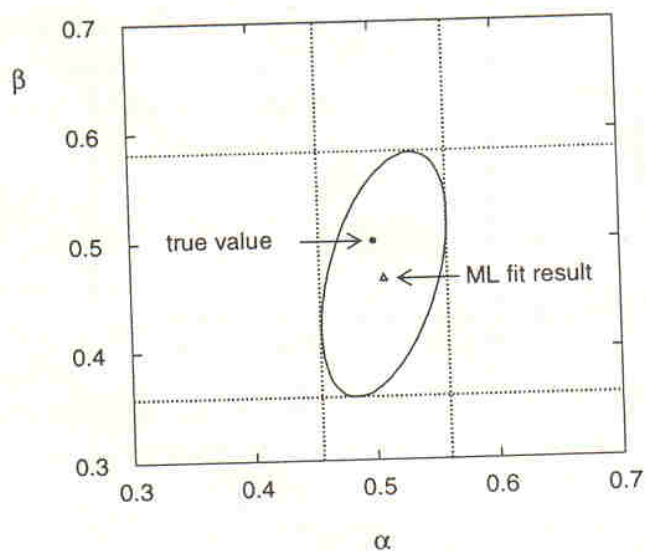


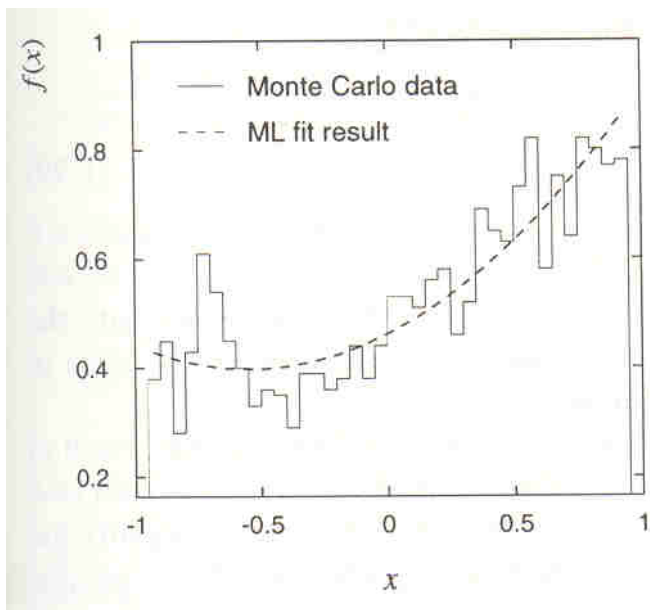
**Fig. 6.3** A histogram of the ML estimate  $\hat{\tau}$  from 1000 Monte Carlo experiments with 50 observations per experiment. For the Monte Carlo 'true' parameter  $\tau$ , the result of Fig. 6.2 was used. The sample standard deviation is  $s = 0.151$ .

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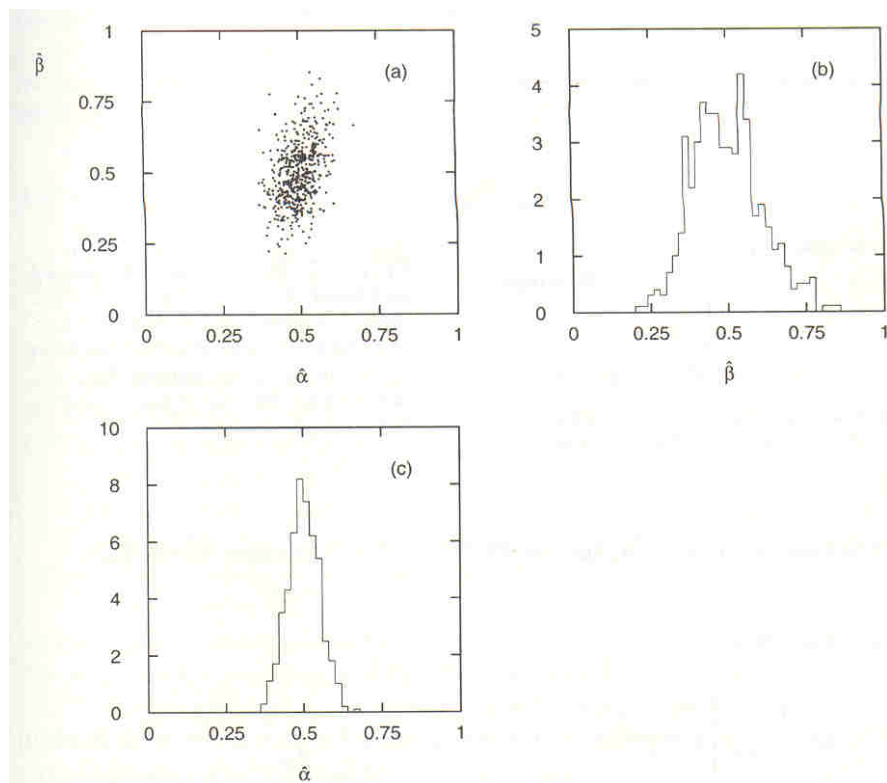
**Fig. 6.7** The contour of constant likelihood  $\log L = \log L_{\max} - 1/2$  shown with the true values for the parameters  $(\alpha, \beta)$  and the ML estimates  $(\hat{\alpha}, \hat{\beta})$ . In the large sample limit the tangents to the curve correspond to  $\hat{\alpha} \pm \hat{\sigma}_{\hat{\alpha}}$  and  $\hat{\beta} \pm \hat{\sigma}_{\hat{\beta}}$ .

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**Fig. 6.5** Histogram based on 2000 Monte Carlo generated values distributed according to equation (6.27) with  $\alpha = 0.5$ ,  $\beta = 0.5$ . Also shown is the result of the ML fit, which gave  $\hat{\alpha} = 0.508 \pm 0.052$  and  $\hat{\beta} = 0.466 \pm 0.108$ . The errors were computed numerically using equation (6.21).

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**Fig. 6.6** Results of ML fits to 500 Monte Carlo generated data sets. (a) The fitted values of  $\hat{\alpha}$  and  $\hat{\beta}$ . (b) The marginal distribution of  $\hat{\beta}$ . (c) The marginal distribution of  $\hat{\alpha}$ .

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