BOOTSTRAP PREDICTION AND BAYESIAN PREDICTION

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We consider a statistical prediction problem under the Kullback-Leibler loss. In a sense, Bayesian prediction is an optimal prediction method when the assumed statistical model is true. Bootstrap prediction is obtained by applying Breiman's 'bagging' method to a plug-in prediction. We show that bootstrap prediction can be considered to be an approximation to Bayesian prediction when the assumed model is true. We also show that bootstrap prediction is asymptotically more effective than Bayesian prediction under misspecified models.