FIGURE CAPTIONS

Figure 1 shows the mean square error (Eqn. 10), for the Bayes (solid) and Frequency Counts (dot-dash) estimators of the entropy $S(\mathbf{p}) = -\Sigma_{i=1}^{2} p_i \log(p_i)$.

Figure 2 shows the mean sample variance (Eqn. 11), of the Bayes (solid) and Frequency Counts (dot-dash) estimators of the entropy $S(\mathbf{p}) = -\Sigma_{i=1}^{2} p_i \log(p_i)$. Both variances are shown as functions of the sample size N.

Figure 3 shows the sample average (Eqn. 12), for the Bayes (solid) and Frequency Counts (dot-dash) estimators of the two bin (m = 2) entropy S($\mathbf{p}$). Both are graphed as functions of N for various values of $\mathbf{p}$ = (p , 1-p). The true value of S($\mathbf{p}$) is also graphed (dashed).

Figure 4, like figure 3, shows the sample average (Eqn. 12), for the Bayes (solid) and Frequency Counts (dot-dash) estimators of the two bin (m = 2) entropy S($\mathbf{p}$). However, in figure 4 both are graphed as functions of $\mathbf{p} = (p, 1-p)$ for various values of N. The true value of S($\mathbf{p}$) is also graphed (dashed).

Figure 5 shows the sample average deviation from true (Eqn. 14) , for the Bayes (solid) and Frequency Counts (dot-dash) estimators of the two bin (m = 2) entropy. Both are graphed as functions of $\mathbf{p}$ = (p , 1-p) for various values of N. The integral over p with the density P($\mathbf{p}$) appears as figure 1.

Figure 6 shows the posterior pdf (Eqn. 15) of the entropy S(**p**) for m = 2 and fixed counts ratio $n_1 : n_2 = 1 : 15$, but differing overall $N = n_1 + n_2$. As N increases, the density converges to a delta function at the value s = S(1/16 , 15/16) = 0.2338 of the entropy .