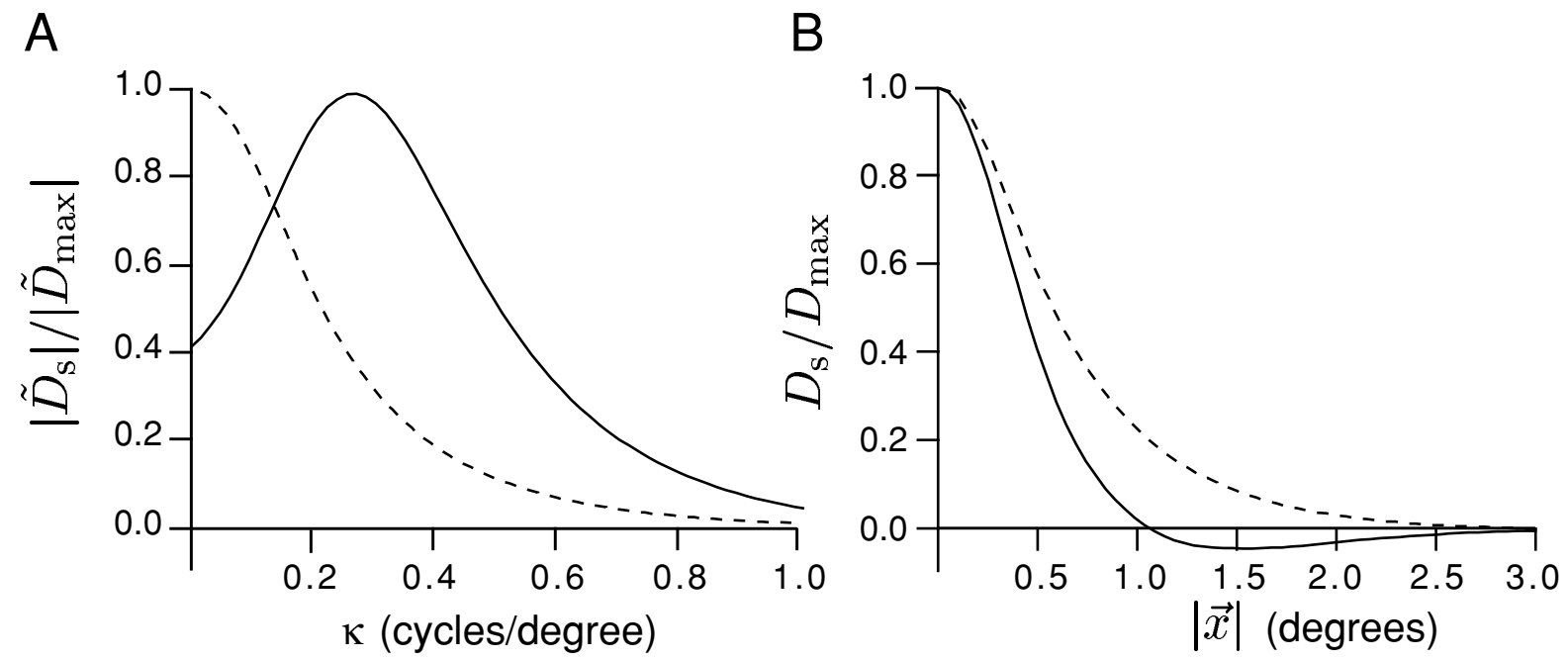
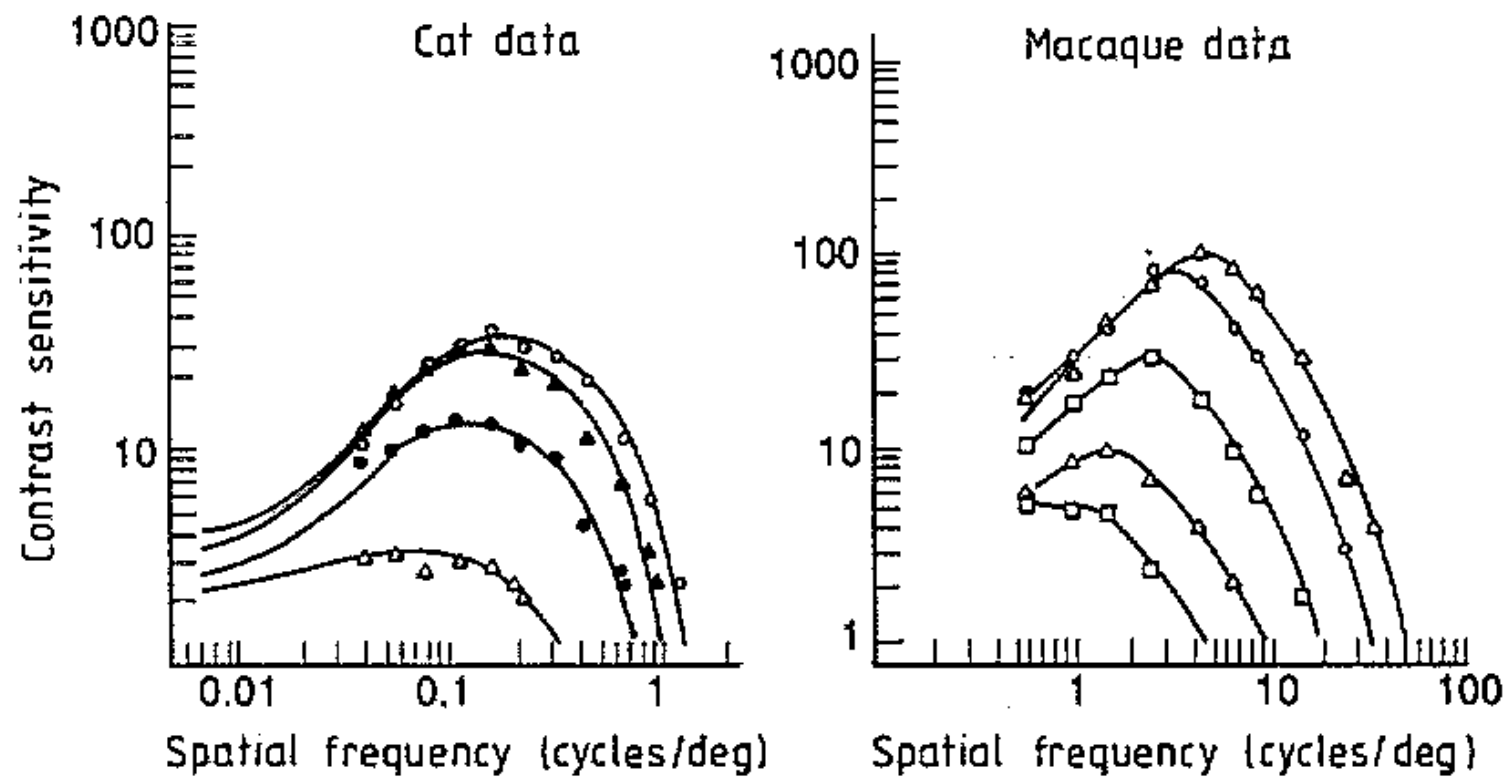


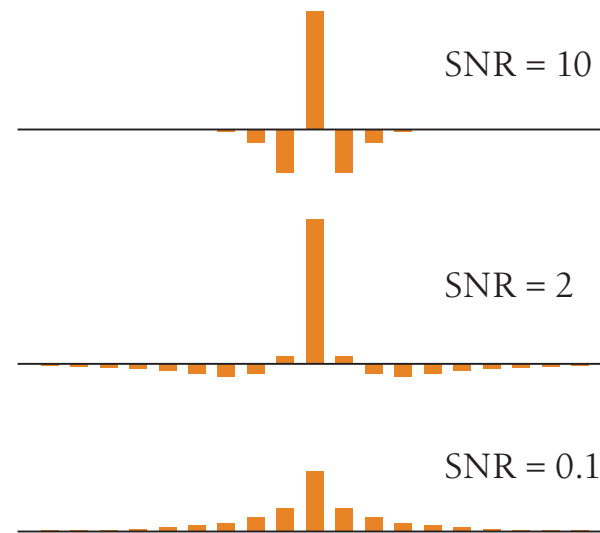
**Testing efficient coding principles**



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**FIGURE 6.33**

Cross-sections through the optimal matrices  $W_{ij}$  in the problem of efficient coding with noise. The correlation function is assumed to be exponential,  $C_{ij} \propto \exp(-|i - j|/\xi)$ , with  $\xi = 50$ , much longer than the range of interactions shown here. At high signal-to-noise ratios (SNRs), the solution looks like a differentiator, which removes the second-order correlations in the signal, whereas at low SNR, the solution integrates to suppress noise. Redrawn from Atick and Redlich (1990).

