- W is randomly chosen from the message set $\mathcal{W}$, so $H(W) = \log M$.

- $\mathbf{X} = (X_1, X_2, \cdots, X_n)$; $\mathbf{Y} = (Y_1, Y_2, \cdots, Y_n)$

- Thus $\mathbf{X} = e(W)$.

- Let $\hat{W} = g(\mathbf{Y})$ be the estimate on the message W by the decoder.