1001-92-79 **Dennis F. Cudia***, 5343 Cunningham Rd., Rockford, Illinois. *Inductive logic of the genetic code.* The degeneracy of a codon is the number of distinct codons that are translated to the same amino acid as the codon.

Theorem. The decrease in information in translating a codon in $m - RNA$ is $\log_2 d$ bits where $d = 1, 2, 3, 4$, or 6 is the degeneracy of the codon.

Proof. If XYZ is the full set of codons translating to the amino acid $A.A.$ then for the cause XYZ and the effect $A.A.$ the likelihood table $LT = I$, the identity matrix, and the prior probability matrix $C = \text{diag}(d/64, 1 - d/64)$. Therefore the predictive value table $PV = I$. Hence the expected information is $EI((d/64, 1 - d/64) \to (1, 0)) = 6 - \log_2 d$. Since the information in a codon is 6 bits the proof is complete. The loss of information in generating the A-chain, B-chain, C-chain, respectively, of proinsulin is $22 + 6\log_2 3$ bits, $40 + 6\log_2 3$ bits, $49 + 8\log_2 3$ bits, respectively. See [3, p. 738].

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