Chapter in *Open Problems in Communication and Computation.*
Springer-Verlag, 1987. T. Cover and B. Gopinath, editors.

4.8 FINITE MEMORY CLOCKS

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How does one tell time when the number of states in the clock is insufficient to count the elapsed time? For that matter, how good are humans at estimating the passage of time?

Let P_n be the probability that a given m-state Markov chain first enters its clock state at time n. We can design a clock such that $P_n \approx (m-1)/ne$, for $n \gg m$. Can one do better?