

# NOTES

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Hartmanis and Stearns begin the study of computational complexity on Turing machines. The early papers on time and space as well as multitape simulation and real-time computation are:

J. HARTMANIS and R. E. STEARNS. "On the computational complexity of algorithms," *Trans. AMS* 117 (1965), 285-305.

J. HARTMANIS, P. M. LEWIS II, and R. E. STEARNS. "Hierarchies of memory limited computations," *Proc. 6th Annual IEEE Symp. on Switching Circuit Theory and Logical Design* (1965), 179-190.

P. M. LEWIS II, R. E. STEARNS, and J. HARTMANIS. "Memory bounds for the recognition of context-free and context-sensitive languages," *Proc. 6th Annual IEEE Symp. on Switching Circuit Theory and Logical Design* (1965), 191-202.

F.C. HENNIE and R.E. STEARNS. "Two-tape simulation of multitape Turing machines," *J. ACM* 13:4 (1966), 533-546.

M. O. RABIN. "Real-time computation," *Israel J. Math.* 1 (1963), 203-211.

The speedup theorem as well as a axiomatic theory of complexity came from:

M. BLUM. "A machine-independent theory of the complexity of recursive functions," *J. ACM* 14:2 (1967), 322-336.

The theorem on the relationship between deterministic and nondeterministic space classes is from:

W. J. SAVITCH. "Relationships between nondeterministic and deterministic tape complexities," *J. Comput. and System Sci* 4:2 (1970), 177-192.

Cobham was the first to mention the class P and the initial NP-complete set was discovered by Cook. Karp quickly produced more and the last reference is an encyclopedia of such sets.

A. COBHAM. "The intrinsic computational difficulty of functions," *Proc. 1964 Congress for Logic, Mathematics, and the Philosophy of Science*. North Holland, 1964, 24-30.

S. A. COOK. "The complexity of theorem proving procedures," *Proc. 3rd Annual ACM Symp. on the Theory of Computation* (1971), 151-158.

R. M. KARP. "Reducibility among combinatorial problems," *Complexity of Computer Computations*, Plenum Press, NY, 1972, 85-104.

M. R. GAREY and D. S. JOHNSON. *Computers and Intractability: A Guide to the Theory of NP-Completeness*, H. Freeman, San Francisco, 1978.

More material on complexity may be found in any of the general theory of computation texts mentioned in the notes for the section on computability.