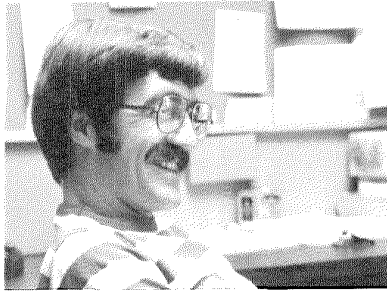


Casino Power

On the cover — mathematical formulas relevant to both statistics and gambling superimposed on a familiar instrument of the latter — a 70-year-old, hand-carved roulette wheel. Gary Lorden's research in sequential analysis, based on sampling data one point at a time, is applicable to both fields of endeavor — to dice as well as data. In his article, "Gambling with Statistics," on page 6, he explains this relationship and graciously volunteers a few mathematical tips on intelligent betting.

Lorden himself is not a threat to the Las Vegas casino circuit; he prefers two-dollar bets (which everyone knows won't break the bank). He's been risk averse ever since becoming a math major at Caltech (BS '62). With a PhD from Cornell in 1966, he returned to Caltech in 1968 and is now professor of mathematics as well as coach of one of the Institute's most successful teams — not the blackjack team, but the William Lowell Putnam Mathematical Competition team, which has won the national prize five times in the last nine years.

Gary Lorden



Morris Fiorina

The Party's Over

Election day may be past, but Morris Fiorina's involvement with elections didn't end then. As professor of political science, he maintains a year-round interest in government and politics, particularly in Congress and elections. Fiorina actually delivered his Watson Lecture on the weakening of political parties, "The Decline of Collective Responsibility in American Politics," before November 4, but the article adapted from it, beginning on page 12, is perhaps even more pertinent in hindsight. (The complete paper was first published in the Summer 1980 issue of *Daedalus*.) He has, however, written an analysis of the meaning of that election, which appears on page 32.

Fiorina came to Caltech in 1972 with a BA from Allegheny College and a PhD from the University of Rochester, and he's been instrumental in the development of the strong interdisciplinary research that characterizes the social sciences program at the Institute. He admits that being a specialist in politics at a place like Caltech "gets a bit lonely at times," but it must be somewhat less lonely at least every four years around this time. Fiorina is the author of three books, one of which, *Congress — Keystone of the Washington Establishment*, won the Washington Monthly annual political book award in 1977.

The View from Engineering

For several years *E&S* has been presenting excerpts from the Oral History of Caltech as gathered by the Institute Archives from interviews with more than 20 senior professors. Although each of those histories has covered roughly the same period of time, the recollections have been remarkably diverse — a mix of varied approaches to the same situations and genuinely different experiences.

In this issue Frederick C. Lindvall, professor of engineering emeritus, reviews his early days at the Institute as a graduate student and young instructor in electrical engineering. The reminiscences in this Oral History are particularly appropriate just now in connection with the symposium held November 6 and 7 in honor of the 70th anniversary of electrical engineering at Caltech as started by Professor Royal W. Sorensen. As one of the symposium speakers, Lindvall took a retrospective look at those beginnings. Many of his more personal recollections can be found in "Frederick C. Lindvall — How It Was," which begins on page 17.

Lindvall received his PhD in 1928, and then spent two years at General Electric. From 1930 to 1968, he was active in research, teaching, and administration at Caltech. The chief areas of his research were vacuum switching phenomena, aerodynamic effects on atmospheric glow discharges, and the dynamics of rail and road vehicles. He was also active in promoting engineering education both at Caltech and on a national level. For 24 years he was chairman of the engineering division. After his retirement, Lindvall spent three years as a vice president of Deere & Company in Moline, Illinois, and then returned to Pasadena, where he now lives with his wife, Janet, and serves as president of Lindvall, Richter, and Associates, an earthquake advisory firm.

STAFF: Editor — Jacquelyn Bonner

Staff Writer — Jane Dietrich

Photographer — Chris Tschoegl

PICTURE CREDITS: Cover — Chris Tschoegl (roulette wheel, courtesy Big Al Bond)/2, 10, 23, 24, 26 — Chris Tschoegl/2. 11 — Floyd Clark.

Engineering & Science (ISSN 0013-7812) is published five times a year, October, December, February, April, and June, at the California Institute of Technology, 1201 East California Boulevard, Pasadena, California 91125. Annual subscription \$5.00 domestic, \$10.00 foreign, \$15.00 foreign air mail, single copies \$1.00. Controlled Circulation postage paid at Pasadena, California. All rights reserved. Reproduction of material contained herein forbidden without authorization. © 1980 Alumni Association California Institute of Technology. Published by the California Institute of Technology and the Alumni Association. Postmaster: Send change of address to Caltech, 1-71, Pasadena, CA 91125.