FROM THE LIBRARY SHELF

Edited by Phyllis Schiller Myers
Virginia Commonwealth University

THEORY OF CONTRACTS

Short-Term Contracts and Long-Term Agency Relationships, by Drew Fudenberg (Massachusetts Institute of Technology), Bengt Holmstrom (Yale University), and Paul Milgrom (Stanford University)

Long-term contracts are valuable only if optimal contracting requires commitment to a plan today that would not otherwise be adopted tomorrow. We show that commitments are unnecessary, and hence short-term contracts are sufficient if (1) all public information can be used in contracting, (2) the agent can access a bank on equal terms with the principal, (3) recontracting takes place with common knowledge about technology and preferences and (4) the frontier of expected utility payoffs generated by the set of incentive-compatible contracts is downward sloping at all times. *Journal of Economic Theory*, Vol. 51, No. 1 (June 1990), pp. 1–31. (Reprinted with permission of the *Journal of Economic Theory*).

ECONOMICS OF INFORMATION

The Principal-Agent Relationship with an Informed Principal: The Case of Private Values, by Eric Maskin (Harvard University) and Jean Tirole (Massachusetts Institute of Technology)

We analyze the principal-agent relationship when the principal has private information as a three-stage noncooperative game: contract proposal, acceptance/refusal and contract execution. We assume that the information does not directly affect the agent's payoff (private values). Equilibrium exists and is generically locally unique. Moreover, it is Pareto optimal for the different types of principal. The principal generically does strictly better than when the agent knows her information. Equilibrium allocations are the Walrasian equilibria of an "economy" where the traders are different types of principal and "exchange" the slack on the agent's individual rationality and incentive compatibility constraints. *Econometrica*, Vol. 58, No. 2 (March 1990), pp. 379–409. (Reprinted with permission of *Econometrica*).

RISK PERCEPTION AND ECONOMIC BEHAVIOR

The Effect on the Preference-Reversal Phenomenon of Using Choice Indifferences, by Raphael Bostic (SRA Corporation, Arlington, Virginia) and R.J. Herrnstein and R. Duncan Luce (Harvard University)

Preference reversal appears to be non-transitive choice behavior, inasmuch as subjects choosing between two gambles with similar expected values typically select the one with a larger chance of winning (a P-bet), yet they place a higher certainty equivalent, or judged indifference point (JIP), on the one with the larger amount to win (the \$-bet). In the present experiments, we explore a pair of methods for determining money indifference points that are procedurally closer than is common in this research to the choice phase of the preference reversal experiment. The two new approaches for determining money indifference points for gambles (called choice indifference points, or CIP) are as follows: a version of the classical psychophysical up-down method and a variant called PEST (i.e., Parameter Estimation by Sequential Testing). With both methods, CIPs reduced the number of reversals, as compared to JIPs, to the point with PEST that the remaining ones may be due primarily to chance fluctuations in choices between gambles. Subjects who reversed frequently usually judged the gambles to have similar values; those who did not reverse at all, judged them as different. The typical subject exhibits JIP>CIP for \$-bets, but not for P-bets. This bias appears to underlie the observed intransitivity when HIp is used. *Journal of Economic Behavior and Organization*, Vol. 13, No. 2 (March 1990), pp. 193–212. (Reprinted with permission of North-Holland Publishing Company).

Gambling With the House Money and Trying to Break Even: The Effects of Prior Outcomes on Risky Choice, by Richard H. Thaler (Cornell University) and Eric J. Johnson (University of Pennsylvania)

How is risk-taking affected by prior gains and losses? While normative theory implores decision makers to only consider incremental outcomes, real decision makers are influenced by prior outcomes. We first consider how prior outcomes are combined with the potential payoffs offered by current choices. We propose an editing rule to describe how decision makers frame such problems. We also present data from real money experiments supporting a "house money effect" (increased risk seeking in the presence of a prior gain) and "break-even effects (in the presence of prior losses, outcomes which offer a chance to break even are especially attractive). *Management Science*, Vol. 36, No. 6 (June 1990), pp. 643–60. (Reprinted with permission of *Management Science*).

Characteristics of Risk Taking Executives, by Kenneth R. MacCrimmon and Donald A. Wehrung (University of British Columbia)

More than 500 top-level business executives were studied to ascertain the validity of common stereotypes of who takes risks and who avoids risks. We began with 13 risk measures based on theoretical grounds, naturally occurring situations, and attitudes. These measures were formed into seven consolidated measures using factor analysis. Data were gathered on numerous socioeconomic variables including ones relating to personal, financial, and professional characteristics. When these characteristics were subjected to factor analysis, four main factors emerged. Linear discriminant analysis was used to address the question of whether risk takers can be differentiated from risk averters. The results were surprisingly clearcut. The most successful executives were the biggest risk takers; the more mature executives were the most risk averse. *Management Science*, Vol. 36, No. 4 (April 1990), pp. 422–35. (Reprinted with permission of *Management Science*).

GAME THEORY

Communication between Rational Agents, by Matthew Rabin (University of California)

Conventional game-theoretic solution concepts *never* guarantee meaningful communication in cheap-talk games. I define a solution concept which does guarantee communication in some games. I assume full rationality without imposing equilibrium conditions, but add a natural behavioral assumption about how agents use language: agents have a propensity to speak the truth and to believe others speak the truth, but use the game's strategic incentives to check whether such behavior and beliefs are rational. I also define and prove the existence of an equilibrium version of the concept, and present examples where its predictions seem more natural than Farrell's neologism-proof equilibrium. *Journal of Economic Theory*, Vol. 51, No. 1 (June 1990), pp. 144–70. (Reprinted with permission of the *Journal of Economic Theory*).

UTILITY THEORY

First Order versus Second Order Risk Aversion, by Uzi Segal (University of Toronto) and Avia Spivak (Ben Gurion University)

This paper defines a new concept of attitude towards risk. For an actuarially fair random variable $\tilde{\varepsilon}$, π (t) is the risk premium the decisionmaker is willing to pay to avoid $t\tilde{\varepsilon}$. In expected utility, and as it turns out, in the case of smooth Fréchet differentiability of the representation functional, $\pi'(0)=0$. There are models (e.g., rank dependent probabilities) in which $\partial\pi/\partial t|_{t=0+} \neq 0$. We call the latter attitude as being of order 1, and we call the first one attitude of order 2. These concepts are then applied to analyze the problem of full insurance. *Journal of Economic Theory*, Vol. 51, No. 1 (June 1990), pp. 111–125. (Reprinted with permission of the *Journal of Economic Theory*).

Utility Functions That Depend on Health Status: Estimates and Economic Implications by W. Kip Viscusi (Duke University) and William N. Evans (University of Maryland)

Taylor's series and logarithmic estimates of health state-dependent utility functions both imply that job injuries reduce one's utility and marginal utility of income, thus rejecting the monetary loss equivalent formulation. Injury valuations have unitary income elasticity, and the valuation of non-incremental risk changes and effects of base risks follow economic predictions. *The American Economic Review*, Vol. 80, No. 3 (June 1990), pp. 353–74. (Reprinted with permission of The American Economic Association).

MATHEMATICAL AND STATISTICAL MODELS

A Statistical Perspective on Insurance Rate-Making, by Cheng Hsiao (University of Southern California, Los Angeles), Changseob Kim (Milliman and Robertson, Inc., Pasadena, California), and Grant Taylor (University of Southern California, Los Angeles)

A common problem in all areas of insurance is the proper pricing of a policy based on what is known about the individual being insured. This paper examines alternative methods for predicting the expected loss (it is called a pure premium in insurance) of a policyholder. It appears that the decomposition of pure premiums of a policyholder into the probability of claim occurrence and the claim severity conditioned on claim occurrence is able to provide simple, yet flexible specifications. The analysis compares the traditional actuarial and regression methods with the censored regression two-part model and sample-selection simultaneous-equations model. The insurance experience of Canadian private passenger automobiles for the years 1984 to 1987 seems to support the sample-selection simultaneous-equations model as a superior alternative to the conventional ad hoc, piecemeal manner of estimating pure premium. *Journal of Econometrics*, Vol. 44, No. 1/2 (1990), pp. 5–24. (Reprinted with permission of North-Holland Publishing Company).

Distributions in Life Insurance, by Jan Dhaene (Instituut voor Actuariële Wetenschappen, K.U. Leuven, Belgium)

In most textbooks and papers that deal with the stochastic theory of life contingencies, the stochastic approach is restricted to the computation of expectations and higher order moments. For a wide class of insurances on a single life, we derive the distribution and the probability density function of the benefit and the loss functions. Both the continuous and the discrete case are considered. *Astin Bulletin*, Vol. 58, No. 1 (April 1990), pp. 81–92. (Reprinted with permission of the *Astin Bulletin*).

Fuzzy Insurance, by Jean Lemaire (University of Pennsylvania)

Fuzzy set theory is a recently developed field of mathematics, that introduces sets of objects whose boundaries are not sharply defined. Whereas in ordinary Boolean algebra an element is either contained or not contained in a given set, in fuzzy set theory the transition between membership and non-membership is gradual. The theory aims at modelizing situations described in vague or imprecise terms, or situations that are too complex or ill-defined to be analysed by conventional methods. This paper aims at presenting the basic concepts of the theory in an insurance framework. First the basic definitions of fuzzy logic are presented, and applied to provide a flexible definition of a "preferred policyholder" in life insurance. Next, fuzzy decision-making procedures are illustrated by a reinsurance application, and the theory of fuzzy numbers is extended to define fuzzy insurance premiums. *Astin Bulletin*, Vol. 58, No. 1 (April 1990), pp. 33–55. (Reprinted with permission of the *Astin Bulletin*).

HEALTH CARE AND INSURANCE

Group Health Insurance: A Hedonic Price Approach, by Gail A. Jensen (Wayne State University) and Michael A. Morrisey (University of Alabama, Birmingham)

We examine the premium consequences of alternative health insurance provisions by estimating pricing regressions for group insurance with data on 9019 fee-for-service (FFS) plans offered by larger firms in the private sector. We find that cost-sharing at the point of purchase, especially for hospital care, significantly lowers FFS premiums. However, some aspects of plan design which are often touted as cost-reducing, such as self-insuring or offering employees the option to join a health maintenance organization, are found to increase premiums. Coverage of alcoholism/chemical dependency treatments, inpatient mental health care, and psychologists' services, which are mandated in many states, are found to be expensive. *The Review of Economics and Statistics*, Vol. LXXII, No. 1 (February 1990), pp. 38–44. (Reprinted with permission of *The Review of Economics and Statistics*).

Ethnic Differences in the Demand for Physician and Hospital Utilization among Older Adults in Major American Cities: Conspicuous Evidence of Considerable Inequalities, by Fredric D. Wolinsky, Benigno E. Aguirre, Lih-Jiuan Fann, Verna M. Keith, Connie L. Arnold, John C. Niederhauer, and Kathy Dietrich (Texas A & M University)

Reinterpreting ethnicity's role in the prevailing behavioral model of health services usage reveals among older Americans a patient pattern of inequality favoring the Anglo-American population. Demand for hospital and physicians' care among minority elderly is far more constrained and sensitive to health needs than it is for their Anglo-American counterparts. The findings underscore the importance of examining ethnic differences in determinants of health behavior as well as in health service utilization. Such results also appear to strengthen the grounds for developing new programs aimed at eliminating inequalities of access to health care that older members of minorities now face. *The Milbank Quarterly*, Vol. 67, Nos. 3–4 (1989), pp. 412–49. (Reprinted with permission of Cambridge University Press).

Studying the Cost of HIV-related Illnesses: Reflections on the Moving Target, by Anne A. Scitovsky (Palo Alto Medical Foundation/Research Institute)

Although medical care costs of the HIV epidemic by 1991 may reach $6 billion, or 1.2 percent of all estimated personal health care expenditures in the United States, costs per patient of treating AIDS appear to be declining. Calculating the epidemic's costs is difficult, however, in that data are lacking on health care expenditures for HIV-infected persons other than those with AIDS, intravenous drug users, women, and children. Shifts in demographic segments affected, changes in medical treatments, and diffusion beyond initial urban centers will alter the economics of AIDS. Prospective studies at both national and local levels are needed to gauge the epidemic's costs and demands on health services. *The Milbank Quarterly*, Vol. 67, No. 2 (1989), pp. 318–44. (Reprinted with permission of Cambridge University Press).

SOCIAL INSURANCE

The Design of Direct Taxation and Family Benefits, by A.B. Atkinson (London School of Economics) and F. Bourguignon (DELTA and E.H.E.S.S., Paris, France)

The subject of this paper is the design of the personal income tax and social security benefits that vary with the size of the family. It is concerned with the analytical problems of policy design that arise from constraints on the instruments which may be used, from differences in social judgements about the desirability of redistribution, and from differences of view about the disincentive effects of taxation. The paper considers these issues in the context of the French tax-benefit system and the implications of the French system being 'harmonised' towards certain features of the British system. *Journal of Public Economics*, Vol. 41, No. 1 (February 1990), pp. 3–29. (Reprinted with permission of North-Holland Publishing Company).

The Effect of Social Security on Married Women's Labor Force Participation, by Therese A. McCarty (Union College, Schenectady, NY)

The Social Security program potentially affects labor supply decisions by altering the wage rate and by creating non-labor retirement income. As a group, married women's wage rates are reduced by relatively high net payroll tax rates. Using a probit procedure to estimate a labor force participation equation with data from the Retirement History Survey, we find that high net payroll tax rates are a labor supply disincentive for many married women, particularly those near retirement age. However, Social Security wealth, the present value of claims to future benefits, does not appear to affect women's labor supply decisions. *National Tax Journal*, Vol. XLIII, No. 3 (March 1990), pp. 95–110. (Reprinted with permission of the *National Tax Journal*).

Investment of Social Security Reserves in Three Countries, by Leif Haanes-Olsen (Social Security Administration)

The current buildup of the U.S. Social Security Trust Fund has caused speculation about both the potential consequences of the buildup under different policy objectives and the fund's management. As is often the case, the search for precedents under similar circumstances abroad has been quite extensive on the part of legislators and U.S. experts in the field of financial policy. This article summarizes the experiences of Canada, Japan, and Sweden—all of whom have accumulated large trust fund reserves—with a focus on their investment policies. Trust fund investments in the three countries are similar as to types of investments, but the pattern of distribution of these investments varies widely from one country to another. *Social Security Bulletin*, Vol. 53, No. 2 (February 1990), pp. 2–8.

On the Intergenerational Pareto Efficiency of Pay-as-You-Go Financed Pension Systems, by Friedrich Breyer (Fern-Universität Hagen, West Germany)

When a pay-as-you-go financed public pension system is replaced by a funded system or by private savings, it is generally impossible to compensate the pensioners in the transition generation for the loss incurred without making at least one later generation worse off. This is shown in a standard one-sector overlapping-generations model, both for a "small" open and for a closed economy. The author's finding imply that the choice between financing methods for social security can not be reduced to the intergenerational Pareto criterion, but necessarily involves distributional conflicts among generations. *Journal of Institutional and Theoretical Economics*, Vol. 145, No. 4 (December 1989), pp. 643–58. (Reprinted with permission of the *Journal of Economic Literature*).

The Impact of the Potential Duration of Unemployment Benefits on the Duration of Unemployment, by Lawrence F. Katz (Harvard University and NBER, Cambridge, MA) and Bruce D. Meyer (Northwestern University and NBER, Cambridge, MA)

This paper examines the impact of the potential duration of unemployment insurance (UI) benefits on unemployment in the United States. First, we use a large sample of household heads to examine differences in the unemployment spell distributions of UI recipients and nonrecipients. Sharp increases in the escape rate from unemployment both through recalls and new job acceptances are apparent for UI recipients around the time of benefits exhaustion. Such increases are not apparent at similar points of spell duration for nonrecipients. Second, our analysis of accurate administrative data from 12 states indicates that a one week increase in potential benefit duration increases the average duration of the unemployment spells of UI recipients by 0.16 to 0.20 weeks. *Journal of Public Economics*, Vol. 41, No. 1 (February 1990), pp. 45–72. (Reprinted with permission of North-Holland Publishing Company).

Incentive Effects of Workers' Compensation Insurance, by Alan B. Krueger (Princeton University and NBER, Cambridge, MA)

This paper uses micro-level data from the Current Population Survey to estimate the determinants of participation in state workers' compensation programs in the United States. The principal finding is that higher workers' compensation benefits are associated with greater participation in the workers' compensation program, after accounting for a variety of covariates. In addition, the waiting period is found to have a substantial negative effect on program participation. Finally, time-series estimates based on the cross-sectional model show that the growth in workers' compensation claims in the 1970s corresponds reasonably well with the growth in real benefits in this time period. *Journal of Public Economics*, Vol. 41, No. 1 (February 1990), pp. 73–99. (Reprinted with permission of North-Holland Publishing Company).

DEMOGRAPHY

Two-Sex Demographic Models, by Robert A. Pollak (University of Pennsylvania and University of Washington)

Classical stable population theory, the standard model of population age structure and growth, is ill suited to addressing many issues that concern economists and demographers because it is a "one-sex" theory. This paper investigates the existence, uniqueness, and dynamic stability of equilibrium in the birth matrix-mating rule (BMMR) model, a new model of age structure and growth for two-sex, monogamously mating, populations. The paper shows, by means of examples, that the BMMR model can have multiple nontrivial equilibria and establishes sufficient conditions for uniqueness. It generalizes a theorem of W. Brian Arthur to nonlinear systems and uses it to establish sufficient conditions for local dynamic stability. *Journal of Political Economy*, Vol. 98, No. 2 (April 1990), pp. 399–420. (Reprinted with permission *Journal of Political Economy*).

ESTATE PLANNING AND DISTRIBUTION

Taxing Wealth: An Accessions Tax Proposal for the U.S., by Sidney L. Carroll (University of Tennessee, Knoxville)

This paper examines a policy intended to alter the extreme skewness of the upper tail of the United States wealth distribution. It is demonstrated that a pronounced and abrupt increase in inequality occurs for the wealthiest 3 percent. After reviewing properties of "accession" taxes, a cumulative tax on an individual's life-time inheritances and gift receipts, two versions are simulated in the national economy and the results compared with current estate taxes. Such a policy is recommended because it would drastically moderate wealth inequality over time with surprisingly mild economic side effects. *Journal of Post Keynesian Economics*, Vol. 12, No. 1 (Fall 1989), pp. 49–69. (Reprinted with permission of the *Journal of Economic Literature*).

INSURER MANAGEMENT AND REGULATION

Accounting Procedures, Market Data, Cash-Flow Figures, and Insolvency Classification: The Case of the Insurance Industry, by Ran BarNiv (Ben-Gurion University)

The property-liability (P&L) insurance industry has used statutory accounting principles (SAP) primarily for measuring and monitoring solvency. In recent years disputes have arisen concerning differences between SAP and the Generally Accepted Accounting Principles (GAAP), and their applications to the P&L industry. The distinguishing characteristics of SAP include the use of market prices for valuation of equity portfolios of P&L firms, and the mismatching of revenues and expenses. The present study compares SAP with GAAP and with an alternative accounting procedure that might be called market value- and cash-flow based principles (MVA). The main characteristics of MVA are the use of market data for valuation of both stock and bond portfolios, and the use of cash flow for earnings.

The purpose of this study is to determine which of the three accounting procedures provides better information for monitoring solvency and identifying financial distress. Thus, the major hypothesis of this study is that increased availability of market-based data and increased reliance on cash-flow figures yield incremental benefits in predicting financial insolvency in the P&L industry.

Some empirical evidence with respect to the relative efficacy of SAP has been reported for the late 1960s and 1970s. These earlier studies used multidiscriminant analysis (MDA) and suffered from some methodological problems. The present study extends previous analyses by using relatively more comprehensive accounting data in logit analysis.

A sample of 105 P&L companies that failed during the period 1975–1987 is used in this study. The insolvent insurers were matched with 106 P&L insurers selected at random from A.M. Best files. The solvent and insolvent samples were each split into an estimation sample and a holdout sample. The results of this study are reported for one and three years prior to insolvency. Univeriate analysis and multivariate logit analyses are presented.

The hypothesis that alternative accounting procedures provide similar classification results was rejected in this paper for both the estimation and holdout samples and for the one and three years prior to the onset of insolvency. The analyses also considered misclassification costs, prior probabilities, and choice-based sample biases; both MVA and SAP procedures outperformed GAAP procedures for all classification and prediction, but the differences were often not significant. Thus, empirical evidence presented suggests that the SAP and the MVA provide classification and prediction of insolvencies in the P&L insurance industry over and above that provided by the GAAP. *The Accounting Review*, Vol. 65, No. 3 (July 1990), pp. 578–604. (Reprinted with permission of *The Accounting Review*).

Predicting IBNYR Events and Delays: II. Discrete Time, by William S. Jewell (University of California at Berkeley)

An IBNYR event is one that occurs randomly during some fixed exposure interval and incurs a random delay before it is reported. A previous paper developed a continuous-time model of the IBNYR process in which both the Poisson rate at which events occur and the parameters of the delay distribution are unknown random quantities; a full-distributional Bayesian method was then developed to predict the number of unreported events. Using a numerical example, the success of this approach was shown to depend upon whether or not the occurrence dates were available in addition to the reporting dates. This paper considers the more usual practical situation in which only discretized epoch information is available; this leads to a loss of predictive accuracy, which is investigated by considering various levels of quantization for the same numerical example. *Astin Bulletin*, Vol. 58, No. 1 (April 1990), pp. 93–112. (Reprinted with permission of the *Astin Bulletin*).

REINSURANCE

The Asymptotic Efficiency of Largest Claims Reinsurance Treaties, by Erhard Kremer (Hamburg & Löhnbert, FRG)

Reinsurance treaties defined as generalizations of the classical largest claims reinsurance covers are investigated with respect to the associated risk, defined as the variance of the insurer's retaining total claims amount. Instead of the unhandy variance corresponding handier asymptotic expressions are used. With these an asymptotic efficiency measure for comparing two such reinsurance covers is defined. It is shown that with respect to asymptotic efficiency the excess-of-loss treaty is better than the classical largest claims treaty. Furthermore the problem of giving optimal weights to the ordered claims of a generalized largest claims cover is discussed. *Astin Bulletin*, Vol. 20, No. 1 (April 1990), pp. 11–22. (Reprinted with permission of the *Astin Bulletin*).

LIABILITY RULES

Liability and Large-Scale, Long-Term Hazards, by Al H. Ringleb (Clemson University) and Steven N. Wiggins (Texas A & M University)

This paper analyzes the application of liability to large-scale, long-term hazards. The key features distinguishing such hazards are the long temporal separation between exposure to a hazard and disease and the large damages when injuries finally emerge. The large scale of damages creates a strong incentive to avoid liability payments, and the long temporal separation creates numerous avenues through which parties can avoid paying possible damage awards. The analysis focuses on the incentive to avoid paying damages by vertically divesting production tasks associated with serious occupational risks. Such divestiture can lower liability costs if the small firm operating the risky stage goes out of business before latent injuries emerge or has insufficient assets to pay damages and declares bankruptcy when suits are filed. The paper then presents an empirical regression analysis of small-firm entry into the U.S. economy between 1967 and 1980, the period in which liability laws were changing. The point estimate is that, ceteris paribus, liability changes appear to have led to a large increase in small corporations in hazardous sectors. Hence the empirical analysis shows widespread attempts to avoid liability by shielding assets through divestiture. *Journal of Political Economy*, Vol. 98, No. 3 (June 1990), pp. 574–95. (Reprinted with permission of the *Journal of Political Economy*).

Indivisible Toxic Torts; The Economics of Joint and Several Liability, by Tom H. Tietenberg (Colby College)

The Comprehensive Environmental Response, Compensation, and Liability Act allows the government to sue parties who are potentially responsible for the hazardous nature of toxic waste sites in order to cover the costs of restoring them. The legal rule governing these suits is joint and several liability with the right of contribution authorized. This paper investigates the extent to which this approach encourages efficient precautionary behavior by analyzing incentive created by the legal precedents. A noncooperative game theory model is used to characterize the Nash equilibria for the government litigation team and the potentially responsible parties under a number of legal regimes. *Land Economics*, Vol. 65, No. 4 (November 1989), pp. 305–19. (Reprinted with permission of the *Journal of Economic Literature*).

INJURY COMPENSATION

Victim Compensation Revisited, by Arthur M. Sullivan (University of California, Davis)

The siting of an 'efficient' noxious facility may decrease social welfare if people care about horizontal equity. The facility decreases the relative attractiveness of the host city, decreasing land rent in the host city and increasing land rent elsewhere. Victim compensation, which promotes horizontal equity at the expense of efficiency, will increase social welfare if (a) the demand for land is relatively inelastic, (b) the demand for the output of the noxious facility is relatively elastic, and (c) the preferences for horizontal equity are relatively strong. *Journal of Public Economics*, Vol. 41, No. 2 (March 1990), pp. 211–225. (Reprinted with permission of North-Holland Publishing Company).