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# SPECIAL JOURNAL ISSUES

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Abstracts from SOCIAL NETWORKS 3(3) 1981

*SNIJDDERS, Tom A. B. (Groningen). "The degree variance: an index of graph heterogeneity."*

In the analysis of empirically found graphs, the variance of the degrees can be used as a measure for the heterogeneity of (the points in) the graph. For several types of graphs, the maximum value of the degree variance is given, and the mean and variance of the degree variance under a simple stochastic null model are computed. These are used to produce normalized versions of the degree variance, which can be used as heterogeneity indices of graphs.

*BONACICH, Phillip (California-Los Angeles) and G. William DOMHOFF (California-Santa Cruz). "Latent classes and group membership."*

A technique for analyzing group membership data, such as interlocking directorates, based on the assumption of latent classes of individuals, is described and illustrated with two data sets. The technique partitions individuals and/or groups into homogeneous sets and can be used to create measures of structural centrality for groups and for individuals.

*KLOVDAHL, Alden S. (Australian National). "A note on images of networks."*

Visual imagery and visual representations have proven very useful in some of the most important discoveries in the history of science. It is not surprising, therefore, that the earliest students of network phenomena often made use of visual representations (e.g., sociograms) to assist in the analysis, interpretation and illustration of complex relational data: by creating such visual representations, human faculties for visual imagery and pattern recognition could be more fully utilized in the search for structural patterns in sociometric networks. What is somewhat surprising, though, is that the techniques for creating visual representations of relational data have remained virtually unchanged since the study of social networks began: the slow, tedious, pen-and-ink approach of forty years ago is still very much the method of the day.

Readily available computer graphics technology, however, introduces potentially powerful possibilities, and some of these are explored. The results of this initial exploration suggest that the time is ripe for forging new tools that will facilitate the analysis of complex relational data, stimulate the development of network theory, and provide new perspectives from which to view previously hidden facets of society.

*RICHARDS, William D. (Simon Fraser) and Ronald E. RICE (Stanford). "The NEGOPY network analysis program."*

A method and its associated computer program for (specifically communication) network analysis are described. The program described here, NEGOPY, is relational, or linkage-based. The conceptual orientation, computational algorithm, operating characteristics, format and availability of NEGOPY are described. Finally, a partial bibliography of works describing other aspects of NEGOPY and research studies using NEGOPY is included.

Abstracts from AMERICAN JOURNAL OF SOCIOLOGY, special issue on the Sociology of Economics, Occupational Mobility, and Social Stratification. Vol. 87(3) 1981.

*WHITE, Harrison C. (Harvard). "Where do markets come from?"*

Production markets have two sides: producers are a fully connected clique transacting with buyers as a separate but aggregated clique. Each producer is a distinctive firm with a distinctive product. Each side continually monitors reactions of the other through the medium of a joint social construction, the schedule of terms of trade. Each producer is guided in choice of volume by the tangible outcomes of other producers—not by speculation on hypothetical reactions of buyers to its actions. Each producer acts purely on self-interest based on observed actions of all others, summarized through a feedback process. The summary is the terms-of-trade schedule, which reduces to constant price only in limiting cases. The market emerges as a structure of roles with a differentiated niche for each firm. Explicit formulae—both for firms and for

market aggregates—are obtained by comparative-statistics methods for one family of assumptions about cost structures and about buyers' evaluations of differentiated products. Not just any set of firms can sustain terms of trade with any set of buyers. There prove to be three main kinds of markets, and three sorts of market failure, within a parameter space that is specified in detail. One sort of market (PARADOX) has a Madison Avenue flavor, another is more conventional (GRIND), and a third (CROWDED) is a new form not included in any existing theory of markets. Current American industrial markets are drawn on for 20 illustrations, of which three are presented in some detail. Inequality in firms' market shares (measured by Gini coefficients) is discussed.

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WILLIAMSON, Oliver E. (Pennsylvania). *"The economics of organization: the transaction cost approach."*

The transaction cost approach to the study of economic organization regards the transaction as the basic unit of analysis and holds that an understanding of transaction cost economizing is central to the study of organizations. Applications of this approach require that transactions be dimensionalized and that alternative governance structures be described. Economizing is accomplished by assigning transactions to governance structures in a discriminating way. The approach applies both to the determination of efficient boundaries, as between firms and markets, and to the organization of internal transactions, including the design of employment relations. The approach is compared and contrasted with selected parts of the organization theory literature.

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BREIGER, Ronald L. (Cornell). *"The social class structure of occupational mobility."*

This paper provides an analytical framework within which hypotheses of class structure are brought to bear directly in the formulation of models for the occupational mobility table. The proper aggregation of rows and columns is portrayed as the fundamental theoretical issue in mobility table analysis, rather than as an exogenous "given" to be decided upon prior to the construction of explicit models. Homogeneity of mobility within and between classes, class hierarchy, and tangible boundedness are the central themes. These themes are implemented in loglinear models and applied in the analysis of large (17-category) intergenerational mobility tables. Four such tables from the studies of Blau and Duncan and of Featherman and Hauser are fitted acceptably. Seven falsifiable hypotheses about the social class structure of occupational mobility are identified and assessed comparatively within the new framework.

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KALLEBERG, Arne L., Michael WALLACE and Robert P. ALTHAUSER (Indiana). *"Economic segmentation, worker power, and income inequality."*

How economic segmentation generates income inequality constitutes a central question for theories of economic and social organization and of socioeconomic achievement. Previous research emphasizes two sources of the structural variation in income: (1) employers with large amounts of resources, for a variety of reasons, may find it in their interests to pay workers higher wages; and (2) some workers are able to acquire power against their employers as well as against other workers and can therefore extract higher earnings. In this paper, we investigate several issues involved in the links among economic segmentation, worker power, and income inequality. We argue that the structure of economic segmentation is multidimensional and reflects such distinct concepts as concentration, economic scale, state intervention in the market, capital intensity, and organization size. Worker power also is derived from diverse sources, such as union membership, occupational skill and licensing, class position, and tenure with an employer. We construct measures of these two sets of concepts and examine their relationships and effects on income with data from two national samples of individuals. We also relate economic segmentation to issues raised by the socioeconomic achievement literature; in particular, we find that the effect of education on income differs among firm and industrial contexts. Our analyses illustrate the utility of an economic segmentation approach for explaining structural sources of income inequality.

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JACOBS, David (Maryland). *"Toward a theory of mobility and behavior in organizations: an inquiry into the consequences of some relationships between individual performance and organizational success."*

In this paper I will show that various positions within organizations put different limits on the relationship between individual performance and organizational success. Some of the consequences of these curvilinear relationships will be illustrated by describing three common types. After specifying the major determinants of these three types, I will use them to help explain four outcomes. The relationships provide an explanation for important aspects of mobility systems within organizations. Additional consequences include the probability that workers will be sympathetic to collective bargaining and horizontal movements between organizations. The three relationships between individual and organizational performance also act as a primary determinant of control processes within organizations and the individual adaptations that result.

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Abstracts from the JOURNAL OF MATHEMATICAL SOCIOLOGY 7(2) 1980

PARSONS, Donald O. (Ohio State). *"The marriage market and female economic well-being."*

Social scientists have for some time viewed mate selection as the outcome of an exchange of attributes among the parties involved in an implicit marriage market. Various demands for and supplies of attributes and (promised) personal services are exchanged in a manner which sorts mates into appropriate marriage contracts. Elements of this exchange theory of marriage are obvious in Waller (1938), Goode (1966), Edwards (1969), Elder (1969), and Taylor and Glenn (1976). A number of economists, notably Becker (1973, 1974), Freiden (1974), Keeley (1973, 1976), and Kogut (1972), have adapted economic models of exchange to the marriage market, providing formal structure to earlier, largely verbal models of mate selection.

Although not stressed in the mate selection literature, the same marriage match process determines an equilibrium price structure for male and female traits and personal services. It has been widely observed that consumption shares within the family differ substantially by sex across time and cultures and, within cultures, across social classes. Attempts to deal with this issue empirically have been hindered by the measurement problem inherent in isolating individual consumption levels within the family when many consumption activities are jointly undertaken.

Sociologists have attempted to analyze this phenomenon by considering the locus of decision making within the family. Blood and Wolfe (1960) attempt to establish a "resource" theory of household decision making much in the spirit of this piece using information on decisions. Reid (1934) had pointed out much earlier the difficulty of such an approach, namely that decision making may be the result of specialization of work and not an intrinsic measure of "power." See also Safilios-Rothschild (1970).

LEUNG, Yee (Chinese University of Hong Kong). *"A fuzzy set analysis of sociometric structure."*

A fuzzy set theoretical framework is proposed for the analysis of sociometric structure characterized by vagueness of liking between individuals and a person's relative degree of belonging to a social group. Max-min transitivity of a fuzzy relation is employed as a basic concept to examine the degree of liking and clustering in group structures. A distance model based on min-max transitivity is also formulated as a special case of transitivity concepts. It appears that the current methodological construct provides a more appropriate perspective in the analysis of the group structure properties.

FRANK, Ove (Lund). *"Transitivity in stochastic graphs and digraphs."*

Transitivity is a central concept for many relational structures, e.g., clusterings and partial orderings. Stochastic graph models which are used to describe uncertain relational structures can be tested for transitivity by using indices based on triad counts. The pure random variation of such counts and indices is investigated assuming simple stochastic models. Some earlier results on transitive triads in tournaments are generalized, and a modified version of a randomization model by Holland and Leinhardt which simplifies the required moment calculations is introduced.

KARMESHU and R. K. PATHRIA (Waterloo). *"Diffusion of information in a random environment."*

The effects of random environmental fluctuations on the process of diffusion of information in a social group are investigated. The methodology of this investigation is based on a study of "stochastic differential equations with fluctuating parameters," under the assumption that the time scale of the fluctuations in the various parameters is much shorter than that of the macroscopic variables of the system. This enables us to convert a stochastic differential equation into a Fokker-Planck equation which in turn can be solved for obtaining an explicit expression for the stationary state of the system. As an illustration, we analyze various cases of Bartholomew's model of diffusion of information in a randomly fluctuating environment and calculate the relevant statistical characteristics of interest. The resulting effects of environmental stochasticity on the process of diffusion of information are compared with the ones arising from the intrinsic stochasticity of the process, the latter depending inevitably on the size of the population group involved.

KARMESHU and R. K. PATHRIA (Waterloo). *"Time development of a Markov process in a finite population: application to diffusion of information."*

A systematic procedure of truncating the hierarchy of moment equations describing the stochastic evolution of a Markov process in a finite population is developed. The procedure makes use of the asymptotic expression for a certain higher-order moment of the relevant probability distribution and yields finite-size corrections to all lower-order moments. The usefulness of the method is illustrated by applying it to study the mean and

the variance of the stochastic variable  $n(t)$ , the number of active spreaders at time  $t$ , in Bartholomew's model of diffusion of information. The results thus obtained are compared with the ones following from the exact probability distribution for the model (wherever known) and the agreement between the two sets of results is found to be remarkably good.

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YAMAGUCHI, Kazuo (Chicago). "A mathematical model of friendship choice distribution."

A mathematical model of friendship choice distribution is proposed. The model differs from other models in that it takes into account certain structural factors in sociometric relations. Two theoretical distributions are derived from a set of assumptions as two approximations to satisfy those assumptions. One distribution is a well-known negative binomial distribution, but its derivation is new. The other distribution has an unfamiliar mathematical structure but it shares certain features with the negative binomial distribution. The two parameters of these distributions are regarded as measures of the degree of expansiveness and the degree of local cohesiveness of friendship ties. The model is tested with several sets of empirical data and shows usefulness as a descriptive tool.

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LINDENBERG, Siegwart (Groningen). "Marginal utility and restraints on gain maximization: the discrimination model of rational, repetitive choice."

The Siegel-Ofshe two-component repetitive choice model, while demonstrating great predictive accuracy, is difficult to interpret and is very data-inefficient. Reasons for these shortcomings are analyzed in detail, and a modified model is suggested. The new model can be more easily interpreted, provides greater data-efficiency, and furthermore, holds up well when tested with available data. The importance of the new "discrimination" model for sociology lies mainly with two factors: first, it can explain deviations from gain maximization, and second, it demonstrates that individuals do not act directly on the basis of values (utility) but rather on the basis of marginal utility. A comparison of the discrimination model with the Camilleri-Berger model (a model in which marginal utility plays no role) favors the former.

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THE INSURGENT SOCIOLOGIST. Special issue on power structure research 9(2-3) Fall 1979 - Winter 1980

DOMHOF, G. William (California-Santa Cruz). "Introduction."

The essays in this volume continue to address basic questions raised by and about power structure research over the past three decades. The "pluralist" versus "power elite" versus "ruling class" argument lies just off stage when it is not the central focus, and the more recent "instrumentalist" versus "structuralist" debate is an explicit concern in many of the papers. What is gratifying about these essays is that they respond to the theoretical debates with original empirical findings that often are the result of new research techniques. It is this fact which gives hope that power structure research will continue to play the unique and relatively independent role it has carved out during its first three decades.

Marvin Dunn's opening essay describes a relatively unknown mechanism of ruling-class coordination, the family office. Dunn learned about the existence of this office somewhat inadvertently, for he began only with the interesting idea that studying a wealthy family in detail might cast light on many of the questions that concern power structure researchers. He soon discovered that the large family in question coordinates much of its economic, philanthropic, and political activity through a common office. Thus, Dunn is able to use his new information to call into question the claim that there is no longer a ruling class in America because wealthy families were unable to solidify their positions of power.

Richard Zweigenhaft brings new perspectives to general questions of ruling-class flexibility and class consciousness by examining the assimilation of successful business people of Jewish background into the social organizations of the upper class. Not only does he give us original substantive information on upper-class anti-Semitism, but he shows us that what Jewish business people do and do not list in a who's who biography is very revealing about their economic position and class consciousness. Consciousness from who's who biographies? But I'll let you read it for yourself.

Susan Ostrander gets her information on class consciousness in the way we might expect someone to get such information--by interviewing. But she adds an interesting twist by interviewing women of the upper class, which gives her a rather unique vantage point. Moreover, Ostrander stresses that she did not learn about class consciousness by asking about it directly. Instead, she learned about it from questions that she didn't think related to class consciousness at all. She was as surprised by many of her findings as you will be, which not only affirmed her in the belief that members of the upper class are class conscious, but led her to an original formulation of what we should mean by the concept itself. It is at the least a provocative approach that she suggests, and it nicely encompasses the kinds of findings presented in the essays by Dunn and Zweigenhaft.

Allen Whitt's essay on the involvement of corporate leaders in one aspect of California politics in effect builds on the understandings solidified in Ostrander's essay. Whitt studied in detail the activities of California business leaders in relation to several ballot initiatives concerning highways and mass transit. He found that these corporate capitalists were quite organized and purposeful in their behavior right down to the last barrel of oil and bank asset, which determined how much they gave in cash contributions to various political campaigns. But it is not barrels of oil and bank assets that ultimately interest Whitt, and he uses his findings to make insightful observations about the instrumentalist-structuralist dichotomy.

The next essay, by Richard Ratcliff, uses his dimensions of "social prominence" and "economic power" to show who the well-organized and purposeful capitalists are in St. Louis when it comes to involvement in the civic organizations that attempt to shape the political and cultural climate of that city. But Ratcliff also goes one step further, exploiting his unique data on bank loans and mortgages to show that capitalist class consciousness is not smoothly comprehensive and without contradictions. The bank directors he found in the civic groups trying to "save" downtown St. Louis are the same bankers who invest their funds outside of St. Louis, and especially outside of neighborhoods where people of low and moderate incomes reside.

A different kind of data was utilized by Eric Lichten to study the financial crisis that enveloped New York City in the mid-1970s. It allows him to highlight the way in which class conflict enters into the power equation. Through a careful sifting of government reports and his perceptive interviews with business, trade union, and government officials in the city, he shows how the demands of city workers and poor people constrained the hand of capitalists until the situation had reached a crisis point. It was only then, and with the help of state and federal levels of power, that the corporate leaders were able to contain elected officials and trade union leaders, and impose fiscal austerity at the expense of the working class in general.

The essay by Irvine Alpert and Ann Markusen moves us to the final third of this issue and a consideration of power at the national level in America. Their essay picks up where Ostrander left off, with an explicit discussion of class consciousness. This time, however, the concern is with the consciousness of the hired academic experts employed by the policy-oriented think tanks financed and directed by members of the national corporate community. Alpert and Markusen explain how such experts end up working to solve problems of corporate capitalism even while they think of themselves as independent and neutral professionals. They address themselves directly to the instrumentalist-structuralist dichotomy, believing the insights into professional consciousness afforded to them as observers at The Brookings Institution and Resources for the Future allow them to bridge some of the gaps between the two sides of this argument.

The essays by Michael Useem, on the one hand, and Harold Salzman and G. William Domhoff, on the other, take us into the question of direct involvement in government by corporate leaders. Useem is able to utilize statistical techniques of a clear and straightforward nature to show just which business people are likely to become involved in formal governance at the state and national levels. Among many interesting findings, he shows that it is the biggest of big business leaders and those with multiple corporate directorships and memberships in national policy organizations who are most likely to serve on federal advisory committees and as trustees of major universities.

If Useem tells us which business people participate in governance, Salzman and Domhoff try to establish the degree to which business people are appointed to positions in the executive branch of the federal government for 1970. As the introduction to their essay informs us, this is one of the oldest and most contested issues in power structure research. It got its start in claims by Mills in *The Power Elite*, and it has been the subject of controversy ever since, with pluralists denying the extent of these appointments and structural Marxists denying any significance to the appointments, whatever their extent. Meanwhile, say Salzman and Domhoff, there is a great deal of interchange of personnel between the corporate community and the executive branch, which raises a problem for those who say that capitalist states function best when there are no capitalists in them.

In the end, we are brought back to the old question of what implications should be drawn from position-holding in civic groups and government, and that is why we have saved the essay by Nancy DiTomaso for last. By responding to the critics of the positional method so frequently employed in power structure research, she provides the theoretical basis for the empirical findings that have been presented in several of the earlier essays, and especially that by Salzman and Domhoff. A sociologist very familiar with the instrumentalist-structuralist debate, DiTomaso approaches the problem from a fresh angle by drawing out the lessons for power structure research that are contained in the detailed literature of organizational sociology, a field largely ignored by power structure researchers in the past. It is a welcome turn of events to see this more conventional counterpart of power structure research provide new perspectives to disputants within the power structure fraternity.

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