them that form the basis of some of the more interesting findings.

To structure the study, Michelson defined four residence/location categories combining one of two housing types, high-rise apartment or single-family detached home, with one of two locations, downtown or suburban. In addition, he limited the study to middle or upper-middle income married couples and families for whom any of the four categories was (theoretically) economically feasible.

The answers to the questions "who moved where?" and "why?" are not very surprising. The general assumption that families who have children and who are concerned with their neighborhood and interested in access to open space will move to suburban single-family homes and that childless couples who are interested in access to such amenities as theaters, museums, and restaurants will move to downtown apartments was clearly supported. The myth that persons who have experienced high-rise living will be more likely to opt again for that kind of residential environment was clearly shattered.

In general, all the households studied were highly satisfied with the type of residence and the location they selected. For the most part, the problems with the previous home that were given as reasons for moving seemed to have been eliminated in the new dwelling. At the same time, expectations about the attractions of the new dwelling seemed to have been met. Downtown apartment dwellers immediately began taking advantage of the amenities of their new locations. Residents of suburban single-family homes tended to take longer, upwards of a year, before feeling comfortable and experiencing the benefits of their new homes. The lowest level of satisfaction was voiced by people living in suburban apartments.

There is a long-standing debate in the housing literature about whether households adopt behavior because of their residential environment (housing type and location) or select their residential environment in order to facilitate either current or intended behavior patterns. Michelson's findings, although mixed, appear to support the self-selection hypothesis. With few exceptions, his respondents indicated that they selected the residence type and location that would best facilitate their desired behaviors.

Regardless of type of residence and location, most households indicated that their ultimate housing ideal was a single-family detached home, which was seen as providing the best living environment for a family. Most of the respondents also stated that their ideal location was suburban. This seems at variance with the high levels of satisfaction expressed by downtown apartment residents. The resolution of the inconsistency lies in the short-term satisfaction of what Michelson calls interim housing objectives. Although most households evidenced an ultimate preference for a single-family dwelling, those that selected apartments, particularly downtown apartments, saw as more immediately important the satisfaction of intermediate objectives—easy access to entertainment, cultural activities, and places of work—that they saw as short-run concerns. Indeed, people in apartments tended to be highly mobile, to have children during the study period, and to have a high expectation of moving soon. A large proportion of them moved a second time during the study period, many to single-family homes. All these households acknowledged that they satisfied their short-run objectives while they were living in apartments. Apartment-dwelling households who for one reason or another could not move tended to be least satisfied with their dwellings while residents of single-family homes tended to be most satisfied, regardless of whether or not they expected another move in the near future.

This review has consciously focused on the polar extremes—those living in downtown apartments or suburban single-family homes—and in so doing has done an injustice to Michelson's work. Some of his greatest insights have to do with those living in the two intermediate residential environments. He suggests that there is a strongly dedicated, highly satisfied, and nontransient group of people preferring downtown single-family homes, a preference that is seriously threatened by the current trend to replace downtown homes with high-rise apartments. On the other hand, suburban apartment residents tend to be dissatisfied, saying that their housing has all of the negative aspects of apartments and suburbs without any compensating benefits. In addition, suburban apartment residents have the lowest expectation of bettering their housing situation.

Michelson's study adds an important dynamic element to our understanding of residential choice and residential satisfaction. Households do not view each residential choice as a stepping stone along a linear progression to the ultimate dwelling. Instead, they perceive each dwelling as a means of satisfying objectives that are important at a given time. The implications of this pattern are immense, and Michelson explores them briefly in the final chapter. His book offers valuable insights for those concerned with housing as an element in social behavior, as a physical artifact, or as a major policy concern in urban areas.

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Decisional Problems

Decision Making. A Psychological Analysis of Conflict, Choice, and Commitment. IRVING L. JANIS and LEON MANN. Free Press (Macmillan), New York, and Collier Macmillan, London, 1977. xx, 490 pp., illus. $15.95.

This book is about decisional problems with which we are all familiar either by firsthand experience or by observing others. Jane blithely ignores information that she would benefit from more exercise; Bill unquestioningly follows his broker's suggestion to invest in utilities; the chairman of the department is so upset about the possible loss of undergraduate enrollments that he won't even talk about it, let alone decide what to do; and when Mary, top student in her class, gets her Ph.D. and is given three days to accept or reject a job at Slipshod State, she panics and takes the job before she knows what other possibilities are available. Faulty decisions can be understood as the result of normal psychological processes, according to Janis and Mann, who believe such decisions can be eliminated or at least minimized.

The authors conceptualize decision-making not as a single act at a point in time but as an extended process that includes the acquisition and evaluation of information prior to choice, some degree of commitment to one of the choice alternatives (resulting in the decision), and a postchoice phase during which the individual continues to process information relevant to the decision. Indeed, the postchoice phase may never end because new information can challenge the decision and result in a new decision. Information-processing both before and after the decision can be active or passive, biased or unbiased. The heart of the theory is the character of this information-processing.

The theory, which is prescriptive as well as predictive, stipulates conditions under which the predecisional search for and appraisal of information will be inadequate or biased and, more generally, conditions under which good or bad de-

cisions will be made, and it delineates an optimal decision process and the conditions conducive to producing it. "Vigilance," the optimal coping state, comes from the recognition of information that is discrepant with one's present course of action, and it is characterized by an unbiased, active search for and appraisal of information regarding all possible new courses of action. When the conditions for vigilance are satisfied, decisions result in the least possible regret and once made are firmly adhered to.

There have been previous theories about decision-making, and some of them, like the present theory, have been concerned with decisions of great emotional impact. What is new in the work of Janis and Mann is the comprehensiveness of their theory. For unlike previous theories, which have addressed only one or another aspect of the decisional process, the present work attempts to account for a variety of predecisional and postdecisional processes and to relate them to phenomena that range from coping with stress to response to therapeutic intervention. To accomplish this wide coverage, Janis and Mann have drawn on their extensive observations of decision-making in situations that range from laboratory experiments to intervention clinics intended to help people stop smoking or lose weight.

The theory is descriptive in that it lays out and relates types of predecisional conditions (such as insufficient time for the search for and appraisal of further alternatives), coping patterns of decision-making (such as ignoring negative information about a current course of action), and stages of decision-making (such as deliberation about the consequences of making a commitment to a particular course of action). The description is clear and well illustrated with case and anecdotal material. And, although one can always quibble about the interpretation of such material, the authors properly caution the reader that the material is to be taken as further definition of the theory rather than as evidential support.

The descriptive nature of the theory will be disappointing to theorists. The theory does not provide a unified view of the decision process, but juxtaposes a complex array of processes that are involved in making a decision. Though it fails to give a new, more basic, understanding of the decision process, it does address a number of phenomena and problems that are not well understood or researched, and by doing so it should generate theoretical controversy and needed research.

Because the authors are good observers of behavior and have had a great deal of experience observing the process of decision-making, the descriptive aspects of their theory are sound and will be useful to those who wish to improve their understanding of decision-making or the quality of their own decisions. Practitioners who counsel others about important decisions (marriage, divorce, occupation, investment, public policy, and the like) will find this volume helpful not only because of its conceptualization of the decision-making process but also because of the considerable practical advice and tools it gives for improving the quality of decisions.

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Surface Phenomena

The Chemical Physics of Surfaces. S. ROY MORRISON. Plenum, New York, 1977. xviii, 416 pp., illus. $39.50.

Catalysis is the process most employed in the chemical industry, and the properties of the interface are sufficiently different from those of the bulk that interfaces warrant consideration as almost a fourth state of matter. There are therefore excellent practical and intrinsic reasons for investigations of the nature of surface structures and processes, and physics, chemistry, materials science, and engineering are all vitally concerned with surfaces. Morrison points out that with improved surface preparation techniques and a host of new spectroscopies (given exotic acronyms such as ELS, RHEED, SIMS, and XPS), tremendous progress has been made recently in the characterization and understanding of clean metal and semiconductor surfaces, simple adsorbed species, and to a lesser extent reactions on clean, single-crystal surfaces. At the same time, solid-liquid interface processes, which were more susceptible to study by older methods, remain the subject of active research, with new phenomena (enhanced Raman scattering) and new explanations being produced rapidly. All these experimental results permit closer investigation of the microscopic mechanisms that underlie observed surface reactions.

Morrison has produced a broad overview of the conceptual and experimental situation in surface science in 1976. In this relatively short book, he considers solid-liquid, solid-vapor, and solid-vacuum interfaces. The ten chapters include ones on space charge, free surfaces, bonding of adspecies, photoeffects, and heterogeneous catalysis. Most of the relevant mathematical expressions are derived rather completely, and the discussions of band bending, polaron broadening of levels, double layer effects, space charges, and the like are helped greatly by the liberal use of potential energy diagrams. The book has some fine features, such as thumbnail sketches of the new surface spectroscopies, discussions of specialized chemical terms ("dangling bond," "Helmholtz plane," "Brønsted site,"), and an attempt to compare the solid-liquid and solid-gas interfaces.

There are numerous sins of omission (no reference to the work of Kuhn on monolayers, to that of Gault on tracers in exchange reactions, to neutron scattering studies of adsorbates, to semiconducting electrodes, to symmetry arguments in bonding, to transition metal complexes as models for metal surfaces) and of commission (the confusing and nonstandard use of "Franck-Condon splitting" to describe nuclear geometry changes after electronic transfer or excitation, the implication that all surface cluster studies employ the multiple scattering [MS] X_α techniques, the implication that electrons must be unpaired for covalent bonding, the incorrect differentiation of Marcus and Levich-Dogonadze descriptions of electron transfer, the incorrect description of the pseudopotential method).

Because the book is a broad survey, many important details, such as the limits of applicability of some of the spectroscopic methods and the nature of the parametrization in the Green's function methods for clean surfaces, must be omitted. This is frustrating, but unavoidable. Extensive references to the current literature are provided; more references to the review literature would be helpful. The text is largely free from typographical error (but the equation defining the Brønsted equilibrium constant is incorrect).

The book is timely and useful. It fills the need for a modern overview of surface phenomena and suggests the need for more detailed books on such topics as single-crystal surface reactions and modern approaches to electrode processes. It is a clear treatment that, despite the high price, will be worthwhile for the large community interested in surfaces.

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