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THE APPROPRIATENESS AND DESIGN OF CATEGORICAL DECISION-MAKING SYSTEMS

*John J. Capowski**

The design and use of categorical decision-making systems comprise a strong and recent trend in administrative law. Examples include the "salient factor score" used by the United States Parole Commission,[1] the Medical-Vocational Guidelines of the Social Security system,[2] and the Federal Aviation Administration's (FAA) regulations on the retirement of pilots.[3] In categorical decision-making systems, the factors that are used to make decisions are limited to a finite and predetermined set. These systems establish guidelines for making decisions or, in some instances, mandate that particular determinations be made.[4]

Categorical systems are often characterized by their use of tables or grids, and they have traditionally been applied to the analysis of data.[5] The recent increase in categorical decision-making systems can

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[1] The salient factor score is a statistical scoring scheme used to predict parole success based on items such as prior convictions, family ties, and employment history. 28 C.F.R. § 2.20 (1983). For an explanation of this process, see Hoffman & Adelberg, *The Salient Factor Score: A Nontechnical Overview*, FED. PROBATION, March 1980, at 44.

[2] For a discussion and criticism of the Medical-Vocational Guidelines, see Capowski, *Accuracy and Consistency in Categorical Decision-Making: A Study of Social Security's Medical-Vocational Guidelines—Two Birds With One Stone or Pigeon-Holing Claimants?*, 42 MD. L. REV. 329 (1983).

[3] The Federal Aviation Administration's regulations presume that inability to fly occurs at age 60. *See* 14 C.F.R. § 121.383(c) (1984). For a discussion of the validity and application of these regulations, see Starr v. FAA, 589 F.2d 307 (7th Cir. 1978); Air Line Pilots Ass'n, Int'l v. Quesada, 276 F.2d 892 (2d Cir. 1960), *cert. denied*, 366 U.S. 962, *reh'g denied*, 368 U.S. 870 (1961).

[4] At one extreme, categorical systems can be described solely as those that have been developed through the use of empirical data. That is, they are essentially statistical in method. In a broad sense, categorical decision-making can be defined to include the general process by which particular rules have been adopted to replace vague principles or standards. In this Article, categorical is not used to describe this larger phenomenon but is used to describe methods broader than purely statistical systems.

[5] Two critics have noted that "[t]ypologies have traditionally had their primary and most fruitful applications as heuristic devices for the systematic exploration of data [and] for the development of scientific theory. . . [T]hey have rarely been used for the operational decision-making purposes. . . ." M. Griffing & A. Richardson, A Methodological and Empirical Critique of the Rules Proposed by the Social Security Administration for Adjudicating Disability Claims in Which Vocational Factors Must be Considered 20 (May 17, 1978)(published by the National

be attributed to the large caseload of some administrative systems,[6] criticisms of inconsistent decision-making,[7] and a call for the use of administrative notice to make decision-making more efficient.[8]

Categorical approaches contrast with clinical methods in which decision-makers are not confined by a certain set of factors:

> One way to describe the difference between clinical and statistical (categorical) methods is to say that clinical methods pay more attention to individual applicants, and statistical methods pay more attention to the rules for selecting them. Thus, the tension between clinical and statistical methods mirrors in large part the familiar tension between

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Social Science and Law Project, Inc.)(on file with the Social Security Administration and the author).

[6] For example, the Social Security Administration processes over 2 million disability benefit claims each year, and more than a quarter of a million claims require an administrative hearing. DEPARTMENT OF HEALTH AND HUMAN SERVICES, SOCIAL SECURITY ANNUAL REPORT TO THE CONGRESS FOR FISCAL YEAR 1981, 32, 35, 38 (1981).

[7] For example, categorical guidelines for parole were developed to answer

> unprecedented criticism [of the United States Board of Parole] from various individuals, the press, and members of the Congress of the United States. Charges of lack of procedural due process, arbitrariness, capriciousness, defensive self-protectiveness, failure to specify reasons for decisions, and working at cross-purposes to rehabilitation were among the complaints.

D. GOTTFREDSON, L. WILKINS & P. HOFFMAN, GUIDELINES FOR PAROLE AND SENTENCING 2 (1978). [hereinafter cited as D. GOTTFREDSON]. Social Security decision-making suffered similar criticism. "The inconsistency of the disability decision process is patent. Indeed, it is widely believed that the outcome of cases depends more on who decides the case than on what the facts are." J. MASHAW, C. GOETZ, F. GOODMAN, W. SCHWARTZ, P. VERKUIL, M. CARROW, SOCIAL SECURITY HEARINGS AND APPEALS: A STUDY OF THE SOCIAL SECURITY ADMINISTRATION HEARING SYSTEM xxi (1978) (preface)[hereinafter cited as J. MASHAW].

[8] For example, in the Social Security area, a report of the Attorney General stated:

> But if the information has been developed in the usual course of business of the agency, if it has emerged from numerous cases, if it has become a part of the factual equipment of the administrators, it seems undesirable for the agencies to remain oblivious of their own experience and strip themselves of the very stuff which constitutes their expertness. It appears far more intelligent, if fairness to the parties permits, to utilize the knowledge that comes from prior acquaintance with the problems. Laborious proof of what is obvious and notorious is wasteful; or, in the alternative, decision in disregard of the obvious and notorious in the absence of such laborious proof, is foolish, and contrary to the demands that decisions be as correct as possible.

J. MASHAW, *supra* note 7, at 81 (quoting U.S. DEP'T OF JUSTICE, ATTORNEY GENERAL'S REPORT ON ADMINISTRATIVE PROCEDURE 72 (1978)). "We also believe that a sensitive use of official notice would eliminate substantial expenditures for unnecessary testimony by vocational experts, and might, in addition, increase the accuracy and fairness of the decision process." J. MASHAW, *supra* note 7, at xxiii.

In addition to simple administrative efficiency, cost savings have been a large factor in the development of categorical models. In the Social Security system, for example, vocational experts were used at over 87,000 hearings at a cost of approximately 4 million dollars in 1978. Office of the Inspector General, *Review of Vocational Expert Usage in the Hearings and Appeals Process by the Social Security Administration, reprinted in* 2 SOC. SECURITY F., Sept. 1980, at 5 (Introduction).

discretion and rules.[9]

This Article focuses on some of the considerations used in deciding when categorical systems are appropriate. It examines the purposes for which a decision-making system is to be used, including both the substantive standards and the procedural considerations involved. The Article also discusses some of the trade-offs involved in the move from clinical to categorical systems, especially in terms of balancing individual accuracy with overall consistency. The features which are important in the design of categorical systems are considered as well as the problems involved in the design of such systems. The analysis is normative and jurisprudential and, while various categorical systems will be discussed as examples, it focuses on no specific system.

This Article draws on some of the existing scholarship on statistical decision-making[10] and incorporates this thinking with the author's recent work on one system of categorical decision-making.[11]

I. The Appropriateness of a Categorical Model

A. *Substantive Considerations*

1. Major Goals

Before adopting any type of decision-making model, one needs to identify the major goal one is attempting to achieve. This point is obvious but needs mentioning, for "[o]ften important things are missed because they are so simple that one overlooks them."[12] The major substantive purpose or goal might be complex,[13] such as providing financial assistance to a certain portion of our population not currently being aided by various public benefit programs, or relatively simple, for example, providing Social Security benefits to all persons over age 65.[14] The identification of this major goal, whether

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[9] Underwood, *Law and the Crystal Ball: Predicting Behavior with Statistical Inference and Individualized Judgment*, 88 Yale L.J. 1408, 1432 (1979).

[10] *See, e.g.*, D. Gottfredson, *supra* note 7; J. Mashaw, *supra* note 7; Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 Harv. L. Rev. 1329 (1971); Underwood, *supra* note 9, at 1408. *See also* K. Davis, Administrative Law Treatise (2d ed. 1980); Pound, *Mechanical Jurisprudence*, 8 Colum. L. Rev. 605 (1908).

[11] Capowski, *supra* note 2.

[12] R. Bergman, Trout 204 (1952).

[13] For a discussion of the appropriateness of categorical decision-making systems to simple versus complex goals, see *infra* notes 28-36 and accompanying text.

[14] One needs to be careful with purposes and standards that have the appearance of being

the goal is simple or complex, is of crucial importance, for much legislation and regulation have been ineffective for want of preliminary study and due to the failure of drafters to accurately assess and respond to social needs.[15]

After identifying the major goal of a categorical decision-making system, one should consider the complementary or subsidiary substantive goals sought to be achieved. An understanding of a system's ability to accomplish its major and complementary substantive goals is important for determining whether the categorical model is better than others one might adopt.

2. Complementary or Subsidiary Goals

One subsidiary goal that needs to be considered is consistency. This can be defined as the treatment of like cases in a like fashion. Consistency is important in the functioning of any moral legal system,[16] but it is especially important in the design of categorical systems.[17] In a categorical system, one expects consistency to be achieved because the factors taken into account in making decisions are both predetermined and limited. Consistency should certainly be achieved if one measures what are like cases by the predetermined factors used in arriving at the individual decisions. Consistency may, however, be more elusive if one measures it vis-a-vis the major substantive purpose of the decision-making system.[18]

Categorical systems, therefore, should not be adopted if consistent decisions cannot be achieved through their use. In most cases, the

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extraordinarily simple. The simple purpose or standard may be a subsidiary goal that has behind it a large number of more complicated and somewhat obscure goals. For example, many states are now moving or have recently moved to a drinking age of 21. Although the purpose may at first appear to be the very simple one of preventing persons under the age of 21 from drinking, there is actually a myriad of purposes that such a standard attempts to serve. These include preventing driving accidents, preventing alcoholism, discouraging alcohol abuse, and enforcing certain moral standards.

[15] Roscoe Pound has noted:

> An efficient cause of the failure of much American legislation [and regulatory action] is that it is founded on an assumption that it is enough for the State to command. Legislation [regulation] has not been the product of preliminary study of conditions to which it was to apply. It has not expressed social standards accurately. It has not responded accurately to social needs.

Pound, *supra* note 10, at 613-14.

[16] For a discussion of basic legal principles that produce a moral legal system, see L. FULLER, THE MORALITY OF LAW 95-151 (rev. ed. 1969).

[17] *See supra* note 7.

[18] For a discussion of the selection of factors to be used in the design of categorical systems, see *infra* notes 71-82 and accompanying text.

adoption of a categorical system and the achievement of consistency will require certain inevitable trade-offs in other areas. One of these areas is likely to be individual accuracy. Individual accuracy, as used here, is the proper substantive outcome in a case reached by using the right standard of law appropriately applied to correctly found facts. It is important in any well-functioning legal system,[19] and the Supreme Court has emphasized individual accuracy in its due process analysis of procedural systems.[20]

In an ideal determination process, correct outcomes are reached by applying appropriate substantive rules to correct fact-finding, and like cases are treated in a like fashion. That is, accuracy and consistency merge.[21] While accuracy and consistency appear to be the same and take on the same normative aspects in such a system, they are not identical. One can develop a system of decision-making which produces highly consistent but extraordinarily inaccurate determinations. For example, one might have a major goal for a decision-making system of incarcerating those likely to commit future crimes. The factor used in deciding which individuals would get long-term sentences might be the commission of a second felony. To sentence all second felony offenders to long-term sentences would certainly provide a consistent handling of cases but would create an extraordinarily inaccurate system measured against the major goal.

In most decision-making systems, there are likely to be trade-offs when one pushes for specific subsidiary goals over others. For example, the push for accuracy may limit a system's ability to produce consistent or predictable determinations. Such a situation could occur in parole determinations if decision-makers place a heavy emphasis upon psychological reports and give minimum weight to an individual's past record and institutional behavior. Assuming the accuracy of the psychological reports, this decision-making framework could create highly accurate determinations of parole risk. Inmates, however, would have a difficult time predicting release dates. In addition, the system might appear inconsistent to inmates who would not be privy to psychological reports but would know of other factors, such as the severity of past records, and would base their

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[19] *See* L. FULLER, *supra* note 16, at 95-151.

[20] *See* J. MASHAW, *supra* note 7, at 8-11 & 35. *See generally* Mashaw, *The Supreme Court's Due Process Calculus for Administrative Adjudication in* Mathews v. Eldridge: *Three Factors in Search of a Theory of Value*, 44 U. CHI. L. REV. 28 (1976).

[21] Accuracy and consistency are also likely to merge in a system where there is no objective external standard for measuring accuracy. In such a system, the measure of accuracy is likely to be consistency. Hence, the two will merge and in fact be the same.

views of consistency on these factors. In deciding whether a categorical system should be adopted, one needs to determine the relative importance of the various subsidiary goals.

Deciding on the relative importance of subsidiary goals requires difficult value judgments. These subjective judgments should take into account the existing pressures upon a particular decision-making system. For example, severe criticism of lack of consistency may lead to value judgments which will require sacrifices in accuracy. Conversely, certain accurate individual decisions may be so important within a particular society's system of values that significant sacrifices may be made in consistency. An example of this value judgment is the degree to which our society abhors the conviction of an innocent man. Thus, value judgments are crucial in evaluating the importance of each subsidiary goal in a particular system and in determining whether such goals can be attained through the use of a categorical model. In addition, once a decision is made to adopt a categorical approach, these value judgments serve to guide the way such a system will be designed.[22]

In addition to looking at the specific subsidiary goals of consistency and individual accuracy, one designing a categorical system should also consider the concepts of aggregate accuracy. One facet of aggregate accuracy is a decision-making system's ability to include in all positive determinations those which should be positively determined. In the public benefits area, this concept is the same as "horizontal efficiency," that is, the degree to which "programs intended to benefit Group A reach all of the group."[23] A decision concerning the importance of this form of aggregate accuracy can be helpful in determining whether to use a categorical system, and, depending on the degree to which this form of aggregate accuracy is desired, the system might be designed to accomplish it. In designing a decision-making system, one can choose to adopt categorical decision-making provisions within a larger non-categorical system. For example, even before the adoption of the Medical-Vocational Guidelines,[24] the Social Security disability decisional process contained certain categorical features

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[22] For a discussion of the design of categorical systems, see *infra* notes 71-114 and accompanying text.

[23] *Marmor, Income Maintenance Alternatives: Concepts, Criteria, and Program Comparisons* in POVERTY POLICY 39 (T. Marmor ed. 1971) (quoting Weisbrod, *Collective Action and the Distribution of Income: A Conceptual Approach*, in 1 THE ANALYSIS AND EVALUATION OF PUBLIC EXPENDITURE: THE PPB SYSTEM 184 (1969) (A Compendium of Papers, Subcommittee on Economy in Government, Joint Economic Committee, U.S. Congress, 91st Congress, 1st Session).

[24] 20 C.F.R. § 404, subpart P, app. 2, §§ 200.00—204.00 (1983).

that allowed only positive determinations, that is, grants, and did not exclude individuals from benefits.[25] The incorporation of positive determination categorical features in a larger decision-making process seems to indicate that a high premium is placed upon a positive outcome.

Another way to measure aggregate accuracy is to look at the degree to which a system makes positive determinations in cases that should have negative outcomes. Weisbrod, in describing public benefit programs, refers to this "degree to which programs intended to benefit Group A also benefit Group B" as "vertical efficiency."[26] A more general term and one that is more widely used to describe this phenomenon of aggregate accuracy is false positives. Aggregate accuracy can also be defined as the degree to which a system creates false negatives, that is, negative determinations in individual cases which should have been decided positively. Of course, "[w]hich type of error is called the 'false positive' [negative] is a matter of point of view!"[27]

A drafter's interest in achieving these various forms of aggregate accuracy is an important consideration in deciding whether to adopt a categorical system. It is important to keep in mind the forms of aggregate accuracy one wishes to achieve along with potential tradeoffs in both consistency and individual accuracy in deciding whether to include categorical features within a larger decision-making process.

3. The Complexity of the Standard

In deciding on the appropriateness of adopting a categorical decision-making process, one also needs to look at the complexity of the standard which the decision-making process is to apply.[28] Where simple standards and purposes exist, categorical systems are highly appropriate. Simple here means standards that incorporate objective and predictive factors that, if necessary, are easily weighted accord-

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[25] Examples include the "burnt out laborer" standard, 20 C.F.R. § 404.1562 (1983), and the Listing of Impairments, an enumeration of body systems with certain clinical findings which, if met in a claimant, would require a positive determination of disability. 20 C.F.R. § 404, subpart P, app. 1 (1983).

[26] T. Marmor, *supra* note 23, at 39.

[27] D. Gottfredson, *supra* note 7, at 156.

[28] As used here, standard is synonymous with a law or rule and may be either legislative or administrative. For example, the standard for Social Security disability is, briefly stated, inability to engage in substantial gainful activity. 42 U.S.C. § 423(d)(2)(A) (1982).

ing to their importance in the decision-making.[29] For example, if the standard being used simply requires a person who has committed two prior felonies to be sentenced in a particular fashion with no other purpose or prediction in mind, it could easily be classified as a simple standard. Other factors could be added that require some weighting, and the standard would become more complex. But, where simple standards exist, categorical systems can produce efficient, routine, accurate, and consistent decision-making.

As the standard becomes increasingly complex, one should be more circumspect about applying a categorical scheme and should instead consider a clinical process. The benefits of each system should be carefully weighed in these instances. Clinical decision-making is especially suited "if the available data are too diverse, and the understanding of the phenomenon too weak, to support the formulation of a useful rule for combining factors to make predictions."[30]

Clinical systems are also appropriate where adjudications and standards are simply not subject to the promulgation of explicit decisional rules. For example, the Social Security program has developed a system of categorical decision-making,[31] yet many maintain that the standard for disability, which requires complex judgments about age, education, and past work experience, is one that cannot be captured in a categorical scheme of decisional rules.[32]

It is in this type of area, where data are undeveloped, where phenomena are vaguely understood, and where standards defy objective verification, that clinical decision-making is usually preferable to categorical schemes. However, even where complex standards and phenomena exist, countervailing considerations may favor the adoption

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[29] The importance of focusing on salient and objective predictive factors and some preliminary thoughts on how one might accomplish this goal are outlined below. *See* text accompanying notes 71-78.

[30] Underwood, *supra* note 9, at 1424 (citing P. MEEHL, *What Can The Clinician Do Well?*, in PSYCHODIAGNOSIS: SELECTED PAPERS 169-70 (1973)).

[31] 20 C.F.R. § 404, subpart P, app. 2, §§ 200.00—204.00 (1983).

[32] *See* Mashaw, *supra* note 20, at 45. Mashaw notes that

> SSA disability adjudications should perhaps be viewed as really concerned with difficult value judgments—individualized exemptions from the moral, social, and economic constraints of the work ethic, determined by a complex of medical, vocational, and environmental factors as they impinge on particular individuals. Such adjudications by their very nature elude objective verification and cannot be effectively controlled for consistency.

Id. Furthermore, "the concept of total disability simply may not lend itself to indications or criteria on the basis of which routine decisions can be made." R. DIXON, SOCIAL SECURITY DISABILITY AND MASS JUSTICE 141 (1973)(citing letter from Saad Z. Nagi to Roger C. Cramton, Chairman, Administrative Conference of the United States (November 26, 1971)). *See also* Capowski, *supra* note 2, at 371-72.

of a categorical system. This situation exists where the probability of an error, either a false positive or a false negative,[33] is very great, and clinical judgments would be unlikely to produce more accurate determinations. Examples of this include the FAA's retirement regulations for pilots[34] and state statutes and regulations requiring retirement for police officers and fire fighters.[35] In these retirement situations, public safety is such a strong value that, when combined with the belief of many experts that there are no reliable testing methods for determining psycho-physiologic age, it seems appropriate to adopt a categorical system that eliminates all possibility of false positives after a certain age.

When moral values are strongly involved in decisions, the designers of decision-making systems may use categorical systems. Standards in which moral values have a pronounced importance are necessarily complex and likely to have highly subjective aspects. For example, many view the granting of public assistance as an exemption from work and in opposition to a strong work ethic. Decision-makers with such a view may need to have their discretion channeled by strong rules so that their moral views on public assistance will not override the intent of policy-makers. A categorical system might be one means of providing these strong rules. The adoption of such a system might create some uniformity and, therefore, equity in decision-making. However, this push for consistency and equity entails strong tradeoffs in individualization.[36]

4. Finding Present[37] vs. Future Facts[38]

Another substantive consideration in deciding whether to adopt a categorical scheme is whether the system will be used to make predictive judgments. Where predictive judgments are involved, one

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[33] *See supra* notes 26-27 and accompanying text.

[34] *See* 14 C.F.R. § 121.383(c) (1984). For a discussion of challenges made to this regulation, see Keating v. FAA, 610 F.2d 611 (9th Cir. 1979); Rombough v. FAA, 594 F.2d 893 (2d Cir. 1979); Starr v. FAA, 589 F.2d 307 (7th Cir. 1978); Air Line Pilots Ass'n, Int'l v. Quesada, 276 F.2d 892 (2d Cir. 1960), *cert. denied*, 366 U.S. 962, *reh'g denied*, 368 U.S. 870 (1961).

[35] *See, e.g.*, Massachusetts Bd. of Retirement v. Murgia, 427 U.S. 307 (1976).

[36] *See infra* notes 83-95 and accompanying text.

[37] An example of a categorical system which is used to find a present fact is the Federal Aviation Administration's regulation which presumes that inability to fly occurs at age 60. 14 C.F.R. § 121.383(c)(1984).

[38] A categorical system which finds future facts is the salient factor score used to predict parole success based on items such as prior convictions, family ties, and employment history. 28 C.F.R. § 2.20 (1983).

needs to be circumspect in adopting such a system. The use of categorical methods to predict future facts has been criticized on three levels. First, there is the argument that

> for a question of past or present fact there is in principle a true answer, and any errors in factfinding are attributable only to inadequacies of evidence or of judgment. For a question of future fact, however, it may be that no amount of evidence or judgment can make the answer accessible.[39]

Second, there is the argument that when predictive determinations are involved, it is difficult to discern and select which factors define probable outcome while giving them appropriate weight.[40] Third, there is the argument that predictive categorical systems should not be adopted because they deny individual autonomy.[41]

Thus, in deciding whether to adopt a categorical model for making predictive judgments, one needs to be cognizant of the alternatives.[42] Also, as systems can be a fusion of both clinical methods and categorical facets, decision-making schemes can be a combination of present fact-finding determinations and predictive judgments.[43] Whether pre-

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[39] Underwood, *supra* note 9, at 1412 (citing B. DEJOUVENEL, THE ART OF CONJECTURE (1976) and Sellars, *Time and the World Order*, 3 MINN. STUD. IN THE PHIL. OF SCI. 527 (1962)).

[40] This argument is especially condemning of the adoption of categorical schemes for predictive judgments. As should be clear already, categorical schemes necessitate the finding of a specific number of factors upon which decisions should be based and the appropriate weighing of these factors. Where these determinative factors cannot be ascertained or articulated, one might argue for the adoption of a clinical system for prediction or against the adoption of a predictive system generally.

[41] For a discussion of the place of autonomy in the adoption of categorical schemes, see *infra* text accompanying note 79.

[42] One commentator explains:

> [T]he assessment of predictive selection must take into account the nature of the plausible alternative to predictive selection.
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> Criteria that purport to punish fault and reward merit frequently provide the chief alternative to predictive criteria for selection. In admitting students to school, the chief alternative to predicting future performance is rewarding past effort and industry. In selecting criminals for release from prison, the chief alternative to predicting future crime is punishing past crime in proportion to its seriousness.
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> But these alternatives have their own limitations with respect to both accuracy and legitimacy.

Underwood, *supra* note 9, at 1418.

[43] The federal system for determining parole, *see* 28 C.F.R. § 2.20 (1983), is such a system. In that system, the salient factor score is a statistical scoring scheme used to predict parole success based on items such as prior convictions, family ties, and employment history.

> The salient factor score concerns only the horizontal dimension of the guidelines chart. The vertical dimension of the guidelines chart relates to the seriousness of the prisoner's current offense behavior. Furthermore, the time ranges specified by the guidelines are predicated upon good institutional conduct. Thus, the salient factor score provides an empirical basis for an important dimension of the guidelines, but it is not the only

dictive judgments are being made is one substantive consideration in deciding whether to adopt a categorical system of decision-making. But,

> [t]he advantages and disadvantages of [adopting a categorical system of decision-making] depend in large measure on one's vision of applicants and decisionmakers. Statistical method and easily scored factors are more appealing if wisdom is thought to be concentrated in a few wise rulemakers, who can anticipate most important contingencies, while the everyday decisionmakers are thought to have inadequacies that require control by rule. Discretionary decisionmaking is most appealing if wisdom is thought to reside in the people who confront applicants and make decisions, rather than in the policymakers who make the rules.[44]

B. *Procedural Considerations in Adopting Categorical Systems*

Up to this point, this Article has reviewed a variety of basically substantive considerations that should be examined before deciding whether to adopt a categorical system. In making this decision, it is important to look at the procedural considerations as well. The adoption of a categorical scheme markedly alters procedures and, in some instances, is the dominant procedural feature in the decision-making process.[45] For this reason, it is especially important to view both the desirable and undesirable procedural consequences that derive from the adoption of categorical decision-making systems. This portion of the Article reviews how some major procedural features of legal decision-making are affected by the adoption of categorical schemes.[46]

One procedural aspect of decision-making that can be dramatically altered or even eliminated from the decisional process by the adoption of the categorical system is the hearing itself.[47] The ritual of the

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dimension.

Hoffman & Adelberg, *supra* note 1, at 45-46.

[44] Underwood, *supra* note 9, at 1448.

[45] In most decisions, one is usually involved in producing an optimum outcome. Tribe, *supra* note 10, at 1383-84 (citing H. RAIFFA, DECISION ANALYSIS, INTRODUCTORY LECTURES ON CHOICES UNDER UNCERTAINTY 273-78 (1968)). But, in legal decision-making, "various features of the procedure followed to reach the decision, including the standard of proof applied, are themselves integral parts of the consequences to be optimized, a fact that greatly complicates the optimization process." Tribe, *supra* note 10, at 1383. In other words, the means are a part of the ends one is attempting to achieve.

[46] For a discussion of the factors involved in determining the requirements of due process, see Mathews v. Eldridge, 424 U.S. 319, 334-38 (1976). *See generally* Mashaw, *supra* note 20.

[47] The hearing is a major part of the ritual of civil litigation which has been called "society's

hearing process is important for the willingness of citizens to have their disputes resolved within the law. It also provides the participants, regardless of the objective outcome of the dispute, with a greater perception of the fairness of the process than they otherwise would have. When the adjudication involves public benefits or other rights or privileges to be bestowed or taken away by the government, the perception of fairness becomes important to the support of not only the judicial process but also the government itself. In addition, it is in these governmental benefit and administrative law processes that categorical decision-making has had and is most likely to continue to have its greatest impact.[48] Consequently, the adoption of categorical schemes will most likely serve to truncate or eliminate the hearing process in these areas. For example, in the case of compulsory retirement systems that create irrebuttable presumptions of physical and mental incapacity to perform certain tasks at a given age,[49]the ritual of the hearing may be completely eliminated. The only fact-finding in such a case would involve deciding an employee's age, and that might be done by using an original employment application or a certified record of birth. Although this example is an extreme one since the adjudication requires an outcome based on the finding of only one fact about which there is usually little dispute, other fact-finding processes could also be dramatically altered by the adoption of a categorical system. In disputes that involve determinations based on many fairly uncontroverted facts for which documentary evidence would be sufficiently probative, the hearing may be either eliminated or severely truncated. Where the interest involved is a minor one, the possibility of error slight, or the value of additional safeguards minimal,[50] the elimination of the right to a hearing may not be significant.[51] But, in all cases, it is important to weigh the

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last line of defense in the indispensable effort to secure the peaceful settlement of social conflicts." Hart & McNaughton, *Some Aspects of Evidence and Inference in the Law*, in EVIDENCE AND INFERENCE 48, 52 (D. Lerner ed. 1968).

[48] *See supra* notes 1-3 and accompanying text.

[49] *See* Massachusetts Bd. of Retirement v. Murgia, 427 U.S. 307 (1976); Air Line Pilots Ass'n, Int'l v. Quesada, 276 F.2d 892 (2d Cir. 1960), *cert. denied*, 366 U.S. 962, *reh'g denied*, 368 U.S. 870 (1961); 14 C.F.R. § 121.383(c) (1984).

[50] *See* Mathews v. Eldridge, 424 U.S. 319 (1976).

[51] In addition to the rather obvious gains in speed and cost-savings, the elimination of a hearing or other adjudicatory process may have other more controversial advantages. For example, the rendering of harsh results may be easier when the decision-making process is depersonalized. The depersonalization of the adjudicatory process at the initial level of Social Security disability claims as opposed to its personalization at the hearing stage is probably a reason for the high rate at which administrative law judges reverse negative determinations. In addition to making the decisional process emotionally less taxing on decision-makers, there may be situa-

manner in which the hearing process will be affected against any trade-offs or advantages involved in the adoption of a categorical decision-making process.

One way that the adoption of a categorical system affects the hearing process is in the degree of claimant participation. Categorical schemes confine participants to a predetermined set of factors. Since the factors to be considered in making a decision are predetermined, participants may be precluded from addressing certain issues and raising facts they view as relevant. Limiting participation in this fashion decreases the perceived fairness of the process by those affected by the determination and, consequently, lessens the legitimacy of the decisional system.[52] Although full claimant participation may harm the consistency and the aggregate accuracy of decision-making,[53] its benefits must be considered in deciding whether to favor categorical over clinical decision-making. As noted earlier, categorical systems are often adopted to improve consistency in decision-making.[54] But, ". . . if consistency is not feasible under a system, perhaps the more compelling standard for evaluating [a] system is the dignitary value of individualized judgment, which . . . implies claimant participation."[55] Even if consistency is likely to be improved, if not achieved, through the adoption of a categorical system, the trade-offs in terms of claimant participation should be recognized and considered.

Another trade-off involved in the adoption of a categorical process is the move away from individualized judgments. The problems of overgeneralization and the consequent lack of an individualized judgment are discussed elsewhere,[56] but here the concept of individualized judgment is used to refer to those decisions that are tailored to individual circumstances. Like claimant participation, highly individualized decision-making is likely to enhance the legitimacy of deci-

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tions in which elimination of the hearing process, for rather paternalistic reasons, might be adopted to benefit the claimant as well. Drawing again from the retirement process, a compulsory retirement age might be preferable to an extensive hearing inquiring into the mental and physical capacity of a long-term employee. For a discussion of the legitimate bounds of paternalism, see Kennedy, *Distributive and Paternalistic Motives in Contract and Tort Law, With Special Reference to Compulsory Terms and Unequal Bargaining Power*, 41 MD. L. REV. 563 (1982).

[52] *See* Joint Anti-Fascist Refugee Comm. v. McGrath, 341 U.S. 123, 171 (1951) (Frankfurter, J., concurring); Verkuil, *The Emerging Concept of Administrative Procedure*, 78 COLUM. L. REV. 258, 279 (1978), *cited in* Underwood, *supra*, note 9, at 1428 n.52.

[53] *See* Capowski, *supra* note 2, at 343-45. *See also infra* note 61.

[54] *See supra* notes 16-21 and accompanying text.

[55] Mashaw, *supra* note 20, at 54.

[56] *See infra* notes 83-108 and accompanying text.

sion-making processes. Conversely, the movement away from individualized judgments is troubling, "because that denies [a person's] claim to equal respect as an individual."[57]

Concerning individual autonomy, no area seems more troubling than that of predictive judgments.[58] Examples of areas in which categorical procedures are possible and, in some situations, have been adopted to predict future behavior include bail decisions, parole determinations, and law school admissions. Although all predictive determinations are to some degree inconsistent with a respect for the autonomous individual,[59] the categorical processes seem more troubling. This is probably because a categorical system uses generalized and pre-determined factors which limit individualization. Within the issue of autonomy, the greatest conflict between the predictive judgments and respect for the individual occurs where the predicted behavior is most subject to individual control.

In some circumstances, one can avoid the predictive nature of the judgments and consequent problems with respect to autonomy by altering the rationale for the determinations. Instead of viewing the determinations as predicting future behavior, they can be looked at as rewarding a good record or meting out punishment based upon a bad one. For example, rather than viewing a potential parolee as a recidivist, one can simply punish him for his past bad record at the institution by continuing his incarceration.[60] The just deserts philosophy can mitigate the problems with prediction and autonomy in some categorical systems, but, in other decisional areas, the problem is unavoidable. For example, in bail determinations, there must be a prediction of the likelihood that the defendant will appear to face trial; the standard simply does not allow adoption of the just deserts concept.[61]

Although numerous procedural losses can be caused by the adoption of a categorical decision-making system, several positive proce-

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[57] Underwood, *supra* note 9, at 1412 n.7 (quoting R. DWORKIN, TAKING RIGHTS SERIOUSLY 13 (1977)).

[58] For a discussion of the consideration of accuracy in adopting predictive catergorical systems, see *supra* notes 37-44 and accompanying text.

[59] For a contrary view, see B. F. SKINNER, BEYOND FREEDOM AND DIGNITY (1972).

[60] *See* D. GOTTFREDSON, *supra* note 7, at 156; Underwood, *supra* note 9, at 1441.

[61] Another objection to categorical systems designed to predict future behavior is that, in time, the factors used in the determination are less likely to be predictive. For example, if planning to live with one's family and having a job at the time of release have been predictive of parole success and used in a categorical system to determine release time, they are likely to become less predictive as the incarcerated person works at achieving these categorical factors to obtain the ultimate goal of release. For a discussion of the need for categorical systems to be cybernetic, see *infra* notes 109-14 and accompanying text.

dural effects may result as well. Perhaps the major procedural gain is that the decision-making process, because it is limited to a specific set of predetermined factors, becomes known, and the criteria for decision-making become explicit and visible. Unlike a clinical system, where the decision-making criteria are likely to be hidden and potentially highly subjective, the categorical system is likely to insure that illegitimate criteria are not used. For example, race is often an illegitimate factor on which to base a decision. In a clinical scheme, race might be used by a clinical decision-maker, whether consciously or unconsciously. In a categorical scheme, however, where factors are predetermined and explicit, race would not be considered unless it could somehow be subjectively brought into the fact-finding process involved in determining the prescribed factors. Because categorical schemes often eliminate illegitimate factors from decision-making, they are especially appropriate where decisions are highly correlated to factors that should not be determinative of outcomes.[62]

As a result of becoming better known, a decision-making process is likely to become clearer and more understandable.[63] Of course, the ability of the process to become clearer and understandable depends in large part on its not being so cumbersome, complex, or obtuse as to defy the procedural goals of clarity and understandability.

As a decision-making process becomes clearer and known, assuming it is desirable in other ways, it should become more acceptable, and its legitimacy should be enhanced. However, the system's legitimacy will be enhanced only if the process of decision-making appeals to common sense. Generalized rules which are applied uniformly to

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[62] One analysis of disability decisions showed that there was virtually no predictive value to basic characteristics which most believe should be important determinants of decisions. These characteristics include age, work history, education, and the claimant's ability to do sedentary, light, medium, or heavy work.

> Hence, the cases get decided on other grounds, that is, those grounds that show up as highly predictive factors in the discriminant factor analysis. Those factors include such things as whether the claimant was represented, the existence and character of the report of a consulting physician, the neediness of the claimant, whether the case involved a medical problem that included disfigurement, and the race and sex of the claimant.

J. MASHAW, *supra* note 7, at 19.

[63] The Social Security Administration claimed that a clear and understandable process would be the result of the adoption of the Medical-Vocational Guidelines.

> Consolidating these policies and incorporating them into the regulations will serve to make clearer to claimants and their representatives how disability is determined where vocational factors must be considered . . . . [A]nd finally, it should promote better understanding and acceptance by the public and the courts of disability determinations that are made.

43 Fed. Reg. 55,349 (1978). For a discussion of the validity of this claim, see Capowski, *supra* note 2, at 363-66.

individual situations often create inequitable results and give rise to some of the harshest contemporary criticism of our legal system by lay persons and legal scholars. The potential problems of over-generalization and mechanical decision-making present in categorical systems, which are based on statistical inference and predictive categories, are likely to engender criticism. This criticism is mainly due to such a system's potential failure to appeal to intuition. Roscoe Pound, in warning against a scientific legal system at the turn of the century stated:

> [I]t is well to remember that law must not become too scientific for the people to appreciate its workings. Law has the practical function of adjusting every-day relations so as to meet current ideas of fair play. It must not become so completely artificial that the public is led to regard it as wholly arbitrary.[64]

Pound's warnings must be considered before adopting a categorical system of decision-making. This is especially so because categorical systems are likely to be adopted where large numbers of cases are handled, such as public benefits, and great numbers of persons are likely to be exposed to the system. Its failure to persuade these individuals is likely to damage their faith in the decision-making process as well as the government which grants benefits or bestows punishment under the system.

Categorical systems are effective not only in making the decisional process known, but also in reducing the expense and time required for decision-making. Although the push for consistency has been the major thrust for the development of categorical systems, savings in expense have also been a motivation.[65] Indeed, some believe that cost and time savings can be the major reasons for the adoption of cate-

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[64] Pound, *supra* note 10, at 606 (footnote omitted). More recently, Lawrence Tribe, in his seminal article *Trial by Mathematics: Precision and Ritual in the Legal Process*, made a similar warning:

> Methods of proof that impose moral blame or authorize official sanctions on the basis of evidence that fails to penetrate or convince the untutored contemporary intuition threaten to make the legal system seem even more alien and inhuman than it already does to distressingly many. There is at stake not only the further weakening of the confidence of the parties and of their willingness to abide by the result, but also the further erosion of the public's sense that the law's fact-finding apparatus is functioning in a somewhat comprehensible way, on the basis of evidence that speaks, at least in general terms, to the larger community that the processes of adjudication must ultimately serve. The need now is to enhance community comprehension of the trial process, not to exacerbate an already serious problem by shrouding the process in mathematical obscurity.

Tribe, *supra* note 10, at 1375-76 (footnote omitted).

[65] "We also believe that a sensitive use of official notice would eliminate substantial expenditures for unnecessary testimony by vocational experts. . . ." J. MASHAW, *supra* note 7, at xxiii.

gorical schemes.[66]

Regardless of whether cost savings are the major motivation for adopting categorical systems, there is no question that their adoption results in substantial savings. This is true for a number of reasons. First, in a categorical system, fact-finding is a truncated process. Because relevancy has already been considered as a part of the system's design, the hearing process is certainly abbreviated. Second, cost savings can occur because individuals administering a categorical system do not need to be as sophisticated or highly trained as those administering a clinical process. Clinical decision-makers must, unlike categorical decision-makers, give appropriate weight to each of the factors they consider relevant. Because of these additional skills and responsibilities, clinical decision-makers command higher salaries. Conversely, categorical decision-makers operate in a fairly mechanical fashion. The relevancy of factors has been determined, the weight to be given to each of these factors is already decided, and outcomes are required where certain facts are found to exist. Third, categorical decision-making can result in savings because policy-making and decision-making are bifurcated. That is, policy-makers in a categorical system can simply design a process which has as its thrust certain policy considerations. After this process is designed, decision-making can simply be delegated to others who, using this categorical scheme, would necessarily make decisions that reflect the policies of the designers.[67] Fourth, the use of administrative notice in categorical systems can result in cost savings. Instead of calling in experts or others to testify about certain facts, as would be the case in various other adjudicatory systems, a categorical system can incorporate this information into its very design so that expert testimony, and its resulting high cost, can be either eliminated or severly curtailed in the decisional process.[68]

In some situations, it is clearly inappropriate to consider cost as a factor.[69] In deciding between the appropriateness of a clinical versus a categorical decisional process, however, it is important to consider cost, when proper, not only as an absolute, but in relation to its effect

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[66] *See, e.g.*, Frady v. Harris, 646 F.2d 143, 145 (4th Cir. 1981) (Hall, J., dissenting).

[67] For an example of how policy and case determinations can be separated in the context of the determination of eligibility for bail, see D. GOTTFREDSON, *supra* note 7, at 156-57.

[68] For a discussion of the effects of the use of administrative notice in one categorical system, see Holmes v. Harris, No. 79-0730-H, slip op. at 8 (S. D. Ala. Aug. 18, 1980)(recommendation of magistrate) (discussing the Social Security Medical-Vocational Guidelines).

[69] *See, e.g.*, Plyler v. Doe, 457 U.S. 202, 229 (1982); Graham v. Richardson, 403 U.S. 365, 376 (1971); Shapiro v. Thompson, 394 U.S. 618 (1969).

upon accuracy and consistency. For example, a clinical and a categorical system might be able to achieve the same level of accuracy given a specific funding allocation and fixed caseload. But, since the cost of clinical decision-making generally increases more dramatically than categorical decision-making as the number of required decisions increases, the accuracy of the clinical process could be seriously undermined if there is an unwillingness to meet rising costs.[70] For this reason, cost becomes an important procedural consideration in choosing between a clinical and a categorical system.

Savings through the adoption of a categorical system should be substantial, but, if one maintains the level of expenditure required for a clinical decision-making system in a categorical system, there should also be great savings in the time needed to process decisions. In fact, in adopting a categorical system, one may be able to create substantial savings in both cost and time.

II. The Design of a Categorical Decision-Making System

Thus far, this Article has discussed the appropriateness of developing and adopting a categorical decision-making system. The following section discusses some of the major issues involved in designing such a decision-making system. Of course, whether a categorical system is appropriate to adopt in a given situation depends on whether the problems involved in designing the system are solvable.

A. *Focusing on Critical Features*

Once the purpose of a decision-making system has been clearly defined, and some tentative decisions have been made concerning the procedural trade-offs one is willing to accept in adopting a categorical scheme, the next major step is to focus on the criteria or critical factors that go into making accurate, consistent, and appropriate decisions. For example, in the bail situation, one might discern that the seriousness of the offense and the seriousness of the prior record of offenses are the criteria that would accurately assess the probability of an individual's appearing at trial.[71] If these criteria are in fact the ones that predict the probability of appearing at trial, their selection as the critical factors in a categorical decision-making scheme would

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[70] *See* Underwood, *supra* note 9, at 1425.

[71] This example is borrowed from D. Gottfredson, *supra* note 7, at 154.

create accurate and consistent decisions.

Although the bail example neatly demonstrates how certain criteria may be adopted, in many cases, it is difficult to select criteria. Some criteria that may, at least theoretically, lead to highly accurate decisions can often have within them a highly subjective element.[72] Furthermore, many of the major goals one is attempting to achieve may be undermined when decision-making systems rely too heavily upon subjective criteria. To the degree that subjective elements are used, the individual biases of decision-makers can weigh heavily in the process and undermine the explicitness, objectivity, and clarity of the standard or standards that enhance the legitimacy of a categorical system. In addition, subjective criteria in categorical systems can make the process less efficient and require more sophisticated and better paid decision-makers.[73]

In designing Social Security's Medical-Vocational Guidelines, the drafters apparently faced the issue of whether to include various subjective critical factors in the categorical scheme.[74] One such factor, an individual's "residual functional capacity," that is, the individual's physical ability after his or her impairments are accounted for, was necessarily included. However, a more subjective factor, the individual's adjustment to his or her disability, was eliminated from the disability equations set out in the regulations.[75] This was done despite the fact that "the claimant's personal 'set' [adjustment] in relation to his handicaps is often really the key factor."[76] One assumes that in developing these regulations, the drafters, opting for objective factors, chose to ignore a highly subjective and salient feature consid-

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[72] For example, see *infra* notes 74-77 and accompanying text.

[73] *See supra* text accompanying note 67.

[74] No comments on this issue appear in early discussions of the regulations. 43 Fed. Reg. 55,349 (1978).

[75] The current language of the regulations suggests that findings of disability are made directly from the tables of the Medical-Vocational Guidelines. Earlier versions of the regulations, however, suggested that instead of finding disability, the Medical-Vocational Guidelines found adjustment. These earlier versions stated that

> [i]f an individual cannot perform any past relevant work because of a severe impairment(s), but the individual's remaining physical and mental capacities are consistent with his or her meeting the physical and mental demands of a significant number of jobs (in one or more occupations) in the national economy, and the individual has the vocational capabilities (considering age, education, and past work experience) *to make an adjustment to work different from that which he or she has performed in the past, it shall be determined that the individual is not under a disability.*

43 Fed. Reg. 55,363 (1978), codified at 20 C.F.R. § 404.1503(f) (1979)(emphasis added).

[76] R. Dixon, Social Security Disability and Mass Justice 61 (1973). *See also* J. Cull & R. Hardy, Understanding Disability for Social and Rehabilitation Services 98-103 (1973).

ered by many to be highly correlated with a finding of disability.[77] Just as the designers of categorical systems are likely to have a bias in favor of choosing objective factors,[78] decision-makers using categorical schemes are also likely, subject to the design of the system, to favor objective over subjective factors, other considerations being equal. Although there has been little empirical research on how fact-finders decide cases, it is probable that simple and objective facts, since they are easily dealt with and easily grasped, will be used in decision-making more often than complicated and subjective facts. This hypothesis, assuming it is true, should be taken into account in the adoption of a categorical system and the consequent move away from individualized decision-making towards rules.

Some factors may not be used in categorical systems because of their highly subjective nature, and others may be eliminated simply because they are objectionable. Obviously, one's decision that certain factors in categorical systems are objectionable involves value judgments. Whether the factors are objectionable depends on whether they are being used positively to grant some benefit or in a negative manner to mete out punishment or withhold a benefit. In addition, their offensiveness may vary depending on whether one is a person whose situation is being judged by the factor, the decision-maker using the categorical scheme, or society in general. Perhaps the most objectionable factors are those which impinge on or undermine autonomy. Objections to certain factors because of their effect on individual autonomy are greatest in categorical systems that are predictive.[79]

Critical factors used in categorical systems can affect autonomy in two distinct ways. First, factors upon which an individual can have no effect, either in the past or the future, deny autonomy. Such factors include age, race, and sex. Of course, since age changes over time and individuals, at some point in their lives, would be treated equally

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[77] For a more extensive discussion of this point, see Capowski, *supra* note 2, at 350-53.

[78] The designers of categorical schemes opt for objective factors over the subjective because the value judgments involved in the adoption of categorical systems shift one away from individualized decision-making and towards general rules. As Laurence Tribe has observed:

> One consequence of mathematical proof, then, may be to shift the focus away from such elements as volition, knowledge, and intent, and toward such elements as identity and occurrence — for the same reason that the hard variables tend to swamp the soft. It is by no means clear that such marginal gains, if any, as we may make by finding somewhat more precise answers would not be offset by a tendency to emphasize the wrong questions.

Tribe, *supra* note 10, at 1366.

[79] For a more thorough discussion of the selection of predictive factors and their effect on autonomy, see Underwood, *supra* note 9, at 1437-42, on which much of this section is based.

by using this factor, it is somewhat less objectionable than race and sex.

A second manner in which autonomy can be affected by the use of certain factors in categorical schemes is when those factors orient and perhaps become determinative of behavior. Individuals wishing to fall within certain categories may behave in a particular fashion simply to influence the determination under a categorical system. Factors that affect behavior vary in the degree to which they are offensive. On one end of the spectrum is individual behavior of a personal and private nature; on the other is public behavior which society strongly wishes to encourage or discourage.

Many methods can be used for developing the critical factors of a categorical system. The factors can be established *a priori* through an analysis of the basic purpose and standard upon which the decision-making system focuses. Some standards will have within them listed factors that clearly should be taken into account. For example, the Social Security disability standard specifically refers to an individual's inability to perform substantial gainful activity based upon age, education, and prior work experience. The listing of these factors makes them presumptively critical. Factors found in the standard would need to be combined with others believed to be important in the decision-making.

In addition to the *a priori* methods for divining critical factors, one can discover factors by viewing past and current decision-making. From this review, one may be able to extract certain salient features which could be used in predicting similar kinds of decisions. Essentially, this form of developing a system of rules or guidelines would make explicit the current decision-making process. Of course, such a method accepts the value judgments and deems the outcomes of the current decision-making system appropriate. Kenneth Culp Davis has mentioned a potentially sounder method for deciding upon critical factors and developing rules. "[A]n agency's normal progression is from unguided discretion to some use of precedents to clarification of standards to greater use of precedents to discovery of principles and finally to formulation of guiding rules and even of governing rules."[80]

Once the relevant factors are determined, these factors must be combined to achieve maximum results. The method used to accomplish this depends a great deal upon the goals of the system and the standards being used. Grids and tables may be used, or simple additive scoring could be adopted. Sophisticated mathematical methods

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[80] 2 K. DAVIS, *supra* note 10, § 8:4, at 170.

using weighted factors are possible now because of computers.[81] There is extraordinary variety in the manner in which factors can be combined when one uses combinations of some of these basic methods.[82]

B. The Problems of Overgeneralization

By definition, categorical systems require decision-makers to focus on a set of predetermined factors.[83] The factors, as mentioned, should include all those which are critical to the decision.[84] However, to achieve consistency and create a workable and efficient system, it is unlikely that all factors important to decision-making will be included. In a categorical system, the factors should match the individual situations. This kind of matching helps to insure individual accuracy. To the degree that factors cannot appropriately match each case, problems of over-inclusion and under-inclusion will result "from reducing the complexity of a decisional context by emphasizing predetermined variables."[85] In addition, certain crucial factors will probably be excluded. Even if one designs a categorical system that incorporates the factors usually employed in current decision-making, characteristics that are unique will be excluded unless a sufficient escape mechanism is made a part of the design of the system.[86]

Essentially, the design problem is one of making the categories sufficiently specific to handle individual situations but broad enough to aid in the search for aggregate accuracy, consistency, and efficiency.[87]

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[81] More complicated methods are not necessarily more useful:

> Interestingly, when predictive devices constructed with different methods are put to the test on validation (the application of the device to a new sample—a sample different from the one used in the construction of the device), devices based upon the simpler additive design appear to predict as well as, and sometimes better than, those constructed by use of mathematically more sophisticated methods.

Hoffman & Adelberg, *supra* note 1, at 44.

[82] An example of such a combination is the guidelines used by the United States Parole Commission. The horizontal dimension of the chart, used to determine a "salient factor score," provides an empirical basis for predicting a potential parolee's likelihood for success upon release. The vertical dimension of the chart lays out the seriousness of the individual's current offense. In addition, time ranges set out in the guidelines assume good behavior while the individual is incarcerated. *Id.*

[83] *See supra* note 4 and accompanying text.

[84] *See supra* text accompanying note 71.

[85] J. MASHAW, *supra* note 7, at 25.

[86] *See infra* notes 96-105 and accompanying text.

[87] The arguments here charge formalism:

> [I]t refers to any misuse of form in a manner which systematically inhibits understanding. Form involves the use of categories which abstract and fragment knowledge. Cat-

While one can find instances of over-generalization within categories in virtually all categorical systems, an example from the Medical-Vocational Guidelines is particularly forceful.[88] Since the statutory definition of disability requires an assessment based on, among other things, a claimant's past work,[89] one of the categories within the guidelines is past work. An integral question is whether the skills acquired from such work are transferable.[90] The guidelines use basically four classifications for a claimant's previous work experience: (1) none, (2) unskilled, (3) semi-skilled or skilled—skills not transferable, and (4) semi-skilled or skilled—skills transferable.[91] Clearly, the attempt to classify the great variety of work experiences available to claimants into four categories and to have many disability determinations turn on this classification obscures the variety of work experiences. It also obscures the subtleties involved in determining whether the transferable nature of particular skills will allow a person suffering from certain physical impairments to reenter the job market.

Before the adoption of the Medical-Vocational Guidelines, vocational experts were called upon to describe an individual's prior work skills and to determine the transferability of these skills. The expert then provided information as to whether an individual with the claimant's limitations would be able to perform other types of work and, if so, what specific jobs an individual with the claimant's impairments could perform. By reducing the cases in which vocational experts would be called, the Medical-Vocational Guidelines eliminated a great deal of the inconsistency that was caused by variation among

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> egories flatten out knowledge within them and mask knowledge outside them. All thought is abstract and fragmentary, but the charge of formalism suggests that categories which purport to distill and organize reality have in fact obscured it, that form has suppressed vital distinctions and connections, that it has eliminated contradiction and contingency.

Simon, *Homo Psychologicus: Notes on a New Legal Formalism*, 32 STAN. L. REV. 487, 493 (1980). An example of this form of generalization exists in the desirable height and weight charts recently published by the Metropolitan Life Insurance Company. " 'The chart is based on three body types, and there are more than that,' Dr. Jennings says. 'You can't put people in those few categories. The charts are only an estimate, and they are vague in many instances.' Weight distribution, age and genetic background have much to do with weight, he says. 'Ideal weight is hard to pin down.' " Baltimore Sun, Jan. 16. 1983, § H, at 4, col. 2.

[88] *See supra* note 24.

[89] 42 U.S.C. § 423(d)(2)(A)(1982).

[90] Transferability of prior work skills is based on whether the same or a lesser degree of skill is required, whether the same or similar machines or tools are used, and whether the same or similar raw materials, products, processes, or services are involved. 20 C.F.R. § 404.1568(d) (1983).

[91] *See* 20 C.F.R. § 404, subpart P, app. 2, tables 1-3 (1983).

vocational expert opinions. These guidelines, however, quantify work experience into four categories and limit the variation among claimants. As a result, outcomes in disability cases can turn on the mere classification of work into one category or another.

In developing a categorical system, designers need to create a sufficient number of categories to reflect accurately real world situations without creating so many categories that systems become unwieldy, thwarting the goals of consistency and efficiency. Categories should not be "irrationally grounded on overgeneralizations, and [should not invoke] stereotypes that inevitably make large differences in outcomes [that] turn on insignificant differences in relevant facts."[92]

Designers of categorical systems need to be cognizant of the problems of over-generalization caused by both the failure to include certain categories of information as well as the failure to include sufficiently specific information within the categories that are used. In addition, over-generalization is possible because fact-finders are likely to focus on certain factors and disregard others. This phenomenon, which excludes some factors in a system and obfuscates some information through the design of included factors, is caused by "the dwarfing of soft variables."[93] Soft or subjective factors are harder to quantify and more difficult to use in a fact-finding process. For these reasons, they are often eliminated from categorical decision-making to promote consistency as well as ease of scoring.[94] Because subjective factors skew consistency, are difficult to objectify, and are dwarfed by hard variables,[95] designers of categorical schemes need to be cognizant of their use and the way their incorporation can affect the goals of categorical processes. If the dwarfing of soft variables and the creation of other generalizations in the categorical scheme create a system which maximizes the designers' goals, the categorical system is appropriate; but if goals of consistency are too greatly undermined by the inclusion of soft variables, or their dwarfing too greatly skews individual as well as aggregate accuracy, a clinical system may be preferable.

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[92] Mashaw, *How Much of What Quality? A Comment on Conscientious Procedural Design*, 65 CORNELL L. REV. 823, 829 (1980).

[93] Tribe, *supra* note 10, at 1361.

[94] *See supra* notes 71-78 for a discussion of subjective factors.

[95] Hard variables are those which are objective. They are "[r]eadily quantifiable factors [which] are easier to process— and hence more likely to be recognized and then reflected in the outcome—than are factors that resist ready quantification." Tribe, *supra* note 10, at 1362.

C. *Providing Needed Individualization*

By selecting certain salient factors and eliminating other potentially relevant factors and information, categorical systems provide uniformity in decision-making. This uniformity is most likely to be achieved by sacrificing individualization. Categorical systems run the risk of producing a jurisprudence of rules where, as in Roman law, "[p]rinciples [are] no longer resorted to in order to make rules to fit cases. The rules [are] at hand in a fixed and final form, and cases [are] to be fitted to the rules."[96] Categorical decision-makers may not be able to respond to the individual differences in cases, and those whose cases are decided by categorical systems may be unable to call attention to the unique characteristics of their cases.[97] Uniformity, and perhaps consistency, are potentially purchased at the expense of individual accuracy and justice.[98] "Rules without discretion cannot satisfy the need for tailoring results to unique facts and circumstances of particular cases."[99] Thus, to temper the rigidity of categorical systems, designers should provide escape clauses from categorical constraints where unique or even unusual features of a particular case require flexibility to achieve a just result. Such escape clauses would allow decision-makers the discretion that is always necessary where individualized decisions are needed.

Escape clauses can be designed and structured in a variety of ways. Designers, in an attempt to predict which cases will require individualized decision-making, should create predetermined and specific categories of cases in which the decision-maker would have discretion to apply or abandon the basic governing rules of the categorical system.[100] For example, the drafters of the Medical-Vocational Guide-

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[96] Pound, *supra* note 10, at 607.

[97] Underwood, *supra* note 9, at 1423, 1427.

[98] The trade-offs involved between uniformity and individualization can have a direct impact on the justice achieved:

> Rigidity provides uniformity, but uniformity does not necessarily provide justice. Situations which appear similar usually contain some unique characteristics. Decisionmaking done in accordance with a rigid adherence to rules cannot take these differences into account. When the unique characteristics of a particular situation alter the effect of a decision in some fundamental way, rigid application of a rule creates injustice.

Note, *Sentencing Women: Equal Protection in the Context of Discretionary Decisionmaking*, 6 WOMEN'S RTS. L. REP. 85, 94 (1980)(footnote omitted).

[99] 2 K. DAVIS, *supra* note 10, § 8:3, at 165.

[100] These "special" categories could be developed *a priori* or by cataloguing the salient features of those cases for which the application of the basic categorical rules has historically proven to be inadequate.

lines[101] provided an escape from the system's basic governing rules in a predetermined category of cases in which those rules are to be used as guiding rules. The major problem with such an escape clause is that unique cases which fail to meet the designers' criteria for individualized treatment are not afforded any degree of discretionary treatment. The failure to anticipate all situations needing a relaxation of the categorical approach inevitably results in injustice and individual inaccuracy.

Alternatively, an escape clause can be fashioned to specifically grant fact-finders the discretion to depart completely from the basic rules of a categorical system when the circumstances of a case require it. Such an escape clause might simply allow decision-makers to depart from the rules without giving any explanation. Or, more appropriately, it might require the decision-makers to articulate the specific reasons for their departure from those rules. By requiring decision-makers to state specifically the reasons for their departure from the general rules, the discretionary element only minimally undermines the advantages of a known and public decision-making process. This type of escape clause is found in the United States Parole Commission's "salient factor score"[102] and is an example of how categorical systems can be designed to contain clinical decision-making components that allow for individualizing and discretion.

It is clear that a properly drafted escape clause can aid individual accuracy. However, there are instances where the use of such a clause continues inaccuracy and undermines other goals of categorical systems. As mentioned, an escape clause may allow the decision-maker to use his discretion in those instances where a predetermined set of factors allows for individualizing. This form of escape clause limits individual accuracy to those cases where unusual factors have been anticipated in advance by the designers of the system. Another obvious problem with the escape clause is that it has the potential for seriously eroding the consistency of a categorical system. If decision-

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[101] While not adopting the terminology of guiding rules, the drafters of the Medical-Vocational regulations stated that the basic rules would be used only as a "framework" in cases where claimants suffer from "strength limitations and nonexertional limitations." 20 C.F.R. § 404, subpart P, app. 2 § 200.00(e)(2) (1982).

[102] Hoffman, *supra* note 1, at 44.

> "[The] escape clause of the guidelines system is designed to enhance consistency and fairness in decision-making by guiding and structuring the exercise of Parole Commission discretion without removing the opportunity for individual case consideration. Decisions departing from the guidelines are permitted, but specific written reasons for such departure are required in each case."

Id.

makers act outside the guidelines too often, cases that have similar determining factors are likely to be decided in different ways. Because broad escape clauses encourage decision-makers to move outside the categorical system,[103] fewer cases will be decided under the guidelines. Consistency and aggregate accuracy will probably not be achieved.

In general, however, categorical decision-makers are reluctant to use escape clauses. One reason for this reluctance is that an escape clause is likely to be triggered where certain subjective factors which could not be incorporated within the objective criteria of the categorical system are found to exist in a case. For the same reasons that these variables failed to be incorporated within the basic design for decision-making— the tendency of hard variables to dwarf soft variables— they are unlikely to be recognized by decision-makers.[104] In addition, because of the nature of their positions, categorical decision-makers are likely to be disinclined to use escape clauses. Categorical decision-makers are generally less highly trained than clinical decision-makers and less sensitive to or concerned with policy considerations. In addition, categorical decision-makers, at least in the administrative law setting, are likely to be government employees who will use the basic rules for decision-making to avoid criticism from their superiors.[105]

Escape clauses explicitly allow for the exercise of discretion. However, because of an inherent mix of rules and discretion, most categorical systems implicitly allow discretion and, to this degree, can add needed individualization. "The unthinking assumption that an officer either follows a rule or exercises discretion is false, because rules overlap with discretion in many ways."[106] In categorical systems, the major area where rules and discretion mix is fact-finding, and this is especially so where subjective factors exist within categorical decision-making systems. While categorical systems require certain outcomes given specific facts, decision-makers have a great deal of control over these outcomes because they control the fact-finding process and decide which facts apply. In addition, many categorical

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[103] Broad escape clauses encourage their use, especially if they are incorporated into a system having narrow and rigid guidelines.

[104] Tribe, *supra* note 10, at 1361-65. *See also supra* note 71-77 and accompanying text.

[105] Several commentators made these observations about the use of the escape clause provision found in the Medical-Vocational Guidelines. Lyko, Sweeney, & Carroll, Comments of the Administrative Law Center and National Senior Citizens Law Center on draft of "Rules for Adjudicating Disability Claims in Which Vocational Factors Must Be Considered" (Dec. 8, 1976) (copy on file with the author).

[106] 2 K. DAVIS, *supra* note 10, § 8:7, at 186 (emphasis deleted).

systems require the fact-finder to evaluate subjectively scored criteria, thus expanding the discretion inherent in the fact-finding process. Such discretion, whether or not enhanced by subjectively scored criteria, provides an opportunity for individualization within a categorical system. In addition, systems which have both clinical and categorical components allow for an even greater degree of discretion within the clinical portion of the scheme.

Clinical components, escape clauses, fact-finding, and the use of subjective factors can all create discretion in categorical systems. While all of these mechanisms can create sacrifices in aggregate accuracy and consistency, the most troubling is the use of subjective factors. Categorical systems appear to remove bias from the decision-making process and create the appearance of processes that are both fixed and uniform. However, the inclusion of subjectively scored factors which may be necessary for individual accuracy allows "the decisionmaker to cloak his personal biases in the mantle of a scientific judgment."[107] This phenomenon may create claimants who are misinformed about the neutrality of the decision-making system or who become suspicious of the potential prejudice and inconsistency within the system. Despite the risk of bias and the risk that consistency and aggregate accuracy may be sacrificed, the designers of categorical systems must be willing to provide for needed individualization.[108]

D. The Need for Validation and Modification

Clearly, there are many design problems which must be resolved to create a categorical system that maximizes decision-making goals. In developing an optimal system, designers should incorporate a mechanism to review whether the system is accomplishing its objectives. For example, if a categorical system has been designed to determine which prisoners, if paroled, would be rearrested or in some other way break parole within a certain time of release, the system should review the records of those placed within the success and failure categories to see if the system has made accurate predictions. Such things as over-inclusion and under-inclusion need to be considered.[109] If possible, the validating systems should also have the ability to determine why over-inclusion or under-inclusion has occurred.

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[107] Underwood, *supra* note 9, at 1443.

[108] *See supra* notes 96-105 and accompanying text.

[109] For a discussion of one such validation, see Hoffman & Beck, *Revalidating the Salient Factor Score: A Research Note*, 8 J. CRIM. JUST. 185 (1980).

If the validation system reveals that the decision-making process is not substantially accomplishing its goals, there should be a mechanism for modification of the categorical system. Such a modification procedure exists in the federal parole system. "[T]he [parole] board may at any time vote affirmatively to change parole selection policy by modifying any guideline category or combination of categories."[110] The need for a categorical system to contain the seeds for its own modification, that is, to be cybernetic, is required not only to make corrections in the system's initial design but also to preserve the system's goals over time. The effect of adopting a categorical system

> is apt to be petrifaction of the subject systematized. Perfection of scientific system and exposition tends to cut off individual initiative in the future, to stifle independent consideration of new problems and of new phases of old problems, and to impose the ideas of one generation upon another.[111]

One reason for this petrifaction in categorical systems is that their development requires a move away from general principles and towards definitions, precision, and mechanical application. This creates a situation where information only vaguely understood is often eliminated from the decision-making process. In fact, a decision not to adopt categorical systems is often made because there is insufficient understanding of a particular area.[112] As knowledge develops in areas that were once fuzzy, categorical systems need to have mechanisms for change so that this information can be incorporated within their structure.[113]

Another reason why categorical systems should have provisions for modification is that factors, especially in predictive systems, will lose their decision-making strength or predictive power over time. In particular, changes in the structure of information and in societal norms can cause factors to lose their decision-making strength. This deterioration can be caused by individuals changing their behavior to create desired outcomes for themselves through the application of the predictive categorical system.[114] Through continuing validation and modification, it may be possible to create categorical systems which affect policies through an optimal mix of rules and discretion.

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[110] D. GOTTFREDSON, *supra* note 7, at 19.

[111] Pound, *supra* note 10, at 606.

[112] *See supra* notes 29-35 and accompanying text.

[113] For a discussion of the importance of principles over rules and incorporation of "somewhat fuzzy and open-ended" statements, see Tribe, *supra* note 10, at 1390-91.

[114] *See, e.g., supra* note 61.

III. Conclusion

Although greater consistency often can be achieved by moving from a clinical to a categorical decision-making system, this step usually requires trade-offs in individual and aggregate accuracy. Because of these trade-offs and the negative procedural consequences of adopting a categorical system, one should adopt such a system only after a studied balancing of the disadvantages and benefits.

In designing a categorical system, one must focus on critical factors, guard against over-generalization, and provide for needed individualizing through escape clauses and through the incorporation of subjective features. Finally, each categorical system should contain a validation and modification process to maximize accuracy and consistency.