

Multi-decisions Decision-Making:

In addition to wheeling and dealing our national politics needs a formal approach to prioritization for better decision-making. How?

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Abstract

Individuals, corporations and governments constantly face the extremely complex problem of ordering and prioritizing their numerous decisions according to urgency and importance. Such ordering may be necessary to sequence and optimize how they are implemented over time and allocate scarce resources. Prioritization requires general and diverse economic, social, political, environmental, cultural and other criteria that reach beyond the familiar process of deciding on the best alternative in making a single decision. The decision about decisions is more difficult when the best choice for each particular decision is unknown and needs investing a large amount of time and resources to determine. There are three cases to consider. 1) The best alternative in each decision is known, 2) The best alternative in each decision is unknown, and 3) A combination of these two cases. What are the values and criteria that we need to use to prioritize decisions as the alternatives of a more general decision process? Decision-making often involves, among other things generating alternatives, setting priorities, choosing a best alternative, allocating resources, determining requirements, predicting outcomes, designing systems, optimizing performance, insuring the stability of a system, planning, and resolving conflicts. Corporations do not have the heterogeneous issues governments have, nor do they involve as much politics. However they are much more resource oriented than governments are.

1. Introduction

In the intense effort to develop ways to do multi-criteria decision making (MCDM), one also needs to consider the more general and vastly more complex problem of how to order and choose from among many decisions. The subject I have in mind is very practical and far more complex than what MCDM does now. It separates the academic approach from the messy and very down to earth daily approach of politicians to decision making. It has to do with having a multiplicity of decisions each of which may or may not have been worked out and the best alternative identified, but now these decisions need to be ordered and implemented to satisfy certain criteria. Such decisions may influence each other and have dependencies that are related to the criteria chosen. They may in turn have their own benefits, opportunities, costs and risks and one would need to examine them in a broader context than the one used to determine the best outcome for a single decision. Their implementation may turn out to be far more complex than that conceived by the politicians in their political wheeling and dealing and may have to be

revised. This multi-decisions problem touches on the more general subject of human values and their priorities and the contribution that each decision makes to these values. The solution of this problem may belong to the domain of dynamic optimization subject to uncertainty in which need, urgency and the overall merits of benefits (B), opportunities (O), costs (O) and risks (R) play a significant role to organize decisions in a sequence for implementation. These merits need to be prioritized with respect to general strategic criteria. That is why the subject of criteria and values takes on particular significance in choosing among decisions. Our greatest challenge is the unknown future and the new uncertainties it may present us with, what new concerns will press us, the decisions we have to make about them in the face of uncertainty. Scenario building is a useful tool for us to deal with the future and its dynamics. I call this subject Multi-decisions Decision-Making (MDDM). Unlike in Multi-Criteria Decision-Making (MCDM), the broader advocacy by the diverse people affected by the decisions, the politics involved, the timing, sequencing and scheduling need to be part of our considerations in MDDM.

Multi-decisions problems bring us head on to the question of ordering our values and their differing order of importance point to the need for hierarchic structures of influence. There are two aspects to modeling a problem quantitatively. The first is to create a structure that represents the different parts of the problem and their interconnections according to the flow of influence among them, and the second is to study the intensity and stability of flows within the structure. In science, the second is done quantitatively by solving equations and inequalities. The first is done creatively through identification, enumeration and order relations among the elements such as arranging the elements in a hierarchy or a network which is important in decision making. How to structure our problems and piece together the different ideas we have about what must be done is a highly demanding process of creative thinking and understanding and is at least as important as and can be far more complex than how to perform the operations within a structure. We tend to think of structures as physical objects forced on us, but most structures are built in our minds for understanding occurrences around us that are both physical and mental. Fundamentally structures are no less mathematical in nature than are operations and transformations that take place within them. But as yet we are not as sophisticated in dealing with them.

All meaning we assign to things depends on our system of values both concrete and abstract. While single decisions are evaluated in terms of local criteria like a locally Euclidean (flat) coordinate system on a manifold that cannot be used to study the entire manifold holistically, multiple decisions are evaluated in terms of global criteria or values that relate to what is more or less widely accepted as good and bad that are like general coordinates on a manifold that cannot be used to study local properties as do the Euclidean coordinates. These are two very different ways to look at decision making and value systems. However most values are adopted relative to other people and to circumstances by using different attitudes. The concept of attitude arises from attempts to account for observed regularities in the behavior of individual persons. One tends to group others around him into common classes; he may assign people of a given skin color to a single class and behave similarly toward all of them. In such a case he is said to hold an attitude specific to that ethnic or racial group. In addition there are perceptual,

emotional, and motivational attributes. In business, corporate values may be not just to make a profit but to serve customers with integrity and concern.

We have to answer questions like: How did the need arise to decide on what to do? What causes that need and who and how many are affected by it? How do we define the actions to be taken to satisfy that need? How well can those actions be implemented and how soon? What is the decision? When analyzing a decision one asks: What are the values that affect this decision? What must be done to best realize them? What position do I want to take or can't take? What role or roles am I expected to play? And so on.

There are at least five orders of complexity for those having the problem of ordering many decisions: by a single individual, by a group, by a corporation, by a government, and by many governments working cooperatively as within the United Nations, or working collectively through coalitions. We shall treat only a small part of this formalization of the problem, using what we know about the U.S. Congress as an illustration.

2. Decision Making in Politics- What Congress Does

Decision-making in politics is very different from business. First, it is important to distinguish between a description of how Congress behaves and how Congress should behave. One can obviously come up with different sets of rankings depending on the question addressed. Second, the most relevant criteria that determine if and when Congress will act are the following, in no particular order: (1) the nature of the need to be satisfied; (2) the demand for congressional action, which stems from public opinion or the pressure of interest groups, the latter of which may not arouse much public attention; (3) the complexity of the issue, in political and public-policy terms that can affect Congress' ability to get consensus for action; and (4) the costs (does Congress have the money or other wherewithal to do it).

Jonathan Moon [1] has studied issue attention with regard to legislative proposals in the US Senate. His findings are interesting and are summarized below.

Since there are many potential issues that may be addressed, a fundamental aspect of lawmaking involves the choice of which issues to pursue and how much to pursue them. At the early stage of legislative production, policy alternatives are shaped through the effort – intensive activities of legislators – gathering information, drafting bills, building coalitions and keeping pace with the activities of various interests. The decisions most constantly on a Senator's mind are not how to vote, but what to do with his time, how to allocate his resources, and how to put his energy. *Costs and benefits are important considerations.* Legislators are policy motivated and their preferences are defined over policy outcomes. Aside from the premise that committee assignments and committee leadership lower the marginal costs of legislative attention, it may also be true that these factors raise the benefits of attention because they indicate better access to and influence over the legislative agenda. There are four basic sets of factors that affect a legislator's

issue attention decisions: *preferences, national conditions, committee* and *party*. The question is to what extent each factor influences issue attention. Three types of preference subfactors are *constituency interests, ideological* and *partisan*. Constituency induces preferences through re-election, ideology means beliefs about what constitutes good public policy from personal convictions or induced by constituents' beliefs. Party suggests that voters and the electorate associate different political parties with the successful handling of different issues.

National conditions indicate whether there are opportunities for policy change based on deficiencies in law and policy.

Majority party status involves two factors: majority party's control of institutional resources subsidizes issue attention. They introduce more bills than the minority party for all issues. Second they give more attention to issues that the majority party owns. There is one committee with primary jurisdiction over each issue except health, which comes under the jurisdiction of transportation. There is little support for the hypothesis that partisan differences influence attention independent of constituency economic interest and ideology. The hypothesis that the majority party control of resources and the agenda allow it to subsidize the attention costs of its members is soundly rejected. The central finding of the analysis is that committee membership is the dominant influence on senators' attention to issues. They give more attention to issues under their jurisdiction than nonmembers. The effects of constituency, ideology and party are significant to a lesser extent. *A bold conclusion that might be drawn from the results is that senators stumble upon issues more often than they actively seek them out. They pursue issues within the set of opportunities provided by their committee assignments.* Other sources indicate that many issues are brought before Congress by the President or by Secretaries of different departments in the Executive Branch.

We may divide decision making into different categories to get a better handle on them. So far, multi-criteria decision-making has focused on homogeneous decisions that can be described sufficiently to model them. Heterogeneous decisions are diverse and intractable because they can be subject to chance and to the vagaries of human society, like the terrorist acts of 9/11. The occurrence of the decisions themselves is a dynamic process whereby the arrival of an urgent decision may set aside work on an existing one, something like preemptive queuing phenomena.

MCDM methods can be appropriately used to help committees using their judgments and understanding to decide on the priorities of the issues they consider because they know their criteria best for those kinds of special issues. Further, and at least as important is to help the leadership in Congress to prioritize the bills brought forth by the many committees and urgent bills brought from other sources so they can be submitted for a vote before the senate or house. In addition, MCDM methods can be used by the members of Congress themselves so they can vote for or against a bill or when the process becomes more entrenched and sophisticated, use the intensity of preference instead of yes-no to determine the outcome of a bill. Finally the president whose influence is very great to determine how the bills are considered by the committees and

by Congress, needs to use a process of prioritization of national interests to decide whether to sign or veto a bill.

When we think of the nature of various decisions we realize that they do not all have the same need and urgency for implementation nor is there the possibility to implement them all before considerable preparation. Some decisions are long term and need to be started immediately at a low threshold to make possible subsequent stages of implementation. Among the criteria that one needs to consider are both positive and negative ones. Noteworthy is the need, the **urgency** of implementation (sometimes we may wish to implement the less important decisions to get them out of the way), the **timing** of implementation, the **availability of resources** that are on hand and other resources that need to be gradually secured through other means, the **costs** and **risks** involved in each decision, the fact that new decisions would be arriving that may cause change in the priority of implementing others, the contributions of these decisions to the welfare and happiness of people, to alleviating suffering and pain, to society, politics, technology and the like. During the past elections, candidates in the U.S. have had to make promises on decisions ranging from the economy, taxation, and unemployment to health benefits to the benefits and harms of outsourcing to the wars in Iraq and in Afghanistan and to terrorism. These are decisions of different kinds and implementing one decision has an effect on implementing others. They each have their own benefits, opportunities, costs and risks. They are all essential considerations but not to the same degree of urgency and resource consumption. How do we combine these considerations to help us obtain an overall priority list for all the decisions we must make?

Many decisions by Congress usually have to do with providing economic support and levying taxes. But there are also legal, political and social decisions that legislate on certain prohibitions like drugs and abortion and going to war, the status of illegal immigrants. Some of the legislation is proactive but much of it is reactive to things happening that become problematic. In society the decisions made have to do with how much resources there are to implement decisions ranging from economic to human; what people and how many need that kind of assistance, what support and lobbies there are in favor or against and what sort of pressures they can bring about; how the issue it affects the image, standing and the chance for reelection of the officials who make the decisions; the short and long term impact of a decision and its domestic and international economic, political and social repercussions.

In government often the negotiability of an issue is important. If there is early agreement on a decision, the positive attitude may carry over to other issues and conversely. Sometime by putting forward the most divisive issue, it is hoped that after that people would rally together to agree on subsequent ones.

A major distinction must be made between the desirability of a decision and the short and long run consequences of that decision. There are preferences for the actions to take and other preferences for the consequences of these actions. To include such preferences for consequences one must examine influences about but what the results of decisions can be.

Due to the high volume and complexity of its work, Congress divides its tasks among approximately 250 committees and sub committees. The House and Senate each have their own committee system, which are similar. Within chamber guidelines, however, each committee adopts its own rules; thus, there is considerable variation among panels.

The Senate Committees

Standing Committees:

Agriculture, Nutrition, and Forestry, Appropriations, Armed Services, Banking, Housing, and Urban Affairs, Budget, Commerce, Science, and Transportation, Energy and Natural Resources, Environment and Public Works, Finance, Foreign Relations, Health, Education, Labor, and Pensions, Homeland Security and Governmental Affairs, Judiciary, Rules and Administration, Small Business and Entrepreneurship, Veterans Affairs

Special, Select, and Other Committees

Indian Affairs, Select Committee on Ethics, Select Committee on Intelligence, Special Committee on Aging

Joint Committees

Joint Committee on Printing, Joint Committee on Taxation, Joint Committee on the Library, Joint Economic Committee

The House Committees

Agriculture, Appropriations, Armed Services, Budget, Education & the Workforce, Energy and Commerce, Financial Services, Government Reform, Homeland Security, House Administration, International Relations, Judiciary, Resources, Rules, Science, Small Business, Standards of Official Conduct, Transportation & Infrastructure, Veterans Affairs, Ways & Means, Joint Economic, Joint Printing, Joint Taxation, House Permanent Select Committee on Intelligence

Bills before Congress (Early 2005)

Abortion, prohibit taking minors across state lines to circumvent parental notification; Abortion, require informing women who seek one about pain to unborn child; Arctic National Wildlife Refuge, designate a portion as wilderness; Bankruptcy reform; Schumer amendment to prevent anti-abortion protesters from using bankruptcy to avoid fines or judgments; Class action lawsuits, assure fairness; Clear Skies Act (emissions control for power plants); Congressional Gold Medals, provide reasonable standards for; Constitutional amendments; Continuity of Congress (special elections/appointments in national emergencies); Death gratuity for military, improve; Estate tax, make repeal permanent; Farm subsidies, limit federal farm payments; FCC indecency, penalties, increase; Flag desecration, constitutional amendment prohibiting; Genetic information, prohibit employers and health insurers from discriminating on the basis of; Gun liability bill, Immigrants, establish driver's license regulations and ID security standards for; Incapacitated Persons Legal Protection Act (provide habeas corpus protections); Insurance, increase coverage of Service members' Group Life program; Insurance, prevent sales of abusive policies to military personnel; Marriage, defined as between a man and a woman only, amendment to the Constitution; Minimum wage, increase; Same-sex marriage, constitutional amendment prohibiting; Senate committee organizing resolutions; Social security numbers, enhance privacy protections and prevent fraudulent misuse; Social security overhaul, including creation of personal accounts; Spyware, protect Internet users from unknowing transmission of personal data; Stem cell research, allow human embryonic; Tax cuts, make permanent; Terri Schiavo bill; Transportation (TEA-21), reauthorization of surface transportation programs; Tsunami relief, accelerate tax benefits for charitable cash contributions; Welfare bill (TANF)

3. Strategic Decision Making

Decision-making provides the interface of science with philosophy and the theory of value. There are two parts to existence: the physical and the creation of value. When one has a single decision to make one answers the question: which of these alternatives is the best one. When one has many decisions to make, one answers the question: "Which of these best alternatives for several decisions should we choose first?" The first decision is determined in terms of the characteristics of the particular decision; the second in terms of the characteristics of many decisions which means the criteria people use to decide or not to decide. I call these strategic criteria. They are economic, physical, social, political, legal, technological, ideological and others. Their priorities are definitely set in terms of the higher goals of well being, survival, peace, and beliefs about the future. In considering multiple decision problems, it is inevitable that one becomes philosophical about the essential meaning of value. Although it is difficult to be exhaustive we can list a variety of values that people use. It is fair to assume that not all values are known and well defined. There is synergy in all that we do that creates value and the values of today are not the values of yesterday. Still, our desire for survival, well-being and peace are permanent values.

There are different levels of urgency in making decisions: different ability to pay, different importance assigned in terms of tactics and strategy, short and long term. How many people are affected and how lasting is the effect of that decision, what happens to the environment. An individual, a group, a company, or a government can organize their areas of concern, the urgency and the magnitude of influence with which they are needed so that caprice in decision making will gradually diminish and disappear and coping with life will become more systematic from the specific to the most general. We would then have more time to focus on expanding our horizons for the future and choosing the most appropriate ones that integrate well with what we know. What we need to do is identify and classify our values and our decisions to make a science of it. The most urgent decisions have to do with conflict resolution so that the decisions we make are built upon and not cancelled or destroyed by conflict. Implementing decisions depends on resources and how much we have of them and how much we need. Resources are an essential part of decision making. When the two parties to a conflict encounter a seemingly impossible impasse, it is important to explore the objectives and values underlying each person's problem and initial proposed solution. After the discussion has progressed from a story about a problem to a description of a desired objective (through Requesting and Leadership Counseling) the key question to ask on which there are numerous variations is:

What is the advantage you seek in getting your objective? What benefits would come to you from having X, your stated goal? How would you gain from getting that for yourself? If you got X, how would that help you? These questions direct the listener's attention to their deeper objectives and the values that would be fulfilled if their objectives were achieved.

4. Axiology – the Study of Values

Multi-decisions problems bring us head on to the question of ordering our values. *Values are generalized, relatively enduring and consistent guides whose priorities establish how we want to live.* We use values to relate and interpret everything else that we learn and experience. It is the focus of our being. Value is an anchor that binds our energies, our thoughts, and our actions. In a sense, our values are us. They are not something abstract and eternal. Despite some overlap, the values of a tree or those of a bee differ in meaning and substance from our human values. That does not mean that our values are important for the tree; in fact, while the trees and their values are important to us, we and our values are not important to the trees unless we want to destroy them. At the outset we must establish the fact that no matter how scarce or rare a thing may be, if no one desires it, it will have no value, power or influence. In addition no matter how valuable a thing may be if everyone has all they want of it, no one will pay a price to get more of it. The value of something is its capacity to satisfy some human need. Value represents the object's utility. The value of a thing is a social property expressing the social nature of the labor of that thing. Only objects that have use also have value.

People who have thought about the subject of value are divided as to how value or values are to be regarded. To some economists such as Ludwig von Mises "value" always has a subjective quality. The basic idea is that there is no implicit value in objects or things and that value derives from the psychology of market participants. Subjective value theory says that things are not of inherent value but have value only insofar as people desire them. You are hungry and you see candy, it is of value to you. You don't eat it, but eat a big dinner. The candy is of no value to you. The value of the candy changed according to your desire. In economic value theory, the value of the candy is the amount of labor that goes into making it. It would still cost the same at the store whether you are hungry or not. On the other hand, ethics and aesthetics commonly consider intrinsic goodness, and these lead to very different kinds of considerations about value. In this case value has a universal importance beyond the time dependent preference of individuals. Values change over time, change in space, and from young to old. The concept of the spirit of the times (*Zeitgeist*) was introduced by Friedrich Hegel (1770-1831). The *Zeitgeist* values of our times are not easy to enumerate. They vary with the fashions.

There are six value-spheres about which it might be possible to reach consensus. They are the pursuit of wealth, order, truth, the sacred, virtue, and beauty. These have been called the *cardinal values*. They are all products of society. The cardinal values are embedded in the major institutional realms, i.e., the economy, politics, science, religion, ethics, and the arts. The ideal of contemporary American and European society is an all-round society that affords people the opportunity to freely pursue the cardinal values. The importance of free enterprise, civic liberties, academic freedom, artistic freedom, and freedom of religion are examples.

A single decision involving the selection of a best alternative requires knowledge of objectives and criteria to evaluate the alternatives of that particular decision. A multiple

decision ordering of several diverse best alternatives requires knowledge of values served by the alternatives. Each alternative serves some objective or objectives that differ from those of other alternatives. The objectives themselves are part of higher-level objectives needed to determine the contributions of the different decisions.

There is a near infinity of values attached to everything and every idea we have like religion and magic. Many people believe that value theory, also fundamental in decision-making is the most important area in philosophy. All religions and most philosophical movements have been concerned with it to some degree. In philosophy, value theory, or axiology, concerns itself with the notion of goodness. It divides into ethics, concerning the morally good and aesthetics, concerning the artistically good, or the beautiful. It also concerns social goodness, and considerations relating to economics and political science. Value defines "good" and "bad" for a community or society. It affects everyone's life – maybe all life forms and not just people. What kinds of things are good? What is “good”? What is “bad”? What is important about our needs and wants? What is the ultimate reference for value, God, evolution and change, law and order?

An objective of a decision is defined by values. It appears that the objectives of decisions can be varied and numerous because the values are numerous. For example, the objective of a car is to transport people, the objective of food is nourishment and these two objectives are substantially different. However, all objectives serve direct needs of people or of the environment that can affect people indirectly. Thus the higher order values have to do with people or with the environment both physical and biological having to do with animals and plants. As a result we can say there are three kinds of high order values: those that deal strictly with people, those that deal strictly with the environment, and those that deal with people and the environment in an interdependent way. We need to do three things.

1. Identify these different higher order values,
2. Prioritize them
3. Use them to prioritize the contributions of best outcomes of decisions according to BOCR.

The decisions may be interdependent and deriving their priorities would need use of the ANP.

Given the priorities of outcomes, we need another set of factors that have to do with implementing the decision of sequencing and carrying out the different decisions. These are knowledge, preparation, urgency, cost, effectiveness, and implementation and so on.

Examples of objectives that satisfy certain values:

Expense Reduction

Reduce Personnel Costs, Reduce Operating Costs, Reduce Systems Costs

Improve Productivity

Reduce Time on Work Performed, Reduce Throughput

Revenue Generation

New Sales, Customer Retention

Key Business Drivers

Increased Profits from Expense Savings, Improved Customer Retention, Comply with Government Regulations, Minimize Product Defects
Minimize Risk
Schedule Risk, Cost Risk, Performance Risk

Personal Values: For most people the order of their personal values may be something like the following:

- Physical Values of Health, Comfort & Hygiene
- Ethical & Religious Values -Life & Death
- Family Values - Love, Caring & Nurturing
- Knowledge, Facts & Information Values
- National Values – Party Commitments & Political leanings
- Global Values - What to do about international issues

Abraham Maslow [2] he classifies seven basic needs in order of importance from the most basic to the least basic need: I. Homeostatic Needs (Physiological), II. Safety and Security Needs, III. Love and Belonging Needs, IV. Esteem Needs, V. Self-Actualization Needs, VI. To Know and Understand Needs, and VII. Aesthetic Needs

There is overlap from need to adjacent need. Each successive need emerges little by little as the previous need is partially satisfied. A need may be satisfied 25 percent when the next one will be felt. If the previous need is satisfied a following need may emerge.

The Scientific Philosophy Perspective on Values

Nicholas Rescher's [3] classifies values. *A person's values are clues to guide deliberations to arrive at decisions and to explain actions.* A thing has value when it is the object of interest—any interest. Values are related to actions in categorically different ways: *A motive, habit or disposition for action* (bravery, generosity); *A physical state* (health, good looks); *A capability, skill or talent* (agility, endurance); *A state of mind or attitude* (indifference to money, patriotism); *A character trait* (resoluteness); *A state of affairs* (privacy, economic justice).

K.Baier and N. Rescher [4] provide a comprehensive list of values.

A tentative register of American values NOTE: We deal here with overtly espoused and publicly appealed values to the exclusion of (i) unconscious motives (e.g., conformist culture insecurity vis a vis Europeans) and (2) traits of national character (e.g., love of novelty). The factors included in the register are such that explicit or overt appeal to them can well be expected from publicly recognized spokesmen for values: newspaper editorialists, graduation exercise speakers, religion-moral sermonizers, and political orators. Such values can be extracted by "content analysis" of the pronouncements of such sources. The values now at issue are those generally acknowledged and widely diffused throughout the society and not those specific to some group (physicians, Catholics, Chinese-Americans, Westerners). Moreover they are all socially general values in that those who espouse them do so as to value them not only personally (for themselves) but societally (for people in general). In short we are concerned to list genuine values adherence and dedication to which is at this writing widely diffused throughout virtually all sectors of American society. The scheme of classification turns on the issue of the setting at issue in the maintenance of the value (oneself, one's group, the society, the nation, all of mankind, the environment).

I. Self-oriented values: 1- Personal "material" welfare (the right to life and the pursuit of happiness): a. health (physical and mental well-being), b. economic security and well-being ("materialism" and the American way of life) c. personal security (stability of the conditions of life) 2. self-respect (the right to be treated as a person and as a member in good standing of the community; honor, honorableness) 3. self-reliance (self-sufficiency; rugged individualism and the pioneer tradition) 4. personal liberty (the right to endeavor to "shape one's own life," to work out major facets of one's own destiny and to go one's own way) 5. self-advancement ("success," ambition, diligence) 6. self-fulfillment (and "the pursuit of happiness") 7. skill and prowess a. the intellectual virtues

(intelligence, education, know-how, realism, practicality, versatility, etc.) b. the physical virtues (strength, dexterity, endurance, good appearance, cleanliness, etc.) c. the virtues of the will (strengths of character): 1. readiness for hard work (industriousness) 2. toughness (fortitude, endurance, bravery, courage) 3. initiative and activism (the "go getter" 'approach) 4. self-control (temperateness, sobriety) 5. perseverance and steadfastness d. competence (pride of workmanship) e. inventiveness and innovativeness f. initiative (the "self-starter") g. well-informedness (access to information, being "in the know") h. faith ("believing in something" including "having a sense of values") i. appreciation and appreciativeness (of "the good things of life").

II. Group-oriented values: 1. respectability (group acceptance, avoidance of reproach, good repute, conformity, the "done thing" and the "herd instinct") 2. rectitude and personal morality (honesty, fairness, probity, reliability, 3. reasonableness and rationality (objectivity) 4. the domestic virtues (love, pride in family role, providence, simplicity, thrift, prudence, etc.) 5. the civic virtues (involvement, good citizenship, law-abidance, civic pride—the "greatest little town" syndrome) 6. conscientiousness: a devotion to family, duty b. personal responsibility and accountability c. devotion to principle (especially of one's religion—"the god-fearing man") 7. friendship and friendliness: a. friendship proper b. loyalty (to friends, associates) c. friendliness, kindness, helpfulness, cooperativeness, and courteousness (the good scout; "getting along with people") d. fellow-feeling (compassion, sympathy, and "love of one's fellows" e- gregariousness f. receptivity (openness, patience, "the good listener") g. personal tolerance ("live and let live," "getting along with people h. patience 8. service (devotion to the well-being of others) 9. generosity (charity, openhandedness) 10. idealism (hopefulness in human solutions to human problems) 11. recognition (getting due public credit for the good points scored in the game of life; success and status) 12. forthrightness (frankness, openness, sincerity, genuineness; keeping things "above board," the fair deal) 15. fair play (the "good sport")

III. Society-oriented values: 1. social welfare (indeed "social consciousness" as such) 2. equality: a. tolerance b. "fair play," fairness c. civil rights 5. justice (including legality, proper procedure, recourse) 4. liberty (the "open society"; the various "freedoms") 5. order (public order, "law and order") 6. opportunity ("land of opportunity" concept; the square deal for all) 7. charity (help for the "underdog") 8. progressivism optimism (faith in the society's ability to solve its problem 9. pride in "our culture" and "our way of life"

IV. Nation-oriented values: 1. the patriotic virtues (love of country, devotion to country, nation pride): a. national freedom and independence b. national prosperity and national achievement generally c. patriotism and national pride d. concern for the national welfare e. loyalty (to country) f. chauvinism (nationalism, pride in national power and preeminence) 2. democracy and "the American way" 3. "public service" in the sense of service of country (the nation)

V. Mankind-oriented values: 1. the "welfare of mankind" a. peace b. material achievement and progress c. cultural and intellectual achievement and progress 2. humanitarianism and the "brotherhood of man" 3. internationalism 4. pride in the achievements of "the human community" 5. reverence for life 6. human dignity and the "worth of the individual"

VI. Environment-oriented values: 1. aesthetic values (environmental beauty) 2. novelty.

5. Prioritization

There are critical decisions, essential decisions, average everyday decisions, whimsical decisions, and not-so-important decisions. Looking at them in this light, importance (how many people they affect), party position, past history, urgency, resources, timing and impacts are decisive factors.

Judgments expressed in the form of comparisons are fundamental in our cognitive makeup. The Analytic Hierarchy Process (AHP) and its generalization to dependence and feedback, the Analytic Network Process (ANP) are theories about how to measure alternatives or courses of action under both tangible and intangible criteria, then combine these measures to make a decision. Real life decisions involving benefits, costs, opportunities and risks and how to combine them and allocate resources subject to constraints will be illustrated.

Granted that politicians and business people are influenced to vote for many reasons and interests, what are the criteria that they consider while voting? In general terms they would be interested in the benefits, the opportunities the costs and the risks that are associated with the issues that they vote on. What are the criteria involved in each of these four BOCR merits? Although our list is incomplete, it is worthwhile to identify these values.

Here are some influences that act on a politician's mind. Political (constituency votes, party loyalty, owing favors), Economic (amount of resources involved, gains to be made,

taxes and other money collection), Social (kind of people affected, equality,...), Legal (race, gender and other equality issues, what to legitimize and what to ban like drugs, gay marriage and so on, national holidays), Military (Defense and size of forces and kind and number of weapons), Environmental (diverse pollution like mercury and other health hazards, oil exploration, national parks), Technological (earth, material and space exploration -NASA-), Health (standards, foods, drinks, tobacco, exercise, medical practices, air and water quality), International (relations with other countries, passing on what countries should join the WTO, United Nations, country by country relations), Ideological (investigating communism in the old days, some religious practices like removing the 10 commandments from buildings and no prayer in public), Residual other (incidental factors like honoring people with citizenship, congressional medal of honor).

Congressional Committee Concerns

On a more general level, Congressional committees can be seen to have the following concerns:

Chronological: Urgency, disaster oriented, human suffering and survival
 Physical: Health, Exercise, and Sports
 Educational: Learning, Communication, and Information
 Economic: Money, Property, Business, Manufacturing, and Agriculture
 Social: Welfare, Cooperation, and Organization
 Political: Power, Influence, Party, and Election
 Environmental: Using and protecting the physical and biological environment
 Legal: Need for laws and enforcement of compliance
 Moral: Order, Honesty, and Trust
 Ideological: Religion, Common Belief, and Fervor
 Technological: Innovation, Change, Problem Solving
 Military: Security, Force, Defense, and Territory
 Aesthetic: Art, Music, and Theater
 Competition: Advertising, Quality, Improvement, Fair Trade, Reasonable Pricing
 Negotiation and Conflict Resolution: Take and Give, Reconciliation

This list may be combined into a shorter list: Economic, Political (both national and international), Physical, Social, Legal, Techno-environmental, Ideological and Military. These in turn may be combined into three overriding factors: Economic, Political, and Legal as in the Legislative the Executive and the Legal branches of government.

Were we to organize a large set of decisions according to priority of implementation we would first rate these decisions one at time with respect to the categories and subcategories described above after developing a set of priorities for them, and then we would develop a set of different order of magnitude intensity levels to use in rating the decisions. The system can be further refined by comparing groups of decisions according to their standing in the ratings. As new decisions are added they take their place in the ratings system.

6. The Group and the Party Effect – What Congress Should Do

One might suggest that Congress has been using the buckshot approach to making its decisions that cover the needs of the nation. What else can they do? Can their process of decision making be organized in some way that would not put off the politicians but strengthen their resolve and reward their pride even more in the breadth and depth of their accomplishments? We think so. Let us see how.

The AHP/ANP approach is a very general way to structure a problem holistically as part of a system and relate its parts according to influence. We have chosen the simplest and most direct route to prioritizing most of the bills that have been before Congress recently.

The decision criteria were established through in-depth reviews of the functions of the U.S. government as well as some interviews with experts in governmental affairs. We reviewed the committees in the Senate including: the Standing; Special; Select and Joint committees. Additionally we reviewed the committees in the House as well as the Bills before Congress to gain as much insight as possible into its activities. Our goal with the decision criteria was to focus on the highest level and next lower level of purposes of the Government rather than break out every single low level function. The analysis is targeted at providing a coherent and justifiable framework for assisting key senior decision makers in the U.S. Government with prioritizing the issues they should address based on their importance in serving the American people. The example is a powerful illustration of what and how one can use comparisons to create priorities in an accurate and justifiable way. One needs to seek further agreement from many more people in government to fine tune the results obtained here.

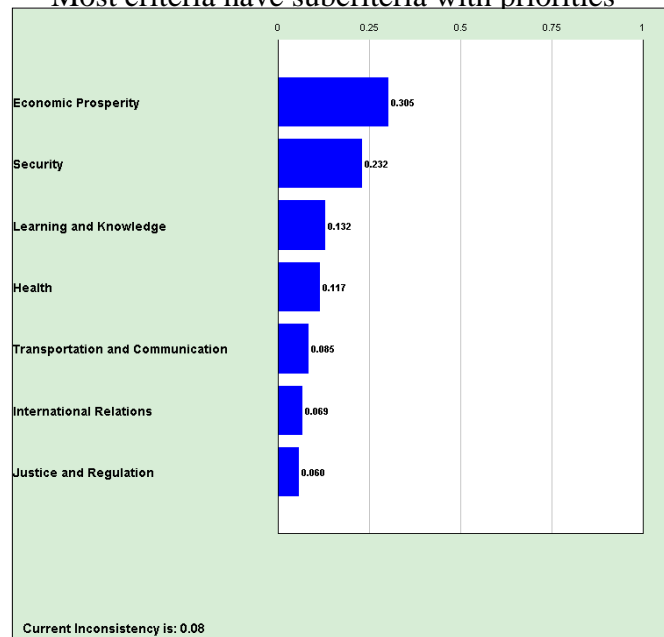
An essential consideration in using the judgment process to prioritize decisions is the power to be accorded to each of the different contributors to the judgment process. Voting according to party position is different than voting alone or with another group. The judgments on each matter may not be equally important and thus the AHP method of synthesizing judgments would be applied to raise that judgment to the power of its source. The numerical value of the power is obtained from an appropriate hierarchy for the importance of the different parties. It is followed by taking the geometric mean of all the judgments raised to the powers to obtain the single judgment and the process is repeated for all the judgments. The criteria priorities are determined here by comparing them with respect to the goal to determine which is more important. But it would be better to derive their priorities by comparing them using the ANP [5,6] with respect to some select very important decisions at least to get a rough idea as to their importance in the real situation when decisions are made under pressure and what has to decide what is more important and how much more important it is. The alternatives were rated with respect to the subcriteria using scale intensities shown above the table below for rating them. One can allocate resources to projects proportionately to their ratings in a dynamic way as more money and more bills and projects are added. The priorities serve as a measure of performance to determine how much money to allocate to cover the costs of funded completely (zero-one allocation), or in part by specifying levels such as 20%, 40%, and so on.

CriteriaTo Prioritize Decisions for Immediacy of Congressional Action



Priorities of the Major Areas of Government

Most criteria have subcriteria with priorities



Below we give the bills and their priorities according to the foregoing criteria.

Excellent 1.000, Very Good 0.800, Good 0.500, Marginal 0.200, No Contribution 0.000

	Score	Transportation and Communication (0.085)	International Relations (0.07)	Justice and Regulation (0.06)	Health (0.118)	Science (0.034)	Education (0.067)	Technology (0.034)	Services and Veterans Affairs (0.105)	Homeland Security (0.053)	Homeland Security (0.053)	Intelligence (0.075)	Appropriations (0.013)
Class action lawsuits, assure fairness	0.391	0.000	0.000	0.800	1.000	0.250	0.250	0.250	0.250	0.000	0.000	0.000	0.250
Allow human embryonic stem cell research	0.299	0.000	0.250	0.800	1.000	1.000	0.800	0.800	0.000	0.000	0.000	0.000	0.250
Continuity of Congress (special elections/appointments in national emergencies)	0.274	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.500	1.000	1.000	0.500	0.250
Minimum wage increase	0.253	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
Drivers licenses and security for immigrants	0.245	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	1.000	1.000	0.500	0.250
Social Security overhaul including personal savings accounts	0.243	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	1.000
Make tax cuts permanent	0.238	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.800
Protect internet users from unknown transmission of personal data	0.237	0.800	0.000	0.800	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000
Farm Subsidies- Limit Federal Farm Payments	0.236	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
Clear Skies Act (emissions control for power plants)	0.215	0.000	0.000	0.250	0.500	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.250
Transportation (TEA-21), Re-authorization of surface transportation programs	0.202	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
Prohibit discrimination based on genetic health info	0.185	0.000	0.000	0.500	0.250	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Increase coverage of service members life insurance	0.178	0.000	0.000	0.250	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.500
Death gratuity for military, improve	0.177	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.800	0.000	0.000	0.000	0.500
Improve Death Gratuity for Military	0.175	0.000	0.000	0.250	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.500
Senate committee organizing resolutions	0.165	0.000	0.000	0.000	0.250	0.250	0.250	0.250	0.250	0.000	0.000	0.000	0.250
Estate tax, make repeal permanent	0.161	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
Provide standards for Congressional Gold Medals	0.157	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.250	0.250	0.250	0.000
Repeal Estate Tax	0.151	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Incapacitated Persons Protection Act	0.149	0.000	0.000	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Enhance privacy of social security numbers	0.136	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.250
Amend to marriage between only man and woman	0.134	0.000	0.000	0.800	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Prohibit minors having abortions across state lines	0.128	0.000	0.000	0.800	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250
Terry Schiavo bill	0.118	0.000	0.000	1.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Tsunami Relief, accelerate tax benefits for charitable contributions	0.112	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Prohibit same sex marriage	0.104	0.000	0.000	1.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Prevent sales of abusive life policies to military service members	0.103	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000
Increase FCC indecency penalties	0.069	0.000	0.000	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Gun Liability Bill	0.054	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Amendment Prohibiting Flag Desecration	0.015	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Excellent 1.000, Very Good 0.800, Good 0.500, Marginal 0.200, No Contribution 0.000

	Score	Appropriations (0.013)	Taxation (0.039)	Business (0.084)	Agriculture/ Environment and Resource Management (0.037)	International Trade (0.043)	Labor (0.071)	Social Security (0.0070)	Welfare (0.0070)	Indian Affairs (0.0070)
Class action lawsuits, assure fairness	0.391	0.250	0.250	1.000	0.250	0.500	0.500	0.250	0.250	0.250
Allow human embryonic stem cell research	0.299	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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Social Security overhaul including personal savings accounts	0.243	1.000	0.800	0.500	0.250	0.250	0.800	1.000	0.250	0.250
Make tax cuts permanent	0.238	0.800	1.000	0.800	0.250	0.250	1.000	0.500	0.250	0.250
Protect internet users from unknown transmission of personal data	0.237	0.000	0.000	0.800	0.000	0.250	0.250	0.250	0.000	0.000
Farm Subsidies- Limit Federal Farm Payments	0.236	1.000	0.800	0.250	1.000	1.000	1.000	0.250	0.250	0.250
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Improve Death Gratuity for Military	0.175	0.500	0.250	0.000	0.000	0.000	0.500	0.250	0.250	0.000
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Incapacitated Persons Protection Act	0.149	0.250	0.000	0.500	0.000	0.000	0.800	0.000	0.000	0.000
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Gun Liability Bill	0.054	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000
Amendment Prohibiting Flag Desecration	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

7. Conclusion

We have outlined a way for dealing with multiple decisions and indicated that the objectives and values needed must be so general as to include all decisions in some way. We also sketched a list of such broad criteria and developed tables for their priorities and those of the bills before Congress in 2005 evaluated in terms of these criteria by way of an example. It is still possible to vote yes or no on a low priority bill, or to change the priority of a bill according to how it stands with respect to additional criteria not on the list in case it encounter insurmountable obstacles to get a high priority.

I am grateful to my son Daniel Saaty for helping me with the tables and the evaluation of the criteria and the bills.

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