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I believe that the levels of grazing fees should be tailored to fit regional or special situations and tempered to reflect much more than simply the generation of revenue for the Federal Treasury.

I think that we need to look briefly at where we are headed in predator control. We anticipate that land managing agencies will have a greater role in recommending or determining the need for animal control. In any event, animal control programs on the National Forests will be based on demonstrated need. Fish and Wildlife Service personnel will perform the animal control work on the National Forests, as in the past. They will also continue to prescribe the techniques and methods of control that will be used. There will, however, be a changed emphasis toward more selective controls, to incorporate pertinent research findings, and to protect the non-target wildlife species. More rigid control of the use of poisons is in the picture.

The direction of our path in range research is well laid out. Our own 10-year National Forestry Research Program, sent to Congress in 1964, outlines a nine-point program proposal. Last October a National Program of Research for Agriculture was submitted to a subcommittee of the Senate Appropriations Committee. This provides further insight into how range research fits into the total effort being directed toward meeting the needs of an expanding Nation. There are many subjects that need more study: the biotic and physical components of range ecosystems; the identity, physiological requirements, and nutritive value of forage plants; methods of seeding; and plant control. At the same time we need to get better appraisals of range conditions and develop better economic and other guidelines which will enable managers to better coordinate livestock grazing with other uses. Yes, the next 20 years should be an exciting period for range scientists as they unlock the answers that must be found.

We can sum up all of this looking ahead very simply. It is time to get on with the job. The American Society of Range Management has a responsibility to foster proper management use and development of the Nation's rangelands. We in the Forest Service invite your comments, advice, and help with the particular set of problems and opportunities that relate to our work. We expect that you will critically appraise all policies and programs that affect rangelands—as befits a mature organization of producers and professionals. We welcome that appraisal.

I hope you share my confidence that the outlook is good for continued use, management, and development of the Nation's forest rangeland resources.

#### THE FULL OPPORTUNITY AND SOCIAL ACCOUNTING ACT OF 1967

Mr. MONDALE. Mr. President, recently Prof. Raymond A. Bauer of the Harvard Graduate School of Business Administration spoke to the Washington Statistical Society on the subject of "Social Indicators." This was of great interest to me because it specifically pertains to legislation I have introduced, S. 843, the Full Opportunity and Social Accounting Act of 1967. This act would provide for social accounting, using social indicators, as a national goal, and provide for an annual social report by the President, establish a President's Council of Social Advisers comparable to the Council of Economic Advisers in the economic sphere, and finally, establish a joint congressional committee with oversight duties.

In his speech, Professor Bauer cogently

discussed the need for social indicators, and I invite particular attention to his statement:

Again, we are not proposing the tilling of unplowed ground. Present methods of program evaluation often involve research on the benefits conveyed. The Poverty Program, for example, is presently the object of such evaluations. The point I want to make is that we develop increasingly more adequate measures of people's values and expectations, we will also be able to develop more appropriate measures of benefits . . . The combination will enable us to plan better and evaluate better.

And he quotes Under Secretary Wilbur J. Cohen of the Department of Health, Education, and Welfare regarding "the voluminous, yet unsuitable data now available for assessing the products of our education." Cohen says that "practically none of it measures the output of our educational system in terms that really matter—that is, in terms of what students have learned." He says that it is an "incredible fact that the Nation has, year after year, been spending billions of dollars on an enterprise without a realistic accounting of that investment."

Finally, Professor Bauer discussed the possible dangers of social indicators to threats to personal privacy, particularly regarding the proposed national data bank. He says these fears "may be excessive" and adds:

I am more concerned with the dossiers and rapid and complete access being built into many credit rating systems which contain a wide range of "blackmailable" material.

Mr. President, I ask unanimous consent that Professor Bauer's excellent address be printed in the RECORD.

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

#### SOCIAL INDICATORS

(Address by Raymond A. Bauer, Harvard Graduate School of Business Administration, to the Washington Statistical Society, Apr. 21, 1967)

Approximately four years ago today I was debating with a group of very well-informed, highly intelligent gentlemen about what would happen to our society as a result of space exploration. After some hours of this discussion, I finally said in irritation, "If all of these things happened, we'd never know what did happen or if the opposite had happened." One of my colleagues asked what I could conceivably mean. Wouldn't it clearly be evident if American families were more or less cohesive? Or if the dignity of man was being better served? And so on. I replied in exasperation that none of these gentlemen seemed to realize how bad our social statistics were. As a result of this encounter I immediately began talking to several of my friends who knew I had competence in this area to persuade them to develop components for a book which would do something to set the record straight on the adequacies and inadequacies of our statistical series, and that is how our book *Social Indicators* was born.

In retrospect my level of aspiration was low. Frankly, my most fervent hope was that one member of my study group, who was a newspaper editor, might take the book and wave it under the noses of his reporters and tell them to stop writing such nonsense in the future. (That hope has not yet been realized.) In a more general sort of way I thought it possible we might succeed in

taking a topic which had been on the back burner of the social science agenda for a number of years and move it up closer to the front burner. I distinctly remember at one point early in our work that a friend asked me if I were completely off my rocker. He said, as I recall, "What the hell do you think you are going to do? Tell the President what he should say to the American people?" I told him that I personally had no such aspirations whatever, but that I hoped we might get a few people to read the book and perhaps activate more social scientists to turn to this topic which they had not been paying much attention to in recent years. All of this proves, I suppose, that I am a lousy forecaster, and you may conclude that this also applies to what I have to say this evening.

So there you have it. If you wonder why I'm standing here tonight, it is obviously a combination of bad disposition, literate friends, and a little bit of luck. It is actually presumptuous of me to address an audience so competent in this field as are most of you. The most I had hoped for when we were working on our book was that people like you might say, "Well, this is what we've been telling people all along. These fellows don't do it as well as we would, but at least they're saying it, and maybe that's a good thing." You are still entitled to that opinion. However, there are times in one's life when it is fruitless to state that he is incompetent as he knows he is. I knew when I was invited to talk to you that it would sound totally inconsistent that a person who had edited and written an introduction to a book called *Social Indicators* could claim incompetence on the topic, so, rather than argue the matter, I decided to come here and demonstrate it. However, there is no further need for you to listen to me proclaim my incompetence. This is assuredly a topic for which other people can generate more enthusiasm than I. Therefore, I may as well say something affirmative.

My friend, historical mentor, and bibliographer, Albert Biderman, tells me that once upon a time the word statistics was derived from the Latin phrase *Ratio Status*, and that this may be translated freely as "state of the nation." This is a matter on which *Webster's Unabridged* agrees with Al. In this once-upon-a-time possibility of developing a set of measures for assessing the state of the society, rather than with the probability of obtaining the same experimental result if you drew a very large number of samples of the same sorts of events.

The question of what a societal information system might look like got forced on me as I considered the mandate of the NASA grant under which we were doing research for the American Academy of Arts and Sciences. Intuitively, I knew it was important to the Space Agency that we have good social statistics. I tried to look at it in terms of the social consequences of space exploration. If an agency such as NASA really felt it had a mandate to increase the beneficial consequences and dampen the less desirable ones, what sort of an informational system would it like to operate with?

First, there should be a series of "Social Indicators," that is, ongoing social statistics which would enable NASA or anyone else to chart the ongoing trends in major features of the society, and to judge what was happening to the performance features of the society (the extent to which it satisfied the values of citizens), and to judge its future capacity to perform. However, not all relevant events would fall into such series. Some one-time or seldom occurring events are important, and therefore, there should be a provision for standby research facilities to make before and after measures, if possible, of the effect of such events as a Presidential assassination, or the launching of the first communications satellite. As you know, our

facilities for making such studies are even poorer than our social trend statistics.

We may regard the regular statistical series and the study of rare events of individual importance as our primary information system. This in turn should be complemented by provision for analytic studies which relate the long term trends in society to those events which presumably have influenced them. As you well know, we are too prone to observe events which are contiguous in time and/or space and attribute a causal relationship among them. If there is an increase in measures of delinquency (mind you, I said "measures," not "delinquency") during a period of urbanization, then it is assumed that urbanization increases juvenile delinquency. And, finally, there should be some sensible provisions for the use of information. There is a prevailing notion that all information is a "good thing," and the more the merrier . . . I have recently proposed that we might well regard information as basically a bad thing, which with a little work can be made useful. By this overstatement I mean to convey the fact that all information in all forms at all times is not equally useful, and that we must give some thought to getting only that information that is useful, getting it in an appropriate form, and reporting it to an appropriate place and person.

These, then, are the components that one would envisage: basic social trend data (including, of course, economic data), standby facilities for researching rare and difficult-to-anticipate events (this would include program evaluation to the extent that we were interested in the consequences of programs as compared to assessing them), regular facilities for analytic studies of the process of change, and the engineering of sensible information systems for each of the using parties. The broadest aspects of this overall system is the system of Social Indicators. I will restrict my concern to them.

You are immediately more familiar than I with the increased interest in social measurement. In part this interest is stimulated by the spread of P.P.B. Behind this is the combined enthusiasm over and recognition of the limitations of the system of Economic Indicators. On the one hand, economists have discovered their limitations as well as their utility, and all parties seem uneasy in using economic criteria alone for judging program effectiveness. No one seems to advocate that course of action. There seems to be a reaction to, as Bert Gross calls it, the prospect of a "New Philistinism." In the more general sense, the program of the Great Society with its emphasis on the "quality of life" has probably created a good environment for such new interests to develop. Finally, I suppose in all frankness one might guess that the economic drain of the Vietnam War having hit so many other aspects of the Great Society programs, there may even be increased enthusiasm for pursuance of such a low budget item (relatively speaking) as the extension of our measures of performance.

Among concrete events reflecting this interest one might mention the Presidential directive of a year and a half ago directing Secretary Gardner to set up this Social Indicators panel which has brought many of us together to work, in part, on a possible new Presidential message, which in turn may be no more than a trial run for defining the new measures that we must have in order to make better-founded statements about the quality of our life.

More contemporary and possibly more transitory is the introduction by Senator Mondale of Minnesota of "The Full Opportunity and Social Accounting Act of 1967" on February sixth of this year. In the course of his introductory speech, Senator Mondale said:

"The fact is that neither the President nor

the Congress nor the public has the kind of broad-scale information and analysis needed to adequately assess our progress toward achievement of our national social aspirations."

Senator Mondale's proposal is an expression of interest which may in fact stimulate additional activity. It may be only the first of a series of such proposals, one of which will eventuate in some concrete action.

In addition to the HEW Panel's attempt to look at the adequacy of our measures of the extent to which our society provides opportunity for the realization of the full human potential, there are other activities going on. Acceleration of ongoing governmental efforts, including those of the Bureau of the Census, you know about better than I do. The Russell Sage Foundation has inaugurated a program to review our measures of social change. And the *Annals of the American Academy of Political and Social Science* has two issues in progress under the editorship of Bertram Gross.

These latter volumes will cover our knowledge of and the adequacy of the measures of various aspects of American society. The following topics are included: political participation; freedom from discrimination; civil liberties; reduction of poverty; employment and leisure; learning and education; health and well-being; delinquency and crime; the urban environment in general; the environment of New York City in particular; the natural environment; culture and the arts; the mass media; and individual and group values.

Let me now state what the various proposals for Social Indicators are *not*, or in my opinion *ought* not to be. This is not a proposal to set economic statistics off against noneconomic statistics, but rather in terms of a recent U.N. report a proposal that economic and noneconomic statistics be integrated "at a higher level of abstraction."

Intuitively one would relate the interest in Social Indicators to the recent and prevalently popular interest in "data banks." While the two interests have a good deal of overlap, there are differences. The interest in data banks is primarily concerned with the storage and retrieval of data will no doubt facilitate a system of Social Indicators. However, the Social Indicators "movement" is more concerned with a better understanding of data needs, with the specification of the required data, and the devising of methods of gathering them so as to meet the needs more precisely. This will involve both the measurement of new phenomena, and more adequate measures of phenomena that we now measure less well than we can. While the data bank movement has increased the concern over privacy and personal security, the Social Indicators movement may reduce such concerns—while increasing resistance of people to being interviewed on sample surveys.

In *Measurement of Past Performance and of Future Potential*, Professor Bertram Gross proposes a system for social accounting which would fall into two broad categories. The first of these categories "system performance" would include measures of the extent to which at a given point in time we have been able to meet the values and aspirations of our citizens. The other broad category "system structure" would include measures of the society's capacity to perform its functions in the future.

Measures of performance would include: our present measures of economic performance, measures of the equitable distribution of economic benefits throughout the society, of the educational and economic opportunities we have afforded our people, the environment we have created for them to live in, the cultural opportunities we have offered, the extent to which we have created a peaceful world, the level of health of the nation, and so on. Any state of affairs that people

value and aspire to is a potential candidate for inclusion in this list, as is any state of affairs they would like to avoid.

The following passage from Senator Mondale's speech is illustrative of some of the "performance" data we need to evaluate how well we are serving the needs of our citizenry:

"How many Americans suffer in the squalor of inadequate housing? How many children do not receive educations commensurate with their abilities? To how many citizens is equality of justice denied? How many convicts in our penal institutions are barred from rehabilitation that would allow them the opportunity to re-enter the mainstream of life? How many physically handicapped and mentally retarded are unable to get training to achieve their potential? How many individual Americans are denied adequate health care? How many are breathing polluted air? These are some of the possible indicators that might be considered in the social accounting."<sup>1</sup>

One of the standard criticisms of the welfare state has been that creaming off present benefits is done "at the cost of the future generations." This is, of course, a reasonable question to raise. For this reason, Gross would parallel measures of present performance with measures of future capacity to perform. Such measures would include: presently conventional measures of the strength of the economy, less conventional measures of the state of science and technology, the state of skills and knowledge in the population, its health, the extent to which our institutions make it possible for all members of the society to make their potential contribution, and so on.

It is clear that many of the things one would want to measure would have to be entered on both sides of the ledger. Education can be viewed in some part as a benefit to the citizen and in some part as a future economic asset to the society. Crime, drug addiction, and delinquency are both indications of the failure of the society to perform as well as it might, and a liability for future performance. Health, also, has such dual status. This circumstance is a stimulus for a better conceptualization of what interests us.

A plea for "better conceptualization" almost certainly has an unearthly, abstract, and academic ring. Happily I can report that this is exactly what has been going on successfully in the National Center for Health Statistics of the Department of HEW.<sup>2</sup> Until the mid fifties, our primary concern was with our ability to keep people alive at various ages; *mortality* was the relevant criterion of health. Since then, considerable attention has been devoted to *morbidity* or departures from health of a nonfatal sort. But non-health is not as clear-cut a proposition as death. It may be thought of as some degree of organic or psychic malfunction susceptible to medical diagnosis. It may also be defined in terms of the individual's incapacity to continue to perform with some degree of effectiveness in his various roles. Several of the concepts of disability or nonhealth employed in National Health Interview Survey, conducted monthly, have borne on the ability of the individual to perform his roles—as a worker, housewife, student, mother, father, and so on.

The immediate physical condition of a person is a matter of concern for his own state of comfort, may have economic consequences because of his need for care and medication, may present a threat to others

<sup>1</sup> The *Congressional Record*, Feb. 6, 1967, Vol. 113, No. 17, "The Full Opportunity and Social Accounting Act of 1967," statement of Senator Mondale.

<sup>2</sup> See Daniel F. Sullivan, *Conceptual Problems in Developing an Index of Health*, Washington, D.C., National Center for Health Statistics, Series 2, Nov. 17, 1966.

if his condition is infectious, may serve as an indication of our ability to conquer certain diseases, and so on. However, if we are concerned directly with his ability to contribute to the society, or conversely with the effect of sickness in general, a given disease, or a specific epidemic on economic production, or on the conduct of the day-to-day business of the society, then a measure of the extent to which people are able to perform their roles is the most relevant criterion of health we can have. At a certain stage of its development, cancer is less likely to restrict role performance than is the common cold.

#### ASSIGNMENT OF VALUE

What should be measured? How should it be measured? Neither question could or should be answered neatly at this point in time. All we can do is suggest the sort of criteria to be invoked, and the direction in which things are likely to go.

The data we want obviously are dependent on the goals we set for ourselves, on the type of people and the type of society we are. A society primarily bent on achieving military power would be interested in measuring different things than would a society bent on maximizing religiosity, aesthetic experience, or material comfort. Therefore, we need to know the values of the members of our society, the programs of "national goals" that ought to represent attempts to serve those values, and the interrelationship of the programs and values.

The knowledge of people's values and aspirations is a key to planning and control. It tells us on one hand what our people want, and on the other the sorts of programs they will support and/or tolerate. The study of values and aspirations can be technically difficult, and politically sensitive. Yet, as difficult and sensitive as the matter is, it continues to be done, no matter how inadequately. For example, politicians know that opinion poll data showing a low level of public support for the space program is not an urgent mandate for dismantling NASA. At no point will knowledge of such values and aspirations be a clear guide to a specific course of action. Yet better knowledge of people's values can give us an improved basis for judgment on many issues. As for aspirations, it wasn't until after the Watts riots that it was generally realized that the aspirations and expectations of Negroes had been raised beyond our capacity to meet them. Whether or not studies of values, expectations, and aspirations should presently be made by a Federal agency is, however, another matter.

In the market place, the conventional and probably proper way of putting a value on goods sold in the market is the amount that people will pay for them. It is characteristic, however, of many public investments that their products (for instance, weather forecasting) can be shared by an untold number of people, thereby, the "value" of such goods and services is a function of the number of people who will benefit by them. But, in the absence of a direct measure of value in terms of the utility of public goods and services to those who use them, the prevailing practice has been to evaluate a public investment solely in terms of its cost. Economists agree that utility cannot be measured solely in monetary terms (at a minimum, a dollar is worth less to some people than to others). So, I guess do the disciples of P.B. Hence to the extent that we can evolve measures of utility that are a direct reflection of the benefits people perceive themselves as receiving, the more adequate basis we will have for evaluating public investments whose value is dependent upon the number of persons benefiting.

Again, we are not proposing the tilling of unplowed ground. Present methods of program evaluation often involve research on the benefits conveyed. The Poverty Program, for example, is presently the object of such

evaluations. The point I want to make is that as we develop increasingly more adequate measures of people's values and expectations, we will also be able to develop more appropriate measures of benefits. (We would judge differently the effect of a physical fitness program on a boy who wants to become an engineer from its effect on a boy who wanted to become a professional athlete.) The combination will enable us to plan better and evaluate better.

#### COST, OR INVESTMENT IN THE FUTURE

Another issue on which more appropriate measures will aid planning and evaluation is that of the extent to which an expenditure should be regarded as a *cost* or as an *investment*. For example, by and large, expenditures on education have been regarded as a public *cost* producing a private benefit. However, a business firm that builds a plant will regard this as a capital *investment* which increases its assets. Corporate accounting draws a reasonable distinction between money consumed in the form of current costs and money invested to yield some future return. But should an investment in plant equipment be treated differently than an investment in training? The idea of federal capital budgeting has been around for some time. It would make more sense if we had a better basis on which to decide between an investment and an expenditure.

Our concern with the educational level of the population illustrates both a technical inadequacy in what we want to measure, and a measure that perpetuates the confusion between costs and investment. As we plot the educational levels of our people over time, or the comparative education of various groups in the population, we view the data from two perspectives, as an index of the benefits we confer on our people, and as a measure to the capacities of these people, to share and produce culture, to perform productive work, and so on. From the first point of view—benefits conferred—we are becoming aware of the imperfections of this measure. Eight years of education in a segregated school is not the equivalent of the same term in an integrated or all white school. Further, as a measure of the capacities of the population for productive work, number of years of schooling achieved is an exceedingly poor measure of a man's present capacity to perform the tasks of the work force at a given period of time. It is probably an even worse measure of his capacity to learn new knowledge and skills.

Under Secretary of HEW, Wilbur J. Cohen, has had this to say:

"When we survey the voluminous, yet unsuitable data now available for assessing the products of our education, we must conclude that practically none of it measures the output of our educational system in terms that really matter (that is, in terms of what students have learned). Amusement at this revelation of the tremendous lack of suitable indicators is almost overshadowed by the incredible fact that the Nation has, year after year, been spending billions of dollars on an enterprise without a realistic accounting of that investment.<sup>3</sup>

There is an established technology for making direct measures of knowledge, ability, and achievement. While there has been controversy over the use of tests devised by psychologists, the fact is that they are in no way inferior to the criteria whereby students are promoted in and graduate from schools which they attend. Properly used, they can be much more adequate measures of the present status of the population's skills, knowledge, and so on. Such measures, gathered on a sample basis can give us a far

more precise estimate of the capacities of the U.S. population on relevant dimensions than we can gauge by the record of their past educational history. (The value of educational history itself becomes less relevant, as approximately half of education and training occurs outside of the formal educational establishment.)

At this point in time, there have been a considerable number of studies which have conducted various measures of ability on national samples, usually of children. The ongoing Carnegie Corporation study of quality of education being conducted by Ralph Tyler is the most current example. Such measures are entirely feasible, and since they must be conducted on a sample basis, are not excessively expensive, once the procedures are established.

Most relevant, they focus our attention on the fact that we are interested in our citizens as a national resource as well as beneficiaries. More appropriate conceptualization of what we are interested in, and proper methods of measurement such as we have mentioned apropos of health and education will enable us to make more sensible distinctions between those proportions of health and educational expenses that should be regarded as costs and as capital investment.

#### THE SAMPLE SURVEY

A distinctive aspect of both the new statistical series and new methods of measuring established phenomena is that increasingly, the preferred instrument for gathering the new data is the sample survey. Sometimes this is motivated by the need for speed (the monthly survey of employment), by costs (the subsamples of the national census), but more interestingly by the fact that people rather than records are the proper source of information. No extant set of records was an adequate source of data on unemployment. Only a properly drawn sample of adults of employable age could supply the information about their employment status and intentions. The argument for testing the skill, knowledge, and ability level of our population directly has been made above. Similarly, only the people involved can tell us of the effect of their health on their ability to carry out their daily responsibilities.

There are interesting practical aspects to this circumstance. Data to be gathered from people must be gathered on a sample basis if only for the simple reason that no one individual can devote his entire life to supplying information.

Sample surveys can provide more rapid information, because the burden of gathering and processing data is enormously less than that for a census. Samples properly drawn, and with correct measures for ensuring completion of the sample design are conceded to be at least as accurate as a census. Costs can be quite modest relative to the value of information. In a country with a population as large as that of the United States, the sample survey is especially attractive since the unit cost of information goes down with the size of the population— for any reasonably sized population.

Of course, any proposal for additional social measurements must, in the light of present concerns, face up to the extent to which many responsible people are appropriately worried over threats to personal privacy. This consideration has been raised against the recently proposed national data bank. Anxiety over invasion of privacy takes many forms. In this context the most appropriate version of this concern is that data files may be turned into dossiers to be used against individuals. Critics of the proposed national data bank express fear that it will be possible to "know anything about everybody," and that someone with access to that data bank may use information for political control or blackmail of many forms.

I happen to believe that the fears concerning the national data bank may be ex-

<sup>3</sup> From a draft of a paper "Learning and Education" prepared for the issue of the *Annals* edited by Bertram Gross. Cited with the permission of Secretary Cohen.

cessive. I am more concerned with the dosiers and rapid and complete access being built into many credit rating systems which contain a wide range of "blackmailable" material. However, what is important is that the various proposals for gathering more adequate Social Indicators may actually reduce the cause of such anxiety. Most of the measures would be made on proportionately small samples of the population, who need not be identified. Mainly, they would be one shot studies with no need to return to the people in the sample. No one person would be likely to be drawn into more than a few samples, so that even if his identity were preserved, files could contain only a limited amount of information about him. Some data series, such as those pertaining to opportunities for educational and occupational advancement, would have to be gathered on a longitudinal basis, with a sample of people followed for many years. Even if this were a very large sample of several hundred thousand people, it would be a small proportion of "everybody."

As a tool for planning and control there can be little argument against better data. Costs would be moderate. Even quite an elaborate survey, as elaborate as any that might be required to make a national estimate on any of the variables mentioned above can be made for a few hundred thousand dollars. Simpler national estimates can be made for tens of thousands of dollars. Costs would depend on the frequency with which measures are made, and the extent to which one wishes to measure subgroups in the population. Both the number of series, the frequency, and size of studies can be advanced at any pace that proves desirable—hopefully as existing series prove their worth.

Let us consider some of the matters which should concern us. The most obvious worry is that widespread data gathering might prove an imposition on the population of the United States, and that the pursuit of a worthwhile cause should turn into a senseless fad, in which data is gathered indiscriminately and to no good purpose. In answer to this concern I would have to reply that I assume we are dealing with sensible men, who in turn will be scrutinized by other sensible men.

The use of sample surveys reduces vastly the number of people who are needed to gather data on a given topic, and it is therefore probable that any reasonable program of expansion of our statistical series can be carried off without substantial burden on the populace.

What is probably a more realistic consideration is that too few statistical series will be experimented with, that these few will be prematurely frozen so that we will be burdened for decades with poorer data than we ought to have. Deliberate provision should be made for experimentation with many measures of many concepts. Measures of the values and expectations of the citizenry would be ones for which it is especially imperative to try a number of ways of going about the task.

Finally, let's face up to the problem of disaggregation. The chief complaint against nationally gathered statistics *via* sample surveys is that they usually do not provide information for smaller units—even so large as the individual state. This is a practical consideration to be taken seriously. However, if these measures are in fact so valuable that states and municipalities clamor for them, then they must be presumed to be worth the cost. Hopefully our social accounting systems will be adjusted to reflect this.

I have put less stress on the scientific worth of these data than on their practical utility. However, if behavioral scientists are to develop adequate understanding of the functioning of large scale social systems, they must have data on such systems. In turn, it

is to be assumed that this comprehension of our society and of social systems in general will have practical payoffs. There is no doubt that economists are decades ahead of other behavioral scientists in the adequacy of their formal models such as are used for controlling the national economy. While economists were active in many ways at earlier times, their work was also favored by more adequate data series. Administratively gathered statistics are generally more suitable for the economist than for other behavioral scientists with other concerns. This need be no surprise: a commercial society keeps more adequate records of its economic transactions than it does of non-economic data.

General models of social systems exist, as do models of the American social system. However, it is safe to say that all of them can stand considerable development and refinement before one could plan developments in the noneconomic sector with any degree of precision. On the whole the choice of statistical series for the immediate future will have to be based either on a reasonable consensus that certain phenomena are "important" regardless of the social system model one might prefer, or that individual series—e.g., equality of employment opportunity—are valuable for their own sake.

The "social accounting" model proposed by Bertram Gross<sup>4</sup> can be used for the tabulation of the flow of "good" and "bad" events—increases in things people value vs. increases in social costs—without commitment to any one dynamic model of the society, or for that matter without the notion that these good and bad events can be compared on a common yardstick. However, the existence of better data against which to check and refine various social system models, and against which to develop common denominations of values will make it possible to have better estimates of the comparative worth of such models and measures.

#### CONCLUSION

In closing—and I am closing—I repeat that I do not regard myself as a bearer of wisdom, but as an enthusiastic partisan for that which all of you do naturally.

I suppose there is some novelty to the fact that some of us are advocating a broad system of social accounting. On the other hand, that distinguished statistician, Philip Hauser, has drawn the history of the interests in social accounts back to the founding of the Republic. At times the census covered ground that it does not now cover. It once even asked people's religion! Possibly the most daring notion, one that I know many of us have had for a long time but scarcely had the courage to mention, is the possibility of eventually having a model of the social system that might approximate that of the economic system in its utility for planning and controlling our own destiny. I have deliberately steered away from the discussion of any particular substantive model for a very good reason: I am a born coward who has worked hard to develop his innate abilities.

Talking to you has been a reward in itself. But perhaps I may hope for more. The profoundest compliment that any of you could pay me is that each professional in the audience would lean over to his or her spouse and say: "Not bad. But if you would have listened to me, I was trying to tell you that ten years ago." Would you believe twenty?

#### STEEL PRODUCTION—COMPETITION OR DUMPING?

Mr. HARTKE. Mr. President, the State of Indiana has long been a major

<sup>4</sup>Gross, Bertram, "The State of the Nation: Social Systems Accounting," in Bauer, Raymond A. (editor), *Social Indicators*, 1966, M.I.T. Press, Cambridge, Mass.

center for steel production in the United States. Its expansion and modernization of steel facilities is more rapid than any other area in the country.

Bethlehem Steel Corp. is systematically constructing and expanding its steel mill at Burns Harbor. I am told that ultimately the Burns Harbor plant will be fully integrated, turning coal and iron ore into finished steel mill products for the rapidly growing Midwest market.

National Steel Corp. is building the west arm of Burns Harbor to serve its Midwest Steel Division in Porter County. Referring to Midwest in its current annual report, National states:

Plans are well along for the addition of major facilities to this plant on which an announcement will be forthcoming as the projects are finalized.

On May 1, in addressing the annual stockholders meeting, United States Steel President Leslie B. Worthington said:

The world's largest continuous slab casting is now undergoing break-in operation at Gary Steel Works. First of its kind in the steel industry, the all-new unit offers dramatic savings in the time required to turn raw materials into finished steel products.

Molten steel from three new basic oxygen furnaces, poured into a tundish at the top of the casting unit, passes through a water-cooled mold where it partially solidifies. Then it goes through a series of rolls which control the movement of the hot continuous slab and turn it to a horizontal position.

The long ribbon of steel then goes through a final sizing operation, after which the slabs are cut into lengths up to 40 feet, inspected, and sent on for further processing into finished products.

The continuously cast steel slabs will supply a new 84-inch hot strip mill at Gary which will be placed in operation this summer. The new complex, including heating furnaces, 12 rolling stands, and finishing and coiling facilities, is housed in a building stretching about a half-mile along the shore of Lake Michigan.

One forty-foot slab entering the head end of the mill will be converted into a coil of sheet steel large enough to supply the steel requirements for 30 automobiles.

The new 84-inch mill will more than double United States Steel's ability to produce hot-rolled sheets and strip in the Chicago area. Colled steel from the mill in widths up to 76 inches—weighing as much as 75,000 pounds—will be further processed to supply automotive, appliance, agricultural equipment, can-making and other customers in a broad market area.

The automobile industry is the largest consumer of steel in America, accounting for nearly 25 percent of all production. The spring, 1967, edition of Ward's Quarterly, an automobile trade publication, contains a most interesting and thought-provoking editorial, "Competition or Dumping?" In view of the fact that 40 Senators joined with me on May 9 in presenting a bill to strengthen the Antidumping Act of 1921, I ask unanimous consent to have printed at this point in the RECORD the entire erudite explanation of the problem.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

#### COMPETITION OR DUMPING?

(By Robert E. Powers, editor and publisher)

If the use of any single man-made element has enabled America to climb to its 20th