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ON COMPARISON AND ADMINISTRATION: A PHILOSOPHICAL DISCOURSE

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As an "onsider" reads over the literature in comparative administration, he is struck by a number of different themes. Among these recurrent motifs are the following:

(1) the student of comparative administration can and should identify real administrative problems;

(2) he can and should realize that the manner in which he formulates these problems--and hence conceptualizes an attack upon them--depends on cultural and other social value differences;

(3) he can and should build the capability of an intellectual expertise which can recommend changes in public administration wherever it occurs, but most especially in developing countries;

(4) this capability is most emphatically based on experience with specific administrations, but is bolstered by a kind of analytic, "scientific" approach.

Of course, the last point has raised serious questions in the minds of those who tend to be critical of CAG's past and have hopes for its future. Too much emphasis on science produces dehumanization, even to the extent of an alliance with the evil side of technology. On the other hand, too little emphasis on science severs the relationships with the academic community, and leaves the student no better than any other member of an administration in evaluating its performance.

One more item therefore needs to be added to the list of CAG characteristics:

(5) there is growing recognition that the best strategy for a student of comparative administration to follow is one of maintaining opposite

world views, both of himself and of what he studies.

To make this last point clear, I'm going to develop two opposite views of the student of comparative administration. One arises from the idea that he is a "comparer," and the other from the idea that what he compares are "administrations." To arrive at such world views, one must pursue the pathway of the generic and ask: what is the more general intellectual task of which comparison is a special case, and what is the more general human activity of which administration is a special case?

To sell my wares, I need a sales pitch which convinces the reader that a journey into the more general (and hence more abstract) is worth what he'll have to pay for it in reading time and puzzlement. With the obvious caveat emptor that sales pitches needn't be true, I'll simply say that many of the problems one encounters at a specific level simply disappear once one understands the more general level. But the point of the journey is not to make problems disappear, for, as we shall see, a new set of problems appears at the general level. My sales pitch is that the new set is better than the old set.

I'm going to argue that "comparison" is an aspect of the more generic activity called "measurement," and that "administration" is an aspect of the more generic activity called "design." Here again you don't have to accept these generalizations, but if you at least hold them in imagination for a while, then you'll see how the problem sets change. I gather that students of comparative administration have wondered whether the "case method" is an appropriate technique for comparison. The problem, so posed, more or less disappears in the more generic question of how one "measures" administrative processes.

Now in introducing the concept of measurement, some caution is needed, especially in today's environment when political scientists have

become fascinated by the prospects of counting and correlating. It is true that certain measurement theorists have defined measurement as the assignment of numbers to objects according to rules. Thus one might feel that he had "measured" an administration if he counted the number of civil servants and divided by the country's population. But the critical point about measurement is not its numerical quality, but rather its information content. Measurements belong to that set of information which can be used in widely different contexts for widely different purposes (for more detail see Churchman, 1961). Thus in measurement, the problem of comparing A with B becomes a problem of defining "with respect to what?" In the practice of measurement, this last question is one of defining a standard with which both A and B can be compared; and the critical aspect of the standard is that it must have certain invariance characteristics over time and space. The generic question, then, is not whether the case method or an alternative per se provides a suitable basis of comparison, but rather whether a specific method can be regarded as one which produces measurements based on invariance characteristics.

A simple illustration is needed to clarify this point. Consider that very basic need we humans have to measure lengths. The question is how A compares with B with respect to length. For example, how does John compare with his father in height? This is a very specific question, which can be "answered" simply by having John and his father stand back to back and placing a book over the taller one's head. But we see how very restricted this "answer" must be in terms of its utility. If John goes away to school, and his mother wants to send him a pair of pants, then what? She had better not use last summer's father-son comparison if John is a growing boy. Well then, she simply writes to John and asks him to measure his trouser length, and with the information in hand she

purchases the right size. But in this homely illustration we can see that the measurement system has become quite complicated. John's mother makes some very strong assumptions. She assumes, for example, that John will make his comparisons correctly. But, more important, she assumes that the yardstick he used, if compared to the one used by the store where she purchased the trousers, would turn out to be essentially alike. Thus we see how relevant is the question "with respect to what?" The answer in the illustration is: with respect to yardsticks which remain invariant over a space and time interval. We note that the time interval need not be very limited if, say, John is a rapidly growing boy but his mother knows the rate of his growth; she could then adjust for the time interval. Note that an invariance property still exists because the adjustment function would have certain parameters (e.g., rate of growth) which are invariant over some period of time.

To "compare," says the dictionary, is to observe or infer similarities and differences. But if comparison is a component of a measurement system, the "differences" must be accounted for by means of an adjustment process. This is done in two ways: by means of natural laws of change, and by means of a theory of errors. The laws of change enable us to adjust observations made at one time and place to useful information in another time and place. The need for laws of change in measurement is why, as Dwight Waldo points out, models are essential in any comparison of administrations. It is important to note that these models must be causal; they must enable us to determine how changes in the environment produce changes in objects.

At this point I'm tempted to make an emphatic digression by joining the futurists and making two forecasts about the study of public administration: students of this field will waste a great deal of energy

by attempting to infer the models of administration from data, typically by various kinds of regression techniques. Nothing can save them from this horror of scientific methodology, because journals will be eager to publish the nonsense and professors will be most willing to confer degrees on candidates who play it safe. The second forecast is that a number of people who have burnt their fingers badly by trying to infer models from data will continue to shout their unheeded warnings.

The reason why one cannot infer models from data was long ago demonstrated by Immanuel Kant (1781). Hume (1739) had pointed out that data alone never provide an epistemologically sound basis for inferring causality. Kant went beyond Hume by pointing out that the inquiring system must make an a priori assumption about causality in order to gather data. The laws of adjustment required by the measurement process are causal laws: they tell us what changes of the state of affairs must occur when certain aspects of the environment are changed. The inquiring system must make a priori assumptions about causal laws, and cannot infer such laws from data. To be sure, the data may suggest some causal linkages, but the inquirer must be aware that these suggestions may arise from his own method of inquiry: the data he selects or the mode of representing them. Also to be sure, the inquirer may be wrong in its causal assumptions, but there is no "crucial test" which will tell him so. Deciding when to change a model is one of the most difficult and ill-understood aspects of inquiring systems.

Causal laws are supplemented by laws of probability (chance, randomness). Classical measurement systems are designed to provide comparisons within certain limits of error; specifying the error factor is an important component of the system. John's mother is happy if the error is no greater than one quarter inch, say, while a piston manufacturer

needs it to be no greater than a thousandth of an inch. Thus the measurement system requires two kinds of theory: a theory of change and a theory of errors. Both theories are based on invariances over space and time.

Finally, to complete this sketch of classical measurement theory, we should emphasize a second answer to the question "with respect to what?" All measurement systems are components of a larger system which provides the basis for evaluating the measurements and deciding on error limits. The ultimate answer is "with respect to some purpose." In the illustration, the purpose is to find a pair of pants which will fit, or a piston which will work. Even in so-called basic science, there is always some more general purpose which the measurement system serves: e.g., to test a theory.

Does this account of how measurement systems are designed help us to understand the literature of comparative administration? In keeping with my earlier remarks, the question has two equally plausible answers, "yes" and "no." The world view which imagines the student of comparative administration to be following the classical philosophy of science of the so-called natural sciences accepts the positive reply.

Administration, this world view says, is a set of managed activities which are intended to bring about a specified set of goals or states of affairs. What is the invariant in terms of which administrations can be measured? History seems to have presented us with at least one candidate: economic value. A number of techniques have been developed in order to make comparisons of economic value over time and space: discounting, the calculus of uncertainty, the theory of utility, and so on. The basic program for establishing the invariance was first set forth at the end of the eighteenth century by Jeremy Bentham (1789). Of course, political

scientists have often suggested that "political power" would be a more suitable measure for their purposes, but they have not been very successful in handling the invariances except by introducing the measure of distribution of economic wealth. Alternatively it has been suggested by Bauer (1967) and others that "social indicators" are required to supplement economic measures, but here again the invariance problem has received very little attention. However, my purpose here is not really to debate which measure is to be "fundamental" but rather to indicate that there is at least one feasible measure with the required invariance characteristics.

To pursue the implications, suppose we say that the measurement ("measure of performance") of an administrative system is the economic cost the system incurs in accomplishing its goals (or, more accurately in this golf game, the negative of the cost: the smaller the better). At the very simplest level, one compares two administrative systems with respect to the same goals by estimating the adjusted dollar cost of each. "Dollars" becomes an invariant with respect to time and place by adjustment to standard dollars for some arbitrary point in time. A good deal of economic theory has been devoted to extending this very simplified account to encompass comparisons when the goals are different, when cultural norms or environmental constraints vary, and so on. For example, if there is a cultural norm prohibiting women from performing certain tasks, then in principle one can infer an imputed cost (or benefit) of this norm. If the goals differ, then one seeks a common "benefit" measure. And so on. Furthermore, the purpose of these comparisons becomes clear: it is to find that administrative system which, relative to a fixed benefit, has the minimum cost, or, more generally, that system which maximizes benefit-minus-cost.

There are still many unsolved problems in trying to measure

administrative systems in this manner, especially as we pass from common goals to different goals. If two administrative systems are both trying to educate approximately the same number of children from kindergarten through grade 12 ("K-12" in the educational jargon), then the measurement process seems fairly straightforward. The problems seem to mount as we try to measure administrative performance where the numbers differ, or the curriculum differs, or when we compare educational administration with transport administration. But "in principle" we should expect that these problems will be solved in time; after all, every science faces similar difficulties in trying to find more general measurement procedures. The "successes" of operations research seem to provide evidence that we are coming to an age when we can indeed measure administrative systems in a manner which will tell us how they should be run. Furthermore, all the old debates about "principles of administration," "case histories," and the like can be reshaped into explicit design questions, namely, whether a proposed measurement scheme is or is not more effective in telling us how well an administrative system works.

Thus a fairly explicit methodology emerges for the student of public administration.

(1) He must use his ingenuity and experience to formulate the problem or set of problems (there are no fixed rules for this step, which essentially separates the men from the boys---or the women from the girls);

(2) he must formulate a causal model, which essentially has the following form: (a) the system plus its environment; (b) the set of possible inputs to the system (dollars, manpower, etc.); (c) the components of the system which can receive various inputs; (d) the causal laws which predict the total system output in terms of any given inputs to the system; (e) the output which is measured in terms, say, of invariant economic

values over a segment of time and space;

(3) he must have criteria which tell him when to change the model on the basis of additional information; and finally

(4) at some critical point he must propose a "solution" for action, which he takes to be the best estimate of the right course of action based on the model and the evidence.

The unsympathetic reader will note that this methodology applies to machines as well as men, and indeed is a reasonably accurate description of how the parts of a machine are to be organized for a specific set of purposes to be served by the whole machine. The uncertainties of human systems really do not make the methodology "humanistic." Many large machines, e.g., farms, also entail large uncertainties in their causal models; furthermore, there are many formal techniques for handling the uncertainty problem.

At this point, the sensible and practical reader may wish to terminate the discussion and get to work. But this haste makes considerable waste, as many futile studies of administrative processes show. Suppose now we proceed to investigate the negative viewpoint of the question raised earlier: there are fundamental reasons why the classical world view of measurement does not apply to the study of comparative administration, especially if the list of CAG ambitions given at the outset holds.

To this end, we can also walk the generic pathway, and note that administration is a special case of the human activity called design. Design comprises that view of the human being in which he is depicted to be trying to change himself and his world in order to bring about improvement. Design is pervasive; as examples, it includes architecture, public health, basic research, management, psychotherapy, engineering design, genetic design. In each of these examples, there is an attempt

to change people as well as their environment, which, as we shall see, entails a very important aspect of the design process.

The critical question of the design process is to determine whose values the design is supposed to serve, i.e., the client of the design. Everything else is subsidiary to this central question. The secondary question is to determine who can bring about the design and in what way, i.e., the decision maker. As we delve deeper and deeper into the design process, we discover that every design process tends itself to become pervasive, in the sense that there is a strong social force to make everyone the client and everyone the decision maker.

Consider, for example, the design process called education. Traditionally, we have said that the client of this process is the youth of the nation, e.g., between the ages of four and twenty-one, with a few stragglers on either side. The decision makers are of two kinds: those who decide on the amount of support and its administration, and those who decide on the method and content of the teaching. In this traditional view, administrator, teacher, and student are clearly different classes of people (with occasional overlaps here and there). If we used the classical approach to the study of educational systems, we would try to build an input, output model (as has been done in several instances), where the input is measured in terms of funds, and the output in terms of student graduations translated into socio-economic benefits. But any allocation of funds which this type of analysis might produce could very well be precisely the right answer to the wrong problem, because it is based on the assumption that the traditional organizational divisions (administrator, teacher, student) are correct. If there is a strong tendency at work for everyone to be the client and decision maker of the educational system, then a model which allocates by ignoring this tendency

must surely be unrealistic and indeed "impractical." There seems to be strong evidence that this pervasive tendency is real. Education is a womb-to-tomb endeavor: students wish to decide what they should be taught; faculty wish to decide how much funding is needed, and so on.

In order to understand the point about pervasiveness more sharply, consider the often-mentioned need to include second, third, and nth order effects of proposed social policies. This kind of consideration belongs to the classical, machine-like analysis discussed at the beginning of this paper. Every engineering designer knows that in designing a machine to move a large mass of dirt, one has to consider the second order effects of the temperature of the motor and the danger of explosion.

But pervasiveness is a different kind of consideration. The engineer can set the boundaries of his machine and talk realistically about the machine and its environment. He is not apt to be concerned with the tendency of a Gradall to become everybody (although at times computer enthusiasts do get to talking this way). It is not merely the second and nth order consequences that concern us in design, but rather the spread of the design across humanity.

To return to public administration, the implication is that there is a tendency for it to become pervasive, so that the distinction between the public administrator's functions and the citizen's functions becomes blurrier. But the example makes us realize that a classical law operates in this as in any design process: for every force there is an opposite force. There is also a strong tendency to distinguish between the duly delegated authority of the public administrator and the public. The clash between law-and-order and dissent-revolution is an obvious example. The student of administration, who is a designer, must design administrative change with this clash of forces in mind.

But does the tendency of design processes to become pervasive, if it exists, really matter very much? There is at least one way to view the world which says that it does, and that we need to invent a new kind of "science" which might be called the science of the art of designing. It is far more flexible and revolutionary than the classical process of measurement. The earlier list of "classical" requirements of the student of administration needs to be altered as follows:

1) he must use his ingenuity and experience to formulate an image of the system, or rather, alternative images; he must be able to imagine the process of public administration in terms of political power, the impact on the human being and the self, anthropologically, economically, religiously, and so on. Central to this act of imagination is the speculation "what if the pervasive tendency were to be fostered?" Compare what public administration would be like if every citizen becomes an administrator with public administration where only an elite are administrators. In the classical mode of study, there was a strong tendency to find one mode of representing the problem; in the suggested mode of study, there is a strong tendency to keep the mode of representation open;

2) he must continuously bound and unbound the system from its environment because he realizes that in reality this is what is happening. The university is tending to go outside its traditional walls into many phases of human existence; to bound it at the walls is unrealistic. He must also realize that the components of the system--the individuals--are also purposive entities, each with its own rights and values. Hence he must be able to hold in mind two conflicting value schemes, the system values and the individual values. He may choose to measure system values in socio-economic terms; he cannot "measure" individual values in this

manner. Nor is the theme a "compromise" of the two, since in compromise the system always wins out. Rather, the theme is "synthesis," primarily based on what Jung calls the "feeling" function;

3) "changing the model" is not the basic consideration, because it is secondary to the capability of holding radically different models in mind.

Finally, and this is the crux of the matter, 4) he must propose "solutions" for action, but not in the same spirit as the classical analyst did. Solutions are now primarily means to the larger design effort. They serve two very important functions. First, they sweep away what we don't want to belabor too long, so that we can work on the main, exciting, dramatic, important aspects of social design (e.g., inventory control, production and distribution scheduling, and the like provide such solutions). But second, and more important, solutions enable us to take design into the real world and to observe what becomes of it; of course, the idea that we can observe what "works out" in an unbiased manner is out of the question. Implementation of design provides still another basis for exercising our ability to create imagery.

As an ending, we need to note that we belong to an age of change and complexity, of danger and gloom, of hope and faith, with an occasional seasoning of love. In fact, we are very much like any other age. As a friend of mine once put it, "Everyone suffers equally, that is, more than anyone else." The theme of pervasiveness may eventually help us realize that we are historical and not temporary; we are, like all times, busily at work creating the past's future.

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