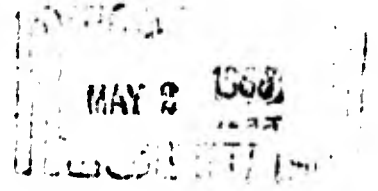


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**ON RELATIONS BETWEEN THE INFLUENCE, AFFLUENCE AND PHENOMENAL CONGRUENCE  
OF SCIENCES AS THEY AFFECT SOCIOLOGY'S FUTURE**

**By Albert D. Biderman**



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Certain reciprocal relationships of the affluence, influence and phenomenal congruence of sciences to be discussed here have become fairly commonplace topics in discussions of the sociology of social sciences. This paper broaches the suggestion that a yet more completely integrated view of these three aspects of the state of a science may contribute to both epistemological and empirical clarification.

#### Underallocations to Public Value Activities

Elsewhere, in a discussion of the relations of the economic support received by sociology and the directions scientific developments in this field have taken, Biderman and Crawford (1963) suggest that sociology has suffered from a double handicap so that it has received low and possibly economically suboptimal allocations of resources. (See also Tullock, 1966.) In some measure, this derives from the economic disadvantage that sociology shares with other sciences in that their product--knowledge--is essentially a public or common good, rather than a distributive commodity. Olson (1965) among others has shown the difficulties besetting allocations to public goods. His analysis suggests that, in the absence of coercion or external inducements, such allocations will inevitably be "suboptimal" in large social aggregations. Biderman and Crawford point out that in the case of sociology the economic problem has been more severe. Not only does sociology ordinarily have knowledge of a public-good character as its product, but this is often knowledge about phenomena that in turn have significance only at the collective (or public) level rather than at the level of individual (or private) values. As a consequence, according to this analysis, sociology has profited less economically from the kinds of

secondary allocations that other fields receive through links to distributive, private commodity economic activities. Other things being equal, one would assume further that the more sociological sociology becomes, the more exclusively will its propositions refer to collective rather than individual behavior and, hence, the more adverse will be its economic fortunes. Clearly, as documented by Biderman and Crawford, other things have not been equal in recent years and economic allocations to producing sociological knowledge have been increasing more rapidly than for all scientific activity and, probably, more rapidly than for less collectively-oriented social sciences. Their monograph discusses a number of institutional innovations and historical developments at the root of this expansion of sociological activity.

#### Scientificity and the Affluence of a Science

The low economic allocations to sociology are often attributed to the low state of development of the discipline as a science--the modest degree to which in form and function it fulfills various criteria of "good science" (its "scientificity"). It is for this reason, it is often suggested, that sociology has remained a smaller and less well endowed discipline than economics or psychology. Thus, for example, the fairly well and rigorously developed subfield of demography has had superior utilization and financial support than most of the rest of the sociology.

But, to some extent, development of a discipline, including its rigor and quantification, are functions of the degree of support it receives. Financial support has much to do with the number and quality

of individuals working on its problems and other resources they have at their command.<sup>1</sup> In other words, fields may be less well developed scientifically because they are less strongly endowed economically as well as the reverse. This is a common argument in pleas for greater economic allocations to the social sciences.

#### Support and Institutional Articulation

One might expect that the social and economic support accorded a social science will depend upon the degree of articulation of the conceptual orientation of the field with the value systems of social groupings and with the general economic arrangements that make possible transfers, that is allocations, of resources to the field. In the case of sociology, the collective or communal orientation almost definitionally explicit in much of its theory has made it less articulatable with the individualistically-ordered institutional arrangements and conceptual modes that are predominant in American society. One might say then that sociology would prosper more in a society in which communal and public values ranked higher in political, economic and ideological arrangements. Such societies, however, have usually been quite hostile to the development of science--to social science in particular and rationalism more generally. The growth of sciences, indeed, is traced by many scholars to the development of individualistic values and the breakdown of communal orders.

#### Applicability and Institutional Fit

There is yet a further way in which these considerations relate to how well developed a discipline is. Social science disciplines with

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<sup>1</sup>Nonfinancial varieties of support, such as the prestige and social entrée accorded members of a profession, are also important.

radically individualistic orientations, such as traditional economics and psychology, "fit" social arrangements which are ordered by those who participate in them on the basis of the same or similar individualistic postulates and concepts. Particularly in the case of economics, the formal science itself is a powerful influence upon the way in which major contemporary social institutions are organized and carry out their business. The science, as a result, tends to have self-fulfilling applicability and, hence, usefulness.

Consider just the very simplest technical need of the science-- that for suitable data. The life of the society produces data that accord directly with the models of economics with regard to units, processes and relationships, precisely because these models are the ones used to guide and rationalize so much of social activity. This does not mean, however, that they necessarily form, within a society so ordered, the models which best capture for measurement those aspects of social activity on which the viability of the system is most dependent or those which come into play to create the most pressing problems of social existence.

#### "Spurious" Phenomenal Congruence

In the case of economics, with its long history and pervasive influences upon social consciousness, the self-fulfilling phenomenal congruence of a social science is recognized only by radical applicers of the sociology of knowledge. In the case of more recently influential scientific innovations, such as many emanating from psychology, there is more immediate awareness that a science is readily applicable because it has been applied--that it describes and predicts an order it itself has helped create. The tendency is to regard such new applicability of a

social science as due to a "spurious" distortion of a "natural" order rather than as either efficient scientific perception or effective social engineering. Recent illustrations are the criticisms of the use of psychological testing for personnel administration in industry and government, or for the psychiatric diagnoses and treatment of "mental illness," or for ability grouping in school systems.

To the extent that social institutions have used the knowledge systems of an applied science, and, further, that they have been more pervasively affected by the same coherent body of theory on which the applied science is based, to that extent will the science be adapted to efficient prediction and control of the institution in question. Critics of personnel testing and psychiatry point out that this is what makes it possible for personnel psychologists to predict fairly accurately who will be and who will not be an "effective" performer and for clinical psychologists to predict who will gradually drift to the back wards of the mental institution.

#### Synthetic Congruence and Scientificity

It is our contention, however, that this kind of fit of a science to a phenomenal order is not necessarily or essentially more spurious from a purely epistemic standpoint than the fit of economics to society or, for that matter, the applicability of many of the physical and biological sciences to the phenomena with which they deal. The notion of spuriousness here involves a possibly ambiguous and nonsociological conception of a "natural order" that is independent of "unnatural," synthetic human interventions with it.

Much of the activities of physical science, too, involve dealing with matter not as it is found lying about the world in its natural state but rather as it figures in synthetically, humanly-organized systems, including the special systems that are established for the laboratory processing of observations. While these synthetic arrangements of objects of study constrain the range of possible variation of their pertinent properties, observations are not completely independent of these "natural" properties.<sup>1</sup> But this is also true of the comparable systems used in the social and psychological sciences. Personnel testing, for example, cannot proceed independently of the "natural" properties of the subjects of testing. It cannot constrain test situation behavior of subjects completely or control completely their later behavior or their significant environments.<sup>2</sup>

Two tests of the validity of influential scientific systems are the stability of the systems they influence and the predicted output functions of these systems. Taking psychiatry as an example, we may first examine if, say, a mental hospital when managed in accordance with a set of principles drawn from the science actually can and does run in the prescribed way. For example, are prognoses regarding who will get "better" and who will "deteriorate" fulfilled? Can the principles be continually

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<sup>1</sup>This rotated-Heisenberg might be termed the "reduction-of-uncertainty" principle.

<sup>2</sup>An extensive digression would be required to point up important contrasts between influential sciences and those other influential thought-systems in which the scientific element is relatively small or nonexistent; for example, religious, legal, aesthetic and ceremonial systems. In addition to the balance between the prescriptive and descriptive content of the system, the possibilities of empirical disconfirmation of its propositions are essential to such contrasts.



applied or must they be modified? Is the system a viable one, or does it "fall apart"? Output functions are also important. For example, does the operation result in a higher "healthy"-to-"sick"-people ratio in the community served (a) by whatever the criteria used by the science, (b) by whatever the criteria used by the community regardless of how informed the community is by the principles of the science? These output questions have to be distinguished from the nonscientific question of whether the evaluative criteria applied to the output functions are ethically or morally sound.

#### Social Change and Phenomenal Congruence

Knowledge systems and their referents may also be subject to change from the same sets of environmental changes. (Gaps between the two were quite explicitly involved in Ogburn's conception of cultural lag.) Environments may also change in such a way as to make particular knowledge systems less applicable, or more so, to events that have inescapable salience in people's experience--that is, events which have compelling problem significance.

A central problem of modern society has been the conciliation of rationalism with communal, supra-individual values and directed social action. Many social innovations of recent times have been of this nature so that science and individualism may not remain such closely linked handmaidens.

Sociology becomes more pertinent and applicable to affairs of social concern as individualism comes to have less perfect fit to an increasingly interdependent social order--one in which collective action becomes more prevalent. As suggested elsewhere (Biderman and Crawford,

1968), this is leading to more extensive allocations to sociological work and greater influence on society of its thought system.

#### SUMMARY

A series of inferential hypotheses suggest that the social influence, affluence and phenomenal congruence of a social science are in reciprocal functional relationship. When a knowledge form becomes more pertinent it becomes more influential. As it becomes more influential it receives greater allocation of resources. With these allocations of resources it increases its descriptive and prescriptive power. At the same time, work in a science is facilitated when institutional arrangements take forms that accord with the postulates and conceptual apparatus of a science. The influence of a science on institutions and social behavior increases such accord. The process can continue to where fine details of the social order have been arranged in accordance with prescriptive implications derived from the science.

Thus, in summary, sociology not only will become more influential as it becomes more scientific. It will become more scientific because it becomes more influential.

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