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PHYSICS AND POLITICS[1]

AN OLD ANALOGY REVISED

IT is just fifty-five years since Walter Bagehot wrote his "Physics and Politics," a very suggestive book in its day. He began the first chapter of this book with a reference to "the sudden acquisition of much physical knowledge" which had marked the second half of the nineteenth century, and declared it his purpose to show the bearing of these new ideas upon the political conceptions of mankind. That purpose he fulfilled with much ingenuity, pointing out the various lines along which the advance in natural science seemed to suggest modifications in the old theories of the state and government.

This was only a half-century ago; yet the new physics of Bagehot's day has already grown old. Its basic concepts have been turned inside out and upside down. Its laws relating to the indestructibility of mass and the conservation of energy have been radically amended. Even a generation ago the atom was held to be the ultimate and indivisible unit in the composition of the universe. It was the basis upon which the scientists of the nineteenth century built up an inclusive set of laws and principles relating to the structure of all creation.

To-day, all this is changed. The world is still composed of atoms; but we have discovered that they are not the last word in matter. On the contrary, they are themselves incessantly in process of division into still smaller, highly-energized particles known as electrons. These diminutive units of disembodied electricity, as they may be called, are continually in flight, yet they form part of every atom in the universe. It is quite possible, and even probable, that these electrons are engaged in the business of transforming matter into energy, and energy into matter. If this be so, there is nothing solid in the old sense, nothing static, nothing that is not continually in process of change.

Nor is this all. In Bagehot's day the science of physics was mainly concerned with visible and large-scale phenomena, with such mechanics of nature as were observable to the naked eye. To-day the physicist has shifted most of his attention to the study of

[1] Presidential address delivered at the twenty-fourth annual meeting of the American Political Science Association, Washington, D. C., December 29, 1927.

small-scale and invisible things. The gross appearances no longer mean much to him. The general acceptance of the quantum theory has wrought a revolution in all the exact sciences. Even the chief corner-stone of the old physics, the law of gravitation, has been jolted out of place. Bagehot wrote in an age when scientists looked upon gravity as a force; to-day we are assured that it is merely one of the properties of space. And space itself is a concern of relativity, hence there is no such thing as absolute position or absolute movement. All things in the physical universe are relative to all things else.

It has been said that no metaphysical implications are necessarily involved in the quantum theory or in the doctrine of relativity, but it is difficult to believe that this can be the case. A revolution so amazing in our ideas concerning the structure of the universe must inevitably carry its echoes into all fields of human knowledge. New truths can not be quarantined. No branch of knowledge advances by itself. In its program it draws others along. By no jugglery of words can we keep mind and matter and motion in water-tight compartments, hence it is inconceivable that a greatly changed point of view, or a series of far-reaching discoveries in any one science can be wholly without influence upon the others, even upon those which are not closely allied. Science begins by altering the day's routine and ends by transferring our orientation towards the social cosmos.

The acceptance of the doctrine of evolution (to take an illustration from the past) did not confine its effects to biology, or even to the natural sciences as a whole. It compelled a general recasting of the older ideas concerning the origin of the state and of government; it threw political science into a new dependence upon history, and led Sir James Seeley to declare in one of his famous epigrams that history without political science could have no fruition. It impelled the student of politics to look upon public institutions as part of the whole evolving order of things, like the protoplasmic cell and the living organism.

And so the "sudden acquisition of much physical knowledge" which has marked the first quarter of the twentieth century would seem to suggest the timeliness of examining once again the old foundations of political sciences upon which we have built up our theories concerning the citizen's relation to his government. Natural science has moved a long way, not only from the teachings of Galileo and Newton, but even from those of Helmholtz and Kelvin; yet political science is still dallying fondly with the abstract formalism of Locke and Montesquieu, Austin, Blackstone and Bentham. It is still concerning itself with theories of absolute rights and duties, with old axioms about sovereignty and the general will, the sanction of law, the rule of public opinion, and the mass behaviorism of free and equal men and women who are assumed to be the ultimate atoms of sovereignty in the commonwealth.

It is still in bondage to eighteenth-century deification of the abstract individual man. Both the science and the art of government still rest upon what may be called the atomic theory of politics—upon the postulate that all able-bodied citizens are of equal weight, volume, and value; endowed with various absolute and unalienable rights; vested with equally absolute duties; and clothed with the attribute of an indivisible sovereignty. Under the influence of ideas which were borrowed from the old natural philosophy we continue to assume that the science of government can be a science only if it is based upon a series of fixed uniformities. Our vernacular and our thinking are still heavily saturated with the idea that there are laws and principles of human liberty to which all government must conform. And these principles we have embodied in a series of impostor axioms which stultify the free thought of the people and form the greatest of all obstacles to the orderly progress of social control.

So long as the social order was simple, without the unending complexities that have been infused into it during the past half century, these older formulas were not beyond the power of rational minds to accept—just as the old concepts of natural science were able to pass muster in the days when laboratory experiments were simple and few. But although we have now passed into an age when the vast laboratory of world politics is conducting experiments of every kind with unmeasurable rapidity, we continue the attempt to explain *our* electrodynamics in terms of mechanics—an attempt which the physicists abandoned a generation ago.

II

The American philosophy of government has exalted the individual citizen beyond all reason. It treats him as the incarnation of the Unknown Soldier. This is partly the result of our legacy from Puritanism, and in part the outcome of a pioneer insistence upon free scope for individualism. Hence it is the national habit to think of social control and individual freedom in terms of hostility to each other, whereas it is only through the one that the other can be realized. For even as every molecule of physical matter is conditioned and directed by those with which it interacts, so the individual citizen is similarly motivated and controlled by the influence of those with whom he associates. These influences, moreover, are not radiated upon him most strongly by society as a

whole; they come from within his own orbit of life. They come directly from the immediate environment—his race, his religion, his political party, his labor union, his club, his newspaper and all the rest. He is the creature of his group-application. These influences are so penetrating, indeed, that for most of our citizenship the dogma of individual freedom is hardly more than a myth. Hence the first problem of political science is not that of adjusting social control to the interests of the individual citizen, but of securing and maintaining a fair balance between the various groups to which the individuals belong.

In other words it is time for political science to step up into line with the new physics by turning some of its attention to the sub-atomic possibilities. We should seek to discover the true reasons for that vast differentiation between good, bad and indifferent citizenship, which is perhaps the most obvious of all the phenomena of politics. We should enquire diligently into the nature and scope of the forces which make each civic atom what he is. And we should discard our allegiance to the absolute, for nothing would seem to be more truly self-evident than the proposition that all civic rights and duties, all forms and methods of government, indeed all principles of political science, are relative to one another, as well as to time and place and circumstance. They can not be stated compressed into rigid formulas.

III

Both in the physical world and in the body politic the atoms have this in common, that they are neither ultimate nor indivisible. The individual citizen, when you pull him apart, is a nucleus of heredity. He is the creature of a habit-system. But the whole training imposed upon us by civilization is based upon the assumption that human beings can be constrained or induced to modify their natural responses. More particularly they respond to the stimulus of ideas, the electrons of the social universe, and indeed our entire process of civic education—in the schools and colleges, by the press and at the forum—consists in bombarding the human nucleus with ideas. Some get attached, but the vast majority do not. The social atmosphere, like the physical universe, is filled with these invisible units of energy, moving at all rates of speed and penetrating power, gaining lodgment here and there, or departing from some human atom where they have been week-end guests. In the last analysis the weight of the individual citizen in the body politic is dependent upon the degree of his receptivity to these rays of intellectual illumination; it is proportioned to the number and quality of the ideas that he assimilates and retains. It is this variableness of response to the stimulus of ideas that largely accounts for the diversity among citizens in relation to their government.

Hence we have the hydrogen citizen. In his journey through the seven ages of man he manages to capture only one electron. His primal instincts have become modified by some single controlling obsession. Militant reformers, in any field, are drawn for the most part from among men and women who belong in this category. The same is true of the diehards at the other extreme, the reactionaries and the partisans of the hundred per cent. variety. They are what the physicist would call "stripped atoms." Neither of these elements ever contributes much to the orderly progress of government as an art or as a science. To continue the metaphor, it is the precious metals of mankind, not the light gases, that give both stability and movement to the social order. Even as the physical world is a composite of matter and energy, which are no longer regarded as separable, so the world of political opinion is to be looked upon as a composite of numbers and intensity, a product arising from the continuous redistribution of both. To the extent that energy is a substitute for mass, so the intelligence and the intensity with which convictions are held by a minority may offset a considerable deficiency in numerical strength.

Therein lies the flaw in such expressions as "the will of the majority" which suggests a purely quantitative measurement. The means by which a majority comes to be a majority is a matter of far greater importance than the mere existence of a majority as such. The actions and attitudes of the individual in politics become what they are by reason of the influences to which he is exposed, and more particularly the immediate influences, for the effectiveness with which a political idea or ideal can be transmitted is in part dependent upon the proximity of its source. The physicist is not content to know that the electron flies. He insists on knowing whence it cometh, whither it goeth, and to what purpose. The world is ruled by ideas which possess the power of penetration and lodgment. The electorate is merely the channel through which they become operative. Government is not, fundamentally, either an affair of laws or of men, but of imponderables behind both of them. To these imponderables, which constitute the invisible government, we have given far too little of our attention; yet we must do it if political science is to maintain an intimate contact with the realities.

IV

How, then, can the sub-atomic forces which make for the improvement of citizenship be singled out, strengthened and made more effective to the desired end? At present we have only a hazy notion of what

they are and only in a crude way do we know how they operate. All around us gigantic campaigns of civic education are being carried on, by organizations of every kind, every bit of it inspired by the hope of improving the attitude of the citizen towards his government, and especially his sense of civic duty. A large part of this effort is based upon the naïve assumption that if you only exhort people with sufficient earnestness they can be induced to accept irrational ideas embalmed in the rhetoric of patriotism. No part of this nation-wide campaign for the promotion of better citizenship utilizes a technique that has ever been examined by scientific methods to discover whether it is at all adapted to the end in view. To a considerable extent the money that is being spent upon these so-called campaigns of civic education represents pure futility and waste. The ardent efforts of well-meaning men and women are frustrated by their sheer irrelevance to the end desired. Perhaps the most striking illustration of this has been afforded in recent years by expensive campaigns for improving the quality of our elective officials by the simple device of bawling at the voter to come out and vote. It is small wonder that these campaigns are accomplishing nothing, for they rest upon formulas concerning civic duty which are not merely unscientific but ridiculous.

Political science, to become a science, should first of all obtain a decree of divorce from the philosophers, the lawyers and the psychologists with whom it has long been in the status of a polygamous companionate marriage to the detriment of its own quest for truth. The philosopher, when he can not account for a phenomenon in any other way, ascribes it to some occult quality in the moral nature of man. The psychologist, in a like quandary, seeks the explanation by going through his inventory of standardized human traits, although it ought to be clear that political behaviorism can not be even described, much less accounted for, by the study of the individual in isolation. An increase in one knowledge of human behavior results at once in a modification of human behavior, hence it is rather optimistic to hope that social psychology will ever point us the way of explaining, much less controlling the actions of men in the body politic. The laws of science are not statistics which nature obeys, and the laws of political science, if ever such laws are formed, will not be rules which human nature obeys. They will be merely definitions which explain how men in groups respond to the stimulus of ideas. It is by the methods of science, not psychology, that we can hope to discover such laws. The essentials of the scientific method are accurate observation, careful experiment, and cautious inference. The earmarks of social psychology, thus far, have been crude generalizations and fantastic claims. Still it is only fair to say, on behalf of psychology, that it has taken the first step on the way to become a real science; it has already succeeded in providing itself with a technical jargon which is incomprehensible to the ordinary man. It has managed to translate many self-evident commonplaces into foggy language.

V

Government, as Emerson once said, is "the greatest science and service of mankind." Yet the science of government has been probably the least successful of all the sciences in building up a set of principles upon which any body of men can agree. Far from having the certitude and authority of physics or chemistry, it has not yet caught up with meteorology, which some people look upon as the least exact of all the natural sciences. As a result of this backwardness in what may be called the pure science of politics there has been almost no applied science of government worthy of the name. Government as an art has been so little perfected that as respects most of the serious problems encountered by the public authorities there has been no alternative but to rely on the promptings of political intuition.

The results are plainly visible in the great and ever-widening gap which separates government and technology. By the application of science to industry, transportation, communication and construction we have made unexampled progress during the past fifty years. But whether the world has made any progress at all during this half century, in the art of governing its people is a question that many of those best qualified to speak would answer in the negative. Our rulership over nature has become more commanding year by year; but man's rulership of man has made no such advance. The wheels of government have multiplied, and they are revolving at an increased speed; yet the electorate's control of them is certainly not firmer than it used to be. Surely there is an element of danger in a situation where our progress runs so fast in all the applied sciences except the one that ought to be the greatest. For although science may be the basis of civilization, government is the retaining wall that holds the entire structure in place. Science is producing wealth but there can be no such thing as wealth save under the protection of government.

Every new application of science to industry makes life more complex, and hence government more difficult, for the difficulties of efficient government in a democracy increase as the square of the newly-created

human relations. That is why the big industrial city is so much harder to govern than is the rural area of equal population. The leaning tower of Pisa is deemed to be one of the greatest wonders of the world, yet it is an infinitely less complicated affair than an urban metropolis like Chicago in which one can find at this very moment, side by side, much of the best industrial technique and some of the worst municipal government on earth.

To be safe, our progress in the art of government ought to go faster than the advance of applied science, but unhappily it is doing nothing of the kind. It is steadily dropping behind. If the fathers of the Republic were to return to life, after their long sleep of a century, they would be equally appalled by the stupendous progress of the American people in all material things and by the relative lack of it in the art of government. Would they perceive any marked improvement in the way the laws are made, or the revenues raised, or the taxes spent? Would they note a conspicuous betterment in the caliber of the men elected to public office? Would they find our current political discussions above, or below, the plane represented by the letters in *The Federalist*? To ask these questions is to answer them.

Our immediate goal, therefore, should be to release political science from the old metaphysical and juristic concepts upon which it has traditionally been based; likewise to keep it clear of the sociologists and social psychologists who, if they could have their way, would only get us deeper into the morass of meaningless terminology. It is to the natural sciences that we may most profitably turn, in this hour of transition, for suggestions as to the reconstruction of our postulate and methods.

Political science should borrow from the new physics a determination to get rid of intellectual insincerities concerning the nature of sovereignty, the general will, natural rights and the freedom of the individual, the consent of the governed, majority rule, home rule, the rule of public opinion, state rights, laissez-faire, checks and balances, the equality of men and nations, and a government of laws. In place of these formulas it should seek to find concepts that will stand the test of actual operations, and upon them it should begin to rebuild itself by an intimate observation of the actualities.

By analogy from the new physics, moreover, it may well turn part of its attention from the large-scale and visible mechanism of politics to the invisible and hitherto much-neglected forces by which the individual citizen is fundamentally actuated and controlled. Three-quarters of a century ago the new biology suggested to us the abandonment of old ideas concerning the spontaneous creation of government; to-day the new physics may well suggest the discarding of our atomic theory of ultimate, equal and sovereign citizens in a free state. It is doubtless true that the natural scientist, as such, can never guide us to the true purposes and policies which should direct human action in matters of government; but it is equally true that only by paralleling his objectivity of attitude and his process of operational study can the political scientist ever hope to reach that goal.

WILLIAM BENNETT MUNRO

A LAYMAN'S VIEW OF HISTORY[1]

SOME time ago I received a pleasant letter from an honored officer of our Association. Among other things he said that his friends and colleagues would be glad to have one more book from me telling how it was that I came to write history. He added friendly words as to the interest of professional teachers of history in the thoughts of laymen like myself. So I am moved to give you a layman's view of history.

The muster-roll of laymen who have written histories is not a mean one. The old world offers us Herodotus, Thucydides, Xenophon, Polybius, Tacitus, no one of whom held a chair at any university. In modern times, in England, we pass from Gibbon down to Grote, and, in our own country, from Parkman to Rhodes. For myself, hovering, as I faintly hope, somewhere on the fringe of this rather Olympian company, I will endeavor to answer in a few words the query in the very friendly letter.

When I was a young man I became bent on devoting my mind and energies to the best things I could find. Not having original and creative gifts, I set myself to the study of what other men had deemed best, and had striven to attain in thought and work and conduct. I had ardently studied law, had practiced a very little, and had written a book on *Private Corporations*. But the law seemed too narrow—very far from covering the whole human field; and I turned to look beyond it. Being inclined toward the humanities rather than the sciences, I soon saw that I at least should find the most humanly interesting elements in the aim and the endeavor—the forming an ideal, and the struggle through the man's years, or perhaps through the longer life of a people, to accomplish it. The accomplishment itself, if indeed it is severable from the endeavor, might be beyond the strength either of individual or of race. Achievement lies on the knees of the gods. The true human story is a story of endeavor—the endeavor for the end conceived.

So I began with the ancient world, which is the pit

[1] Presidential address delivered before the American Historical Association at Washington, December 28, 1927.