

- A famous student of law and society points out the undesirable effects of fast scientific discoveries and inventions during the last 100 years.

## THE DANGERS OF SCIENTIFIC PROGRESS

The question that confronts our generation is whether or not our shifting physical environment has outrun our capacity for adaptation. Is human society being gorged with innovations too great for its powers of assimilation? It is not the *fact* of change; it is the rate of change that constitutes the danger. The over-rapid alteration of artificial environment may annihilate mankind no less certainly than the over-rapid modification of natural environment wiped out saver-toothed tiger and mastodon.

The advance of the last three generations<sup>1</sup> has been almost exclusively along the line of the natural sciences — physics, chemistry and biology. In spite of his new weapons and increased powers, man himself remains as he always has been — irrational, impulsive, emotional, bound by customs which he

will not analyze, the victim of age-old conventions and prejudices — probably not far removed from his paleolithic ancestors. The social sciences have advanced scarcely at all. This divergence between the natural sciences and the social sciences, between machinery and control, between the kingdom of this world and the kingdom of the spirit — this is where the hazard lies. Science has given man power and weapons which the utmost wisdom could scarcely be trusted to use aright.

Unless we can marshal behind such studies as economics, political science and sociology the same enthusiasm and something of the same technique that characterize our treatment of physics and chemistry; unless the results of this research can be applied to human life as boldly as we apply the natural sciences to modify our

methods of living; unless we can free ourselves of stale custom and harness intelligence to the task of straightening out the relations of man with his fellow men — then pessimism has the better of the argument.

Face the extraordinary contrast between our willingness to make any change whatever in physical environment and our obstinate determination to leave unaltered our relations to the world and to each other. For example, physics gives us the internal combustion engine or the principles of communication by electricity. With that feverish activity we seize upon these ideas! With a thousand minds working upon them, they are brought to such completion that we soon soar through the air and talk to friends a thousand miles away. Nobody stops to ask what Isaac Newton, two hundred years ago, would have thought of these innovations. Nobody questions their propriety because they do not follow the theories of Michael Faraday. Nobody tries to impede their development by attacking the character of the inventors.

But let economics and political science develop the principle that the world we live in is an economic unit and that interrelationship has developed to a point where some international machinery is necessary to handle the common interests of mankind — what happens? We ask what George Washington would have thought of it 120 years ago. We summon tradition to bear witness that the thing has never been done before. We impugn the character of the chief inventor, and fight over the matter in political campaigns. For the detachment of the laboratory we substitute the emotion of the torchlight procession.

It makes no difference how essential the change may be to the social order. Whether it be in eugenics, or in economics in an effort to distribute more fairly the rewards of industry, or in law through the establishment of a new international court, the response is invariably the same. We condemn the man who dares preach a new method of salvation. "He perverteth the people," we cry. "Crucify him!"

Of course, 300 years ago this same Calvary awaited the prophets of the natural sciences. Galileo, Giordano Bruno, Francis Bacon, Descartes — these were the early saints of the Kingdom of Truth, by whose integrity we are free. Bruno was burned at the stake; Descartes in terror suppressed his own books; and Galileo, under duress, knelt before ten scarlet-clad cardinals to amend the solar system which he had disarranged. For 300 years was waged the war for intellectual freedom in relation to the natural sciences. Only by dint of sacrificial devotion was the war won. Harvey, Newton, Darwin, Huxley — these were the gallant souls who dared to break with the past, who faced the invective invariably leveled against proponents of new ideas.

But as far as the freedom of the social sciences is concerned, the war has just begun. Any attempt to bring to bear on human affairs the same critical analysis that we apply to electrons or glands or the stellar spaces is met with angry opposition. Innovations in social institu-

tions and economic ideas frighten us. Much of our education is directed toward this same traditionalism: instilling belief that our laws and institutions necessarily contain permanent qualities of reality. As for the prophets of new ideas in the social and economic field, our inclination is to classify them as enemies of society. They are radicals, Reds, dangerous men, tampering with the foundations of order; they dare to subject to scrutiny the customs we have received as a sacred trust from the past.

Yet we are living in a world utterly different from any existing before. Science has suddenly compressed the planet we occupy. On top of this, science has scattered weapons of destruction far more deadly than man ever possessed; so that, suddenly armed to the teeth, he is asked to live in peace crowded together with neighbors whom he never knew before and for whom he has no particular liking. All this has happened in 100 years — so quickly that it finds the race utterly unprepared in reli-

gion, ethics, law, economics and government to meet the innumerable exigencies that have arisen.

This is the challenge we face in our generation. It requires a public opinion eager to encourage creative work in the sphere of human relationships. Derangement of human affairs is so extensive that bewildering opportunities await on every hand. Our views of property, our conceptions of government, our systems of education, our churches, laws, notions of right and wrong — these are legitimate laboratory materials of the new inquiry. No longer can the world build sanctuaries for the protection of ideas. We are not called upon to adopt all the ideas. Many will ultimately be proved wrong. We are asked rather for a sympathetic attitude toward the creative purposes out of which the ideas come.

But if we are to develop real ability to face the truth

with fearless eyes, then we must be prepared as new light comes to free ourselves from the old forms that have narrowed our thinking. We need not fear that we shall progress too fast. The overwhelming danger is that we shall not be able to progress fast enough. There is plenty of conservatism in the world. What we need in our time is not a brake for the chariot of progress but motive power. Our business is not to look behind but to look ahead along the road over which mankind is moving. The past cannot be altered, the future is plastic. For the past we have no moral concern, for the future we are responsible. "We are still the heirs of all the ages that have gone, but we are no less truly the ancestors of all the ages that are to come." — *By Raymond Blaine Fosdick, Condensed from the Golden Book Magazine (November, '30).*