

The CENTURY MAGAZINE

Vol 113

January 1927

No 3

THE DUTY OF DOUBT

We Take Nobody's Word for It

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WE ARE taught that faith is a virtue. This is obviously true in some cases, and to my mind equally false in others. There are occasions when the need for it must be emphasized. Nevertheless at the present time I believe that mankind is suffering from too much, rather than too little faith, and it is doubt rather than faith that must be preached. I am not thinking wholly or even mainly of faith in the Christian or any other religion, but simply of the habit of taking things for granted. Nor am I praising a blind and haphazard doubt, which is as unintelligent as blind faith, and far less fruitful. Greece and Rome produced a sect of skeptic philosophers who produced valid reasons for doubting anything whatever, and finally left themselves with no motives except the gratification of their instincts. Christianity swept away skepticism along with many nobler philosophies. And any system in which the suspense of judgment leads to the suspense of action will inevitably perish at the hands of men who are prepared to act, however

utterly nonsensical be the motives that lead them.

Modern science began with great acts of doubt. Copernicus doubted that the sun went round the earth, Galileo that heavy bodies fall faster than light ones, Harvey that the blood flowed into the tissues through the veins. They had each a theory to replace the old one, and their observations and experiments were largely designed to support that theory. But as time went on these theories, too, were found wanting. The planets do not go round the sun in circles as Copernicus thought; gravitation is a more complex affair than Galileo or even Newton believed. And nowadays, though many experiments are made to support old or new theories, large numbers merely go to prove them false without putting anything in their place. One can hardly open a scientific journal without finding a paper with some such title as, "On an Anomalous Type of Inheritance in Potatoes," or, "Deviations from the Law of Mass Action in Concentrated Sugar Solutions."

The statement of any general principle is enough to raise active doubt in many minds. Moreover the authors very often make no attempt to put forward an improved theory; and if they do so it is generally in a very tentative form. "The results so far obtained are consistent with the view that . . ." has taken the place of "Thus saith the Lord . . ." as an introduction to a new theory. Moses apparently regarded "An eye for an eye and a tooth for a tooth" as an absolute principle of right conduct; Einstein would certainly not regard any of his laws as final accounts of the behavior of matter.

Now the method of science, which involves doubt, has been conspicuously successful over a certain field. But there are many who affirm that that field is strictly limited. "In the realm of religion and ethics," they assert, "we have reached finality. You may not be certain about the principles of physics, but I, and every right-minded man and woman, are certain about the principles of right and wrong; and those who question them deserve to be treated as criminals." This attitude is rather commoner in the United States than in most civilized countries, not because Americans are more stupid or less educated than other nations, but because they live amid a more homogeneous moral tradition. The Englishman who thinks it wrong to live with a mistress has only to cross to France to find people doing so without exciting serious disapproval. The Russian who regards making a fortune as a disgusting vice has only to enter Finland (if his government will let him) to find quite decent and useful

individuals practising it. But the American has a long way to travel before he or she will find otherwise respectable women smoking cigars without unfavorable comment, or governing classes who regard the self-made millionaire as inevitably vulgar and unpleasant.

Now there are conditions when it is an advantage that moral principle should be unquestioned. It is roughly true that our laws are the laws which would have been suitable for our grandparents, and our moral code that which would have sufficed for our great-great-grandparents. It takes about two generations of effort to effect a great legal change, say prohibition or Irish home rule, and a good deal more to dethrone a generally accepted principle of moral conduct, such as the different moral standards of the sexes or the wickedness of sport on Sundays. In a society which is not altering much in other respects this stability is an excellent thing, though of course the desirable moral code will vary from place to place. Thus the South Pacific islanders almost universally practised infanticide or abortion, and very often cannibalism or head-hunting. The islands were as thickly populated as was possible with the methods of agriculture and fishing available, and if the population had not been kept down by these methods famines would have occurred. The missionaries have taught them that these practices are wrong, and so they are now, since European diseases and drinks have replaced them as checks on overpopulation.

Now the moral code of Europe, North America, Australia, and New Zealand is to a large extent the code

which was found to work in medieval Europe. Of course it has altered since the Middle Ages, but it is far more similar to its ancestor of six hundred years back than to the codes, say, of China, Arabia, New Guinea, or central Africa to-day. The medieval code was evolved in a society mainly engaged in small-scale agriculture and small-scale industry, dominated by a small educated class of priests, and a still smaller military nobility. And the oddest traces of this survive even in the United States. University professors are no longer in holy orders but they are expected to conform to a standard of conduct much stricter than that demanded of business men or soldiers. The head of the state no longer wears a sword and chain-mail on public occasions. (I am not talking about kings, who still occasionally wear swords, and who, when explosives have been superseded by other methods of killing, will probably carry dummy bombs.) But he still behaves to the heads of other states in a manner appropriate to a medieval knight. We are delighted (at least if we are shareholders) when company presidents and directors effect a combination with another corporation in the same line of business, but we expect our premiers and presidents to maintain our national independence to the last drop of our blood.

And the same applies to property. It was obviously right that a medieval workman should own his own tools and workshop. It is obviously impracticable for a modern factory worker to own half a lathe and twenty square yards of floor space. It is only gradually being realized

that the idea of absolute personal ownership so suitable when applied to a spade or a chisel leads to inconveniences when applied to a share certificate. And those who realize it most fully are convinced, why I am not very clear, that those inconveniences would vanish if only the ownership were transferred to the state. The truth is more probably that the idea of absolute ownership is ceasing to work and will have to be replaced as the idea of absolute position has been in physics or that of fixed species in biology. The believer in absolute ownership will at once ask me what I have to put in its place and will raise a triumphant shout when I say that I do not know.

Now supposing I go to a physiologist and convince him that his otherwise admirable theory of conduction in nerves will not explain, let us say, the action of cocaine in blocking them, he will not immediately ask me to produce a theory better than his own. Nor will he abandon his former view; he will try out modifications of it and see whether they work. He will quite likely spend a couple of months in experiments suggested by a theory which he regards as probably false. And when he arrives at a scheme of ideas which will fit all the facts so far known he will hardly dignify it by the name of theory, but call it a working hypothesis.

"Yes," my opponent will say, "and do you expect men to die for a working hypothesis as they will die for a faith?"

Well, men have died for odder things. On the occasion of Napoleon III's *coup d'état* in 1851, Baudin,

a deputy of the Second Republic, was trying to rally opposition in the streets of Paris, though with little hope of success. A workman shouted, "Why should we risk our lives for your twenty-five francs?" referring to his daily salary as a deputy.

"Stay here," said Baudin, "and you shall see how a man dies for twenty-five francs." He died.

And every day men do risk their lives for working hypotheses. Half the art of war consists of doing so. The dispositions of the enemy during a modern battle are more or less unknown. On the available evidence the commander-in-chief forms a hypothesis on which he must then act with the utmost vigor. The great general is the man who stakes everything on his hypothesis while realizing that it is only a hypothesis and must be modified from moment to moment.

Just the same is true of scientific work. A good many biologists experiment on themselves. Of course it is occasionally necessary to make experiments which one knows are dangerous, for example in determining how a disease is transmitted. A number of people have died in this way, and it is to my mind the ideal way of dying. Others make experiments which are apparently risky, but really perfectly safe provided the theory on which they are based is sound. I have occasionally made experiments of this kind, and if I had died in the course of one I should, while dying, have regarded myself not as a martyr but a fool. For all that, I have no doubt that the theories to which I intrusted my life were more or less incorrect. One

at least has already been proved so, and the history of science makes it clear enough that many of the others will be. But though they had their flaws, they were good enough to enable me to predict the safety of those particular experiments, and I hope that I never regarded them as much more than working hypotheses.

My objection to the thought of many people on all subjects, and of all people (including myself) on some subjects, is that it is in a pre-scientific stage. They seem to be incapable of acting on certain momentous topics unless they are certain of their premises. Now all I should be prepared to say in favor of democracy is that it is, in my opinion, the least objectionable form of government so far devised for men and women of certain sections of the human race. But acting on that opinion I should be willing to risk my life on its behalf in defending it against government by a military autocrat like the kaiser or a secret society like the Ku Klux Klan. Yet I hope that I have not closed my mind to the claims of other forms of government, for example the rule of such a voluntary aristocracy as the governing group of Italy or Russia.

Similarly in the field of religion it seems to me very probable that in certain respects the structure of the universe resembles that of my own mind. This opinion leads, I think, to implications as to moral conduct different from those of materialism. But if we try to clothe this idea in the terminology of religion we can do it in many different ways. Some of these may serve to make man more

like God; they also have the converse effect in bringing God, in our ideas at least, down to the level of man.

It is characteristic of a good scientific theory that it makes no more assumptions than are needed to explain the facts under consideration and predict a few more. For example it is quite likely that the inverse square law describing the force between two electrically charged bodies ceases to hold when they are very close or very far apart. In half an hour I could write down a dozen laws of a more complicated kind which would agree equally well with all the observed facts. But no one nowadays would be interested in such a law. Scientific men agree to suspend judgment when they do not know. On the whole, however, the opposite has been the case in the history of religion. Where there was obvious room for different opinions, for example as to the nature of Jesus' relationship with God, a highly complex theory was gradually built up and was accepted by most Christian churches. The Unitarians regard themselves as more reasonable than the Trinitarians and have adopted a quite different theory. To my mind a far more rational view than either would be as follows: "I believe in God and try to obey and imitate Jesus, but I do not know exactly what is their relationship." That is certainly the view of millions of Christians, but no important religious body dares to adopt it. They prefer to go on thinking along pre-scientific lines. And it is this pre-scientific outlook of religion, rather than anything specific in its tenets, which brings it into conflict with science. "A creed in harmony with

the thought of to-day" is no better than the Athanasian Creed if it is taken as a creed and not a working hypothesis, for the simple reason that it will not be in harmony with the thought of to-morrow.

As a matter of fact the Christian attitude to faith probably rests on a misunderstanding. Diseases of the nervous system and chronic diseases of the skin are particularly amenable to cure by suggestion and other psychological methods.* Jesus' recorded healing work was mainly confined to these complaints, and required faith in the patients. But this faith was a belief that they would be cured, and not an assent to historical or metaphysical propositions. Christian Science is so often therapeutically successful because it lays stress on the patient's believing in his or her own health rather than in Noah's Ark or the Ascension. But the Christian churches have tended to accumulate more and more dogmas in their schedules as time went on, so that faith has become more and more intellectual and more and more of a strain on the intellect.

It is just the same with politics. Political creeds fall into two classes. There are the conservative beliefs that institutions which have worked fairly well in the past will go on working under new conditions. Opposed to them are the radical beliefs that policies which have not been tried at all, such as universal disarmament, or have been tried far away or long ago, for example prohibition in Arabia, are the only solutions for our problems. The good party men honestly hold these beliefs; the politicians say that they hold them. Fortunately this is

rarely the case, though occasionally an honest man like Robespierre or W. J. Bryan rises to power and acts as if he believed in his own speeches. As long as the average voter's thought is pre-scientific, a politician dare not say: "I am inclined to think the tariff on imported glass should be raised. I am not sure if this is a sound policy; however, I am going to try it. After two years, if I do not find its results satisfactory I shall certainly press for its reduction or even removal."

Nevertheless the successful politician often acts in very much that way, and quite calmly goes back on his policy of a year ago. His enemies accuse him of broken pledges; his friends describe him as an inspired opportunist. In England and the United States the two-party system permits a government to remedy the grosser mistakes of its predecessors, while continuing their successful policies without too great a show of enthusiasm. The tacit agreement to this effect between the party leaders gives our politics a certain air of unreality, and many of those who seek for truth in the mouths of politicians turn with relief to Russia. The government of the Soviet Union not only admits but boasts that its policy is experimental. Many items in its early program were failures, and some of these have been withdrawn. Others equally daring in their conception have proved successful. Hence the evolution of the new social order has been amazingly rapid. The Communist party has been in power for less than nine years, but it has contrived to evolve a fairly stable system combining some of the advantages of capitalism

and socialism. No doubt the Russian people has proved an ideal subject for large-scale experiments. But the growing distrust of constitutional government in Europe suggests that there, too, the present generation is more prepared to be experimented on than were its fathers. And if we are to escape the despotism which will follow a revolution either to the Left or the Right, our present rulers and those who support them will be well advised explicitly to imitate the extremely capable Bolshevik leaders, and adopt an experimental method.

In the sphere of ethics the same principles must, I believe, be applied. The circumstances postulated by the older ethical codes have ceased to exist. In a more primitive community our most obvious duty was quite literally to our neighbor. In a village we knew our neighbor's affairs pretty well, and if we did not always succeed in loving him as ourself we could pretty often be of assistance to him. In a great city one may have a department-store on the left and a man one never meets on the right. An occasional gift to charity or even an evening a week spent on welfare work in a poorer quarter is not the psychological equivalent of taking in Mrs. Johnson's children during her illness and going to the assistance of Mrs. Kelly when her husband comes home drunk. All through the civilized world experiments are being made as to how best to help one's fellow-creatures without falling into hard officialism on the one hand or indiscriminate gifts to the undeserving on the other. The mere multiplicity of these experiments goes to

show how few of them have been completely successful.

Again the invention of contraceptive methods and the economic emancipation of women have created new problems in sexual morality. If a given action has different consequences now from those which would have followed fifty years ago, it is from the ethical point of view a different action. Contraception is leading to experiments on rather a large scale in Europe; and most of them, like most laboratory experiments, are unsuccessful. Married women are discovering that no children or a single child seldom lead to happiness; unmarried women who try the experiment rarely find satisfaction in a multitude of lovers. On the other hand a spacing out of childbirths is generally found to be advantageous for all concerned, and there is a small but perhaps a growing body of experience favoring an experimental honeymoon before marriage in lands where divorce is difficult, and an experimental period of marriage where it can easily be dissolved. The public discussion of such topics generally leads to the promulgation by both sides of dogmatically held opinions, and a failure to realize that the questions at issue can only be decided by experience. This failure is unfortunate for two reasons. It means that many more experiments in behavior, often of a disastrous type, will be needed before the question is cleared up, than would be the case if a serious attempt were being made to collate the results of those going on to-day. And it is extraordinarily difficult to love one's neighbor when he or she differs from one fundamentally on moral

issues, though quite possible to do so if one believes that he or she has made an unfortunate mistake in conduct because of uncertainty as to what, under the new conditions, was right or wrong.

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Such then is the case, or rather a fragment of the case, for doubt. It is very nearly the same as the case for freedom of speech. Plato described thought as the dialogue of the soul with itself, and doubt is just a refusal to deprive either side of a hearing. Just as freedom of speech facilitates right action by the state provided the speakers and those who listen to them have a share in deciding policy, so doubt is a virtue if, and only if, it is the prelude to action. A merely negative doubt is like freedom of speech divorced from political responsibility. This was the condition of affairs in India in the ten years before 1919, when the Indian politicians were permitted to talk indefinitely, but possessed no effective share in the government. India is barely beginning to recover from the type of political thinking which flourished during that unfortunate epoch.

There are some who will admit that doubt may be a necessity in a scientific era, but hold that art and literature flourish best in an age of faith when they become the interpreters of a great religious or philosophical system rather than the symptoms of intellectual unrest. While such opponents bring forward Dante and the architects of the European cathedrals, forgetting Milton and Phidias, I shall do no more than cite the opinion of John Keats in a letter to his brother. "Dilke is a man who

cannot feel he has a personal identity unless he has made up his mind about everything. The only means of strengthening one's intellect is to make up one's mind about nothing—to let the mind be a thoroughfare for all thoughts, not a select party." Keats certainly did not strengthen his intellect at the expense of his esthetic powers, and his "Hyperion" is little more than an account of the supersession of good ideas by better, a process which as he showed, so far from stifling art, may inspire it.

Finally I shall perhaps be told that I am preaching pragmatism. But where the pragmatist says that a belief is true because it works, I have attempted to suggest that it is often false although it works, and that belief is not, as James preached, a necessary preliminary to effective action. And where the pragmatist exalts the will to believe, I have attacked it. The desire for intellectual certitude is laudable in the young, as a stimulus to thought and learning; in the adult it easily becomes a vice. History, when it is taught as the history of human thought, makes it abundantly clear

that most of the intellectual certitudes of our forefathers were illusory, though often of temporary value. One intellectual certitude has from time to time been replaced by another at the expense of a sufficient number of martyrs. So long as our education aims at inculcating dogmas, religious, political, ethical, or scientific, fresh relays of martyrs will be necessary for every step of human progress. And while I do not suggest that humanity will ever be able to dispense with its martyrs, I cannot avoid the suspicion that with a little more thought and a little less belief their number may be substantially reduced.

To sum up, science has owed its wonderful progress very largely to the habit of doubting all theories, even those on which one's action is founded. The motto of the Royal Society, "Nullius in verba," which may be paraphrased, "We take nobody's word for it," is a sound rule in the other departments of life. The example of science shows that it is no check on action. Its general adoption would immeasurably hasten human progress.

MONEY BRAINS

HOMER CROY

IF you have been to Monte Carlo, and if you have noticed a little, undersized, inconsequential Frenchman with bug-eyes and a pair of thick glasses balanced on a thin, sharp, humped nose, then you have seen the great Chavoix. He is, in fact, Monsieur le Directeur Chavoix.

Many a time he has been mistaken for a waiter, but it does not ruffle him. Nothing, it is said, does that, except money going the wrong way. His word is law, and the silent watchful little man dominates the Casino as completely as Napoleon did Compiègne. He is the one man between the powerful international syndicate, which owns the establishment, and the public.

Possibly it does not disturb him to be mistaken for a waiter, because once he *was* a waiter. It had been in some little obscure restaurant in Paris where he could polish glasses until they looked like the Ritz; and when he worked there he was the same slight, inconsequential-looking person as when he came to Monte Carlo to—er—polish the public.

No nation in the world loves money so much as do the French; and Chavoix, the little waiter, made most of his fellow-countrymen seem like spendthrifts. All French people are supposed to have a stocking under a loose stone in the living-

room floor, but not the thrifty, planning, scheming Chavoix. He trotted his savings off to the bank and got his little three per cent. Then he began to invest them; the man who once sold a gold brick to a Frenchman is now as old as Chauncey M. Depew.

It was not long before Chavoix owned the little restaurant in Paris, and took off his professional shirt-front and put on a clean one. Rung One. But being the owner of a little restaurant was nothing to Chavoix; he had just begun. He wanted to make big money. Money, money, money; that was what counted with Chavoix, and it was the key-note of his character, and if any idea or project made money for him nothing else mattered. Although big money was what he wanted, he wanted little money too.

There was the incident of Florine, the waitress. She had been ambitious to be an actress and had played a few small parts, but it takes money in Paris to rise in the world theatrical; and so, wearing her little black and white waitress cap, she flitted among the tables, smiled upon customers, and helped trade generally.

One day ten francs was missing; the girl had stolen it, Chavoix said, and called the *agents de ville*. They took her away, sobbing, protesting; she had not done it, she said; she