

RULES

by

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It is the purpose of this paper to discuss certain characteristics of rules generally. My own field, the law, has a great plenty of rules, and thousands more are spawned every month. Yet not content with this quantity, I aim also to treat with rules in the physical and natural sciences and in human behaviour generally. And all in less than an hour.

Start with the hypothesis that rules exist only in the human mind, not in nature. The behaviour of recurrent phenomena is described among human beings in the language of rules and such descriptions should be as reliable as our knowledge that the sun will rise tomorrow. Indeed, it is the purpose of scientific research and thought to establish rules within the human mind so that that mind can accurately predict or account for various events. The establishment of such rules based on the observation of events is inductive reasoning; applying the rules to predict or account for further events is deductive reasoning. The effect on this planet of the relatively sudden evolution of a

creature with an organ having a relatively large capacity for such reasoning has been most remarkable. This capacity so to deal with rules has made the desert bloom and turned fertile plains into barren wastes; it has gone far to conquer earth's diseases and to poison its air and water; and it has subjugated much of solid and gaseous portions of the Planet's surface and threatens to blow it up.

I have heard often, in our politically troubled times, how shameful it is that our political advances have not kept pace with our scientific advances. Partly, perhaps, because my own field is closer to the political than the scientific, I grow increasingly annoyed at these statements. Our scientific achievements, which I do not propose to belittle, are mere by-products of our political success. Without pooling the efforts of millions of people, our technology could never have reached a beginning. Only in a society where there is a surplus of human effort available after taking care of the basic requirements of food, clothing and shelter can any scientific, cultural or artistic accomplishments be borne. The generation of this surplus can be accomplished only through a complex system of division of labor, and such a system is a political achievement.

In common speech, we generally distinguish between the mind and the brain. When an unaccustomed result from the

activity of the head appears, the mind is treated by a psychiatrist and the brain by a surgeon. If a person's mind or brain functions egregiously but within neither doctor's discipline, the law may take over and put the owner in jail. Thus we maintain our rule-oriented society.

Traditionally, human behaviour has been established by the communication of rules from one human being to another, usually from the older to the younger -- for a while at least. The instructor exhumes a rule from its storage place in his head and by applying another set of rules to govern the selection of symbols (words, usually) broadcasts certain symbols to the pupil who, by applying the same rules of language in the other direction, establishes in his own mind the rule which was exhumed from the mind of the instructor.

The exact method by which the brain performs this process is known far better to other members of this club than to me. The important thing from the point of view of this paper is that the mechanics by which the brain operates can be expected to prevent our comprehension of anything to which the brain cannot apply these mechanics. You would be perfectly right in saying that you can't conceive of any such thing: by definition, it is inconceivable. That there may be information which the human mind can not handle should not worry us, however, any more than the theory of evolution should have worried a brontosaurus.

Our thoughts being circumscribed by the limitations of the organ which produces them, I generally regard the science of logic as the organization of these limitations. Thus, when we utter the syllogism: "All S is M; all M is P; therefor all S is P" the conclusion is dictated not by the nature of M, S and P, but by the inability of the human mind to conceive otherwise. I recall a favorite question among philosophy students in my undergraduate days at college: "If God is omnipotent can He make a stone so heavy He can't lift it?" I believe that the answer which the philosophy students said was correct is "Yes, but he can lift it anyway." The legal mind would be tempted to certify such a question to a higher court, provided that the necessary declaration of the importance of the question could be signed.

This process of logical thinking and orderly reasoning was derived by western civilization in a large measure through the ancient Greeks and, as I mentioned, has been largely responsible for the dominance of man over the plants and other animals on earth. Yet this is not the only process by which the human brain can be made to work. Often it is a particularly unnatural process and a great many people avoid it altogether.

Logical thought requires adherence to rules and somehow it often turns out that the rules conflict. In the law one such

a conflict arose from the classic case of the murderingⁿ heir, where the court was faced with one rule that the deceased's will, leaving his property to his son, should be honored; this conflicted with another rule that a wrongdoer should not profit from his evil deeds. The court decided the latter rule prevailed, in case you're interested. In physics, following the prediction by Albert Einstein, the rule that light always travels in a straight line was bent, as were the light rays from a star that passed through the gravitational field of the sun during an eclipse, in the conflict between the straight-line rule and a newly established rule that light rays are affected by a gravitational field.

These conflicts and resulting exceptions to rules previously stated as general give birth to new rules which describe the exceptions. As it is the nature of everything to get more complicated, these rules of exception have some exceptions themselves, which are stated as further rules. I forget, if I ever knew, who wrote the verse: "All the fleas have little fleas which on their backs do bite 'em. The little fleas have littler fleas, and so ad infinitum."

In short, to think logically you must accept the concept that any rule has tier after tier of exceptions and counter-exceptions; the thought of a pyramid with a rule at its base and

a series of diminishing contradictory layers extending forever to a point of no size comes to mind.

Mercifully, people don't always think like that. As I said, this is not the only way the human mind can be made to work. Most of the time we do pretty much what is pre-determined by our own habits, which we tend to follow unless we exercise the necessary initiative to do something different. Habits, for my purposes, are rules of behaviour which have been so stored in our heads that we follow them without having to make decisions. These habits may have originated from the exercise of original thought, but more likely from example passed down from individual to individual, as a body, with accretions and deletions from time to time, depending on circumstances. These habits become rules to those who hold them, and frequently their breach is followed by emotional distress of one degree or another. If you are used to eating three meals a day, and should be required to miss one, you would probably find the emotional results more annoying than the physical ones. Also, what you expect of others becomes a rule of which the violation is followed by distress, even though there is no objective reason for one to have relied on his expectation of the behaviour of the other. You can often read in the newspapers how upset faculties in schools get, and even the boards of the school districts, when students wear hair

or clothing which fails to meet the anticipated norm. When the mini-skirt came into fashion, newspapers delighted in printing stories of public officials who insisted on firing female help who wore their skirts too short -- always accompanied by pictures of the female help and seldom of the public officials.

Thus, habits of thought take over from the thinking process in determining what we do most of the time. It is just as well, too; I find it hard enough to decide each morning what food to eat for breakfast and which suit and tie to wear without having to redetermine daily whether I'll have anything to eat at all, or whether I'll wear any clothes at all.

Often, however, there is an outright rejection of the rule of logic. I suspect that this results from rebellion against the discipline that logic requires. Superstition and fondness for magic are demonstrations of this rejection, and both have the benefit of acceptance without rational inquiry. I am not sure that the tendency to reject logical thought in many instances is all bad. Once I read that people who display exceptionally great powers of extrasensory perception are likely to have exceptionally illogical minds. Perhaps the power to master rules is purchased at the cost of other powers of which the mind would be capable in the absence of such a discipline. I am reminded of the bitter conflict, a few hundred years ago, between those

who followed the Christian faith and its purportedly logical theology and those who practiced witchcraft. Could this conflict, and the triumph of those who chose logic over the other powers, have been the cerebral equivalent of the choice between lungs and gills a few score millions of years ago?

Whether these other powers should have been developed at the expense of the power of logical reasoning will hardly be raised in a scientific fashion; partly because deciding to apply a scientific test to the question assumes the result. In any event, the great test that counts, which is survival, has so far given the edge to logic. The entire basis of man's civilization is his ability to establish rules and apply them.

Yet it is precisely this feature of man's position on earth which bothers me. In all of our activities, particularly in the government of our behaviour, ability to comprehend and apply rules is of increasingly greater importance. This ability is not the same in all people by any means; in some the ability could be instilled by early training from parents who had the ability themselves, in others no amount of training would suffice. The mass of rules a person must observe in contemporary American society is staggering. And this mass is constantly increasing and growing more complex. To get along in our civilization you must not only avoid violating the criminal laws, you must ascertain and comply with legal codes governing taxation, traffic regulation, property ownership, fiduciary relationships and conflicts of interests. You must ascertain and

comply with social codes covering dress, table manners, and method of speech. You must ascertain and comply with economic codes covering how much money you get and how much you spend or save. You must ascertain and comply with health codes covering diet, drinking and sanitary practices.

Were I now to ask you if there are too many rules, you might very well say yes. But if I were to ask which rules should be abolished, the answer would probably include only those which you don't want to be bothered with. Perhaps a look should be given at our civilization as a whole to see if there are too many rules.

The first question is how do you tell if the number of rules is too many or too few. The answer, I suggest, is to see if incremental rules do more harm than good, looking not only at the subject matter of the rule, but at society as a whole. What harm could be expected if there were too many rules?

The chief potential harm that I see is that people by their nature rebel against too many rules, and the rebellion could be expected to vary in intensity with the pressure thereby released. Thus, the more rules are adopted to ensure compliance with the rules already existing, the greater the pressure will be to reject them, and the more violent will be the explosion of release. What symptoms should we expect to warn of such

mounting pressures? A growing tendency of people to refuse to follow those rules which others in like circumstances have followed in the past would be a good guide, provided we underscore the phrase "in like circumstances." A rejection of obsolete rules which pertain to circumstances ~~which~~ ^{that} no longer exist is likely to amount merely to a substitution of rules; this would normally occur on a more or less selective basis, and has occurred throughout history. I doubt there has been a generation in the life of civilized man which has not felt despair at the failure of the succeeding generation to follow the rules held sacred by the former. Our time is certainly no exception.

There is no doubt that the human creature craves some rules to govern his behaviour even when the rules are not demonstrably related to any particular end. Observe children on their way to school some time, taking great care not to step on the cracks in the sidewalk; or, sometimes, taking great care to step on the cracks.

The problem of too many rules relates chiefly to whether the mass of rules has become so great that it is outstripping the present capabilities of too many human minds to ascertain and comply. There are and will always be many who, through mental or emotional deficiency or disorder, cannot make it. The greater the mass grows the more nearly normal will be those who can't cope with it. A moron should be able to do perfectly well in a society which makes no demands which a moron could not satisfy; but a society which makes demands that

only a genius can satisfy will be a source of frustration and rebellion for the near-genius. As matters now stand, a constant process of education, from birth to twenty or twenty-five years is necessary to adapt a person to our culture, and any serious slipup anywhere along the line will make the rest of the process fail. Thus children who fail to learn to read well enough will never have the opportunity to learn the rest of what is necessary to participate satisfactorily in modern times, even though in times past illiteracy would not have been much of a handicap. This educational process is, mainly, learning the rules which govern our society, including the things which the particular individual is expected to do in that society. Too many people are unable, whether intellectually or emotionally, to learn both the rules and the way to govern their own behaviour according to them. Whether the ability to apply learned rules to your own behaviour is inherited or achieved, instinctive or learned, innate or imposed, I know not. I suspect that some of each quality is involved, and am sure that all people have innate limitations, which no amount of instruction could overcome, on their abilities in this regard. As the complexity and mass of our rules grow, more and more of these innate limitations will take effect, excising from the mass of "normal" people more and more of those who can't make it. And this process seems to be accelerating.

The prospect of such a progression is bad enough, but now we come to what concerns me even more. That is what we do about it. As soon as you ask the question, you've answered it wrong because whatever process you choose, it requires the adoption

of at least one more rule. The two words "we do," so short that they seem completely harmless, necessarily imply concerted action; concerted action requires the adoption, communication and observance of rules. And the process of such adoption requires the application of still more rules; so do the processes of communication and observance. And the enforcement of observance. It's like quicksand, the more you struggle, the faster you sink, but if you don't struggle you'll sink anyway. Can we avoid the pitfall by rewording the question: What is to be done about it? No... Before the question makes sense, you must also ask, by whom?; or if it's by more than one person, the "we do" problem is back again; if it's by yourself, the question must be asked of yourself, answered by yourself, and dependent on no one else for implementation, and these limitations themselves are more rules.

Our natural thought processes and our very genius for logical thought are the trap and we cannot extricate ourselves by that process which so holds us. And here we are, our vaunted powers of logical thought and concerted action, those powers by which we have solved so many problems, no longer our tools but now the bars of our prison.

Do I hear a cry "Can't we just abandon the rules?"
No, we can't. The mere process of abandonment, when performed

in the concert implied by that little word "we", would be but the application of yet another rule, subserved by more and more sets of rules to determine just which existing rules we abandon and which we save; which we alter and which we disregard; which we forget and which we remember. You can't get out that way.

Did you ask, "What of faith? Can't I rely on that instead of those logical rules?" No, not even on a basic, primitive, fundamental faith, for it merely adds rules which must be interpreted by the use of logic and its rules, and applied if at all by the employment of other rules, and the rules to be superseded must be separated into those which you'll retain and those which you won't, and this separation must be conducted in accordance with still more rules.

A favorite theme of science fiction involves the development of machines to perform more and more of human work and eventually the machines take control and men become subservient to them. Let me suggest a refinement: the machines are not made of steel plates and copper wires; they do not go clanking about reminding people of their subservience to creatures of their own making; they do not exercise their control through the application or threat of physical force. Rather, the control is so subtle that people are not aware that they are controlled, the machines are made not of metal but of human brain tissue,

and they conceal their existence not by hiding themselves, but by hiding all else so that the victim can neither see nor comprehend anything but what the machine in his head lets him. This machine is the process of logical thought which is passed on like a golden albatross from parent to child, from teacher to pupil. We worship our prison.

Once we recognize the existence of the prison, even though escape be impossible, a few moments of freedom may be allowed on a short leash. Temporary relief is available. Let me quote what I consider a masterpiece of man's triumph over rational thought, dealing with nature's process of reducing the meandering length of a river by causing it to cut through the sides of the loops in the river bed.

"In the space of one hundred and seventy-six years the Lower Mississippi has shortened itself two hundred and forty-two miles. That is an average of a trif^{le} over one mile and a third per year. Therefore, any calm person, who is not blind or idiotic, can see that in the Old ~~Cretaceous~~ ^{Ordovician} ~~Carboniferous~~ ^{Silurian} Period, just a million years ago next November, the Lower Mississippi River was upwards of one million three hundred thousand miles long, and stuck out over the Gulf of Mexico like a fishing rod. And, by the same token, any person can see that seven hundred and forty-two years from now the Lower Mississippi will be only a mile and three quarters long, and Cairo and New Orleans will have joined their streets together, and be

plodding comfortably along under a single mayor and a mutual board of aldermen. There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact." Too few of us, alas, have the capacity to rise above reason that Samuel Clemens did when he wrote Life on the Mississippi.

Now back to our prison. Look through those rule-bars at what you can see perfectly plainly, but are not allowed to admit. Time is supposed to pass at a uniform rate; it is just as long from Monday night to Monday night this year as it was last year, or the year before that, or a hundred years ago, or a thousand. That's what the rule says, and we can't even confess doubt about it to ourselves despite overwhelming personal^{al} experience to the contrary. A few decades ago Christmasses came so seldom that one could barely stand to wait until a forthcoming one; now they recur at increasingly short intervals, so close together that there is not time to recover from the last one before the next is upon you. This process once impelled a friend of mine to consider founding a committee for the celebration of Christmas biennially because once a year is too often, but once every two years would be about right. Birthdays are even worse, they used to come more slowly than Christmasses and now they come even

faster. Yet the rules claim that amount of time from Christmas to Christmas, or from birthday to birthday, has remained constant throughout our lives, and we feel obliged to say "yes, that is true" even though we know it isn't. Time basically is a measure of the rotation of the earth on its axis, and of earth's revolving around the sun. It is also a measure of certain sub-molecular activities and of the swinging of pendulums. In all of these cases, however, the measurement is in relation to the behaviour of some sort of matter. If the passage of time is in fact accelerating uniformly when applied to matter, all of our material measurements would not detect it. Thus, when the non-material operation of our minds does detect such acceleration, we cannot admit it. Like the people in the story of The Emperor's New Clothes, we cannot say what we see because the rules require us to see (or at least pretend to see) something quite different. Eventually, I suppose, a scientist will come along and establish a proper theory, which complies with the rules scientists must follow in their business, that the material standards we use to measure time really are accelerating and that our secret subjective observations were right all along. This would not be a release from our rule-prison, however, but merely an extension of the walls to cover more territory.

I recall reading somewhere the comment that the characteristics needed for survival of a species in any age may be very different from those needed for survival in the preceding age; that many a species which was admirably suited to an age in which it evolved became specialized to take advantage of a certain set of conditions pertinent to that age; as the age changed, so did the conditions and the specialization which brought such prosperity to the species then resulted in its extinction. The passenger pigeon is an example. Its habit of migrating in huge flocks over the oak forests which covered much of the eastern part of the country served to provide nourishment because the pigeons would arrive at each part of the forest as the food ~~was~~ required became ready to eat and also served to protect most of the pigeons from such natural enemies as might be around because all of the predators in an area could glut themselves on pigeons for a brief period with no substantial diminution of the birds' numbers. However, when the white man cut down much of the forest cover, the food supply at various parts of the migration disappeared and what was left was inadequate to feed the multitudes. And the huge flocks of pigeons drew attention and destroyed any secrecy which might have protected their passage, so that men, whose capacity to kill is not limited by the quantity of what they can eat before it spoils, were able to locate and shoot the birds in great numbers. The inability of the passenger pigeon to adjust to this change in events led to its extinction.

human minds will be incapable of dealing with the mass of rules we shall have. ~~While~~ ^W We are now beginning to use these capabilities to dispell some of the less fortunate changes we are wreaking on this planet, and also to head toward other planets, (having already left considerable no-longer useful hardware and a few plastic bags of urine on the moon), ^{But are we} ~~we are~~ hurtling toward the position of the passenger pigeon who assumed the forests would always be there, or the brontosaurus who didn't worry about evolution?