

Inquisition, Repression, and Ridicule

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Does the scholarly community have an obligation to extend a respectable forum for the open discussion of repugnant theories?

In the spring of the year 1498, Moro, the Duke of Sforza, held a gathering of scholars in the large hall of the Sforza Palace in Milan. The affair was called "The Duel of Learning."

There were arguments among the learned men concerning the immaculate conception of the Virgin Mary and then an intense medical discussion on the questions:

1. Are handsome women more prolific than homely ones?
2. Was the healing of Tobit with fish-gall natural?
3. Is a woman an imperfect creation of nature?
4. In which inner part did the water originate which flowed out of the Lord's wound when he had been pierced by a spear?
5. Is woman more voluptuous than man?

The dispute on all the questions was heated, for these were matters which learned men of the time found of great importance both to their contemplation and to their professional advancement within the society of their peers.

At some point in the course of the debate the Countess Cecelia of the House of Sforza persuaded the Duke to challenge his guest to enter the debate of the scholars. His guest was Leonardo da Vinci.

Leonardo was extremely hesitant. He felt most uncomfortable speaking in front of large groups. In fact, he had an absolute fear of such a challenge. Nevertheless, the Duke and his Lady insisted that he speak.

He was totally unknown to the scholars assembled. He was not a member of any faculty, nor had he written learned documents on the burning issues of the day. He was known only as an artist who was working on a painting called "The Last Supper." For this reason, most people were pleased at the idea that he would speak, since it was well accepted that artists were comical.

He told them about petrified marine animals and the imprints of seaweed and corals which he had found in caves and on mountains a great distance from the sea. He stated that this was a demonstration of how, over the long period of its history, the face of the earth had changed. He stated that where there are now dry lands and mountains there had once been the bottom of the ocean. He suggested that eventually even the Nile River would fall into the Atlantic beyond the Straits of Gibraltar.

He is quoted as having said: "I am positive that the study of petrified animals and plants, which has hitherto been despised by men of science, will give a beginning of a new science of the earth, of her past and her future."

The scholars around him were baffled. How were they to act? Should they say praiseworthy things because

the Duke had asked him to speak, or should they laugh because what he had said was so patently absurd, and obviously intended as a joke? It was finally decided that laughter was the proper behavior, but after the audience had quieted, one of the more noteworthy scholars pointed out that all of this was simply the result of the flood as it had been written.

Leonardo replied by noting that the level of the flood according to the Scripture was ten cubits higher than the highest mountains. Therefore shells swirled by the waves would have fallen on the tops of mountains but not on the sides, nor the bottoms, nor inside of caverns. Furthermore, they should have fallen in wild disorder and not in carefully placed layers. Furthermore, how could they be imbedded in the rocks by a flood which lasted only a number of weeks?

An astrologer had the answer to all of this, saying that the sea animals and all the other things found by Leonardo had been created by the magical action of stars.

Leonardo asked if all mysteries were simply explained as a magical action of stars, how could science advance? Before too long, one of the more learned scholastics caught Leonardo on a question of theology. As he put it: "Can it be that all our knowledge of the soul, of God, of life beyond the grave, all of which knowledge is not susceptible of experimentation is, according to what you say, sir, not open to proof, as you yourself were pleased to express it? Are you saying, sir, that even though such knowledge is confirmed by the unflinching testimony of the Holy Scriptures that it is still not proven?"

Leonardo attempted to beat a hasty retreat from the trap of heresy that had been opened in front of him, and was fortunately saved from any further difficulties by a loud shouting match among the assembled scholars.

This was Leonardo da Vinci's first and last attendance at a symposium of learned men. For all of his understanding, and for all of his ability, he was nevertheless a somewhat simple man in dealings with the rest of humanity. He was disappointed, baffled, and perhaps even disgusted by the ridicule he had been subjected to. From that point on, and through the rest of his career, his scientific theories remained in his notebooks, written backward with his left hand and in fact quite often in a special code—not a terribly complex code, but at least difficult enough to frustrate anyone who might glance at his notebook.

But if Leonardo was subjected to the ridicule of the philosophers in this particular symposium, the general flavor of his life was quite different. He was both honored and sought after. In fact, for a couple of years, Pope Leo X was his patron.

As is well known, the situation was quite different a century later, in the case of his countryman Galileo

Galilei. For Galileo was indeed served with an injunction, haled before the Holy Office, and sentenced to prison for what amounted to the remainder of his life. Even though he was allowed to serve his sentence in his own house on a small farm that he owned, we should not believe that this sentence was purely symbolic. The house was indeed small, and (for those days) a long distance from any center of civilization. During one of the more painful illnesses of his old age, his friends begged the Pope for permission to take him to Florence for medical treatment—but that permission was flatly refused.

Although many of us are familiar, at least in general terms, with the unhappy history of Galileo, there may be only a few who have looked into the real details of the matter. Many of us are inclined to view Galileo's trouble as a conflict between religious dogma and scientific freedom. With this belief firmly in our minds, we feel justified in considering ourselves far beyond such sordid mistakes. But was this really the conflict, and are we indeed so far beyond the mistakes we ascribe to the Inquisition of 1633?

Galileo was not charged with, nor sentenced for, heresy. The charge was rather that he failed to obey an injunction which had been laid upon him 17 years earlier—an injunction concerning his support of the theories of Copernicus that the sun is the center of the solar system, and the earth moves around it. But a careful study of the records indicates that this injunction was a fake. It had apparently been forged into the church records, and with the deliberate intent of laying a trap years ahead of time which might at some future date be useful in bringing the great man to heel. In other words, Galileo was framed. But by whom and for what purpose?

The story began years before. Some of the early writing and letters of Galileo had caused considerable anguish and embarrassment to a learned society of Dominicans, a group who considered themselves to be the center of philosophy in Italy.

At this same period of time an ancient antagonism was brewing again between the Jesuits and the Dominicans. The Jesuits' traditional role was running the educational system, and they were just as upset with Galileo as the Dominicans were. Galileo's published works were usually written in Italian, rather than the scholarly Latin. This meant that anybody could read them. And indeed, many noblemen and their offspring were reading them, and were asking their Jesuit teachers some embarrassing questions about natural philosophy. The Dominicans and Jesuits were frequent, and sometimes bitter, rivals for Vatican favor, but they found a common enemy in Galileo.

Actually, Galileo had many friends in the highest echelons of both Jesuits and Dominicans. (You can almost hear

him saying at the time he was summoned before the Inquisition, "Why, some of my best friends are cardinals!"—and it was true.) But to have close acquaintances and supporters among individual, even leading, members of a group doesn't necessarily mean that you are on good terms with the bureaucracy. Yet the fact that Galileo had such powerful friends forestalled any direct attack. The rule, then as now, was—"Don't make waves!"

The crisis finally arose in 1614 when a Dominican monk of small wit, but great ambition, decided to make a name for himself by attacking Galileo from the pulpit, something that had not yet been done. He announced that mathematics was of the devil; mathematicians should be banished from Christian states; and these ideas about a moving earth were very close to heresy.

In the workings of the church, in the early 17th century, individuals, whether clerical or laity, could write letters and publish papers about almost anything they pleased,

We must recognize that bureaucracies have not changed much since the time of Galileo

even the theories of Copernicus, so long as they were very careful to word them in such a way that obvious heresy was avoided. But when a monk preached a sermon with references to heresy, and thus "stirred up the multitudes," the bureaucracy of the Vatican became concerned.

The Jesuits capitalized on the situation and persuaded the Vatican that embarrassment was a distinct possibility. Point one, it had been triggered by a Dominican; but, point two, Galileo was the basic problem.

Although the theories of Copernicus did indeed seem to be against official church doctrine, the highest authorities had studiously avoided making any official pronouncement on the subject. They wanted to keep their options open. Suppose further study should tend to show that Copernicus was right? The best move was to take no stand at all, but now the hand was forced.

The action was an official examination of the theories of Copernicus by a group of scholars and philosophers called "qualifiers." The result of the examination was that the Copernican theory on the solar system was held to be absurd, false, against theology, and in part heretical. No one was to hold or to teach this theory. Galileo was notified of that decision and agreed that he would not "hold or teach" that the sun stands still and the earth moves. He then tried out, very delicately and very carefully, writing and teaching about the theory in a discursive manner, being careful never to claim it as absolute truth.

This approach was quite acceptable to all concerned. The Vatican authorities heaved sighs of relief. The Pope encouraged him to publish. It seemed that a serious flap had been avoided. No individual was actually indicted for heresy and no one, including Galileo, complained about the formal restriction on the wording of scientific papers. Yet the Jesuit and Dominican monks remained frustrated. The enemy still lived and prospered.

Now we come to the plot. After Galileo had been told of the judgment concerning the theories of Copernicus, a curious note was entered into the official files of the Holy Office. It is curious in many ways. It was on the back of a sheet of paper where few notes were put, and certainly nothing with great official value. It was unsigned. The date when it was entered is not stated. It appears to be a minute of a meeting. It states that Galileo was enjoined as follows (and in those days the word enjoined had a specific and somewhat frightening legal meaning): ". . . nor further to hold, teach or defend it in any way whatsoever, verbally or in writing."

The crucial phrase in this document is ". . . or defend it in any way whatsoever, verbally or in writing."

This was the injunction on which Galileo was tried and convicted. Throughout his trial and in the years after his sentencing, Galileo claimed it was this specific injunction that had never been laid upon him. And apparently he was right.

Galileo threatened the status quo of education, and the self-respect of the philosophical hierarchy. They wanted him out of their hair. It took many years and seemingly forged documents to get him, but they finally did. It had to be carefully done. If they made too much trouble too soon, the blow could easily have fallen upon them.

Perhaps it is an interesting comment on the personality of Galileo that he steadfastly believed that the matter really did concern the theories of the solar system. He repeatedly tried to have somebody in authority actually read his *Dialogues*. The book had already received the official seal of approval from the Vatican censors, but higher authorities found it either too difficult or, perhaps, too boring.

I have dwelt a long time on the story of Galileo because I believe it has some special meaning for us. I believe we must recognize that times and bureaucracies have really not changed so much, whether the bureaucracies are governmental, religious, educational, or scientific.

continued on page 28

Inquisition, Repression, and Ridicule . . . continued from page 6

Still today, when an individual disturbs the establishment, or deviates too loudly and too effectively from the accepted wisdom of a large and bureaucratically organized group, we find ways to silence him—sometimes by ridicule (although this has often proved a very weak weapon, and one which frequently turns against its user), sometimes by repression, and, if all else seems to fail, by legal action.

We're all familiar with the famous 1925 Scopes trial in Tennessee. The theories of Charles Darwin had been ridiculed for 60 years, but they still lived and were apparently growing steadily more healthy. Although certain religious forces attempted to repress them, religion, at least in the United States, was too weak to make the repression effective. So it was left to the law. And even here, only a very few states could be persuaded to make the teaching of evolution illegal. Nevertheless, it was done, and the result was that curious carnival in Dayton, Tennessee. As you may recall, the law won, just as it did in the case of Galileo. Mr. Scopes was found guilty. But it was, as we know, a futile victory. He was fined \$100, and of course he lost his job. Not too bad compared to Galileo.

It might be interesting to review the 1954 security hearing of Dr. Robert Oppenheimer. Unfortunately, it is not likely that we have all of the important documents available to us. We do have enough to feel that this whole business was not quite right. There is a distinct impression that Dr. Oppenheimer was being tossed out of the official halls not because he was an actual security risk, but rather because his political opinions, particularly as they applied to matters of national defense, were a troublesome embarrassment for the establishment. But it is very difficult to know whether in any sense Oppenheimer was framed as Galileo had been. Such records as are available seem to indicate that the government had a pretty good case. Of course, they had the same pretty good case several years before they used it. So here again, the suspicion exists that Oppenheimer's questionable security

status, if any, was more a matter of legal convenience than an actual threat to national security.

Perhaps you remember the curious case of Immanuel Velikovsky and his book, *Worlds in Collision*. Velikovsky was subjected to scientific ridicule for his opinions, and perhaps he deserved the ridicule. But did he deserve the repression that the organized scientific community attempted to place upon him?

This situation is well documented. Harlow Shapley, the director of one of the nation's foremost astronomical observatories, informed his favorite publisher that if the company dared

When an individual disturbs the establishment, we find ways to silence him

to publish the work of Velikovsky, Shapley would never submit another manuscript to it. The publisher, Macmillan, had the book reviewed by independent critics, and following a favorable reply, printed it. But only a few months later, the pressure of many scientists, previous and potential authors and customers, forced Macmillan to ask Velikovsky for permission to transfer rights to Doubleday—even though the book was on the best-seller list.

One of the astronomers who denounced the work as “nothing but lies” in a letter to Macmillan concluded by saying he had not and never would read the book.

I should add to this story that early in 1974 a debate was arranged by the American Association for the Advancement of Science, meeting in San Francisco. Velikovsky met his critics on stage in front of an open audience. It would appear that nobody's mind was changed. The devotees of Velikovsky remained devoted, and the critics remained critical. But the criticism was honest and scientific, and Velikovsky's replies were scholarly. There was no attempt at repression—and obviously no need for it.

One last example, and in this case I will ask you to consider your own reaction. I'll quote a few excerpts from a 1973 column in the *New York Times* by Associate Editor Tom Wicker. The question that Wicker wishes to pose about an individual and his theory (which the writer calls “repugnant”) is given by this paragraph:

“His particular case not only raises the usual First Amendment question about offensive ideas, but a corollary: to what extent is a free society obligated to create opportunities for expression of such ideas?”

And further: “But do universities and publications have an obligation to extend him a respectable forum for his . . . theories?”

One of the objections this columnist raises against the individual is that even though he is a reputable scientist in one field, he is now talking about another, and as the writer states: “It can reasonably be argued that—on this subject, rather than in his field of expertise—he is not professionally entitled to serious attention or academic credit.”

It is interesting that one of the charges raised against Galileo in the long process of bringing him before the Inquisition was that he was discussing matters of theology and natural philosophy, whereas he should stick to his own field; namely, mathematics. Centuries later, Oppenheimer was accused of using his scientific stature to make pronouncements in politics, where obviously he had no competence, and Freud was accused of dipping his hands too far into matters of morality instead of sticking to his own field.

Whatever attempts were made to repress Freud's theories, they were obviously not successful. Even the “repugnant” theory of infant sexuality has seen the light of day. Is that particular theory right or wrong? Who knows? The issue is still in doubt. Even the expert psychoanalyst has difficulty gathering data from the unconscious mind of a human being.

Was this repugnant theory important? Apparently yes. It was the basis of the

Freudian heresy, and the basis for making us take a new look at the whole problem of mental disorder. We now recognize that mental illness is to some degree treatable, and the degree is improving year by year. We are moving away from the old tradition of locking the victims of mental illness into insane asylums and trying to forget they exist. Of course we have only come a short distance along this road, but would we have progressed even this far had Freud been successfully repressed?

To relieve the mystery about my modern example, I will quote from its first paragraph: "Dr. William Shockley is a noted physicist of dubious qualifications for his views on genetics."

I use the example of Professor Shockley with obvious intent. In a number of discussions with my friends and colleagues, I have found that the majority find the genetic theories of Dr. Shockley as personally abhorrent as does the editorial writer whom I have quoted. One of my friends, an eminent medical researcher and a man of liberal view, responded, "Oh I know about his stuff. He's just a racist!" Well, maybe

The dogma of racial equality is very important in our present governmental structure

he is. And of course "racist" is a highly pejorative word these days. But even if we question his motives, does that disprove his concepts?

Right now Dr. Shockley seems to be going through the ridicule phase. He is being shouted down at public lectures, insulted by newspaper writers, and occasionally a university cancels his lectures. But as we have seen in past cases, this seldom works. Will the next step be repression? What form will it take? Will the scientific and educational establishments that you and I represent take part in it? And if that fails, will the law be used next? The philosophy behind our current laws on this matter is clear: There are no racial differences in mental capability. Differences in capability appearing between the races

are due to environmental factors only. This is the official position of the federal government—Administration, Congress, and the Courts. It is just as official as the position of the Holy Office in 1633 that the earth stands still and the sun moves around it.

In fact, the situation now may be even more rigid. The dogma of the church regarding the solar system in the 17th century was really not a central issue in the structure of the bureaucracy. However, the dogma of racial equality is of enormous importance in our present governmental structure.

Judging from experience, that famous expensive teacher, we might conclude that, if Dr. Shockley persists with his "repugnant" theories, there is at least a slight possibility that he may be subjected to some sort of legal action. Of course, if experience is as good a teacher as it is expensive, such action will not be against the theories themselves, but on some other charge.

But it is likely that even the law would not succeed in silencing Shockley. He might have difficulty getting his papers published, although in principle any member of the National Academy of Sciences has the right to publish anything he pleases in the Proceedings. It is rather curious that this traditional right has fairly recently come into question in a manner many consider to be unprecedented. In 1973 a Nobel Laureate chemist, Linus Pauling, had difficulty with the Academy's editorial board over one of his papers on megavitamin therapy. It was, in fact, rejected, and subsequently published in another journal.

I do not intend to place Oppenheimer, Pauling, Shockley, or Velikovsky on the same level as Galileo—although perhaps Freud belongs there and history may have more to say about the others. The comparison I intend is rather between the educated society of the 20th century—ourselves—and the educated society of the 17th. I cannot avoid the impression that we have not improved as much as we would like to believe.

Some of my scholarly friends have argued that Shockley's ideas ought to be repressed. They cause more social mischief than they are worth. And after

all, at the present time, there are insufficient data to prove them right or wrong.

This argument has a familiar ring. It has been sounding through the halls of science for almost four centuries—and through the temples of philosophy and religion for considerably longer—"Don't make waves!" Surely by now we have learned that inquisition, repression, and ridicule are not the shields and bulwarks of society, but quite the opposite. They are damaging to progress, damaging to education, and, in fact, damaging to all mankind.

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Did the astronomical community really have anything to fear from the publications of Velikovsky? What a ridiculous notion! Are we to fear that the racial theories of Dr. Shockley will take over society? There is no need for it. He has all the critics he needs.

Columnist Wicker raised the question: "Do universities and publications have an obligation to extend Shockley a respectable forum for his theories?"

I believe that question is slanted the wrong way. It implies some sort of obligation to Shockley. But the obligation is to ourselves. The central question is: Does the scholarly community have an obligation to extend a respectable forum for the open discussion of repugnant theories? To that question, the answer is clearly, "Yes!" □